Directors
Manny Fernandez
Tom Handley
Pat Kite
Anjali Lathi
Jennifer Toy

BOARD MEETING AGENDA
Monday, November 14, 2016
Regular Meeting - 7:00 P.M.

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.
	2.	Pledge of Allegiance.
	3.	Roll Call.
Motion	4.	Approve Minutes of the Special Meeting of October 18, 2016.
Motion	5.	Approve Minutes of the Meeting of October 24, 2016.
	6.	Written Communications.
	7.	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.*
Motion	8.	Review and Accept the June 30, 2016 Comprehensive Annual Financial Report *(to be reviewed by the Audit Committee).*
Motion	9.	Board Member Compensation for 2017 *(to be reviewed by the Budget & Finance Committee).*
Motion	10.	Consider Second Amendment to Employment Agreement Between Union Sanitary District and Paul Eldredge.
Motion	11.	Authorize the General Manager to Execute an Agreement and Task Order No. 1 with Brown and Caldwell for the Standby Power Generation System Upgrade Project *(to be reviewed by the Engineering and Information Technology Committee).*
Motion	12.	Authorize the General Manager to Execute an Agreement and Task Order No. 1 with Brown and Caldwell for the Primary Digester No. 7 Project *(to be reviewed by the Engineering and Information Technology Committee).*

Motion	13.	Authorize the General Manager to Execute an Agreement and Task Order No. 1 with RMC Water and Environment for the Force Main Condition Assessment *(to be reviewed by the Engineering and Information Technology Committee).*
Information	14.	Check Register.
Information	15.	Annual Reporting of Expense Reimbursements Over $100 *(to be reviewed by the Budget & Finance Committee).*
Information	16.	Status of Priority 1 Capital Improvement Program Projects *(to be reviewed by the Engineering and Information Technology Committee).*
Information	17.	First Quarterly Report on the Capital Improvement Program for FY 17 *(to be reviewed by the Engineering and Information Technology Committee).*
Information	18.	Report on the East Bay Dischargers Authority (EBDA) Meeting of October 20, 2016.
Information	19.	Committee Meeting Reports. *(No Board action is taken at Committee meetings):* a. Audit Committee – Wednesday, November 9, 2016, at 11:00 a.m. • Director Fernandez and Director Toy **b.** Budget & Finance Committee – Thursday, November 10, 2016, at 3:15 p.m. • Director Handley and Director Lathi c. Engineering and Information Technology Committee – Friday, November 11, 2016, at 9:30 a.m. • Director Kite and Director Toy d. Legal/Community Affairs Committee – will not meet. e. Legislative Committee – will not meet. f. Personnel Committee – will not meet. g. Audit Committee – will not meet. h. Ad Hoc Subcommittee for Communications Strategy.
Information	20.	General Manager's Report. *(Information on recent issues of interest to the Board).*
	21.	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.
	22.	Adjournment – The Board will adjourn to a Special Meeting in the Alvarado Conference Room on Monday, November 28, 2016, at 6:00 p.m.
	23.	Adjournment – The Board will then adjourn to the next Regular Meeting in the Boardroom on Monday, December 12, 2016, 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

Officers
Paul R. Eldredge
General Manager/ District Engineer

Karen W. Murphy
Attorney

AUDIT COMMITTEE MEETING

Committee Members: Director Fernandez and Director Toy

AGENDA
Wednesday, November 9, 2016
11:00 A.M.

Mission Conference Room
5072 Benson Road
Union City, CA 94587

1. Call to Order
2. Roll Call
3. Public Comment
4. Review and Approve Minutes from Audit Committee Meeting of August 31, 2016
5. Review the June 30, 2016 Comprehensive Annual Financial Report
6. Upcoming Governmental Accounting Standards Board Pronouncements
7. Status of Audit Contract (USD only)
8. Communication to the Board
9. 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

Officers
Paul R. Eldredge
General Manager/ District Engineer

Karen W. Murphy
Attorney

BUDGET & FINANCE COMMITTEE MEETING

Committee Members: Director Handley and Director Lathi

AGENDA

Thursday, November 10, 2016
3:15 P.M.

Alvarado Conference Room
5072 Benson Road
Union City, CA 94587

1. Call to Order

2. Roll Call

3. Public Comment

4. Items to be reviewed for the Board meeting of November 14, 2016:
   - Board Member Compensation for 2017
   - Annual Reporting of Expense Reimbursements Over $100

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

Officers
Paul R. Eldredge
General Manager/ District Engineer

Karen W. Murphy
Attorney

ENGINEERING & INFORMATION TECHNOLOGY COMMITTEE MEETING

Committee Members: Director Kite and Director Toy

AGENDA

Friday, November 11, 2016
9:30 A.M.

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

2. Roll Call

3. Public Comment

4. Items to be reviewed for the Board meeting of November 14, 2016:
   - Authorize the General Manager to Execute an Agreement and Task Order No. 1 with RMC Water and Environment for the Force Main Condition Assessment
   - Authorize the General Manager to Execute an Agreement and Task Order No. 1 with Brown and Caldwell for the Standby Power Generation System Upgrade Project
   - Authorize the General Manager to Execute an Agreement and Task Order No. 1 with Brown and Caldwell for the Primary Digester No. 7 Project
   - Status of Priority 1 Capital Improvement Program Projects
   - First Quarterly Report on the Capital Improvement Program for FY 17

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 SPECIAL MEETING OF THE
BOARD OF DIRECTORS OF
UNION SANITARY DISTRICT
October 3, 2016

CALL TO ORDER

President Handley called the special meeting to order at 6:20 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
Karen Murphy, District Counsel

ORAL COMMUNICATIONS

There were no oral communications.

CLOSED SESSION

The Board adjourned to Closed Session for the following matters:

PUBLIC EMPLOYEE PERFORMANCE EVALUATION
Pursuant to Government Code Section 54957
Title: General Manager

CONFERENCE WITH LABOR NEGOTIATORS
Agency designated representatives: President Handley and Director Lathi
Unrepresented employee: General Manager

The Board reconvened to Open Session. President Handley reported there was no reportable action.

ADJOURNMENT:

The special meeting was adjourned at approximately 8:45 p.m. to the next Regular Board Meeting in the Boardroom on Monday, October 24, 2016, at 7:00 p.m.

SUBMITTED:

_____
REGINA McEVOY
BOARD SECRETARY

ATTEST:

_____
ANJALI LATHI
SECRETARY

APPROVED:

_____
TOM HANDLEY
PRESIDENT

Adopted this 14th day of November, 2016

MINUTES OF THE MEETING OF THE
BOARD OF DIRECTORS OF
UNION SANITARY DISTRICT
October 24, 2016

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

STAFF: Paul Eldredge, General Manager
Karen Murphy, District Counsel
Sami Ghossain, Technical Services Manager
James Schofield, Collection Services Manager
Armando Lopez, Treatment and Disposal Services Manager
Pamela Arends-King, Business Services Manager/CFO
Robert Simonich, Fabrication, Maintenance, and Construction Manager
Regina McEvoy, Assistant to the General Manager/Board Secretary

APPROVAL OF THE MINUTES OF THE MEETING OF OCTOBER 10, 2016

It was moved by Vice President Kite, seconded by Director Fernandez, to approve the Minutes of the Meeting of October 10, 2016. Motion carried unanimously.

MONTHLY OPERATIONS REPORT FOR SEPTEMBER 2016

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 during the month of September from a Union City resident who reported a treatment plant odor. District staff responded by touring the resident's neighborhood and no odor was detected.

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

- Revenues:
    - Received $193,000 in capacity fees during the month of September which included the following:
        - $67,000 from Crossroads Church in Fremont

        - Received $67,000 for residential development from Brookfield Bell Air LLC
- Expenses:
    - The District spent $2.2 million in Capital Expenditures
    - The District spent $1 million for the Newark Backyard Sewer Relocation Project

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.

AUTHORIZE THE GENERAL MANAGER TO EXECUTE TASK ORDER NO. 2 WITH DEGENKOLB ENGINEERS FOR THE SEISMIC VULNERABILITY ASSESSMENT, PHASE 3

This item was reviewed by the Engineering & Information Technology Committee. Technical Services Manager Ghossain stated the Board authorized the General Manager to execute an agreement and Task Order No. 1 with Degenkolb Engineers in the amount of $148,399 for Phase 1 of the Seismic Vulnerability Assessment at the Board meeting held November 25, 2013. Phase 2 identified seismic deficiencies of the Administration, Field Operations, Plant Operations Control, and Primary Clarifiers 1-4 Buildings. A special project to perform Phase 3 of the Seismic Vulnerability Assessment was included in the FY 17 budget. The objective of Phase 3 will be to assess the structures critical in conveying wastewater at the Plant and one remote pump station. Staff recommended the Board authorize the General Manager to execute Task Order No. 2 with Degenkolb Engineers in the amount of $105,345 for the Seismic Vulnerability Assessment, Phase 3.

General Manager Eldredge stated the Engineering & Information Technology Committee requested staff continue to use the American Society of Civil Engineers criteria for seismic impact as opposed to terms previously used by Degenkolb Engineers.

It was moved by Director Toy, seconded by Secretary Lathi, to Authorize the General Manager to Execute Task Order No. 2 with Degenkolb Engineers for the Seismic Vulnerability Assessment, Phase 3. Motion carried unanimously.

CONSIDER MODIFYING BOARD OFFICER TITLES FROM PRESIDENT AND VICE-PRESIDENT TO CHAIR AND VICE-CHAIR

District Counsel Murphy stated staff prepared this item per a request received at the September 26, 2016, Board meeting. District Board titles had been Chair and Vice Chair prior to changing to President and Vice President in January 2008. District Counsel Murphy stated that while the majority of Sanitary Districts use the titles of President and Vice President, USD may choose to use Chair and Vice Chair provided it is made clear the Chair would serve the role of the "President" per Health & Safety Code section 6486 and 6487. To accomplish the title change, staff would prepare necessary revisions to Policy 3070, Board Officers and Committee Membership.

It was moved by Vice President Kite, seconded by Secretary Lathi, for staff to prepare a Board item to modify Board officer titles from President and Vice-President to Chair and Vice-Chair. Motion with the following vote:

AYES:	Fernandez, Kite, Lathi
NOES:	Handley, Toy
ABSENT:	None
ABSTAIN:	None

INFORMATION ITEMS:

Check Register

All questions were answered to the Board's satisfaction.

Recycled Water Feasibility Study Update

Technical Services Manager Ghossain stated the main focus of the study was to evaluate potential for an indirect potable reuse (IPR) project for the District and Alameda County Water District (ACWD) to recharge the Niles Cone Groundwater Basin. USD would need a secondary treatment process enhancement in addition to a new Advanced Water Purification Facility to comply with regulations governing groundwater recharge for IPR. It was noted that any IPR project would require further study and modeling by ACWD before moving forward.

Annual Report to Union City for Fiscal Year 2016

Treatment and Disposal Services Manager Lopez stated the District's Use Permit with the City of Union City requires submission of an annual report to the City Manager's Office. The report documents existing wastewater treatment plant flow, provides projections for plant flow the following year, reviews compliance and effluent discharge limits, and provides a status report on progress made in the development of new treatment facilities outside of Union City limits.

Cal-Card Quarterly Activity Report
This item was reviewed by the Budget & Finance Committee. Business Services Manager/CFO Arends-King presented the Cal-Card Quarterly Merchant Activity Report and responded to Boardmember questions.

Board Expenditures for the 4th Quarter of FY 2016
This item was reviewed by the Budget & Finance Committee. Business Services Manager/CFO Arends-King presented the report.

Board Expenditures for the 1st Quarter of FY 2017
This item was reviewed by the Budget & Finance Committee. Business Services Manager/CFO Arends-King presented the report.

COMMITTEE MEETING REPORTS:
The Budget & Finance, Legal/Community Affairs, and Engineering and Information Technology Committees met. The Legislative Committee meeting was canceled due to a lack of quorum.

GENERAL MANAGER'S REPORT:
General Manager Eldredge reported the following:

- Presented a chart which showed estimated savings for refinancing the District's SRF debt. Staff is not proceeding with the refinance at this time, but will wait and see what the market does in the coming months.
- The District will host the next Alameda County Special Districts Association meeting at 7:45 a.m. on Wednesday, November 9, 2016.

OTHER BUSINESS:

Director Kite stated she attended the 2016 Sewer Summit held October 20, 2016.

ADJOURNMENT:

The meeting was adjourned at 7:45 p.m. to the next scheduled Regular Board Meeting to be held in the Boardroom on Monday, November 14, 2016, at 7:00 p.m.

SUBMITTED: ATTEST:

_____ _____
REGINA McEVOY ANJALI LATHI
BOARD SECRETARY SECRETARY

APPROVED:

_____
TOM HANDLEY
PRESIDENT

Adopted this 14th day of November, 2016

Directors
Manny Fernandez
Tom Handley
Pat Kite
Anjali Lathi
Jennifer Toy

Officers
Paul R. Eldredge
General Manager/
District Engineer

Karen W. Murphy
Attorney

DATE: November 1, 2016

MEMO TO: Board of Directors – Union Sanitary District

FROM: Paul R. Eldredge, General Manager/District Engineer
Pamela Arends-King, Business Services Manager/CFO
Maria Buckley, Principal Financial Analyst

SUBJECT: Agenda Item No. 8 – Meeting of November 14, 2016
REVIEW AND ACCEPT THE COMPREHENSIVE ANNUAL FINANCIAL REPORT (CAFR) FOR FISCAL YEAR ENDING JUNE 30, 2016

Recommendation

Receive and file the CAFR for fiscal year (FY) ending June 30, 2016.

Background

The District engages an independent accounting firm to audit the financial statements and records for each fiscal year. Attached is the FY 2016 CAFR with comparative information for FY 2015.

Highlights for FY 2016 include the increase in Net Position to $334.4 million, a two percent or $9.4 million increase from FY 2015. The increase is primarily due to receiving $7.2 million in capacity/connection fees and $1.8 million in contributed capital due to the increase in residential development. Net Position consists of $295.4 million invested in capital assets; $25.1 million restricted for specifically stipulated spending agreements originated by law, contract or other agreements with external parties; and $14 million is unrestricted and subject to designation by the District Board of Directors and may be used to meet the District's ongoing obligations. The District placed $6.6 million in capital assets compared to $12.5 million in FY 2015. Long-term liabilities increased $5.6 million from FY 2015 due to the addition of the State Revolving Fund loan proceeds (debt) for the Thickener project and a net pension liability increase of $4.5 million.

There were no significant audit findings for FY 2016 as stated in the attached Government Auditing Standards (GAS) letter from auditors, Vavrinek, Trine, Day & Co., LLP, Certified Public Accountants.

Attachments

FY 2016 CAFR
GAS letter
Independent Auditors' Report on Internal Control

Union Sanitary District

Union City, California

Comprehensive Annual Financial Report

Fiscal Year Ended June 30, 2016 with Comparative Information for Fiscal Year Ended June 30, 2015

Union Sanitary District

Union City, California

Comprehensive Annual Financial Report

Fiscal Year Ended June 30, 2016 with Comparative Information for Fiscal Year Ended June 30, 2015

Prepared by Business Services Department

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The Statistical Section of Union Sanitary District's comprehensive annual financial report presents detailed information as a context for understanding what the information in the financial statements, note disclosures, and required supplementary information says about the District's overall financial health.

Financial Trends **Page #**

These schedules contain trend information to help the reader understand how the District's financial performance and well-being have changed over time.

Changes in Net Position and Statement of Net Position by Component.....**S-1**
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Operating Expenses by Major Function..... **S-3**
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Revenue Capacity

These schedules contain information to help the reader asses the District's most significant revenue sources.

Current and Historical Fees, last ten years..... **S-5**
Ten Principal Industrial Rate Payers by Levy..... **S-6**
Fiscal Year Assessed Valuation (of Service Area)..... **S-7**

Debt Capacity

These schedules contain information to help the reader assess the affordability of the District's current levels of outstanding debt and the District's ability to issue additional debt in the future.

Ratios of Outstanding Debt by Type..... **S-8**
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Demographic and Economic Information

These schedules offer demographic and economic indicators to help the reader understand the local environment within which the District's financial activities take place.

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Major Employers in District Service Area..... **S-12**

Operating Information

These schedules contain service and infrastructure data to help the reader understand how the information in the District's financial report relates to the services the District provides and the activities it performs.

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Sources: Unless otherwise noted, the information in these schedules is derived from the comprehensive annual financial reports for the relevant year.

Directors
Manny Fernandez
Tom Handley
Pat Kite
Anjali Lathi
Jennifer Toy

Officers
Paul R. Eldredge
General Manager/
District Engineer

Karen W. Murphy
Attorney

October 20, 2016

Board of Directors

Union Sanitary District
Union City, California

Subject: Comprehensive Annual Financial Report
For the Year Ended June 30, 2016

We are pleased to present the Union Sanitary District's Comprehensive Annual Financial Report (CAFR) for the fiscal year (FY) ended June 30, 2016. Responsibility for both the accuracy of presented data and the completeness and fairness of the presentation, including all disclosures, rests with the District. To the best of our knowledge and belief, the enclosed data is accurate in all material respects and reported in a manner designed to present fairly the financial position and results of operations of the District. All disclosures necessary to enable the reader to gain the maximum understanding of the District's financial activities have been included.

The CAFR is presented in accordance with Generally Accepted Accounting Principles (GAAP) as set forth by the Governmental Accounting Standards Board (GASB).

District Profile

The Reporting Entity

The Union Sanitary District (District) is an independent Special District, and is accounted for as an enterprise fund type (proprietary fund category). A fund is an accounting entity with a self-balancing set of accounts established to record the financial position and results of operations of a specific governmental activity. The activities of enterprise funds closely resemble those of ongoing businesses in which the purpose is to conserve and add to basic resources while meeting operating expenses from current revenues. Enterprise funds account for operations that provide services on a continuous basis and are substantially financed by revenues derived from user charges. As an enterprise fund, the District uses the accrual basis of accounting. Revenues are recognized when earned and expenses are recognized as they are incurred, regardless of when cash is paid or received. The District has no component units.

The District applies all applicable GASB pronouncements in accounting and reporting for proprietary operations. District policy requires that its financial statements be audited on an annual basis by an independent certified public accounting firm approved by the Board of Directors. The independent

auditor's report for the fiscal years ended June 30, 2016 and 2015 are presented in the Financial Section of this report. Please refer to the Management's Discussion and Analysis immediately following the independent auditor's report in the Financial Section for additional information about the financial statements.

District Formation and Organization

The Union Sanitary District was formed in 1918 and subsequently reorganized in 1923 to serve Newark and the Centerville area of what is now Fremont. Between 1949 and 1962, Niles, Decoto, Irvington, and Alvarado Sanitary Districts joined the Union Sanitary District. The District is empowered to own and operate wastewater facilities and the Board of Directors may prescribe, revise and collect fees or charges for services and facilities. The District provides wastewater collection, treatment and disposal services to the residents and businesses of the cities of Fremont, Newark, and Union City, commonly referred to as the Tri-City Area, with a combined population of 347,009. The Cities are located along Interstates 680 and 880, between Oakland and San Jose in southern Alameda County.

The District is governed by a five-member Board of Directors, which is independently and directly elected by voters to staggered four-year terms. The election is non-partisan and at-large within ward #3. The Board appoints the General Manager to manage and oversee the day-to-day operations. The District, which employs 136.45 Full Time Equivalent (FTE) staff, operates in a team-based environment and uses the Balanced Scorecard as a model for its strategic plan and performance measurement tool.

Local Economic Condition and Outlook

Located at the northern end of Silicon Valley, the Tri-City area of Fremont, Newark and Union City has a diverse population, as well as a varied mix of employers including bio-tech, research and development, education, manufacturing and retail. Following are economic conditions in the Tri-City area and the District as a whole.

The City of Fremont*

Fremont is the 4th largest city in the Bay Area in population and 2nd largest in size with an area of 92 square miles. The majority of its 40 schools are considered high performing by the State. The City is a recognized leader in advanced manufacturing, clean technology, and biotechnology. During FY 2016, Fremont began and continued several development projects, in the areas of housing, commercial, industrial, and transportation. Tesla, the largest employer in Fremont, took orders for mass manufacture of their Model 3 electric automobile. New companies include Pivot Interiors, Apple, and Living Spaces. The Warm Springs district will soon have a Bay Area Rapid Transit station, as well as more housing and mixed-use developments. All of the City's major revenue streams are showing moderate growth.

The City of Newark*

Newark has an area of 13 square miles. There are several developments, comprising hundreds of single family homes, condos, and townhomes underway. The property taxes generated from 2,500 new living units will help Newark continue to provide the City with essential resources in addition to maintaining their balanced budget. The increased housing will improve school enrollment, which has dropped in recent years. Newpark Mall's $40 million renovation continues, including an IMAX theater which is up and running.

The City of Union City*

Union City is 18 square miles in area. It has many parks, sports fields, community facilities, and recreation programs for citizens of all ages. The City of Union City's Measure AA, the 0.5% sales tax adjustment, which was set to expire in March 2015, has been extended for 10 more years. Both home values and sales taxes are increasing at modest rates. The City's retirement costs have decreased due to recent labor agreements where employees will pick up the full share of employee PERS costs.

Region-wide, the Tri-City area is experiencing significant-residential and commercial development due to the healthy economy. Annual average unemployment rates for the cities of Fremont, Newark and Union City were 3.8%, 4.1%, and 4.4% respectively, compared with 3.7%, 5.0%, and 5.3% one year earlier.

*Source: Fremont and Newark State of the City addresses 2016; www.fremont.gov, www.newark.org, www.ci.union-city.ca.us, www.labormarketinfo.edd.ca.gov, www.247wallst.com.

Major Projects or Initiatives

During fiscal year 2016, the District completed or initiated a number of significant projects:

Alvarado Basin Sewer Master Plan Update – The goal of the master plan is to develop a long-term capital improvement program that will provide for adequate hydraulic capacity in the sewer system as well as address maintenance and structural problems in sewers in the basin. The condition assessment was completed in FY 2016, while the capacity assessment will be completed in FY 2017.

Mobile Data Technologies – The utilization of Mobile Data Technology (tablets) was implemented that allows field staff to access real-time data from the District's Computerized Maintenance Management System.

Standard Specification Update – The District's standard specifications govern the design and construction requirements of sanitary sewer main and lateral installations by private contractors (non-Capital Improvement Projects (CIP)). The specification was last updated in 2006. A number of revisions to building and plumbing codes, as well as other standards, have occurred since the last revision. To keep current, the District's Standard Specifications and Information Bulletin were updated.

Aeration Membrane Cleaning – A cleaning method was selected and a trial will be performed this fiscal year. The trial results will be evaluated for both process and economic benefit.

Co-Digestion – The Fabrication, Maintenance & Construction (FMC) work group assisted Total Productive Operations (TPO) with a co-digestion pilot project. This involved considerable effort of staff and resources.

Reduction of Overtime – FMC staff reduced the amount of overtime worked. Over the years overtime has been used frequently to support multiple plant and pump station projects while also maintaining the District's facilities.

Phase 5 LED Lighting Conversion – District facilities were upgraded with LED lighting.

Plant Solids Capacity Assessment – The liquid component of wastewater has historically been the critical element when it comes to the plant capacity evaluation, however for more than ten years, plant flows have been steadily decreasing while the solids components have been increasing. For this, as well as other reasons, a solids capacity evaluation was initiated.

Thickener Project – The District successfully managed the largest CIP project currently under construction and met the State Revolving Fund (SRF) loan and Single Audit requirements.

Phone System Replacement – A Voice Over Internet Protocal (VOIP) phone system was installed to replace a 20-year-old analog phone system.

Future Projects or Initiatives

Dumbarton Transit Oriented Development Project – This development requires the relocation of the District forcemains. Management will ensure District's interests are met and concerns are mitigated.

Increased In-house Cured-in-Place Pipe Capabilities – Currently the District is limited to six foot long cured-in-place pipe repairs. Implementing this new process will increase our capabilities up to one hundred feet.

Plant Solids Capacity Assessment, Phase 2 – The solids capacity evaluation does not affect the solids stream only, it is also a central element in the hydraulic capacity of the plant. This second phase will evaluate the plant liquid stream capacity.

Preventative Maintenance Project – Operations & Maintenance (O&M) for all plant equipment will be reviewed to ensure proper maintenance is taking place per the manufacturers' recommendations. This will include developing specific maintenance tasks/Standard Operating Procedures (SOPs), and updating our computerized maintenance management system as needed.

Emergency Response – Over the next several years FMC will develop specific emergency response procedures for each remote pump station. This will include writing SOPs, procuring equipment, creating inventory sheets, identifying staging areas, and communicating new information with staff.

Permit Renewal for the Easy Bay Dischargers Authority (EBDA) Discharge – An application will be submitted in September 2016 to the State Water Resource Control Board (SWRCB).

Digester #3 and Secondary Digester Cleaning – The digester cleaning program will be resumed.

Project Implementation Master Plan – The Master Plan will review and assess the District's critical projects and recommend the sequence of design and construction implementation based on priorities and schedules; existing and future space needs; process adjacencies; economic feasibility; and other planned capital improvement projects.

Alternative Grit Cleaning in Plant – A new Pilot Program to remove accumulated grit from control box #1 and Alvarado pump station without having to shut down the treatment plant will be completed.

New Enterprise Resource Planning (ERP) System – The District will research and select a new ERP system to replace a system that is no longer being updated.

Phase 6 LED Lighting Conversion – Phase 6 of the LED lighting upgrade for facilities will be completed.

Local Limits Study – The Plant National Pollutant Discharge Elimination System (NPDES) permit should be reissued in early 2017. As required under 40 Code of Federal Regulation (CFR) 403.5(c)(1), a Local Limits study will evaluate the need to revise dischargers' limits.

Financial Information

Accounting System

District financial records are maintained on the accrual basis of accounting as required by GASB Section 1600.125. Accrual basis accounting recognizes transactions, events, and circumstances when they occur, rather than when cash is received or paid.

Internal Controls

While developing and evaluating the District's accounting system, consideration is given to the adequacy of internal accounting controls. Internal controls are designed to give reasonable, but not absolute, assurance regarding: (1) the safeguarding of assets against loss from unauthorized use or disposition; and (2) the reliability of financial records for preparing financial statements and maintaining accountability for assets. The concept of reasonable assurance recognizes that: (1) the cost of a control should not exceed the benefits likely to be derived; and (2) the evaluation of costs and benefits requires estimates and judgments by management.

All internal control evaluations occur within the above framework. We believe that the District's internal accounting controls adequately safeguard assets and provide reasonable assurance of proper recording of financial transactions. The District's internal controls include but are not limited to positive pay, fraud protection checks, timely bank reconciliations, segregation of duties wherever possible, dual approvals on wires and investment purchases, an anonymous fraud hotline, and financial system security.

Budgetary Controls

Budgetary controls are maintained by the District to ensure compliance with the annual budget adopted by the Board of Directors. All financial activities for the fiscal year are included in the annual budget, along with a ten-year capital improvement projects plan. Budgetary control is maintained at the Work Group (department) level for administrative and operating budgets, and at the project level for capital improvements. Monthly budget reports are provided to the Executive Team and Board of Directors, and the Executive Team conducts a detailed quarterly review, as well.

Rate Structure

The District receives its revenue from four primary sources: sewer service charges; capacity fees; other minor operating revenues such as permits, inspections and outside work that we perform in cooperation with other municipalities; and interest earnings on reserve funds.

Sewer Service Charge

The sewer service charge has historically been collected on the annual property tax bill. Sewer service charges to be collected are provided to the County of Alameda in August of each fiscal year. The District receives its primary payments of funds in December (50%) and April (45%), and the remainder in September, and receives all amounts billed as part of the County's "Teeter" plan.

The sewer service charge is divided into four primary categories of customers: residential, commercial, institutional, and industrial. The calculation of the sewer service charge for the commercial, institutional, and industrial customers is based upon their average flow, as well as contribution of their projected suspended solids (SS) and chemical oxygen demand (COD). The District does experience substantial variability in the type of effluent produced by industrial users, and the SS and COD can vary significantly. The District has a sampling program to periodically test the effluent from its industrial customers. Flow for industrial users is based on water use records from the Alameda County Water District. The annual residential fee for 2016 was $377.00 for a single family dwelling and $326.00 for a multi-family dwelling.

Connection Fees
In 2016 the District charged a sewer connection fee of $5,595.66 for an equivalent dwelling unit (EDU). The charges for commercial, industrial, and office use are based on factors such as square footage, flow, COD, and suspended solids. Revenues from capacity fees are used to fund capital projects and upgrades that preserve or increase the system's capacity. Thus, the collected revenues may be used to fund certain renewal and replacement CIP projects, but not operating costs.

Interest Income
The District earns interest on its portfolio of investments, including the Local Agency Investment Fund (LAIF), and the California Asset Management Program (CAMP), which is allocated to the major funds (Capacity and Sewer Service) monthly by percentage of fund balance.

Other Information

Independent Financial Audit – California state statutes require an annual independent audit of the books of accounts and financial records of the District. The firm of Vavrinek, Trine, Day Inc. was contracted to conduct this year's audit. The Board Audit Committee receives and reviews the audited financial statements. The audit opinion is included in the Financial Section of this report.

Financial Policies – In fiscal year 2016, the District reviewed and/or updated the following finance-related policies: Investments, and Standardized Equipment.

East Bay Dischargers Authority – USD is a member of EBDA. Founded in 1974, EBDA is a five-member Joint Powers Agency formed to plan, design, construct, and operate regional facilities to collect, transport and discharge treated effluent to deep waters of San Francisco Bay. Treated effluent from the District's Alvarado Wastewater Treatment Plant is pumped to the EBDA System and discharged into the Bay southwest of Oakland International Airport. Frequent testing of the treated wastewater confirms compliance with regional permit requirements. The other member agencies are Castro Valley Sanitary District, Oro Loma Sanitary District, City of Hayward, and City of San Leandro.

District Financing Authority – The District is a member of the Alameda County Water District Financing Authority. The Authority was organized to provide assistance to the water district in anticipation of financing capital projects over the next several years. the District has one Board member on the governing body of the Authority.

Awards Received

During the past year, the District received the following awards:

- California State Risk Management Association (CSRMA) – Workers Compensation Excellence Award

- California Association of Sanitation Agencies (CASA) – Public Outreach and Education Award – Small Agency

- California Association of Public Information Officials – Excellence in Communications Award, Award of Excellence for Special Events, One Time Events Category (2015 Open House) – "Party at the Treatment Plant"

- National Institute for Government Purchasing (NIGP) – Achievement of Excellence in Procurement

- Government Finance Officers Association (GFOA) – Excellence in Financial Reporting

  The Government Finance Officers Association of the United States and Canada (GFOA) awarded a Certificate of Achievement for Excellence in Financial Reporting to Union Sanitary District for its comprehensive financial report for the fiscal year ended June 30, 2015. In order to be awarded a Certificate of Achievement, a government must publish an easily readable and efficiently organized comprehensive annual financial report. This report must satisfy both generally accepted accounting principles and applicable legal requirements.

  A Certificate of Achievement is valid for a period of one year only. We believe that our current comprehensive annual financial report continues to meet the Certificate of Achievement Program's requirements and we are submitting it to the GFOA to determine its eligibility for another certificate.

Respectfully submitted,

Business Services Department

MISSION STATEMENT

To safely and responsibly collect and treat wastewater for the Tri-cities while protecting human health and improving the environment in a way that benefits our customers, employees and the community.

How we accomplish our Mission:

We demonstrate our commitment to safety by:

- Having an effective safety program
- Protecting employees and the community
- Committing resources (equipment, training, staff)
- Planning to work safely
- Looking out for each other while we work

We demonstrate responsibility by:

- Being fiscally responsible
- Being accountable for our actions and decisions
- Anticipating and meeting future needs and demonstrating stewardship
- Maintaining compliance with laws and regulations
- Effectively managing our assets
- Continuously improving our processes

We collect and treat wastewater, including:

- Maintaining our infrastructure
- Providing capacity in the collection system and plant
- Regulating connections
- Disposing of treated wastewater and biosolids
- Effectively using technology
- Having effective pretreatment and pollution prevention programs
- Testing for compliance

We protect human health by:

- Preventing sewer spills and back-ups
- Reducing health risks through treatment of wastewater
- Responding to emergencies

We improve the environment by:

- Enhancing the San Francisco Bay and Hayward Marsh ecosystems
- Maintaining compliance with effluent and air quality regulations
- Promoting pollution prevention
- Recycling biosolids
- Co-generating electric power

(Continued on next page)

We benefit our customers by:

- Providing reliable service
- Being fiscally responsible and cost effective, and providing value
- Promptly responding to customers' needs
- Being professional and courteous
- Proactively and creatively meeting customer needs
- Supporting businesses through permitting, education and by providing capacity

We benefit our employees by:

- Providing competitive wages and benefits in a stable work environment
- Providing a safe work environment
- Demonstrating equality and fairness
- Valuing employee input, and offering opportunities for involvement and creativity
- Recognizing employee contributions
- Providing training and resources
- Communicating and sharing information openly and honestly
- Encouraging cooperation and collaboration

We benefit the community by:

- Protecting the environment and controlling odors
- Communicating with the public and educating them on wastewater issues
- Responding to emergencies and providing mutual aid
- Participating in community outreach activities and charity events
- Contributing to the wastewater treatment profession by participating in professional associations, partnering with other agencies and organizations, and sharing best practices
- Working cooperatively with cities and other government agencies

Board of Directors

Tom Handley

Pat Kite

Jennifer Toy

Anjali Lathi

Manny Fernandez

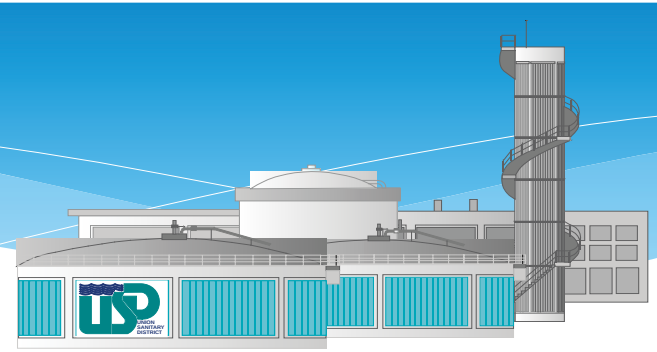
Principal Officials

As of June 30, 2016

		City Represented	Year Elected	Term Expires
Jennifer Toy	President	Fremont (Ward 3)	1998	2018
Tom Handley	Vice President	Fremont (Ward 3)	2007	2018
Pat Kite	Secretary	Newark (Ward 2)	1991	2020
Anjali Lathi	Board Member	Fremont (Ward 3)	2002	2020
Manny Fernandez	Board Member	Union City (Ward 1)	2011 (Appointed)	2020

Karen W. Murphy	General Counsel
	Staff
Paul Eldredge	General Manager/District Engineer
Armando Lopez	Treatment & Disposal Services Manager
Robert Simonich	Fabrication Maintenance & Construction Manager
Pamela Arends-King	Business Services Manager/Chief Financial Officer
Sami Ghossain	Technical Services Manager
James Schofield	Collection Services Manager

UNION SANITARY DISTRICT



Board of Directors (5)

General Manager (139*)

Technical Services Manager (33)

- Coach
  - Capital Improvements Projects Team (8)
    - Administrative Specialist I (1)
    - Assistant Engineer (2)
    - Associate Engineer (4)
    - Engineering Technician II (1)
- Coach
  - Customer Service Team (10)
    - Assistant to the GM/Board Secretary(1)
    - Associate Engineer (1)
    - C&IG Coordinator (1)
    - Construction Inspector II (2)
    - Customer Service Fee Analyst (2)
    - Engineer Technician I (1)
    - Engineer Technician III (1)
    - Receptionist (1)
- Coach
  - Environmental Compliance Team (11)
    - Administrative Specialist II (1)
    - Administrative Specialist I (1)
    - EC Inspector II (3)
    - EC Inspector III (3)
    - EC Inspector IV (1)
    - EC Outreach Rep (1)
    - Environmental Program Coordinator (1)

Collection Services Manager (32)

- Coach
  - Maintenance/ TV Team (12)
    - Collection System Worker I (6)
    - Collection System Worker II (3)
    - Lead Collection System Worker (3)
- Coach
  - Support Team (8)
    - Administrative Specialist II (1)
    - Fleet Mechanic II (2)
    - Janitor (2)
    - Maintenance Assistant (1)
    - Mechanic II (1)
    - Planner /Scheduler II (1)
  - Construction Team (9)
    - Collection Services Trainer (1)
    - Collection System Worker II (5)
    - Lead Collection System Worker (3)

Treatment & Disposal Services Manager (28)

- Coach
  - Research & Support Team (6)
    - Administrative Specialist II (1)
    - Chemist II (3)
    - Lab Director(1)
    - Sr. Process Engineer (1)
- Coach (Day)
  - Total Productive Operations (12)
    - Plant Operator II (1)
    - Plant Operator III (8)
    - **POIII Trainee (2)**
    - Plant Operations Trainer (1)
- Coach (Night)
  - Total Productive Operations (6)
    - Plant Operator I (1)
    - Plant Operator III (4)
    - Plant Operator III Trainee (1)

Fabrication, Maintenance, and Construction Manager (23)

- Coach
  - Electrical/ Support Team (8)
    - Adm. Specialist II (1)
    - Instrument Technician/ Electrician (4)
    - Painter (2)
    - Planner/ Scheduler I (1)
- Coach
  - Mechanical Team (12)
    - Mechanic I (4)
    - Mechanic II (8)

Business Services Manager/CFO (23)

- Information Technology Team (5)
  - Sr. GIS DBA(1)
  - IT Administrator (1)
  - Sr. Network Administrator (1)
  - Sr. Developer/DBA (1)
  - Sr. IT Analyst (1)
- Coach /HR Mgr
  - Organizational Support Team (5)
    - Administrative Specialist II (1)
    - Environmental Health & Safety Program Manager (1)
    - Human Resources Analyst II (1)
    - Org Performance Program Mgr(1)
    - Training & Emergency Response Programs Manager(1)
- Coach
  - New Business Services Team (10)
    - Accounting Technical Specialist (3)
    - Administrative Specialist I (1)
    - Buyer I(1)
    - Principal Financial Analyst (1)
    - Purchasing Agent (1)
    - Sr. Accountant (1)
    - Storekeeper I (1)
    - Storekeeper II (1)

Vacancy

*** 139 positions allocated in 2015**
Full Time Equivalent positions in 2015 is 136.45.

Union Sanitary District Service Area Location Map

Government Finance Officers Association

Certificate of Achievement for Excellence in Financial Reporting

Presented to

Union Sanitary District

California

For its Comprehensive Annual
Financial Report
for the Fiscal Year Ended

June 30, 2015

Executive Director/CEO

Financial Section

INDEPENDENT AUDITORS' REPORT

Board of Directors
Union Sanitary District
Union City, California

Report on the Financial Statements

We have audited the accompanying financial statements of the Union Sanitary District (the District) as of and for the year ended June 30, 2016 and 2015, and the related notes to the financial statements, which collectively comprise Union Sanitary District's basic financial statements as listed in the table of contents.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditors' Responsibility

Our responsibility is to express an opinion on these financial statements based on our audit. We did not audit the equity investment in the East Bay Dischargers Authority which represents approximately 1.5 percent and 1.8 percent, respectively, of the assets and net position of the District. The statements for which the equity investment is derived were audited by other auditors whose report has been furnished to us, and our opinion, insofar as it relates to the amount included for the equity investment, is based solely on the report of the other auditors. We conducted our audit in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatements.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

5000 Hopyard Road, Suite 335 Pleasanton, CA 94588-3351 Tel: 925.734.6600 www.vtdcpa.com Fax: 925.734.6611

Opinion

In our opinion, based on our audit and the report of other auditors, the financial statements referred to above present fairly, in all material respects, the financial position of the District as of June 30, 2016 and 2015 and the changes in financial position and cash flows for the years then ended in accordance with accounting principles generally accepted in the United States of America, as well as accounting systems provided by the State Comptroller's Office for Special Districts.

Emphasis of Matter

As described in Note 1 to the financial statements, the District adopted Governmental Accounting Standards Board (GASB) Statement No. 72, *Fair Value Measurement and Application*, and GASB Statement No. 76, *The Hierarchy of Generally Accepted Accounting Principles for State and Local Governments*, effective July 1, 2015. Our opinion is not modified with respect to these matters.

Other Matters

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the management's discussion and analysis, the schedule of changes in net pension liability and related ratios, the schedule of pension contributions, and the schedules of funding progress for retiree health benefit plan, as listed in the table of contents, be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board, who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Other Information

Our audit was conducted for the purpose of forming an opinion on the financial statements that collectively comprise the District's basic financial statements. The financial information listed as supplementary information in the table of contents is presented for purposes of additional analysis and is not a required part of the basic financial statements.

The supplementary information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the financial statements. Such information has been subjected to the auditing procedures applied in the audit of the basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the basic financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the information is fairly stated in all material respects in relation to the basic financial statements as a whole.

The introductory and statistical sections have not been subjected to the auditing procedures applies in the audit of the basic financial statements and, accordingly, we do not express an opinion or provide any assurances on them.

Other Reporting Required by *Government Auditing Standards*

In accordance with *Government Auditing Standards*, we have also issued our report dated October 20, 2016, on our consideration of the District's internal control over financial reporting and our tests of its compliance with certain provisions of laws, regulations, contracts and grant agreements and other matters. The purpose of that report is to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the District's internal control over financial reporting and compliance.

Vavrinek, Trine, Day & Co., LLP.

Pleasanton, California
October 20, 2016

MANAGEMENT'S DISCUSSION AND ANALYSIS
JUNE 30, 2016 AND 2015

As management of the Union Sanitary District, Union City, California, (District), we offer readers of the District's financial statements this narrative overview and analysis of the financial activities of the District for the fiscal year ended June 30, 2016. We encourage readers to consider the information presented here in conjunction with additional information that we have furnished in our letter of transmittal, which can be found in the introductory section of this report, and with the District's financial statements.

FINANCIAL HIGHLIGHTS

- The assets and deferred outflows of resources of the District exceeded its liabilities and deferred inflows of resources at June 30, 2016, by $334.4 million (net position). Net position consists of $295.4 million invested in capital assets, $25.1 million restricted net position and $14 million in unrestricted net position.

- The District's total net position increased by $9.4 million during the fiscal year ended June 30, 2016. The primary reasons for the increase was the collection of $7.3 million in connection fees and $1.86 million in contributed capital for pipeline installed for a residential development.

- Long-term liabilities increased by $5.6 million during the current fiscal year due to the addition of State Revolving Fund loan proceeds (debt) for the Thickener project and an increase of $4.5 million in the net pension liability.

- The District placed $6.6 million in capital assets into service compared to $12.5 million last year.

USING THIS ANNUAL REPORT

This annual report consists of a series of financial statements. The District's financial statements include the Statement of Net Position, the Statement of Revenues, Expenses and Changes in Net Position, and the Statement of Cash Flows. These provide information about the activities of the District as a whole and present a longer-term view of the District's property, debt obligations and other financial matters. They reflect the flow of total economic resources in a manner similar to the financial reports of a business enterprise.

The notes to the financial statements provide narrative explanations or additional data needed for full disclosure.

- **Statement of Net Position** – Includes all District assets, liabilities, deferred outflows of resources, and deferred inflows of resources and provides information about the nature and amounts of investments in resources (assets) and obligations to creditors (liabilities). It also provides the basis for computing rate of return; evaluating the capital structure of the District; and assessing the liquidity and financial flexibility of the District.

- **Statement of Revenues, Expenses and Changes in Net Position** – All of the current year revenues and expenses are accounted for in the Statement of Revenues, Expenses and Changes in Net Position. This statement measures the success of District operations over the past year and can be used to determine whether the District has successfully recovered all its costs through its user fees and other charges, profitability, and credit worthiness.

- **Statement of Cash Flows** – The primary purpose of this statement is to provide information about District cash receipts, cash disbursements and net changes in cash resulting from operations, investments, and capital and non-capital financing activities. It illustrates the source of revenue, purposes for which it was used, and change in cash balance during the reporting period.

Reporting the District as a Whole

The Statement of Net Position and the Statement of Revenues, Expenses, and Changes in Net Position

DISTRICT-WIDE FINANCIAL ANALYSIS

Our analysis focuses on the net position (Table 1) and changes in net position (Table 2) of the District's activities.

The largest portion of the District's Net Position (88%) reflects its investment in capital assets (net of accumulated depreciation) less any related outstanding debt that was used to acquire those assets. The District uses these capital assets to provide services to citizens; consequently, these assets are not available for future spending.

Table 1 – Condensed Statement of Net Position

	Fiscal Year 2016	Fiscal Year 2015	Fiscal Year 2014	Dollar Change FY16 to FY15	Percent Change FY16 to FY15
Current and other assets	$ 77,881,176	$ 64,249,309	$ 57,495,214	$ 13,631,867	21.2%
Capital assets	338,426,172	339,323,878	338,757,641	(897,706)	-0.3%
Total assets	416,307,348	403,573,187	396,252,855	12,734,161	3.2%
Deferred outflows of resources	7,549,687	2,973,280	-	4,576,407	153.9%
Current liabilities	10,533,131	8,137,982	9,146,967	2,395,149	29.4%
Long-term liabilities	72,916,067	67,311,036	37,360,355	5,605,031	8.3%
Total liabilities	83,449,198	75,449,018	46,507,322	8,000,180	10.6%
Deferred inflows of resources	5,962,106	6,052,085	-	(89,979)	-1.5%
Net Position:					
Net investment in capital assets	295,355,262	297,462,404	299,269,526	(2,107,142)	-0.7%
Restricted	25,075,327	19,808,500	17,622,778	5,266,827	26.6%
Unrestricted	14,015,142	7,774,460	32,853,229	6,240,682	80.3%
Total net position	$ 334,445,731	$ 325,045,364	$ 349,745,533	$ 9,400,367	2.9%

Net position of the District's business type activities increased 2.8% to $334.4 million, of which $295.3 million is invested in capital assets such as equipment, buildings and infrastructure. Of the remaining total, $25 million is restricted to specifically stipulated spending agreements originated by law, contract or other agreements with external parties. The remaining $14 million is subject to designation for specific purposes as approved by the District Board of Directors and may be used to meet the District's ongoing obligations.

Table 2 – Condensed Statement of Revenues, Expenses, and Changes in Net Position

	Fiscal Year 2016	Fiscal Year 2015	Fiscal Year 2014	Dollar Change FY16 to FY15	Percent Change FY16 to FY15
Operating Revenues:					
Sewer service charges (SSC)	$ 50,112,564	$ 48,379,254	$ 45,139,420	$ 1,733,310	3.6%
Other revenues	1,791,782	1,581,031	1,370,017	210,751	13.3%
Total operating revenues	51,904,346	49,960,285	46,509,437	1,944,061	3.9%
Operating Expenses:					
Depreciation	17,379,112	17,899,765	17,219,109	(520,653)	-2.9%
Sewage treatment	15,464,775	14,956,369	15,410,523	508,406	3.4%
Sewage collection and engineering	11,296,680	10,763,530	10,869,755	533,150	5.0%
General and administration	6,848,244	6,910,857	6,634,688	(62,613)	-0.9%
Total operating expenses	50,988,811	50,530,521	50,134,075	458,290	0.9%
Nonoperating Revenues (Expenses)					
Connection fees	7,233,338	4,820,637	3,315,007	2,412,701	50.0%
Contributed capital	1,863,035	4,774,582	886,925	(2,911,547)	-61.0%
Investment income and net gains	496,439	160,790	180,041	335,649	208.7%
Loss on retirement of capital assets	(30,472)	(1,165,160)	(796,735)	1,134,688	-97.4%
East Bay Dischargers Authority loss	(160,540)	(86,652)	(92,180)	(73,888)	85.3%
Interest	(916,968)	(971,695)	(1,106,609)	54,727	-5.6%
Total net non-operating revenues (expenses)	8,484,832	7,532,502	2,386,449	971,491	12.9%
Change in Net Position	9,400,367	6,962,266	(1,238,189)	2,438,101	-35.0%
Beginning Net Position	325,045,364	349,745,533	350,983,722	(24,700,169)	-7.1%
Prior period adjustment	-	(31,662,435)	-	31,662,435	N/A
Restated Net Position, Beginning of Year (2015)	325,045,364	318,083,098	-	6,962,266	N/A
Ending Net Position	$ 334,445,731	$ 325,045,364	$ 349,745,533	$ 9,400,367	2.9%

The District's increase in net position of $9.4 million is primarily due to the following reasons:

! The sewer service charges due to a rate increase and the increase in other revenues due to an increase in permits, therefore revenues exceeded expenditures by $0.9 million.

! Connection fees the District received of $7.2 million and $1.8 million in contributed capital due to the increase in residential development.

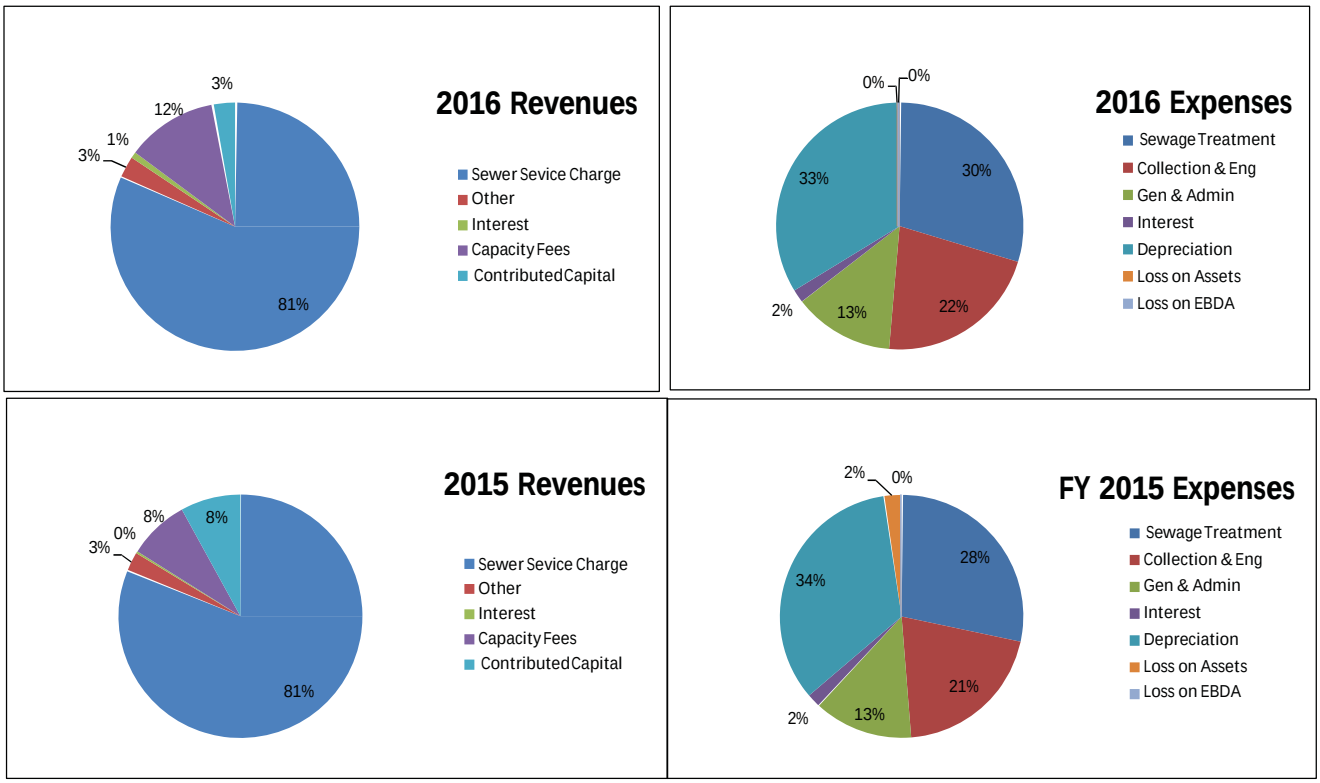
Overall the District's revenues increased $1.8 million from fiscal year (FY) 2015. The District's sewer service charge rates increased 5.6% therefore, the total increase in sewer service charges from FY 2015 was $1.7 million. Other revenues increased $0.2 million or 13.3% from prior year due to the increase in permit revenue from building. The District's service area continues to experience a robust economy which has resulted in a significant amount of residential development. Due to the residential development, the connection fee revenue increased $2.4 million, or 50%, from prior year. Contributed Capital decreased $2.9 as the development that occurred during FY 2015 required a significant amount of construction for infrastructure to support it.

District-wide Financial Analysis (continued)

Investment income and net gains increased $0.3 million from prior year due to the overall increase in cash and investments of $12.5 million, and diversifying the portfolio in a variety of eligible investment instruments with longer terms. These factors resulted in a higher weighted investment yield at June 30, 2016, of 1.159%, with a weighted average portfolio life of 712 days compared to a weighted investment yield at June 20, 2015, of 0.49%, with a weighted average portfolio life of 466 days.

The District's operating expenses increased from prior year $0.5 million or 0.9%. The increase is primarily due to cost of living salary adjustments; an increase in the retirement plans percentage contribution; an increase in utility costs; and an increase in maintenance and operating expenses.

In the prior year, the District's total revenues such as capacity fees and sewer service charges increased by $8.8 million, or 17.3% for the year ended June 30, 2015. This is due mainly to a 5.7% increase in the sewer service charge rate; an increase in capacity fee revenue due to strong residential, industrial and commercial development; and an increase in other fees and permits from development and building. Contributed capital increased, from development that required major construction of infrastructure, by $3.9 million. The total cost of all programs and services, including depreciation, was 1.1% higher than FY 2014. Most major cost categories decreased from FY 2014 costs except for non-capital project costs, repairs and maintenance, and office supplies.



As previously stated, in FY 2016, the District took actions to compensate for increases in certain costs, and to avoid the loss of revenue due to changes in the economy by increasing sewer service charges by 5.6%.

CAPITAL ASSET AND DEBT ADMINISTRATION

Capital Assets

At the end of FY 2016, the District had approximately $338.4 million invested in a broad range of capital assets, including facilities and equipment for the plant, collections, and administrative facilities. This amount represents a net decrease of $898,000, or 0.3%, compared to last year. The main reason for this is a combination of increased Construction in Progress (CIP), additional assets placed in service, and more assets being depreciated. Total CIP placed into service was $4.05 million in FY 2016 vs. $12.5 million in FY 2015 and $37 million in FY 2014. Additions to CIP were $14.0 million in FY 2016 vs. $13.8 million in FY 2015 and $19.9 million in FY 2014.

The District has outstanding construction contract commitments on capital projects approximating $45.4 million at June 30, 2016. Additions to CIP totaled $14.0 million. Major projects included:

Table 3 – Additions to CIP

Thickener Control Building Improvements, Phase 2	$	3,799,893
Alvarado Blvd Sewer Main Repairs		2,208,595
Newark Backyard Sanitary Sewer Relocation, Phase 2		1,710,278
Alvarado Niles Road Sanitary Sewer Rehabilitation		1,082,907
High Speed Aeration Blowers		1,081,155
Plant Facilities Improvements		870,627
Motor Control Center & Progammable Logic Controll		674,847
Newark Backyard Sanitary Sewer Relocation, Phase 3		672,498
Fremont & Paseo Padre Lift Station Improvements		379,650
Miscellaneous Spot Repairs		337,586
Diffuser Replacement - Aeration Basin Tank 5		296,048
Hypo Tanks and Piping Replacement		223,764
3rd Sludge Degritter System		181,816
Water Recycling & Conservation Program		108,724
Others		363,219
Total	$	13,991,607

This year's major additions (placed into service) included:

Table 4 – Total CIP Placed into Service

Newark Backyard Sanitary Sewer Relocation, Phase 2	$	2,693,133
Hansen 8 Upgrade		774,420
Boyce Road Lift Station		422,350
Remote Access to iFix		66,008
Mobile Project		61,092
Newark Pump Station Waterline		33,957
	$	4,050,960

More detailed information about the District's capital assets is presented in Note 2 to the financial statements.

Debt Administration

At year-end, the District had $43.1 million in loans outstanding versus $41.9 million last year. This debt consists of nine State Revolving Fund loans.

Other obligations include accrued vacation pay and sick leave. More detailed information about the District's long-term liabilities is presented in *Note 5* to the financial statements.

New Significant Accounting Standards Implemented

In fiscal year 2015-16, the District implemented two new statements of financial accounting standards issued by the Governmental Accounting Standards Board (GASB) that relate to pension activity:

- Statement No. 72 "*Fair Value Measurement and Application*" and
- Statement No. 76, *"The Hierarchy of Generally Accepted Accounting Principles for State and Local Governments"*.

Statement No. 72 requires disclosures to be made about fair value measurements, the level of fair value hierarchy, and valuation techniques. These disclosures should be organized by type of asset or liability reported at fair value. It also requires additional disclosures regarding investments in certain entities that calculate net asset value per share (or its equivalent).

Statement No. 76 objective is to identify—in the context of the current governmental financial reporting environment—the hierarchy of generally accepted accounting principles (GAAP). This statement supersedes Statement No. 55, *The Hierarchy of Generally Accepted Accounting Principles for State and Local Governments*.

NEXT YEAR'S BUDGET AND RATES

The Board of Directors adopted the fiscal year 2016-2017 Budget with total appropriations of $57.3 million. Of that amount, $14.6 million is appropriated for capital projects such as the Alvarado-Niles Sewer Rehabilitation, Newark Backyard Relocation, and Thickener Control Building Improvements and Plant facilities improvement. The budget also includes $2.1 million in special projects such as a financial master plan; a treatment plant master plan; and a solids system/capacity master plan. This budget includes the first year of a five-year sewer service charge rate increase that became effective on July 1, 2016. The FY 2017 rate increase for residential sewer service charges was 1%. Total estimated revenues for FY 2017 are $54.1 million which includes $50.4 million in sewer service charges. Connection fee revenues are estimated at $8.9 million. To stay competitive with the market, the appropriations include a cost of living increase of 3.5% for union employees and an overall cost of living increase for exempt employees of 3.8%. All other appropriations are consistent with FY 2016.

CONTACTING THE DISTRICT'S FINANCIAL MANAGEMENT

This financial report is designed to provide our citizens, taxpayers, customers, and investors and creditors with a general overview of the District's finances and to show the District's accountability for the money it receives. If you have questions about this report or need additional financial information, contact the District at (510) 477-7500.

UNION SANITARY DISTRICT

STATEMENT OF NET POSITION
JUNE 30, 2016 AND 2015

	2016	2015
CURRENT ASSETS		
Cash, cash equivalents	$ 3,256,503	$ 2,100,320
Investments	62,438,845	49,924,414
Accounts receivable, net	3,179,897	3,404,733
Interest receivable	216,019	106,021
Inventory	761,415	712,956
Other	27,901	20,967
Total current assets	69,880,580	56,269,411
NONCURRENT ASSETS		
Capital Assets		
Non depreciable capital assets:		
Land and improvements	5,395,903	5,395,903
Construction in progress	32,974,397	23,033,750
Capacity permits and easements	6,415,898	6,415,898
Depreciable assets		
Utility plant in service	657,171,954	650,926,132
Less: Accumulated depreciation	(363,531,980)	(346,447,805)
Net capital assets	338,426,172	339,323,878
Other Assets		
Restricted cash and cash equivalents	404,968	221,827
Restricted investments	10,000	15,000
Net OPEB asset	1,452,553	1,449,455
Investment in East Bay Dischargers Authority	6,133,075	6,293,616
Total other assets	8,000,596	7,979,898
Total non-current assets	346,426,768	347,303,776
TOTAL ASSETS	416,307,348	403,573,187
DEFERRED OUTFLOWS OF RESOURCES		
Deferred outflows related to pensions	7,549,687	2,973,280
CURRENT LIABILITIES		
Accounts payable and accrued expenses	5,460,347	3,030,544
Customer deposits	842,855	520,628
Accrued payroll and related expenses	506,116	961,515
Interest payable	512,068	546,052
Current portion of compensated absences	979,801	903,086
Current portion of long-term debt	2,231,944	2,176,157
Total current liabilities	10,533,131	8,137,982
LONG-TERM LIABILITIES		
Long-term debt, net of current portion	40,838,966	39,685,317
Net pension liability	32,077,101	27,625,719
Total long-term liabilities	72,916,067	67,311,036
TOTAL LIABILITIES	83,449,198	75,449,018
DEFERRED INFLOWS OF RESOURCES		
Deferred inflows related to pensions	5,962,106	6,052,085
NET POSITION		
Net investment in capital assets	295,355,262	297,462,404
Restricted for:		
Capacity purposes	21,617,947	16,351,121
SRF loan contingency reserve	3,457,380	3,457,379
Unrestricted	14,015,142	7,774,460
TOTAL NET POSITION	$ 334,445,731	$ 325,045,364

The accompanying notes are an integral part of these financial statements.

UNION SANITARY DISTRICT

STATEMENT OF REVENUES, EXPENSES AND CHANGES IN NET POSITION FOR THE YEARS ENDED JUNE 30, 2016 AND 2015

	2016	2015
OPERATING REVENUES		
Sewer service charges	$ 50,112,564	$ 48,379,254
Other operating revenues	1,791,782	1,581,031
Total operating revenue	51,904,346	49,960,285
OPERATING EXPENSES		
Sewage treatment	15,464,775	14,956,369
Sewage collection and engineering	11,296,680	10,763,530
General and administration	6,848,244	6,910,857
Total operating expenses before depreciation	33,609,699	32,630,756
DEPRECIATION	17,379,112	17,899,765
Total operating expenses	50,988,811	50,530,521
OPERATING INCOME/(LOSS)	915,535	(570,236)
NON-OPERATING REVENUES (EXPENSES)		
Net investment income and net realized gains and losses	496,439	160,790
Interest Expense	(916,968)	(971,695)
Loss on retirement of capital assets	(30,472)	(1,165,160)
Loss on equity investment in East Bay Dischargers Authority	(160,540)	(86,652)
Net non-operating revenue (expense)	(611,541)	(2,062,717)
INCOME/(LOSS) BEFORE CONTRIBUTED CAPITAL	303,994	(2,632,953)
Connection fees and other contributed capital	9,096,373	9,595,219
CHANGE IN NET POSITION	9,400,367	6,962,266
NET POSITION, BEGINNING OF YEAR	325,045,364	318,083,098
NET POSITION, END OF YEAR	$ 334,445,731	$ 325,045,364

The accompanying notes are an integral part of these financial statements.

UNION SANITARY DISTRICT

STATEMENT OF CASH FLOWS
FOR THE YEARS ENDED JUNE 30, 2016 AND 2015

	2016	2015
CASH FLOWS FROM OPERATING ACTIVITIES		
Receipts from customers	$ 52,129,182	$ 49,816,326
Payments to suppliers & service providers	(9,214,018)	(12,790,080)
Payments to employees	(16,001,089)	(15,014,047)
Payments for benefits on behalf of employees	(6,055,761)	(6,263,323)
Receipts for customer deposits	729,478	468,319
Returns of customer deposits	(407,251)	(536,687)
Payments related to postemployment benefits	(561,205)	(543,540)
Cash flows provided by operating activities	20,619,336	15,136,968
CASH FLOWS FROM CAPITAL AND RELATED FINANCIAL ACTIVITIES		
Principal payments on long-term debt	(2,176,154)	(2,127,763)
Proceeds from state revolving loan funds	3,385,590	4,501,122
Interest paid on long-term debt	(950,952)	(999,349)
Acquisition and construction of capital assets	(14,648,844)	(14,856,581)
Connection fees and other related revenues from developers	7,233,338	4,820,637
Cash flows used in capital and related financing activities	(7,157,022)	(8,661,934)
CASH FLOWS FROM INVESTING ACTIVITIES		
Interest received	386,441	134,129
Purchase of investments	(97,926,056)	(68,226,219)
Proceeds from sales and maturities of investments	85,416,625	62,945,000
Cash flows provided by (used in) investing activities	(12,122,990)	(5,147,090)
NET INCREASE IN CASH AND CASH EQUIVALENTS	1,339,324	1,327,944
CASH AND CASH EQUIVALENTS, BEGINNING OF YEAR	2,322,147	994,203
CASH AND CASH EQUIVALENTS, END OF YEAR	$ 3,661,471	$ 2,322,147
RECONCILIATION OF CASH AND EQUIVALENTS		
Unrestricted cash and cash equivalents	$ 3,256,503	$ 2,100,320
Restricted cash and cash equivalents	404,968	221,827
Total cash and cash equivalents	$ 3,661,471	$ 2,322,147
RECONCILIATION OF OPERATING INCOME/(LOSS) TO NET CASH FROM OPERATING ACTIVITES		
Operating income/(loss)	$ 915,535	$ (570,236)
Adjustments to reconcile operating loss to cash flows provided by operating activities		
Depreciation	17,379,112	17,899,765
(Increase) in accounts receivable and other assets	224,836	(143,959)
Decrease in inventory and other	(437,175)	44,489
(Increase) in pension related amounts	(215,002)	(957,911)
(Decrease) increase in accounts payable and accrued expenses	2,429,803	(1,066,812)
(Decrease) increase in customer deposits	322,227	(68,368)
Cash flows provided by operating activities	$ 20,619,336	$ 15,136,968
NONCASH TRANSACTIONS		
Contributions of capital assets	$ 1,863,035	$ 4,774,582
Decrease in equity in East Bay Dischargers Authority	160,541	86,651

The accompanying notes are an integral part of these financial statements.

NOTE #1 – SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

The Organization

Union Sanitary District (the "District") operates pursuant to Division 6 of the Health and Safety Code of the State of California (Sanitary District Act of 1923, as amended). The District, which was established in 1918 and subsequently reorganized in 1923, is empowered to own and operate wastewater facilities, and the Board of Directors may prescribe, revise and collect fees or charges for services and facilities of the District in connection with its wastewater system.

The District is governed by a five-member Board of Directors elected by wards for four-year overlapping terms. The election is at-large and non-partisan. The Board appoints the General Manager to manage and oversee the day-to-day operations.

The accounting policies of the District conform to accounting principles generally accepted in the United States of America as applicable to enterprise governments. The Governmental Accounting Standards Board (GASB) is the accepted standard-setting body for governmental accounting and financial reporting principles. The GASB establishes standards for external financial reporting for all state and local governmental entities, which require a management and discussion and analysis section, a statement of net position, a statement of revenues, expenses, and changes in net position, and a statement of cash flows. It requires the classification of net position into three components: invested in capital assets, restricted, and unrestricted.

The Financial Reporting Entity

For financial reporting purposes component units are defined as legally separate organizations for which the elected officials of the primary government are financially accountable, and other organizations for which the nature and significance of their relationship with a primary government are such that exclusion would cause the reporting entity's financial statements to be misleading or incomplete. The District considered all potential component units in determining what organizations should be included in the financial statements. The District has determined that there are no component units that meet these criteria as of, and for the year ended June 30, 2016. The District includes all funds that are controlled by, or dependent upon the Board of Directors of the District.

In addition, the District's share of a Joint Powers Authority (East Bay Dischargers Authority) is reflected based upon the District's proportionate share of its investment in the discharge facilities in the Authority (see Note 5).

Measurement Focus and Basis of Accounting

The financial statements of the District are presented as those of an enterprise fund under the broad category of funds called proprietary funds, which also include internal service funds. All proprietary funds utilize the economic resources measurement focus and the accrual basis of accounting. Under the accrual basis of accounting, revenues are recognized when earned, and expenses are recorded when the liability is incurred or economic asset utilized.

NOTE #1 – SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES - CONTINUED

Enterprise funds account for business-like activities provided to the general public. These activities are financed primarily by user charges, and the measurement of financial activity focuses on net income measurement similar to the private sector. The acquisition and capital improvement of the physical plant facilities requires that these goods and services be financed from existing cash resources, cash flow from operations, the issuance of debt, and contributed capital.

Certain amounts presented in the prior year data have been reclassified in order to be consistent with the current year's presentation.

Cash and Cash Equivalents

The District considers all highly liquid investments, which are readily convertible into known amounts of cash and have a maturity of three months or less when acquired, to be cash equivalents. As of June 30, 2016 and 2015, cash equivalents consist of U.S. Treasury funds in a sweep account and money market funds.

Certain cash and cash equivalents have been placed into escrow according to the requirements of ongoing construction contracts. Accordingly, such cash and cash equivalents have been classified as restricted in the accompanying financial statements.

Investments

Investments, which consist of short-term, fixed-income securities at June 30, 2016 and 2015, are recorded at fair value using quoted market prices. The related net realized and unrealized gains (losses) on investments are recognized in the accompanying statement of revenues expenses, and changes in net position.

Certain investments have been placed into escrow according to the requirements of ongoing construction contracts. Accordingly, such investments have been classified as restricted in the accompanying financial statements.

Inventory

Inventory is held for consumption and is recorded at cost using the first-in-first-out (FIFO) basis.

Capital Assets

Capital assets, including costs of addition to utility plant and major replacements of property, are capitalized and stated at cost. The District's capitalization threshold is $10,000. Such capital costs include materials, direct labor, transportation, and such indirect costs as interest and contracted engineering. Contributed property is recorded as fair value as of the date of donation. Repairs, maintenance, and minor replacements of property are charges to expense.

Comparative Data

Comparative data for the prior year have been presented in certain sections of the accompanying financial statements in order to provide an understanding of changed in the District's financial position and operations.

NOTE #1 – SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES - CONTINUED

Depreciation

The purpose of depreciation is to spread the cost of capital assets equitably among all customers over the life of those assets. The amount charged to depreciation expense each year represents that year's pro rata share of capital asset costs.

Depreciation of all capital assets in service is charged as an expense against operations each year. Accumulated depreciation, the total amount of depreciation taken over the years, is reported on the statement of net position as a reduction in the gross value of the capital assets.

Depreciation of capital assets in service is calculated using the straight line method, dividing the cost of the asset by its expected useful life in years. The result is charged to expense each year until the asset is fully depreciated. It is the District's policy to utilize the half-year convention when calculating depreciation. The District has assigned the following useful lives to capital assets:

Useful Lives	
Wastewater collection facilities	50 – 115 years
Wastewater treatment facilities	10 – 50 years
District facilities	10 – 35 years
General equipment	3 – 35 years

The aggregate provision for depreciation was 3.07 percent and 3.14 percent of average depreciable plant during the years ended June 30, 2016 and 2015, respectively.

Compensated Absences

Compensated absences, including accumulated unpaid vacation, sick pay and other employee benefits, are accounted for as expenses in the year earned. The liability for compensated absences includes the vested portions of vacation, sick leave, and compensated time off. The liability for compensated absences is determined annually.

Net Position

Net position is measured on the full accrual basis and is the excess of all the District's assets and deferred outflows over all its liabilities and deferred inflows. Net position is classified into the following components: net investment in capital assets, restricted and unrestricted. Restricted net position describes the portion of net position which is restricted as to use by the terms and conditions of agreement with outside parties, governmental regulations, laws, enabling legislation or other restrictions which the District cannot unilaterally alter. It is the District's policy to apply restricted resources first when an expense is incurred for purposes for which both restricted and unrestricted resources are available.

The following categories of restricted net position are described as follows:

- *Net Position Restricted for Capacity Purposes* – restricted for activities related to increases in the capacity of the collection and/or treatment systems.

- *Net Position Restricted for Debt Purposes* – the State requires a contingency reserve for State Revolving Fund loan balances.

NOTE #1 – SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES - CONTINUED

Classification of Revenues and Expenses

Operating revenues consist primarily of sewer service charges to customers, which are billed and collected on behalf of the District by Alameda County (the County) as a separate component of semiannual property tax billings. Property taxes are levied on March 1 and are due in equal installments on November 1 and February 1. The County remits to the District those charges which are placed on the property tax roll and handles all delinquencies, retaining interest and penalties.

Nonoperating revenues consist of investment income and special charges that can be used for either operating or capital purposes.

Capital contributions consist of contributed capital assets, connection, and capacity fees that are legally restricted for capital expenditures by State law or by Board actions that established those charges. Connection and capacity fees represent a one-time contribution of resources to the District, imposed on contractors and developers for the purpose of financing capital improvements.

Operating expenses are those expenses that are essential to the primary operations of the District. Operating expenses include costs related to wastewater collection and treatment, as well as engineering and general and administrative expenses. Other expenses such as investment losses, interest expense, and loss on retirement of capital assets are reported as non-operating expenses.

Use of Estimates

The preparation of financial statements in conformity with generally accepted accounting principles (GAAP) requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

Deferred Outflows and Inflows of Resources

Deferred outflows of resources are a consumption of net position that is applicable to a future reporting period and deferred inflows of resources are in acquisition of net position that is applicable to a future reporting period. A deferred outflows of resources has a positive effect on net position, similar to assets, and a deferred inflows of resources has a negative effect on net position, similar to liabilities. The District has certain items, which qualify for reporting as deferred outflows of resources and deferred inflows of resources.

Pensions

For purposes of measuring the net pension liability and deferred outflows/inflows of resources related to pensions, and pension expense, information about the fiduciary net position of the Plan and additions to/deductions from the Plan's fiduciary net position have been determined on the same basis as they are reported by California Public Employees Retirement System (CalPERS). For this purpose, benefit payments (including refunds of employee contributions) are recognized when due and payable in accordance with the benefit terms. Investments are reported at fair value.

NOTE #1 – SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES - CONTINUED

Change in Accounting Principles

GASB Statement No. 72 – In February 2015, GASB issued Statement No. 72, *Fair Value Measurement and Application*. This statement requires disclosures to be made about fair value measurements, the level of fair value hierarchy, and valuation techniques. These disclosures should be organized by type of asset or liability reported at fair value. It also requires additional disclosures regarding investments in certain entities that calculate net asset value per share (or its equivalent). The requirements of this statement are effective for financial statements for periods beginning after June 15, 2015. This statement was implemented by the District as of July 1, 2015.

GASB Statement No. 76 – In June 2015, GASB issues Statement No. 76, *The Hierarchy of Generally Accepted Accounting Principles for State and Local Governments.* The objective of this statement is to identify—in the context of the current governmental financial reporting environment—the hierarchy of generally accepted accounting principles (GAAP). This statement supersedes Statement No. 55, *The Hierarchy of Generally Accepted Accounting Principles for State and Local Governments*. This statement is effective for reporting periods beginning after June 15, 2015. This statement was implemented by the District as of July 1, 2015.

New Accounting Pronouncements

GASB Statement No. 73 – In June 2015, GASB issued Statement No. 73, *Accounting and Financial Reporting for Pensions and Related Assets That Are Not within the Scope of GASB Statement 68, and Amendments to Certain Provisions of GASB Statements 67 and 68*. The provisions in statement 73 are effective for fiscal years beginning after June 15, 2015—except those provisions that address employers and governmental non-employer contributing entities for pensions that are not within the scope of Statement 68, which are effective for fiscal years beginning after June 15, 2016. The District has not determined its effect on the financial statements.

GASB Statement No. 74 – In June 2015, GASB issued Statement No. 74, *Financial Reporting for Postemployment Benefit Plans Other Than Pension Plans*. Statement No. 74 replaces Statements No. 43, *Financial Reporting for Postemployment Benefit Plans Other Than Pension Plans*, as amended, and No. 57, *OPEB Measurements by Agent Employers and Agent Multiple-Employer Plans*. It also includes requirements for defined contribution OPEB plans that replace the requirements for those OPEB plans in Statement No. 25, *Financial Reporting for Defined Benefit Pension Plans and Note Disclosures for Defined Contribution Plans*, as amended, statement 43, and statement No. 50, *Pension Disclosures*. The provisions in statement 74 are effective for fiscal years beginning after June 15, 2016. The District has not determined its effect on the financial statements.

GASB Statement No. 75 - In June 2015, the GASB issued Statement No. 75, *Accounting and Financial Reporting for Postemployment Benefits Other Than Pension.* The primary objective of this Statement is to improve accounting and financial reporting by state and local governments for postemployment benefits other than pensions (other postemployment benefits or OPEB). It also improves information provided by state and local governmental employers about financial support for OPEB that is provided by other entities. This Statement results from a comprehensive review of the effectiveness of existing standards of accounting and financial reporting for all postemployment benefits (pensions and OPEB) with regard to providing decision-useful information, supporting assessments of accountability and inter-period equity, and creating additional transparency.

NOTE #1 – SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES - CONTINUED

This Statement replaces the requirements of Statements No. 45, *Accounting and Financial Reporting by Employers for Postemployment Benefits Other Than Pensions*, as amended, and No. 57, *OPEB Measurements by Agent Employers and Agent Multiple-Employer Plans*, for OPEB. Statement No. 74, *Financial Reporting for Postemployment Benefit Plans Other Than Pension Plans*, establishes new accounting and financial reporting requirements for OPEB plans. The requirements of this Statement are effective for financial statements for periods beginning after June 15, 2017. The District has not determined its effect on the financial statements.

GASB Statement No. 77 - In August 2015, the GASB issued Statement No. 77, *Tax Abatement Disclosures*. This Statement requires governments that enter into tax abatement agreements to disclose the following information about the agreements:

- Brief descriptive information, such as the tax being abated, the authority under which tax abatements are provided, eligibility criteria, the mechanism by which taxes are abated, provisions for recapturing abated taxes, and the types of commitments made by tax abatement recipients,
- The gross dollar amount of taxes abated during the period,
- Commitments made by a government, other than to abate taxes, as part of a tax abatement agreement.

The requirements of this Statement are effective for financial statements for periods beginning after December 15, 2015. The District has not determined its effect on the financial statements.

GASB Statement No. 78 - In December 2015, the GASB issued Statement No. 78, *Pensions Provided Through Certain Multiple-Employer Defined Benefit Pension Plans*. The objective of this Statement is to address a practice issue regarding the scope and applicability of Statement No. 68, *Accounting and Financial Reporting for Pensions*. This issue is associated with pensions provided through certain multiple-employer defined benefit pension plans and to state or local governmental employers whose employees are provided with such pensions. Prior to the issuance of this Statement, the requirements of Statement No. 68 applied to the financial statements of all state and local governmental employers whose employees are provided with pensions through pension plans that are administered through trusts that meet the criteria in paragraph 4 of that Statement.

This Statement amends the scope and applicability of Statement No. 68 to exclude pensions provided to employees of state or local governmental employers through a cost-sharing multiple-employer defined benefit pension plan that (1) is not a state or local governmental pension plan, (2) is used to provide defined benefit pensions both to employees of state or local governmental employers and to employees of employers that are not state or local governmental employers, and (3) has no predominant state or local governmental employer (either individually or collectively with other state or local governmental employers that provide pensions through the pension plan). This Statement establishes requirements for recognition and measurement of pension expense, expenditures, and liabilities; note disclosures; and required supplementary information for pensions that have the characteristics described above.

The requirements of this Statement are effective for reporting periods beginning after December 15, 2015. The District has not determined its effect on the financial statements.

NOTE #1 – SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES - CONTINUED

GASB Statement No. 79 - In December 2015, the GASB issued Statement No. 79, *Certain External Investment Pools and Pool Participants*. This Statement addresses accounting and financial reporting for certain external investment pools and pool participants. Specifically, it establishes criteria for an external investment pool to qualify for making the election to measure all of its investments at amortized cost for financial reporting purposes. An external investment pool qualifies for that reporting if it meets all of the applicable criteria established in this Statement. The specific criteria address (1) how the external investment pool transacts with participants; (2) requirements for portfolio maturity, quality, diversification, and liquidity; and (3) calculation and requirements of a shadow price. Significant noncompliance prevents the external investment pool from measuring all of its investments at amortized cost for financial reporting purposes. Professional judgment is required to determine if instances of noncompliance with the criteria established by this Statement during the reporting period, individually or in the aggregate, were significant.

If an external investment pool does not meet the criteria established by this Statement, that pool should apply the provisions in paragraph 16 of Statement No. 31, *Accounting and Financial Reporting for Certain Investments and for External Investment Pools*, as amended. If an external investment pool meets the criteria in this Statement and measures all of its investments at amortized cost, the pool's participants also should measure their investments in that external investment pool at amortized cost for financial reporting purposes. If an external investment pool does not meet the criteria in this Statement, the pool's participants should measure their investments in that pool at fair value, as provided in paragraph 11 of Statement No. 31, as amended.

This Statement establishes additional note disclosure requirements for qualifying external investment pools that measure all of their investments at amortized cost for financial reporting purposes and for governments that participate in those pools. Those disclosures for both the qualifying external investment pools and their participants include information about any limitations or restrictions on participant withdrawals. The District has not determined its effect on the financial statements.

GASB Statement No. 80 - In January 2016, the GASB issued Statement No. 80, *Blending Requirements for Certain Component Units - amendment of GASB Statement No. 14*. The objective of this Statement is to improve financial reporting by clarifying the financial statement presentation requirements for certain component units. This Statement amends the blending requirements established in paragraph 53 of Statement No. 14, *The Financial Reporting Entity, as amended*. The additional criterion requires blending of a component unit incorporated as a not-for-profit corporation in which the primary government is the sole corporate member. The additional criterion does not apply to component units included in the financial reporting entity pursuant to the provisions of Statement No. 39, *Determining Whether Certain Organizations Are Component Units*.

The requirements of this Statement are effective for reporting periods beginning after June 15, 2016. The District has not determined its effect on the financial statements.

GASB Statement No. 81 - In March 2016, the GASB issued Statement No. 81, *Irrevocable Split-Interest Agreements*. The objective of this Statement is to improve accounting and financial reporting for irrevocable split-interest agreements by providing recognition and measurement guidance for situations in which a government is a beneficiary of the agreement.

NOTE #1 – SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES - CONTINUED

This Statement requires that a government that receives resources pursuant to an irrevocable split-interest agreement recognize assets, liabilities, and deferred inflows of resources at the inception of the agreement. Furthermore, this Statement requires that a government recognize assets representing its beneficial interests in irrevocable split-interest agreements that are administered by a third party, if the government controls the present service capacity of the beneficial interests. This Statement requires that a government recognize revenue when the resources become applicable to the reporting period.

The requirements of this Statement are effective for financial statements for periods beginning after December 15, 2016, and should be applied retroactively. The District has not determined its effect on the financial statements.

GASB Statement No. 82 - In March 2016, the GASB issued Statement No. 82, Pension Issues - An Amendment of GASB Statements No. 67, No. 68, and No. 73. The objective of this Statement is to address certain issues that have been raised with respect to Statements No. 67, *Financial Reporting for Pension Plans*, No. 68, *Accounting and Financial Reporting for Pensions*, and No. 73, *Accounting and Financial Reporting for Pensions and Related Assets That Are Not within the Scope of GASB Statement No. 68, and Amendments to Certain Provisions of GASB Statements No. 67 and No. 68*. Specifically, this Statement addresses issues regarding (1) the presentation of payroll-related measures in required supplementary information, (2) the selection of assumptions and the treatment of deviations from the guidance in an Actuarial Standard of Practice for financial reporting purposes, and (3) the classification of payments made by employers to satisfy employee (plan member) contribution requirements.

The requirements of this Statement are effective for reporting periods beginning after June 15, 2016, except for the requirements of this Statement for the selection of assumptions in a circumstance in which an employer's pension liability is measured as of a date other than the employer's most recent fiscal year-end. In that circumstance, the requirements for the selection of assumptions are effective for that employer in the first reporting period in which the measurement date of the pension liability is on or after June 15, 2017. The District has not determined its effect on the financial statements

NOTE #2 – CAPITAL ASSETS

Capital asset activity for the year ended June 30, 2016 is summarized as follows:

	Balance June 30, 2015	Additions	Deletions	Transfers	Balance June 30, 2016
Capital assets, not being depreciated:					
Land and improvements	$ 5,395,903	$ -	$ -	$ -	$ 5,395,903
Construction in progress	23,033,750	13,991,607	-	(4,050,960)	32,974,397
Capacity permits and easements	6,415,898	-	-	-	6,415,898
Total Capital assets, not being depreciated:	34,845,551	13,991,607	-	(4,050,960)	44,786,198
Capital assets, being depreciated:					
Sewage collection facilities	409,763,916	1,863,035	(79,081)	3,115,483	414,663,353
Sewage treatment facilities	154,580,723	51,288	-	-	154,632,011
District facilities	73,307,922	-	-	33,957	73,341,879
General equipment	6,679,143	220,293	(48,410)	901,520	7,752,546
Fleet	6,594,428	385,655	(197,918)	-	6,782,165
Total Capital assets, being depreciated:	650,926,132	2,520,271	(325,409)	4,050,960	657,171,954
Less: Accumulated depreciation					
Sewage collection facilities	(224,303,176)	(9,445,531)	60,390	-	(233,688,317)
Sewage treatment facilities	(79,662,752)	(4,861,411)	-	-	(84,524,163)
District facilities	(33,727,935)	(2,089,493)	-	-	(35,817,428)
General equipment	(5,276,281)	(527,188)	44,952	-	(5,758,517)
Fleet	(3,477,661)	(455,488)	189,594	-	(3,743,555)
Total Accumulated depreciation:	(346,447,805)	(17,379,111)	294,936	-	(363,531,980)
Total capital assets, being depreciated , net	304,478,327	(14,858,840)	(30,473)	4,050,960	293,639,974
Total Capital Assets, net	$ 339,323,878	$ (867,233)	$ (30,473)	$ -	$ 338,426,172

Construction work in progress consists primarily of the direct construction costs associated with numerous District projects plus related construction overhead. The District has outstanding construction contract commitments on capital projects approximating $45.4 million at June 30, 2016.

NOTE #2 – CAPITAL ASSETS - CONTINUED

Capital asset activity for the year ended June 30, 2015 is summarized as follows:

	Balance June 30, 2014	Additions	Deletions	Transfers	Balance June 30, 2015
Capital assets, not being depreciated:					
Land and improvements	$ 5,395,903	$ -	$ -	$ -	$ 5,395,903
Construction in progress	16,012,340	13,803,875	-	(6,782,465)	23,033,750
Capacity permits and easements	6,415,898	-	-	-	6,415,898
Total Capital assets, not being depreciated:	27,824,141	13,803,875	-	(6,782,465)	34,845,551
Capital assets, being depreciated:					
Sewage collection facilities	400,135,920	4,774,582	(387,453)	5,240,867	409,763,916
Sewage treatment facilities	157,562,129	70,801	(4,258,286)	1,206,079	154,580,723
District facilities	73,250,838	-	(41,785)	98,869	73,307,922
General equipment	6,560,276	80,693	(198,476)	236,650	6,679,143
Fleet	6,250,358	901,212	(557,142)	-	6,594,428
Total Capital assets, being depreciated:	643,759,521	5,827,288	(5,443,142)	6,782,465	650,926,132
Less: Accumulated depreciation					
Sewage collection facilities	(214,757,353)	(9,916,923)	371,100	-	(224,303,176)
Sewage treatment facilities	(77,870,321)	(4,986,146)	3,193,715	-	(79,662,752)
District facilities	(31,652,174)	(2,097,698)	21,937	-	(33,727,935)
General equipment	(4,939,480)	(472,769)	135,968	-	(5,276,281)
Fleet	(3,606,693)	(426,229)	555,261	-	(3,477,661)
Total Accumulated depreciation:	(332,826,021)	(17,899,765)	4,277,981	-	(346,447,805)
Total capital assets, being depreciated , net	310,933,500	(12,072,477)	(1,165,161)	6,782,465	304,478,327
Total Capital Assets, net	$ 338,757,641	$ 1,731,398	$ (1,165,161)	$ -	$ 339,323,878

NOTE #3 – CASH AND INVESTMENTS

A. Summary of Cash and Cash Equivalents and Investments

Cash and cash equivalents and investments at June 30 are detailed as follows:

	2016	2015
Cash and cash equivalents	$ 3,256,503	$ 2,100,320
Restricted cash and cash equivalents	404,968	221,827
Investments	62,438,845	49,924,414
Restricted investments	10,000	15,000
Total Cash and Cash Equivalents and Investments	$ 66,110,316	$ 52,261,561

NOTE #3 – CASH AND INVESTMENTS - CONTINUED

B. Authorized Investments by the District

The District's investment policy and the California Government Code allow the District to invest in the following investments, with certain limiting provisions that address interest rate, risk, credit risk, and concentration of credit risk.

Authorized Investment Type	Maximum Remaining Maturity	Minimum Credit Quality	Maximum Percentage of Portfolio	Maximum Investment In One Issuer
U.S. Treasury Obligations	5 years	N/A	None	None
U.S. Agency Obligations (a)	5 years	N/A	None	None
Bankers Acceptance (b)	180 days	A1/P1 (ST) A (LT)	40%	10%
Certificates of Deposit	180 days	N/A	30%	10%
Negotiable Certificates of Deposit	5 years	A1 (ST) A (LT)	30%	10%
Repurchase Agreements (c)	90 days	N/A	10%	10%
Commercial Paper	270 days	"Prime" quality	25%	10%
Local Agency Investment Fund (LAIF)	N/A	N/A	70%	None
Corporate Notes (d)	5 years	A	30%	10%
Mortgage Pass-through and Asset Backed Securities	N/A	AAA or Aaa	20%	10%
Money Market Funds	N/A	AAA or Aaa	20%	10%

a) Securities issued by agencies sponsored by the federal government such as the Federal Farm Credit Bank (FFCB), the Federal Home Loan Bank (FHLB), the Federal National Mortgage Association (FNMA), and the Federal Home Loan Mortgage Corporation (FHLMC).

b) Bankers Acceptances issued by institutions the short term obligations of which are rated at a minimum of "P1" by Moody's Investor Services (Moody's) and A1 by Standard & Poor's, Inc. (S&P); or if the short term obligations are unrated, the long-term obligations of which are rated a minimum of "A" by S&P.

c) Repurchase agreements must be collateralized with U.S. Treasury Obligation or U.S. Agency Securities, which must maintain a market value of at least 102% of the principal of the repurchase agreement.

d) Securities shall be issued by corporations rated a minimum of "A" by S&P.

NOTE #3 – CASH AND INVESTMENTS - CONTINUED

C. Interest Rate Risk

Interest rate risk is the risk that changes in market interest rates will adversely affect the fair value of an investment. Generally, the longer the maturity of an investment, the greater the sensitivity of its fair value to changes in market interest rates.

Information about the sensitivity of the fair values of the District's investments to market interest rate fluctuations is provided by the following table that shows the distribution of the District's investments by maturity as of June 30:

2016	Maturities of			
	12 months or less	12-24 months	25-60 months	Total
U.S. Treasury Obligations	$ 1,000,090	$ 2,008,630	$ -	$ 3,008,720
U.S. Agency Obligations:				
FHLB	2,002,970	1,004,090	4,007,230	7,014,290
FNMA	2,004,750	-	2,002,130	4,006,880
FHLM	-	2,004,460	7,509,700	9,514,160
Corporate Notes	6,534,965	2,013,240	11,406,871	19,955,077
Certificates of Deposit	4,390,925	2,465,332	-	6,856,257
LAIF	12,083,636			12,083,636
Local Government Investment Pool (CAMP)	9,825			9,825
Total Investments	28,027,162	9,495,752	24,925,931	62,448,845
Cash in bank	3,661,471	-	-	3,661,471
Total Cash and Investments	$ 31,688,633	$ 9,495,752	$ 24,925,931	$ 66,110,316

2015	Maturities of			
	12 months or less	12-24 months	25-60 months	Total
U.S. Treasury Obligations	$ 5,013,600	$ -	$ 2,002,190	$ 7,015,790
U.S. Agency Obligations:				
FHLB	-	3,001,390	999,170	4,000,560
FNMA	1,001,390	-	-	1,001,390
FHLM	-	1,000,360	1,003,770	2,004,130
Corporate Notes	3,135,031	4,600,640	-	7,735,671
Certificates of Deposit	1,215,483	1,684,264	240,153	3,139,900
LAIF	25,032,178	-	-	25,032,178
Local Government Investment Pool (CAMP)	9,795	-	-	9,795
Total Investments	35,407,477	10,286,654	4,245,283	49,939,414
Cash in bank	2,322,147	-		2,322,147
Total Cash and Investments	$ 37,729,624	$ 10,286,654	$ 4,245,283	$ 52,261,561

NOTE #3 – CASH AND INVESTMENTS - CONTINUED

D. LAIF Pool

The District is a voluntary participant in the Local Agency Investment Fund (LAIF). LAIF is regulated by California Government Code Section 16429 under the oversight of the Treasurer of the State of California. The District reports its investment in LAIF at the fair value amount provided by LAIF, which is the same as the value of the pool share. The balance is available for withdrawal on demand, and is based in the accounting records maintained by LAIF, which are recorded on an amortized cost basis. Included in LAIF's investment portfolio are collateralized mortgage obligations, mortgage-backed securities, other asset-backed securities, loans to certain state funds, and floating rate securities issued by federal agencies, government-sponsored enterprises, United States Treasury Notes and Bills and corporations. The carrying value of LAIF approximates fair value. At June 30, 2016, these investments mature in an average of 167 days.

E. Credit Risk

Credit risk is the risk that an issuer of an investment will not fulfill its obligation to the holder of the investment. This is measured by the assignment of a rating by a nationally recognized statistical rating organization.

Presented below is the actual rating as of June 30, 2016 for each investment type:

	Aaa	Aa3	Aa2	A1	A2	A3	Total
U.S. Agency Obligations							
FHLB	$ 7,014,290	$ -	$ -	$ -	$ -	$ -	$ 7,014,290
FNMA	4,006,880	-	-	-	-	-	4,006,880
FHLM	9,514,160	-	-	-	-	-	9,514,160
Corporate Notes	6,014,350	5,223,358	1,192,561	4,190,984	2,324,503	1,009,320	19,955,077
Totals	$ 26,549,680	$ 5,223,358	$ 1,192,561	$ 4,190,984	$ 2,324,503	$ 1,009,320	40,490,407
Exempt from credit rate disclosure							
U.S. Treasury Obligations							3,008,720
Not rated							
Certificates of deposit							6,856,257
California Local Agency Investment Fund							12,083,636
Local Government Investment Pool (CAMP)							9,825
Cash and cash equivalents							3,661,471
Total Cash, Cash Equivalents and Investments							$ 66,110,316

Presented below is the actual rating as of June 30, 2015 for each investment type:

	Aaa	Aa3	Aa2	A1	A2	A3	Total
U.S. Agency Obligations							
FHLB	$ 4,000,560	$ -	$ -	$ -	$ -	$ -	$ 4,000,560
FNMA	1,001,390	-	-	-	-	-	1,001,390
FHLM	2,004,130	-	-	-	-	-	2,004,130
Corporate Notes	-	2,209,156	565,153	3,074,958	1,315,916	570,488	7,735,671
Totals	$ 7,006,080	$ 2,209,156	$ 565,153	$ 3,074,958	$ 1,315,916	$ 570,488	14,741,751
Exempt from credit rate disclosure							
U.S. Treasury Obligations							7,015,790
Not rated							
Certificates of deposit							3,139,900
California Local Agency Investment Fund							25,032,178
Local Government Investment Pool (CAMP)							9,795
Cash and cash equivalents							2,322,147
Total Cash, Cash Equivalents and Investments							$ 52,261,561

NOTE #3 – CASH AND INVESTMENTS - CONTINUED

F. Concentration of Credit Risk

Concentration of credit risk is the risk of a loss attributed to the magnitude of a government's investment in a single issuer.

As of fiscal year ended June 30, 2016, more than 5 percent of the District's investments were in FHLB, FNMA, and FHLM. These investments were 10.6 percent, 6.1 percent, and 14.49 percent, respectively, of the District's total investments.

G. Custodial Credit Risk

Deposits

This is the risk that in the event of a bank failure, the District's deposits may not be returned to it. The District's policy, as well as the California Government Code, requires that a financial institution secure deposits made by state or local governmental units by pledging securities in an undivided collateral pool held by a depository regulated under state law (unless so waived by the governmental unit). The fair value of the pledged securities in the collateral pool must equal at least 110 percent of the total amount deposited by the public agencies. California law also allows financial institutions to secure public deposits by pledging first trust deed mortgage notes having a value of 150 percent of the secured public deposits and letters of credit issued by the Federal Home Loan Bank of San Francisco having a value of 105 percent of the secured deposits. As of June 30, 2016, the District's total bank balance of $1,488,351 was either collateralized or insured by the Federal Deposit Insurance Corporation (FDIC). Certificates of Deposit were also collateralized.

Investments

This is the risk that, in the event of the failure of the counterparty, the District will not be able to recover the value of its investments or collateral securities that are in possession of an outside party. The California Government Code does not contain legal or policy requirements that would limit the exposure to custodial credit risk for investments. However, the District's policy states that all security transactions entered into by the District shall be conducted on delivery-versus-payment (DVP) basis. All securities purchased or acquired shall be delivered to the District by book entry, physical delivery, or by third party custodial agreement as required by CGC Section 53601. The collateralization on repurchase and reverse repurchase agreements will adhere to the amount required under CGC Section 53601(i) (2).

NOTE 4 - FAIR VALUE MEASUREMENTS

The District categorizes the fair value measurements of its investments based on the hierarchy established by generally accepted accounting principles. The fair value hierarchy, which has three levels, is based on the valuation inputs used to measure an asset's fair value. The following provides a summary of the hierarchy used to measure fair value:

Level 1 - Quoted prices in active markets for identical assets that the District has the ability to access at the measurement date. Level 1 assets may include debt and equity securities that are traded in an active exchange market and that are highly liquid and are actively traded in over-the-counter markets.

NOTE 4 - FAIR VALUE MEASUREMENTS - CONTINUED

Level 2 - Observable inputs other than Level 1 prices such as quoted prices for similar assets in active markets, quoted prices for identical or similar assets in markets that are not active, or other inputs that are observable, such as interest rates and curves observable at commonly quoted intervals, implied volatilities, and credit spreads. For financial reporting purposes, if an asset has a specified term, a Level 2 input is required to be observable for substantially the full term of the asset.

Level 3 - Unobservable inputs should be developed using the best information available under the circumstances, which might include the District's own data. The District should adjust that data if reasonable available information indicates that other market participants would use different data or certain circumstances specific to the District are not available to other market participants.

Uncategorized - Investments in the Local Agency Investment Funds/State Investment Pools are not measured using the input levels above because the District's transactions are based on a stable net asset value per share. All contributions and redemptions are transacted at $1.00 net asset value per share.

The District's fair value measurements are as follows at June 30, 2016:

Investment Type	Fair Value	Level 1 Inputs	Level 2 Inputs	Level 3 Inputs	Uncategorized
U.S. Agency Obligations	$ -	$ -	$ -	$ -	$ -
FHLB	7,014,290	-	7,014,290	-	-
FNMA	4,006,880	-	4,006,880	-	-
FHLM	9,514,160	-	9,514,160	-	-
Corporate Notes	19,955,077	12,749,989	7,205,088	-	-
Local Government Investment Pool (CAMP)	9,825	-	-	-	9,825
U.S. Treasury Obligations	3,008,720	-	3,008,720	-	-
Certificates of deposit	6,856,257	-	6,856,257	-	-
California Local Agency Investment Fund	12,083,636	-	-	-	12,083,636
Total	$ 62,448,845	$ 12,749,989	$ 37,605,395	$ -	$ 12,093,461

NOTE #5 – JOINT VENTURES

Alameda County Water District Financing Authority

The Alameda County Water District Financing Authority, a Joint Powers Authority, was established through Joint Exercise of Powers Agreement between the Alameda County Water District (ACWD) and Union Sanitary District (USD) on November 14, 2011 for the purpose of assisting in the financing and refinancing of capital improvement projects of the ACWD and to finance working capital for the ACWD. The assets, debts, liabilities, and obligations of the Authority do not constitute assets, debts, liabilities, and obligations of Union Sanitary District. The Authority is administered by the Board, which consists of one member from Union Sanitary District and five members from the Alameda County Water District.

NOTE #5 – JOINT VENTURES - CONTINUED

Investment in East Bay Dischargers Authority

The District has an 18.7 percent interest in East Bay Discharges Authority (EBDA), a Joint Powers Authority established under the Joint Exercise of Powers Act of the State of California. As a separate legal entity, EBDA exercises full power and authority within the scope of the related Joint Powers Agreement, including the preparation of annual budgets, accountability for all funds, the power to make and execute contracts and the right to sue and be sued. Obligations and liabilities of EBDA are not those of the District and the other participating entities.

EBDA constructed and operates an export pumping facility through which all treated wastewater in the area is discharged. The other participants (and their ownership percentages) are the City of Hayward (33 percent), the City of San Leandro (18.6 percent), and the Oro Loma and Castro Valley Sanitary Districts (collectively, 29.7 percent). The District has rights to 18.7 percent of EBDA's capacity.

EBDA is governed by a board of directors consisting of representatives from each member agency. The board controls the operations of EBDA, including selection of management and approval of operating budgets, independent of any influence by member agencies beyond their representation on the Board.

Because the District has the ability to exercise influence over operating and financial policies of the EBDA, the District's proportionate share of EBDA's net position, excluding sole use of facilities, and the District's share of its undivided ownership (18.7 percent) in EBDA's total net equity, has been recorded as an investment in EBDA accounted for under the equity method.

Summary financial information for EBDA, as of June 30, 2015 and 2014 and for the years then ended, the most recent audited information available, is as follows:

	2015	2014
Total Assets	$ 34,069,451	$ 34,477,100
Total liabilities	1,084,270	821,401
Net position value of EBDA	$ 32,985,181	$ 33,655,699
District's share at 18.7%	$ 6,168,229	$ 6,293,616
Net loss on equity investment in EBDA	$ 125,387	$ 86,652

EBDA has no outstanding debt.

During fiscal year ended June 30, 2016 and 2015, the District was charged $1,213,490 and $1,152,054, respectively, by EBDA primarily for operating costs. Such costs are included in the wastewater treatment expenses by the District for financial reporting purposes.

The financial statement for EBDA may be obtained from the EBDA, 2651 Grant Avenue, San Lorenzo, CA 94580-1841.

NOTE #6 - LONG-TERM OBLIGATIONS

Long-term obligations at June 30, 2016 are summarized as below:

	Maturity Date	Interest Rate	Balance 7/1/15	Additions	Retirements	Balance 6/30/16	Current Portion
2003 State Revolving Fund Loan - Irvington	08/30/23	2.4%	$ 7,273,123	$ -	$ 733,608	$ 6,539,515	$ 751,216
2008 State Revolving Fund Loan - Willow	11/16/27	2.4%	1,198,175	-	79,628	1,118,547	81,540
2008 State Revolving Fund Loan - Newark	01/26/30	2.7%	8,362,728	-	459,610	7,903,118	472,020
2008 State Revolving Fund Loan - Hetch Hetchy	11/17/28	2.7%	1,610,058	-	96,162	1,513,896	98,759
2009 State Revolving Fund Loan - Cedar Blvd.	02/26/30	2.5%	1,576,757	-	87,930	1,488,827	90,128
2011 State Revolving Fund Loan - Primary Cl.	01/15/33	2.7%	8,321,201	-	365,109	7,956,092	374,968
2011 State Revolving Fund Loan - Substation 1	02/28/32	2.6%	2,139,709	-	101,695	2,038,014	104,339
2011 State Revolving Fund Loan - Boyce Rd. Lift Station	03/31/33	2.6%	6,102,002	-	252,412	5,849,590	258,974
2014 State Revolving Fund Loan- Thickener Control Building	03/31/36	2.1%	5,277,721	3,385,590	-	8,663,311	-
Compensated absences	n/a	n/a	903,086	1,079,312	1,002,597	979,801	979,801
			$ 42,764,560	$ 4,464,902	$ 3,178,751	$ 44,050,711	$ 3,211,745

A. 2003 State Revolving Fund Loan – Irvington

During 2003, the District entered into a loan agreement with the California State Water Resources Control Board in accordance with the State Revolving Fund Loan Program. As of March 26, 2004, $14,301,057, the maximum loan amount, had been drawn. The interest rate on the loan is 2.4 percent and is payable in twenty annual installments, beginning on year after initial loan disbursement. The purpose of this loan was to finance the Irvington Equalization Storage Facilities project.

B. 2008 State Revolving Fund Loan – Willow

During 2008, the District entered into a loan agreement with the California State Water Resources Control Board in accordance with the State Revolving Fund Loan Program. The interest rate on the loan is 2.4 percent and is payable in twenty annual installments, beginning one year after initial loan disbursement. The purpose of this loan was to finance the Willow/Central Avenue sanitary sewer rehabilitation project. The maximum amount of this agreement is $1,749,329 based upon projected costs to be incurred.

C. 2008 State Revolving Fund Loan – Newark Pump Station

During 2008, the District entered into a loan agreement with the California State Water Resources Control Board in accordance with the State Revolving Fund Loan Program. The interest rate on the loan is 2.7 percent and is payable in twenty annual installments, beginning in 2011. The purpose of this loan was to finance the Newark Pump Station project. The maximum amount of this agreement is $10,283,321 based upon projected costs to be incurred. As of June 30, 2016, $10,283,322, the maximum loan amount, has been advanced under this agreement.

D. 2008 State Revolving Fund Loan – Hetch Hetchy

During 2008, the District entered into a loan agreement with the California State Water Resources Control Board in accordance with the State Revolving Fund Loan Program. The interest rate on the loan is 2.7 percent and will be payable in twenty annual installments beginning one year after initial loan disbursements. The purpose of this loan is to finance the lower Hetch Hetchy sewer rehabilitation project. The maximum amount of this agreement is $2,212,432 based upon projected costs to be incurred. As of June 30, 2016, $2,113,379 has been advanced under this agreement.

NOTE #6 - LONG-TERM OBLIGATIONS - CONTINUED

E. 2009 State Revolving Fund Loan – Cedar Boulevard

During 2009, the District entered into a loan agreement with the California State Water Resources Control Board in accordance with the State Revolving Fund Loan Program. The interest rate on the loan is 2.5 percent and will be payable in twenty annual installments beginning one year after the initial loan disbursements. The purpose of this loan is to finance the Cedar Boulevard Sanitary Sewer Rehabilitation Project. The maximum amount of this agreement is $2,052,841 based upon projected costs to be incurred. As of June 30, 2016, $1,998,384 has been advanced under this agreement.

F. 2011 State Revolving Fund Loan – Primary Clarifier

During 2011, the District entered into a loan agreement with the California State Water Resources Control Board in accordance with the State Revolving Fund Loan Program. The interest rate on the loan is 2.7 percent and will be payable in twenty annual installments beginning one year after the initial loan disbursements. The purpose of this loan is to finance the rehabilitation of primary clarifiers (Nos. 1 through 4) at the Alvarado Wastewater Treatment Plant. The maximum amount of this agreement is $8,821,860 based upon projected costs to be incurred. As of June 30, 2016, $8,821,860 has been advanced under this agreement.

G. 2011 State Revolving Fund Loan – Substation 1

During 2011, the District entered into a loan agreement with the California State Water Resources Control Board in accordance with the State Revolving Fund Loan Program. The interest rate on the loan is 2.6 percent and will be payable in twenty annual installments beginning one year after the initial loan disbursements. The purpose of this loan is to finance the replacement of Substation 1 to ensure its continual operation. The maximum amount of this agreement is $2,676,485 based upon projected costs to be incurred. As of June 30, 2016, $2,412,908 has been advanced under this agreement.

H. 2011 State Revolving Fund Loan – Boyce Rd. Lift Station

During 2011, the District entered into a loan agreement with the California State Water Resources Control Board in accordance with the State Revolving Fund Loan Program. The interest rate on the loan is 2.6 percent and will be payable in twenty annual installments beginning one year after the initial loan disbursements. The purpose of this loan is to finance the replacement of Boyce Road Lift Station to ensure its continual operation. The maximum amount of this agreement is $6,196,671 based upon projected costs to be incurred. As of June 30, 2016, $6,196,671 has been advanced under this agreement.

I. 2014 State Revolving Fund Loan –Thickener Control Building

During December 2013, the District entered into a loan agreement with the California State Water Resources Control Board in accordance with the State Revolving Fund Loan Program. The interest rate on the loan is 2.1 percent and will be payable in nineteen annual installments beginning September 2017. The purpose of this loan is to finance the Thickener Control Building Improvements Project to ensure its continual operation. The maximum amount of this agreement is $12.2 million based upon projected costs to be incurred. As of June 30, 2016, $8,663,311 has been advanced under this agreement.

NOTE #6 - LONG-TERM OBLIGATIONS – CONTINUED

J. Debt Service Requirements

Future annual repayment requirements as of June 30, 2016 are as follows:

Year Ended June 30	Principal	Interest	Total
2017	$ 2,231,944	$ 803,445	$ 3,035,389
2018	2,772,832	799,394	3,572,226
2019	2,701,940	879,827	3,581,767
2020	2,769,649	821,891	3,591,540
2021	2,839,065	762,488	3,601,553
2022-2026	13,462,397	2,878,858	16,341,255
2027-2031	10,897,439	1,406,547	12,303,986
2032-2036	4,887,643	320,041	5,207,684
2037	508,001	10,669	518,670
Totals	$ 43,070,910	$ 8,683,160	$ 51,754,070

NOTE #7 - PENSION PLAN

General Information about the Pension Plans

Plan Descriptions – All qualified permanent employees are eligible to participate in the District's separate Miscellaneous Plan, agent multiple employer defined benefit pension plan administered by the California Public Employees Retirement System (CalPERS), which acts as a common investment and administrative agent for its participating member employers. Benefit provisions under the Plans are established by State statute and District resolution. CalPERS issues publicly available reports that include a full description of the pension plans regarding benefit provisions, assumptions and membership information that can be found on the CalPERS website at http://www.calpers.ca.gov/index.jap?bc=/about/forms-pubs/calpers-reports/actuarial-reports/home.xml

Benefits Provided – CalPERS provides retirement and disability benefits, annual cost of living adjustments and death benefits to plan members, who must be public employees and beneficiaries. Benefits are based on years of credited service, equal to one year of full time employment. Members with five years of total service are eligible to retire at age 50 with statutorily reduced benefits. All members are eligible for non-duty disability benefits after 10 years of service. The death benefit is one of the following: the Basic Death benefit, the 1957 Survivor Benefit, or the Optional Settlement 2W Death Benefit. The cost of living adjustments for each plan are applied as specified by the Public Employees' Retirement Law.

NOTE #7 - PENSION PLAN – CONTINUED

The Plans' provisions and benefits in effect at June 30, 2016 and 2015, are summarized as follows:

	Miscellaneous	
Hire Date	Prior to January 1, 2013	On or after January 1, 2013
Formula	2.5% @ 55	2% @ 62
Benefit vesting schedule	5 years of service	5 years of service
Benefit payments	monthly for life	monthly for life
Retirement age	50-55	52-67
Monthly benefits, as a % of annual salary	2.0% to 2.5%	1.0% to 2.5%
Required employee contribution rates	8%	6.25%
Required employer contribution rates	17.410%	18.558%

Employees Covered – At June 30, 2016 and 2015, the following employees were covered by the benefit terms for the Plan:

	Miscellaneous	
	2016	**2015**
Inactive employees or beneficiaries currently receiving benefits	155	143
Inactive employees entitled to but not yet receiving benefits	67	69
Active employees	129	132
Total	351	344

Contributions – Section 20814(c) of the California Public Employees' Retirement law requires that the employer contribution rates for all public employers are determined on an annual basis by the actuary and shall be effective on the July 1 following notice of a change in rate. Funding contributions for both Plans are determined annual on an actuarial basis as of June 30 by CalPERS. The actuarially determined rate is the estimated amount necessary to finance the costs of benefits earned by employees during the year, with an additional amount to finance any unfunded accrued liability. The District is required to contribute the difference between the actuarially determined rate and the contribution rates of employees.

For the year ended June 30, 2016 the average employee contribution rate was 8.0 percent of annual payroll, and the District's average rate was 17.410 of annual payroll. The total contributions to the plan were $3,034,082 for the year ended June 30, 2016.

Net Pension Liability - The District's net pension liability for the Plan is measured as the total pension liability, less the pension plan's fiduciary net position. The net pension liability of each of the Plan is measured as of June 30, 2015, using an annual actuarial valuation as of June 30, 2014 rolled forward to June 30, 2015.

A summary of principal assumptions used to determine the net pension liability is shown as follows:

NOTE #7 - PENSION PLAN – CONTINUED

Actuarial Assumptions – The total pension liabilities in the June 30, 2014 and 2013 actuarial valuations were determined using the following actuarial assumptions.

	Miscellaneous	
	2014	**2013**
Valuation Date	June 30, 2014	June 30, 2013
Measurement Date	June 30, 2015	June 30, 2014
Actuarial Cost Method	Entry-Age Normal Cost Method	Entry-Age Normal Cost Method
Actuarial Assumptions:		
Discount Rate	7.65%	7.59%
Inflation	2.75%	2.75%
Payroll Growth	3.0%	3.0%
Projected Salary Increase	3.3% - 14.2%	3.3% - 14.2%
Investment Rate of Return	7.7%	7.5%
Mortality Rate Table [(1)]	Derived using CalPERS' Membership Data for all Funds	Derived using CalPERS' Membership Data for all Funds
Post Retirement Benefit Increase	Contract COLA up to 2.75% until Purchasing Power Protection Allowance Floor on Purchasing Power applies, 2.75% thereafter	Contract COLA up to 2.75% until Purchasing Power Protection Allowance Floor on Purchasing Power applies, 2.75% thereafter

The mortality table used for Miscellaneous Plan was developed based on CalPERS' specific data. The table includes 20 years of mortality improvements using Society of Actuaries Scale BB. For more details on this table, please refer to the CalPERS 2014 experience study report available on CalPERS website.

The underlying mortality assumptions and all other actuarial assumptions used in the June 30, 2014 valuation were based on the results of a January 2014 actuarial experience study for the period of 1997 to 2011. Further details of the Experience Study can be found on the CalPERS website at:
http://www.calpers.ca.gov/index.jsp?bc=/about/forms-pubs/calpers-reports/actuarial-reports.xml

Discount Rate – The discount rate used to measure the total pension liability was increased from 7.50 percent to 7.65 percent in 2015. To determine whether the municipal bond rate should be used in the calculation of a discount rate for the plan, CalPERS stress tested plans that would most likely result in a discount rate that would be different from the actuarially assumed discount rate. Based on the testing of the plans, the tests revealed the assets would not run out. Therefore, the current 7.65 percent discount rate is appropriate and the use of the municipal bond rate calculation is not deemed necessary. The long-term expected discount rate of 7.65 percent is applied to all plans in the Public Employees Retirement Fund. The stress test results are presented in a detailed report called "GASB Crossover Testing Report" that can be obtained at CalPERS' website under the GASB 68 section.

NOTE #7 - PENSION PLAN – CONTINUED

The long-term expected rate of return on pension plan investments was determined using a building-block method in which best-estimated ranges of expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class.

In determining the long-term expected rate of return, CalPERS took into account both short-term and long-term market return expectations as well as the expected pension fund cash flows. Such cash flows were developed assuming that both members and employers will make their required contributions on time and as scheduled in all future years. Using historical returns of all the funds' asset classes, expected compound (geometric) returns were calculated over the short-term (first 10 years) and the long term (11-60 years) using a building-block approach. Using the expected nominal returns for both short-term and long-term, the present value of benefits was calculated for each fund. The expected rate of return was set by calculating the single equivalent expected return that arrived at the same present value of benefits for cash flows as the one calculated using both short-term and long-term returns. The expected rate of return was then set equivalent to the single equivalent rate calculated above and rounded down to the nearest one quarter of one percent.

The table below reflects long-term expected real rate of return by asset class. The rate of return was calculated using the capital market assumptions applied to determine the discount rate and asset allocation. The target allocation shown was adopted by the Board effective on July 1, 2014 and 2013.

	Target Allocation			
Asset Class	**2014**	**2013**	**Real Return Years 1-10 [(a)]**	**Real Return Years 11+ [(b)]**
Global Equity	51.0%	47.0%	5.25%	5.71%
Global Fixed Income	19.0%	19.0%	0.99%	2.43%
Inflation Sensitive	6.0%	6.0%	0.45%	3.36%
Private Equity	10.0%	12.0%	6.83%	6.95%
Real Estate	10.0%	11.0%	4.50%	5.13%
Infrastructure and Forestland	2.0%	3.0%	4.50%	5.09%
Liquidity	2.0%	2.0%	-0.55%	-1.05%
Total	100.0%	100.0%		

(a) An expected inflation of 2.5% used for this period
(b) An expected inflation of 3.0% used for this period

NOTE #7 - PENSION PLAN – CONTINUED

Changes in the Net Pension Liability - The changes in the Net Pension Liability for the District are as follows:

	Increase (Decrease)		
	Total Pension Liability	Plan Fiduciary Net Position	Net Pension Liability/(Asset)
Balance at June 30, 2014	$ 110,669,156	$ 76,577,853	$ 34,091,303
Changes in the year:			
Service Cost	2,338,837	-	2,338,837
Interest on the total pension liability	8,205,194	-	8,205,194
Differences between actual and expected experience	-	-	-
Changes in assumptions	-	-	-
Changes in benefit terms	-	-	-
Contribution - employer	-	2,428,874	(2,428,874)
Contribution - employee (paid by employer)	-		-
Contribution - employee	-	1,356,767	(1,356,767)
Net investment income	-	13,223,974	(13,223,974)
Differences between projected and actual earning on plan investments	-	-	-
Administrative expenses	-	-	-
Benefit payments, including refunds of employee contributions	(4,871,998)	(4,871,998)	-
Net changes	5,672,033	12,137,617	(6,465,584)
Balance at June 30, 2015	$ 116,341,189	$ 88,715,470	$ 27,625,719

	Increase (Decrease)		
	Total Pension Liability	Plan Fiduciary Net Position	Net Pension Liability/(Asset)
Balance at June 30, 2015	$ 116,341,189	$ 88,715,470	$ 27,625,719
Changes in the year:			
Service Cost	2,285,511	-	2,285,511
Interest on the total pension liability	8,707,550	-	8,707,550 Differences
between actual and expected experience	1,118,325	-	1,118,325 Changes in
assumptions	(2,041,756)	-	(2,041,756)
Plan to plan resource movement	-	(8,501)	8,501
Contribution - employer	-	2,536,676	(2,536,676)
Contribution - employee	-	1,187,621	(1,187,621)
Net investment income	-	2,002,533	(2,002,533)
Administrative expenses	-	(100,081)	100,081
Benefit payments, including refunds of employee contributions	(5,472,643)	(5,472,643)	-
Net changes	4,596,987	145,605	4,451,382
Balance at June 30, 2016	$ 120,938,176	$ 88,861,075	$ 32,077,101

NOTE #7 - PENSION PLAN – CONTINUED

Sensitivity of the Net Pension Liability to Changes in the Discount Rate – The following presents the net pension liability of the District for the Plan, calculated using the discount rate, as well as what the District's net pension liability would be if it were calculated using a discount rate that is 1-percentage point lower or 1-percentage point higher than the current rate:

	Miscellaneous	
	2016	**2015**
1% Decrease	6.65%	6.50%
Net Pension Liability	$47,517,126	$42,097,870
Current Discount Rate	7.65%	7.50%
Net Pension Liability	$32,077,101	$27,625,719
1% Increase	8.65%	8.50%
Net Pension Liability	$19,190,933	$15,485,726

Pension Plan Fiduciary Net Position – Detailed information about each pension plans' fiduciary net position is available in the separately issued CalPERS financial reports.

Pension Expense and Deferred Outflows/Inflows of Resources Related to Pension - For the year ended June 30, 2016 and 2015, the District's recognized pension expense of $2,819,078 and $2,015,375, respectively. At June 30, 2016 and 2015, the District reported deferred outflows of resources and deferred inflows of resources related to pensions from the following sources:

June 30, 2015:	Deferred Outflows of Resources	Deferred Inflows of Resources
Pension contributions subsequent to measurement date	$ 2,973,280	$ -
Differences between actual and expected experience	-	-
Changes in assumption	-	-
Net differences between projected and actual earnings on plan investments	-	$ 6,052,085
Total	$ 2,973,280	$ 6,052,085

June 30, 2016:	Deferred Outflows of Resources	Deferred Inflows of Resources
Pension contributions subsequent to measurement date	$ 3,034,082	$ -
Differences between actual and expected experience	779,439	-
Changes in assumption	-	(1,423,042)
Net differences between projected and actual earnings on plan investments	3,736,166	(4,539,064)
Total	$ 7,549,687	$ (5,962,106)

NOTE #7 - PENSION PLAN – CONTINUED

The amount of $3,034,082 reported as deferred outflows of resources related to contributions subsequent to the measurement date will be recognized as a reduction of the net pension liability in the year ended June 30, 2017. Other amounts reported as deferred outflows of resources and deferred inflows of resources related to pensions will be recognized as pension expense as follows:

Year ended June 30		
2016	$	(858,807)
2017		(858,807)
2018		(662,927)
2019		934,040
2020		-
Thereafter		-
	$	(1,446,501)

Payable to the Pension Plan - At June 30, 2016 and 2015, the District reported a payable of $160,866 and $132, respectively, for the outstanding amount of contributions to the pension plan.

NOTE #8 - OTHER RETIREMENT BENEFITS

A. Postemployment Healthcare Plan (OPEB)

Plan Description. The District's defined benefit postemployment healthcare plan provides medical benefits to employees who satisfy the requirements for retirement under CalPERS (attained age 50 with five years of service or satisfaction of the requirements for a disability retirement.) The amount of the retiree's medical benefit is dependent upon both years of service with the District and the year the employee retires.

The District contracts with CalPERS to administer its retiree health benefit plan (an agent multiple-employer plan) and to provide an investment vehicle, the California Employers' Retiree Benefit Trust Fund, to prefund future OPEB costs. A menu of benefit provisions as well as other requirements is established by State statute within the Public Employees' Retirement Law. The District chooses among the menu of benefit provisions and adopts certain benefit provisions by Board resolution. CalPERS issues a separate Comprehensive Annual Financial Report. Copies of the CalPERS annual financial report may be obtained from the CalPERS Executive Office at 400 P Street, Sacramento, CA, 95814.

Funding Policy. The District's annual required contribution of the employer (ARC) is an amount actuarially determined in accordance with the parameters of GASB Statement No. 45. The ARC represents a level of funding that, if paid on an ongoing basis, is projected to cover normal annual costs each year and amortize any unfunded actuarial liabilities (or funding excess) over a period not to exceed 30 years on a closed basis. The current ARC rate is 4% of the annual covered payroll, based on the most recent actuarial report dated July 1, 2015. The plan members receiving benefits currently do not make contributions. For the year end June 30, 2016 the District contributed $561,205 to the plan.

NOTE #8 - OTHER RETIREMENT BENEFITS – CONTINUED

Annual OPEB Cost and Net OPEB Obligation. The following table shows the components of the District's annual OPEB cost for the year, the amount actually contributed to the plan, and changes in the District's net OPEB obligation.

ANNUAL OPEB COST

Annual Required Contribution (ARC)	$ 561,205
Interest on net OPEB obligation (asset)	(97,838)
Adjustment to ARC	94,740
Annual OPEB cost	558,107
Contributions made	561,205
Change in net OPEB obligation (asset)	(3,098)
OPEB obligation (asset) - beginning of year	(1,449,455)
OPEB obligation (asset) - end of year	$ (1,452,553)

Trend Information. The District's annual OPEB cost, the percentage of the annual OPEB cost contributed to the plan, and the net OPEB obligation (asset) is as follows:

Fiscal Year Ending	Annual OPEB Cost	Actual Employer Contributions	Percentage Contributed	Net OPEB Obligation (Asset)
6/30/2016	$ 558,107	$ 561,205	101%	$ (1,452,553)
6/30/2015	537,844	543,540	101%	(1,449,455)
6/30/2014	454,811	462,852	102%	(1,443,759)

Funded Status. The schedule of funded status of the plan as of July 1, 2013 was as follows:

Actuarial accrued liability (AAL)	$ 8,461,869
Actuarial value of plan assets	4,170,486
Unfunded actuarial accrued liability (UAAL)	$ 4,291,383
Funded ratio (actuarial value of plan assets/ AAL)	49.3%
Covered payroll (active plan members)	$ 14,189,868
UAAL as a percentage of covered payroll	30.2%

Actuarial valuations of an ongoing plan involve estimates of the value of reported amounts and assumptions about the probability of occurrence of events far into the future. Examples include assumptions about future employment, mortality, and the health care cost trend. Amounts determined regarding the funded status of the plan and the annual required contributions of the employer are subject to continual revision as actual results are compared with past expectations and new estimates are made about the future. The schedule of funding progress, presented as required supplementary information presents multiyear trend information that shows whether the actuarial value of plan assets is increasing or decreasing over time relative to the actuarial accrued liabilities for benefits.

NOTE #8 - OTHER RETIREMENT BENEFITS – CONTINUED

A. Postemployment Healthcare Plan (OPEB) - Continued

Actuarial Methods and Assumptions. Projections of benefits for financial reporting purposes are based on the substantive plan (the plan as understood by the employer and plan members) and include the types of benefits provided at the time of each valuation and the historical pattern of sharing of benefit costs between the employer and plan members to that point. The actuarial methods and assumptions used include techniques that are designed to reduce short-term volatility in actuarial accrued liabilities and the actuarial value of assets, consistent with the long-term perspective of the calculations.

The following is a summary of the actuarial assumptions and methods:

Valuation date	July 1, 2013
Actuarial cost method	Entry age, Normal cost
Amortization method	Level percentage of payrol
Amortization period	30 years - closed
Asset valuation method	Market value of assets
Actuarial Assumptions:	
Investment rate of return (funded)	6.75%
Salary increase	3.25%
Healthcare cost trend rate	8.5% initial; 4.5% ultimate
Inflation Rate	3.00%

B. 401(a) Plans

The District sponsors two internal Revenue Code Section 401(a) money purchase retirement plans for unclassified employees through the ICMA Retirement Corporation. The plans were established and can be amended by Board resolution and, for certain terms, by participant agreement. Eligibility for participation in a particular plan is dependent on job classification. Within each plan, participating employees contribute the same dollar amount of $3,000 per year for employees under the management plan, and $1,850 for employees under the professional plan, and the District makes matching contributions on their behalf. The District and the participants each contributed a total of $20,630 and $27,865 to the plans for the years ended June 30, 2016, and 2015, respectively.

C. Deferred Compensation Plan

District employees may defer a portion of their compensation under a District sponsored deferred compensation plan created in accordance with Internal Revenue Code Section 457. Under this plan, participants are not taxed on the deferred portion of their compensation until distribution. Distributions may be made only at termination, retirement, death, or, in an emergency, as defined by the plan.

The laws governing deferred compensation plan assets require plan assets to be held by a trust for the exclusive benefit of plan participants and their beneficiaries. Since the assets held under these plans are not the District assets and are not subject to District control, they have been excluded from these general purpose financial statements.

NOTE #9 - RISK MANAGEMENT

The District is a member of the California Sanitation Risk Management Authority (CSRMA). CSRMA covers general liability and workers' compensation claims. In addition, commercial insurance is purchased for excess liability, property, and employee dishonesty coverage. The District has a $500,000 deductible for general liability coverage, and no deductible for workers' compensation coverage.

Claims and judgments, including a provision for claims incurred but not reported, are recorded when a loss is deemed probable of assertion and the amount of the loss is reasonably determinable. As discussed above, the District has coverage for such claims, but it has retained the risk for the deductible or uninsured portion of these claims. The District's liability for uninsured claims is limited to general liability claims, as discussed above. Settled claims have not exceeded coverage in any of the past three years.

NOTE #10 - COMMITMENTS AND CONTINGENT LIABILITIES

The District is contingently liable in connection with claims and contracts arising in the normal course of its activities. District management is of the opinion that the ultimate outcome of such matters will not have a significant effect on the financial position of the District.

REQUIRED SUPPLEMENTARY INFORMATION

REQUIRED SUPPLEMENTARY INFORMATION
FOR THE YEAR ENDED JUNE 30, 2016

Schedule of Funding Progress for Retiree Health Benefit Plan

Actuarial Valuation Date	Actuarial Value of Assets	Actuarial Accrued Liability (AAL)	Unfunded AAL (UAAL)	Funded Ratio	Covered Payroll	UAAL as a Percentage of Covered Payroll
July 1, 2013	$ 4,170,486	$ 8,461,869	4,291,383	49%	$ 14,189,868	30.2%
July 1, 2013	3,735,506	8,010,025	4,274,519	47%	13,743,213	31.1%
July 1, 2013	3,377,623	7,568,777	4,191,154	45%	13,310,618	31.5%

REQUIRED SUPPLEMENTARY INFORMATION
FOR THE YEAR ENDED JUNE 30, 2016

Miscellaneous Plan
Agent Multiple-Employer Defined Benefit Pension Plan
Last 10 Years **
Schedule of Changes in the Net Pension Liability and Related Ratios
During the Measurement Period

	2016	2015
Measurement Period	June 30, 2015	June 30, 2014
Total Pension Liability		
Service Cost	$ 2,285,511	$ 2,338,837
Interest on total pension liability	8,707,550	8,205,194
Changes in benefits terms	-	-
Difference between expected and actual experience	1,118,325	-
Changes in assumptions	(2,041,756)	-
Benefit payments, including refunds of employee contributions	(5,472,643)	(4,871,998)
Net change in total pension liability	4,596,987	5,672,033
Total Pension Liability - beginning	116,341,189	110,669,156
Total Pension Liability - ending (a)	$ 120,938,176	$ 116,341,189
Plan fiduciary net position		
Contributions - employer	$ 2,536,676	$ 2,428,874
Contributions - employee	1,187,621	1,356,767
Net investment income	2,002,533	13,223,974
Benefit payments	(5,472,643)	(4,871,998)
Plan to plan resource movement	(8,501)	-
Administartive expense	(100,081)	-
Net change in plan fiduciary net position	145,605	12,137,617
Plan fiduciary net position - beginning	88,715,470	76,577,853
Plan fiduciary net position - ending (b)	$ 88,861,075	$ 88,715,470
Net pension liability - ending (a) - (b)	$ 32,077,101	$ 27,625,719
Plan fiduciary net position as a percentage of the total pension liability	73.48%	76.25%
Covered - employee payroll	$ 15,432,788	$ 14,947,998
Net pension liability as a percentage of covered employee payroll	207.85%	184.81%

Notes to Schedule:

Benefit Changes: The figures above do not include any liability impact that may have resulted from plan changes which occurred after June 30, 2014 valuation date. This applies for voluntary benefit changes as well as any offer of Two Years Additional Service Credit (a.k.a. Golden Handshakes).

Changes of Assumptions: The discount rate was changed from 7.5 percent (net of administrative expense) to 7.65 percent.

REQUIRED SUPPLEMENTARY INFORMATION
FOR THE YEAR ENDED JUNE 30, 2016

Miscellaneous Plan
Agent Multiple-Employer Defined Benefit Pension Plan
Last 10 Years *
Schedule of Pension Contributions

	2016	2015
Actuarilly Determined Contribution	$ 3,034,082	$ 2,973,280
Contribution in relation to the Actuarially Determined Contribution	(3,034,082)	(2,973,280)
Contribution Deficiency (Excess)	$ -	$ -
Covered-employee payroll	$ 16,210,804	$ 15,432,788
Contributions as a percentage of covered-employee payroll	18.72%	19.27%
Notes to Schedule		
Valuation date	6/30/2014	6/30/2013

Methods and assumptions used to determine contribution rates:

Actuarial cost method	Entry age normal
Amortization method	Level Percent of Payroll
Average Remaining Period	26 Years as of the Valuation Date
Asset valuation method	15 Year Smoothed Market
Inflation	2.75%
Salary increases	Varies by entry age and service
Payroll growth	3.00%
Investment rate of return	7.65%, net of pension plan investment expenses, including inflation
Retirement age	The probabilities of Retirement are based on the 2010 CalPERS Experience Study for the period from 1997 to 2007.
Mortality	The probabilities of mortality are based on the 2010 CalPERS Experience Study for the period from 1997 to 2007. Pre-retirement and Post-retirement mortality rates include 5 years of projected mortality improvement using scale AA published by the Society of Actuaries.

SUPPLEMENTARY INFORMATION

UNION SANITARY DISTRICT

SCHEDULE OF OPERATING EXPENSES BEFORE DEPRECIATION
FOR THE YEAR ENDED JUNE 30, 2016 AND 2015

	2016				2015			
	Sewage Treatment	Sewage Collection & Engineering	General & Administrative	Total	Sewage Treatment	Sewage Collection & Engineering	General & Administrative	Total
Salaries and wages	$ 5,581,380	$ 6,692,390	$ 3,187,901	$ 15,461,671	$ 5,496,340	$ 6,399,329	$ 3,344,762	$ 15,240,431
Employee benefits	2,143,880	2,695,466	1,720,254	6,559,600	1,889,390	2,290,977	1,541,957	5,722,324
Recruitment and development	92,840	72,350	216,060	381,250	75,044	74,380	229,128	378,552
Temporary help	-	41,134	8,243	49,377	8,114	90,313	-	98,427
Repairs and maintenance	1,389,802	750,887	11,653	2,152,342	1,162,998	644,803	11,670	1,819,471
Operating supplies	1,660,979	191,922	-	1,852,901	1,650,879	210,820	-	1,861,699
Office and safety supplies	150,382	217,787	264,228	632,397	141,816	167,258	298,525	607,599
Insurance	-	-	216,594	216,594	-	-	282,429	282,429
Contractual services	855,954	74,904	-	930,858	665,305	48,689	11,119	725,113
Professional services	191,753	80,275	777,880	1,049,908	173,100	46,049	666,407	885,556
Utilities	1,806,434	73,461	123,091	2,002,986	1,802,178	66,778	85,495	1,954,451
East Bay Dischargers Authority - operating charges	1,213,490	-	-	1,213,490	1,152,055	-	-	1,152,055
Non-capital projects	336,665	336,665	287,050	960,380	677,034	677,034	396,561	1,750,629
Sewer Service charge administrative fee	35,289	35,289	35,290	105,868	35,186	35,186	35,186	105,558
Rents/Leases	5,927	34,150	-	40,077	26,930	11,914	7,618	46,462
Total	$ 15,464,775	$ 11,296,680	$ 6,848,244	$ 33,609,699	$ 14,956,369	$ 10,763,530	$ 6,910,857	$ 32,630,756

UNION SANITARY DISTRICT

SCHEDULE OF INSURANCE COVERAGE
FOR THE YEAR ENDED JUNE 30, 2016

The District's insurance policies and coverages in effect at June 30, 2016 are as follows:

General liability (pooled liability program)		
Bodily injury, property damage, and personal injury	$	25,500,000
Public entity errors and omissions and other related practices	$	25,500,000
Employment related practices	$	25,500,000

		Insured Value
Auto physical damage (primary insurance program)	$	3,055,865
Workers' Compensation	$	1,750,000
Group Health and Life		Contract
Employee Disability and Salary Continuance		Contract
Property insurance, all property	$	235,573,907
Accounts receivable		No sublimit
Employee Dishonesty Bond Coverages:		
Public Employee Dishonesty Bond	$	1,000,000
Forgery and alteration	$	1,000,000
Computer Fraud	$	1,000,000

Statistical Section

UNION SANITARY DISTRICT

Changes in Net Position and Statement of Net Position by Component
Last Ten Years

	Fiscal Year									
Changes in Net Position	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**
Operating Revenues										
Sewer Service Charges	$30,951,916	$32,851,938	$35,103,885	$37,217,073	$38,486,824	$40,630,578	$42,339,311	$45,139,420	$48,379,254	$50,112,564
Other Operating Revenues	1,099,925	922,013	809,171	968,475	987,948	1,027,357	1,163,802	1,370,017	1,581,031	1,791,782
Total Operating Revenues	32,051,841	33,773,951	35,913,056	38,185,548	39,474,772	41,657,935	43,503,113	46,509,437	49,960,285	51,904,346
Operating Expenses										
Treatment	11,250,875	11,881,805	12,938,404	13,995,781	14,342,352	14,255,266	16,088,929	15,410,523	14,956,369	15,464,775
Collection and Engineering	8,160,123	7,998,961	8,658,679	9,338,919	10,532,692	9,712,645	11,954,345	10,869,755	10,763,530	11,296,680
General and Administration	4,442,638	4,757,630	5,200,792	5,322,085	5,574,251	5,951,818	6,111,468	6,634,688	6,910,857	6,848,244
Total Operating Expenses Before Depr.	23,853,636	24,638,396	26,797,875	28,656,785	30,449,295	29,919,729	34,154,742	32,914,966	32,630,756	33,609,699
Depreciation	17,127,661	15,829,000	16,380,510	16,243,535	16,323,858	16,790,277	16,776,307	17,219,109	17,899,765	17,379,112
Total Operating Expeneses	40,981,297	40,467,396	43,178,385	44,900,320	46,773,153	46,710,006	50,931,049	50,134,075	50,530,521	50,988,811
Operating Loss	(8,929,456)	(6,693,445)	(7,265,329)	(6,714,772)	(7,298,381)	(5,052,071)	(7,427,936)	(3,624,638)	(570,236)	915,535
Non-operating Revenues (Expenses)										
Investment Income	1,902,866	1,746,157	1,136,138	349,012	274,328	248,337	178,690	180,041	160,790	496,439
Interest Expense	(839,808)	(775,179)	(647,171)	(867,781)	(1,114,313)	(858,162)	(1,138,677)	(1,106,609)	(971,695)	(916,968)
Loss on Retirement of Utility in Capital Assets	(97,969)	(384,325)	(134,787)	(95,110)	(751,601)	(127,430)	(1,479,254)	(796,735)	(1,165,160)	(30,472)
Gain (loss) on Equity Investment in EBDA	(142,783)	(46,886)	(12,946)	(76,498)	(95,011)	(100,827)	(89,170)	(92,180)	(86,652)	(160,540)
Other Non-operating Expenses	0	0	0	0	0	0	0	0	0	0
Net Non-operating Revenues	822,306	539,767	341,234	(690,377)	(1,686,597)	(838,082)	(2,528,411)	(1,815,483)	(2,062,717)	(611,541)
Loss Before Contributions	(8,107,150)	(6,153,678)	(6,924,095)	(7,405,149)	(8,984,978)	(5,890,153)	(9,956,347)	(5,440,121)	(2,632,953)	303,994
Connection Fees and Other Contrib. Capital	3,503,054	6,231,701	2,648,784	3,196,347	7,850,769	4,386,772	7,072,821	4,201,932	9,595,219	9,096,373
Change in Net Position	(4,604,096)	78,023	(4,275,311)	(4,208,802)	(1,134,209)	(1,503,381)	(2,883,526)	(1,238,189)	6,962,266	9,400,367
Net Position, Beginning of Year	367,626,389	363,022,293	364,988,951	360,713,640	356,504,838	355,370,629	353,867,248	350,983,722	349,745,533	325,045,364
Prior period adjustment	0	0	0	0	0	0	0	0	(31,662,435) *	0
Net Position, End of Year	$363,022,293	$363,100,316	$360,713,640	$356,504,838	$355,370,629	$353,867,248	$350,983,722	$349,745,533	$325,045,364	$334,445,731
Statement of Net Position by Component										
Net investment in capital assets	$321,621,932	$312,722,057	$308,753,429	$302,407,235	$300,489,831	$296,939,157	$294,393,392	$299,269,526	$297,462,404	$295,355,262
Restricted	6,700,960	10,166,261	14,290,870	14,840,623	16,877,836	19,346,378	20,297,820	17,622,778	19,808,500	25,075,327
Unrestricted	2,215,053	2,927,822	37,669,341	39,256,980	38,002,962	37,581,713	36,292,510	32,853,229	7,774,460	14,015,142
Restricted-Retiree medical benefit plan	938,263	1,457,853	0	0	0	0	0	0	0	0
Unrestricted	31,546,085	35,826,323	0	0	0	0	0	0	0	0
Total USD net position	$363,022,293	$363,100,316	$360,713,640	$356,504,838	$355,370,629	$353,867,248	$350,983,722	$349,745,533	$325,045,364	$334,445,731

* GASB 68 Adjustment
** Capital asset threshhold increased from $5,000 to $10,000

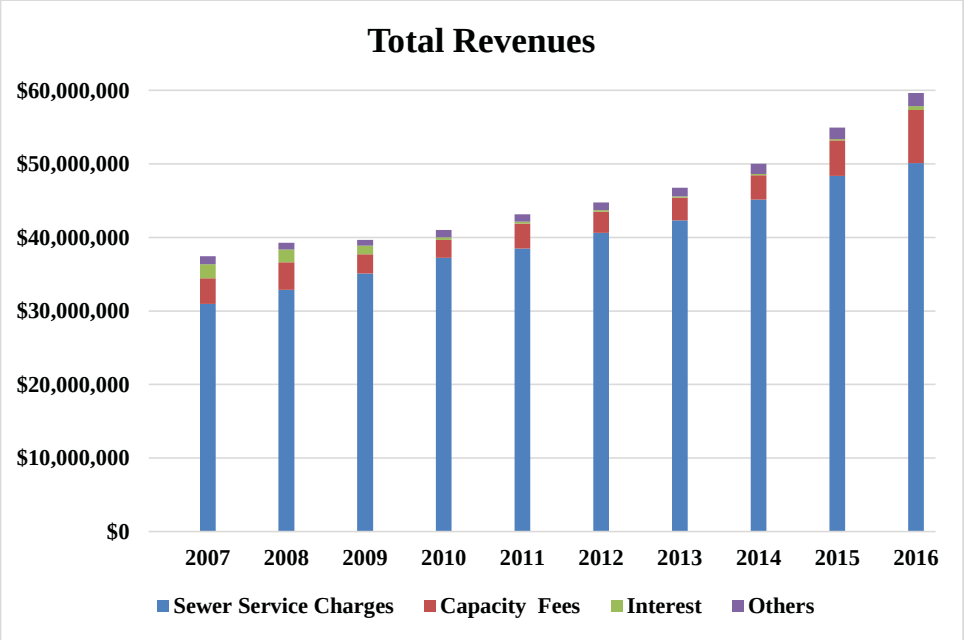
Source: USD Audited Financial Statements

UNION SANITARY DISTRICT

District-Wide Revenues and Other Financing Sources

Fiscal Year	Sewer Service Charges	Capacity Fees	Interest	Others*	Total Revenues
2016	$ 50,112,566	$ 7,233,337	$ 496,439	$ 1,791,783	$ 59,634,125
2015	$ 48,379,254	$ 4,820,637	$ 160,790	$ 1,581,031	$ 54,941,712
2014	$ 45,139,420	$ 3,315,007	$ 180,071	$ 1,370,017	$ 50,004,515
2013	$ 42,339,311	$ 3,062,836	$ 178,690	$ 1,163,802	$ 46,744,639
2012	$ 40,630,578	$ 2,848,488	$ 248,337	$ 1,027,357	$ 44,754,760
2011	$ 38,486,824	$ 3,381,963	$ 274,328	$ 987,948	$ 43,131,063
2010	$ 37,217,073	$ 2,467,083	$ 349,012	$ 968,475	$ 41,001,643
2009	$ 35,103,885	$ 2,621,801	$ 1,136,138	$ 809,171	$ 39,670,995
2008	$ 32,851,938	$ 3,746,046	$ 1,746,157	$ 922,013	$ 39,266,154
2007	$ 30,951,916	$ 3,503,054	$ 1,902,866	$ 1,099,925	$ 37,457,761

*Others includes inspection fees, permits, external work orders, discounts, and misc.

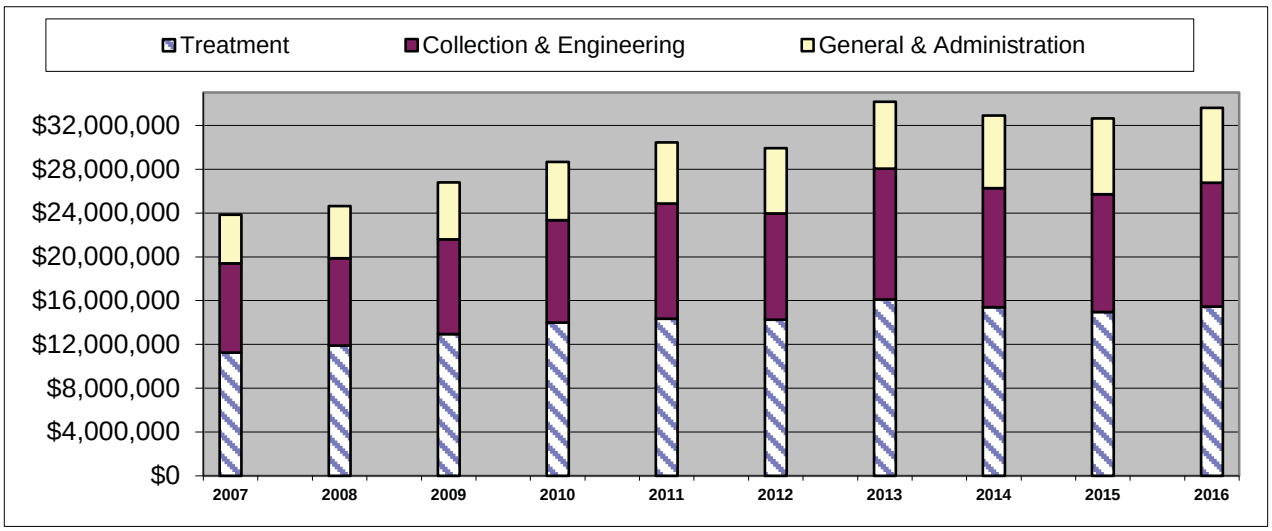


The District's main source of revenue is sewer service charges, which are collected on behalf of the District by Alameda County, on the tax rolls as part of the Teeter Plan.

Source: USD Audited Financial Statements

Operating Expenses By Function

Fiscal Year	Sewage Treatment	Sewage Collection & Engineering	General & Administration	Total Operating Expenses
2016	$15,464,775	$11,296,680	$6,848,244	$33,609,699
2015	14,956,369	10,763,530	6,910,857	32,630,756
2014	15,410,523	10,869,755	6,634,688	32,914,966
2013	16,088,929	11,954,345	6,111,468	34,154,742
2012	14,255,266	9,712,645	5,951,818	29,919,729
2011	14,342,352	10,532,692	5,574,251	30,449,295
2010	13,995,781	9,338,919	5,322,085	28,656,785
2009	12,938,404	8,658,679	5,200,792	26,797,875
2008	11,881,805	7,998,961	4,757,630	24,638,396
2007	11,250,875	8,160,123	4,442,638	23,853,636



Operating expenses are the day-to-day expenses to run the District, including labor, benefits, chemicals, utilities, parts and materials, and other supplies. Depreciation, a non-cash operating expense, is not included here. Capital expenditures are not included in operating expenses.

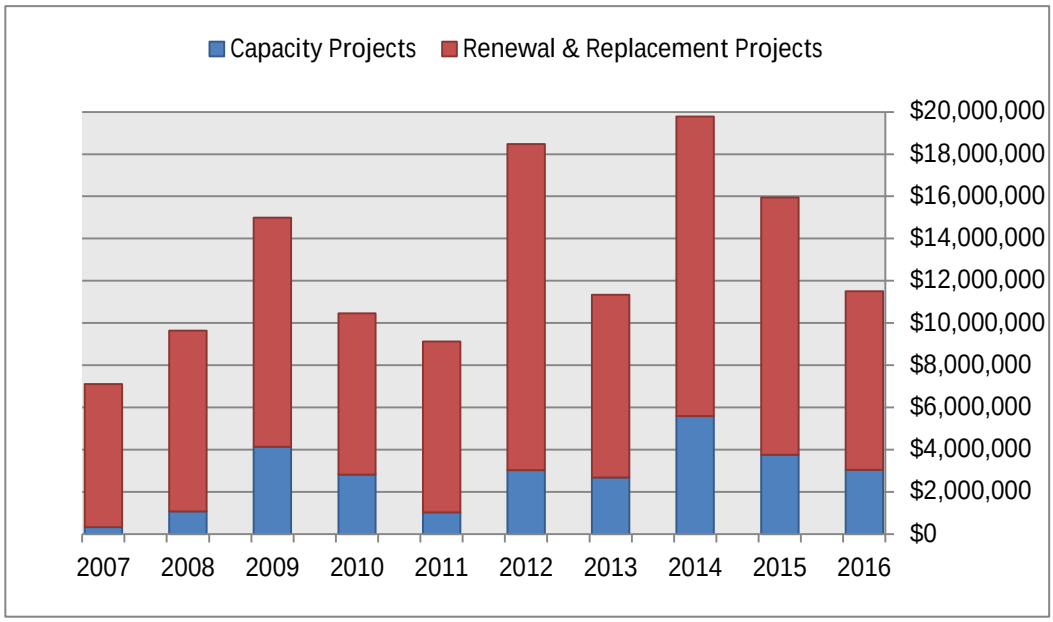
General & Administration includes Business Services, Information System Renewal and Replacement, and retiree medical benefits.

Source: USD Audited Financial Statements

UNION SANITARY DISTRICT

Capital Expenditures

Fiscal Year	Capacity Projects	Renewal & Replacement Projects	Total Capital Expenditures
2016	$3,037,012	$8,466,899	$11,503,911
2015	3,755,472	12,194,927	15,950,399 *
2014	5,592,023	14,195,068	19,787,091
2013	2,673,173	8,663,485	11,336,658
2012	3,032,556	15,453,790	18,486,346
2011	1,030,689	8,099,110	9,129,799
2010	2,809,723	7,641,018	10,450,741
2009	4,134,515	10,861,404	14,995,919
2008	1,070,104	8,571,513	9,641,617
2007	333,087	6,765,850	7,098,937



Capacity projects provide new or expanded facilities (equipment, processes, buildings, pipelines, etc.) to accommodate increased wastewater flows or to provide reliability in the collection, treatment and disposal systems.

Structural renewal & replacement projects provide rehabilitation, replacement, or upgrade of existing facilities to prolong the useful life of the assets and to maintain the current service level of the facilities.

*Does not include Self Generation Incentive Program (SGIP) credit of $1,690,000 for the Co-generation project.

Source: USD Finance Department

UNION SANITARY DISTRICT

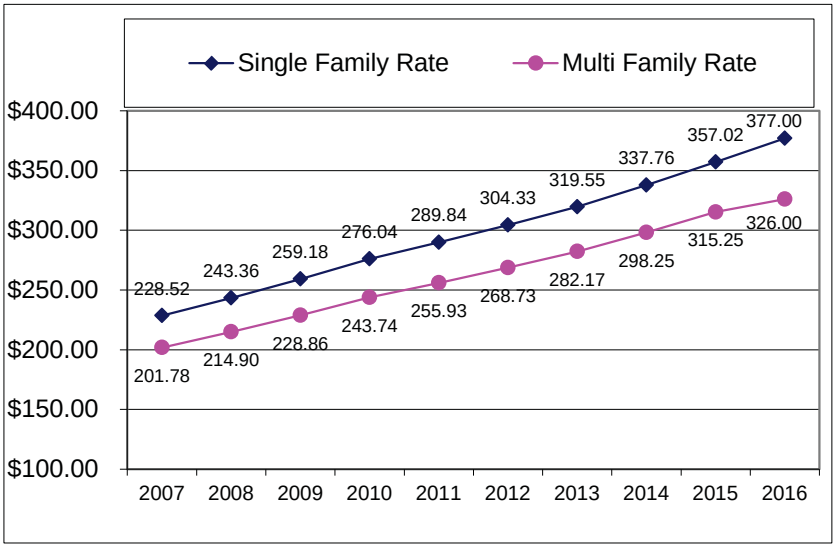
Current and Historical Fees

As of June 30, 2016

Last Ten Years

Sewer Service Charge Rates

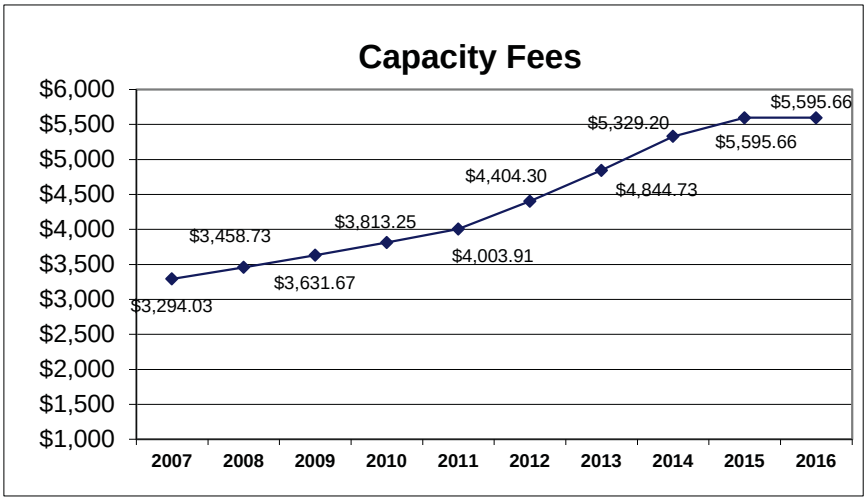
	Single Family Rate	Multi - Family Rate	Single Family Rate Percentage Change
2016	$377.00	$326.00	5.6%
2015	357.02	315.25	5.7%
2014	337.76	298.25	5.7%
2013	319.55	282.17	5.0%
2012	304.33	268.73	5.0%
2011	289.84	255.93	5.0%
2010	276.04	243.74	6.5%
2009	259.18	228.86	6.5%
2008	243.36	214.90	6.5%
2007	228.52	201.78	



The fees above are for residential units. A property with multiple housing units such as an apartment complex is charged $326 for each dwelling unit on the property. Fees for commercial and industrial customers are based on the volume and strength of the wastewater being treated.

Capacity Fee Rates

		% Change
2016	$5,595.66	0.0%
2015	5,595.66	5.0%
2014	5,329.20	10.0%
2013	4,844.73	10.0%
2012	4,404.30	10.0%
2011	4,003.91	5.0%
2010	3,813.25	5.0%
2009	3,631.67	5.0%
2008	3,458.73	5.0%
2007	3,294.03	10.3%



The capacity fees shown are per dwelling unit. Other categories such as restaurants, warehouses, and mixed-use commercial facilities are based on square footage and other factors as per the Capacity Fee Ordinance.

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UNION SANITARY DISTRICT

Ten Principal Industrial Rate Payers by Levy

June 30, 2016

2015-16

Rate Payer	Total Annual Billing	Rank	% of Total Annual Billings
Tesla	$469,466	1	0.94%
Western Digital	218,616	2	0.44%
Seagate Technology #3	152,100	3	0.30%
Washington Hospital	147,910	4	0.30%
U S Pipe	123,218	5	0.25%
Marriott Hotel	119,716	6	0.24%
Kaiser Hospital	118,369	7	0.24%
Ranch 99/Warm Springs Shopping	115,458	8	0.23%
Pacific Commons (Area 4-Asian P	112,498	9	0.22%
Pacific Commons (Kohls/Old Navy	108,358	10	0.22%
Total annual billing largest ten:	$1,685,708		3.36%
Total ALL annual billings	$50,112,564		

2014-15

Rate Payer	Total Annual Billing	Rank	% of Total Annual Billings
Tesla	$324,934	1	0.67%
Western Digital	235,844	2	0.49%
Washington Hospital	153,645	3	0.32%
Seagate Technology	116,332	4	0.24%
Lido Faire Shopping Center	114,536	5	0.24%
Pacific Commons (Kohls/Old Nav	113,472	6	0.23%
Pacific Commons (Area 4-Asian I	108,292	7	0.22%
Ranch 99/Warm Springs Shoppin	108,163	8	0.22%
Full Bloom	105,805	9	0.22%
Kaiser Hospital	102,771	10	0.21%
Total annual billing largest ten:	$1,483,794		3.07%
Total ALL annual billings	$48,379,254		

2013-14

Rate Payer	Total Annual Billing	Rank	% of Total Annual Billings
Western Digital	$260,023	1	0.58%
Washington Hospital	148,743	2	0.33%
Seagate Technology	140,016	3	0.31%
Tesla	137,788	4	0.31%
Ranch 99 Warms Springs Sh	112,329	5	0.25%
Gateway Plaza	101,416	6	0.22%
Kaiser Hospital	99,174	7	0.22%
Pacific Commons (Area 4)	99,159	8	0.22%
The Benton in Fremont	96,037	9	0.21%
Pacific Commons (Kohls/Old	90,880	10	0.20%
Total annual billing largest te	$1,285,565		2.85%
Total ALL annual billings	$45,139,420		

2012-13

Rate Payer	Total Annual Billing	Rank	% of Total Annual Billings
Western Digital	$216,919	1	0.51%
Seagate Technology	114,131	2	0.27%
Washington Hospital	105,407	3	0.25%
Pacific Commons (Kohls/Old Navy	95,188	4	0.22%
Ranch 99 Warms Springs Shoppir	90,954	5	0.21%
The Benton in Fremont	90,859	6	0.21%
U S Pipe	90,780	7	0.21%
Solyndra	89,164	8	0.21%
Lam Research	88,904	9	0.21%
Kaiser Hospital	83,879	10	0.20%
Total annual billing largest ten:	$1,066,186		2.52%
Total ALL annual billings	$42,339,311		

2011-12

Rate Payer	Total Annual Billing	Rank	% of Total Annual Billings
Western Digital	$269,619	1	0.66%
Solyndra	210,366	2	0.52%
NUMMI/Tesla	148,978	3	0.37%
Evergreen Oil	133,925	4	0.33%
Washington Hospital	112,361	5	0.28%
Caravan Trading Co. & Bakery	103,048	6	0.25%
The Benton in Fremont	86,531	7	0.21%
Kaiser Hospital	84,813	8	0.21%
Gateway Plaza	81,681	9	0.20%
U S Pipe	76,091	10	0.19%
Total annual billing largest ten:	$1,307,413		3.22%
Total ALL annual billings	$40,630,578		

2010-11

Rate Payer	Total Annual Billing	Rank	% of Total Annual Billings
NUMMI	$391,105	1	1.02%
Western Digital	215,190	2	0.56%
Washington Hospital	136,804	3	0.36%
Evergreen Oil	124,684	4	0.32%
Solyndra	120,712	5	0.31%
Full Bloom	109,681	6	0.28%
The Benton in Fremont	82,409	7	0.21%
Seagate Technology	82,333	8	0.21%
Kaiser Hospital	78,993	9	0.21%
Amgen	75,741	10	0.20%
Total annual billing largest te	$1,417,652		3.68%
Total ALL annual billings	$38,486,824		

Source: USD Customer Service Team

UNION SANITARY DISTRICT

Ten Principal Industrial Rate Payers by Levy (continued)

June 30, 2016

2009-10			
Rate Payer	Total Annual Billing	Rank	% of Total Annual Billings
NUMMI	$549,041	1	1.48%
Western Digital	227,410	2	0.61%
Evergreen Oil	136,078	3	0.37%
Washington Hospital	128,056	4	0.34%
Full Bloom	122,577	5	0.33%
The Benton in Fremont	78,484	6	0.21%
The Tropics Trailer Park	77,194	7	0.21%
Solyndra	73,694	8	0.20%
Lam Research	73,316	9	0.20%
Union Square	71,960	10	0.19%
Total annual billing largest ten:	$1,537,810		4.13%
Total ALL annual billings	$37,217,073		

2008-09			
Rate Payer	Total Annual Billing	Rank	% of Total Annual Billings
NUMMI	$525,177	1	1.50%
Western Digital	273,113	2	0.78%
Washington Hospital	146,515	3	0.42%
Evergreen Oil	136,727	4	0.39%
Hilton Hotel	77,798	5	0.22%
Full Bloom	75,086	6	0.21%
The Benton in Fremont	73,693	7	0.21%
Union Square	73,546	8	0.21%
The Tropics Trailer Park	72,481	9	0.21%
Kaiser Hospital	67,334	10	0.19%
Total annual billing largest ten:	$1,521,470		4.33%
Total ALL annual billings	$35,103,885		

2007-08			
Rate Payer	Total Annual Billing	Rank	% of Total Annual Billings
NUMMI	$496,063	1	1.51%
Western Digital	274,533	2	0.84%
Washington Hospital	139,089	3	0.42%
Evergreen Oil	114,815	4	0.35%
U S Pipe	82,993	5	0.25%
DS Waters/McKesson	79,118	6	0.24%
Union Square	74,001	7	0.23%
The Benton in Fremont	69,198	8	0.21%
The Tropics Trailer Park	68,061	9	0.21%
MMC Technology/Maxtor	66,597	10	0.20%
Total annual billing largest te	$1,464,468		4.46%
Total ALL annual billings	$32,851,938		

2006-07			
Rate Payer	Total Annual Billing	Rank	% of Total Annual Billings
NUMMI	$544,105	1	1.76%
Western Digital	233,804	2	0.76%
MMC Technology/Maxtor	172,425	3	0.56%
Nancy's Food	132,210	4	0.43%
Evergreen Oil	124,993	5	0.40%
Washington Hospital	111,139	6	0.36%
U S Pipe	101,516	7	0.33%
DS Waters/McKesson	87,468	8	0.28%
Union Square	69,036	9	0.22%
The Benton in Fremont	64,973	10	0.21%
Total annual billing largest ten:	$1,641,669		5.30%
Total ALL annual billings	$30,951,916		

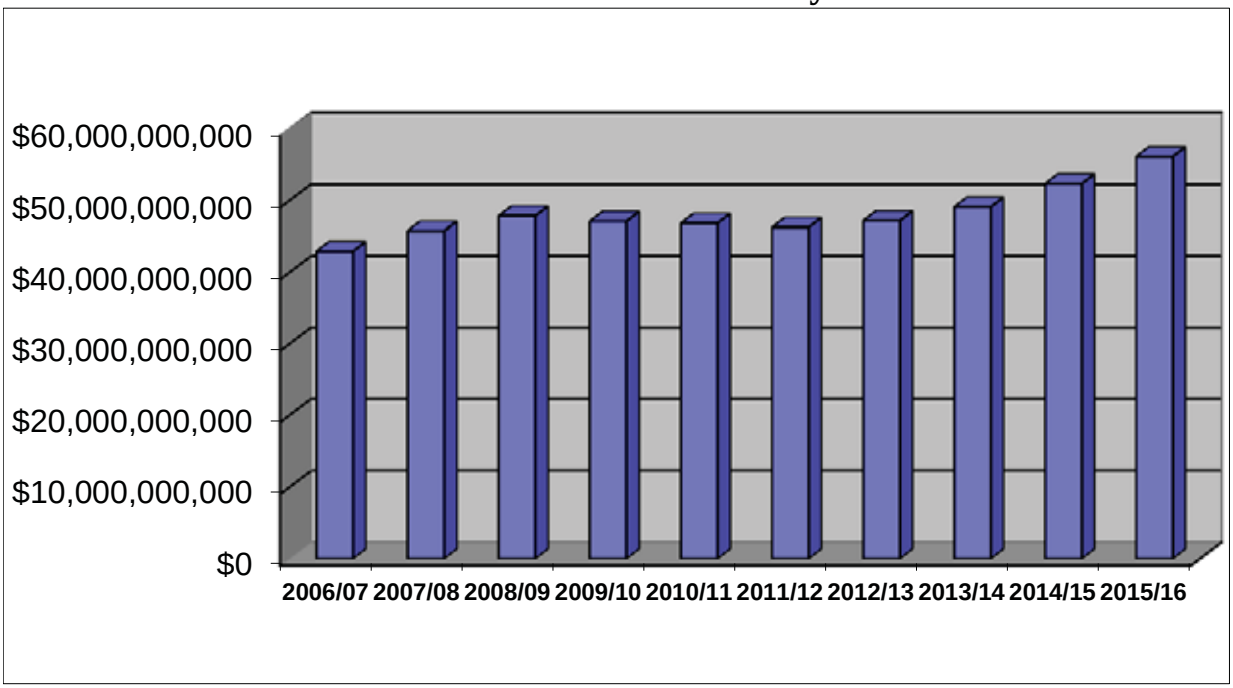
Source: USD Customer Service Team

UNION SANITARY DISTRICT

Fiscal Year Assessed Valuation for All Properties in the Tri-City Area
Valuation of taxable property within Union Sanitary District

		% Change
2015/16	$56,180,082,061	7.25%
2014/15	$52,380,183,178	6.64%
2013/14	$49,120,298,326	4.06%
2012/13	$47,205,182,529	1.95%
2011/12	$46,301,581,317	-1.22%
2010/11	$46,871,083,762	-0.54%
2009/10	$47,125,012,456	-1.57%
2008/09	$47,878,943,360	4.55%
2007/08	$45,796,626,625	6.56%
2006/07	$42,977,256,903	

Assessed Valuation for Tri-City Area



Includes property in Fremont, Newark, and Union City.

Source: Alameda County Office of the Auditor-Controller

UNION SANITARY DISTRICT

Ratios of Outstanding Debt by Type
Last Ten Fiscal Years

Fiscal Year	Use Permit (1)	State Revolving Fund Loans Payable (2)	Principal Total	# of Parcels	Total Debt/ Parcel
2016	$0	$43,070,909	$43,070,909	95,254	$452
2015	0	41,861,476	41,861,476	94,768	442
2014	0	39,488,115	39,488,115	94,877	416
2013	0	40,648,328	40,648,328	94,640	430
2012	0	39,630,289	39,630,289	94,351	420
2011	471,698	31,985,449	32,457,147	94,231	344
2010	916,696	33,594,457	34,511,153	93,962	367
2009	1,336,506	29,499,150	30,835,656	93,666	329
2008	1,732,553	25,367,381	27,099,934	92,427	293
2007	2,106,182	24,908,737	27,014,919	91,896	294

Source: USD internal accounting records

UNION SANITARY DISTRICT

Pledged-Revenue Coverage
Last Ten Fiscal Years

Fiscal Year	Gross Revenues [1]	Operating Expenses [2]	Net Revenue Available for Debt Service	Debt Service Requirements	Debt Coverage % [3]
2016	$59,634,122	$33,609,699	$26,024,423	$3,127,110	832%
2015	54,941,712	32,630,756	22,310,956	3,127,110	713%
2014	50,004,485	32,914,966	17,089,519	4,086,647	418%
2013	46,744,639	34,154,742	12,589,897	4,429,320	284%
2012	44,754,760	29,919,730	14,835,030	4,429,320	335%
2011	43,131,063	30,449,295	12,681,768	3,584,000	354%
2010	41,001,643	28,656,785	12,344,858	3,476,933	355%
2009	39,670,995	26,797,875	12,873,120	3,368,548	382%
2008	39,266,154	24,638,396	14,627,758	3,368,548	434%
2007	37,457,761	23,853,636	13,604,125	3,368,548	404%

(1) Includes sewer service charges, connection fees, other operating revenues, and interest.

(2) Excludes depreciation; operating expenses do not include capital project expenditures.

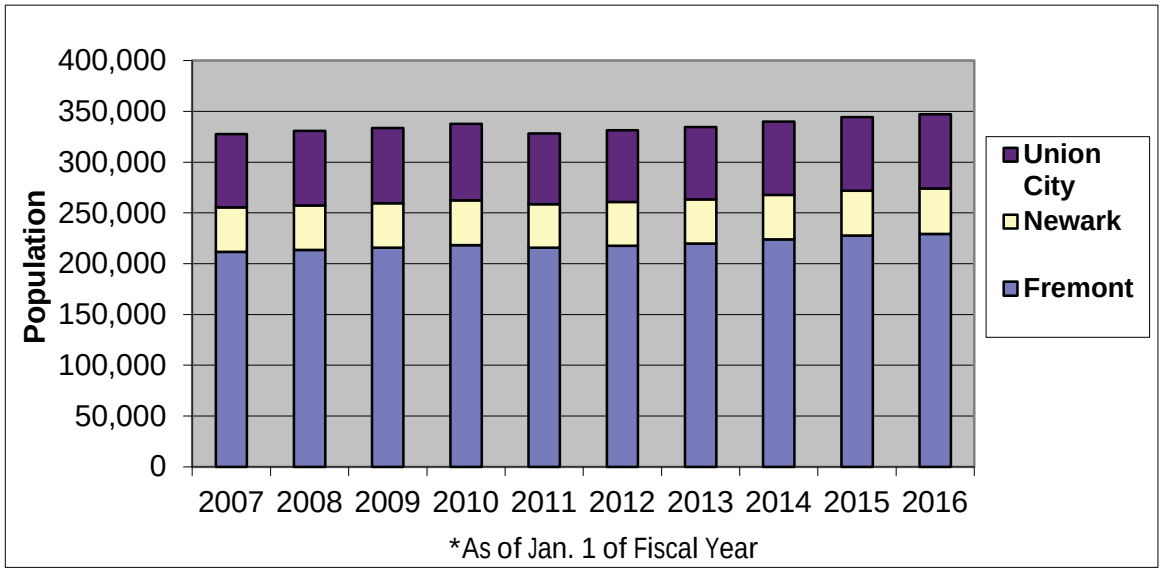
(3) According to the District's Debt Management Policy, the targeted minimum debt service coverage ratio is 130%, which is higher than the standard 120% typically used to secure revenue bonds.

Source: USD internal accounting records

UNION SANITARY DISTRICT

Demographics
Population Served*

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Fremont	211,662	213,512	215,636	218,128	215,711	217,700	219,926	223,972	227,582	229,324
Newark	43,693	43,872	44,035	44,380	42,764	43,041	43,342	43,856	44,284	44,733
Union City	72,297	73,402	73,977	75,054	69,850	70,646	71,329	72,155	72,412	72,952
Total	**327,652**	**330,786**	**333,648**	**337,562**	**328,325**	**331,387**	**334,597**	**339,983**	**344,278**	**347,009**
Total % Change	0.88%	0.96%	0.87%	1.17%	-2.74%	0.93%	0.97%	1.61%	1.26%	0.79%



Source: CA Dept. of Finance (www.dof.ca.gov)

UNION SANITARY DISTRICT

Demographics of Population Served
(Calendar Year)

		Per Capita Income	Median Household Income Data	Unemployment Rate
2016	Fremont	N/A	N/A	3.8%
	Newark	N/A	N/A	4.1%
	Union City	N/A	N/A	4.4%
2015	Fremont	$40,562	N/A	3.7%
	Newark	$30,572	N/A	5.0%
	Union City	$59,111	N/A	5.3%
2014	Fremont	$40,562	$103,591	4.6%
	Newark	$30,572	$86,521	5.0%
	Union City	$57,758	$82,564	5.7%
2013	Fremont	$43,504	N/A	5.3%
	Newark	$29,390	N/A	5.3%
	Union City	$56,365	N/A	7.4%
2012	Fremont	$38,095	N/A	6.4%
	Newark	$28,683	N/A	6.5%
	Union City	$55,224	N/A	9.0%
2011	Fremont	$37,261	N/A	7.5%
	Newark	$28,466	N/A	9.7%
	Union City	$51,239	N/A	10.3%
2010	Fremont	N/A	N/A	8.2%
	Newark	N/A	N/A	10.5%
	Union City	N/A	N/A	11.3%

County	Income Category	Number of Persons in Household							
		1	2	3	4	5	6	7	8
Alameda County 4-Person Area Median Income: $93,500	Extremely Low	19650	22450	25250	28050	30300	32570	36730	40890
	Very Low Income	32750	37400	42100	46750	50500	54250	58000	61750
	Low Income	50150	57300	64450	71600	77350	83100	88800	94550
	Median Income	65450	74800	84150	**93500**	101000	108450	115950	123400
	Moderate Income	78550	89750	101000	112200	121200	130150	139150	148100

Sources: CAFR Reports - Fremont, Newark, Union City; Employment Development Department
Data USA
State of California Department of Housing and Community Development

UNION SANITARY DISTRICT

Demographics
Major Employers in District Service Area

Percent of Total Employees as of fiscal year ended June 30,*

Employer Name	Type of Business	2016	2015	2014	2013	2012	2011	2010	2009	2008	2007
		% of Total City Employment									
Fremont											
Tesla	Auto Manufacturer	N/A	2.68%	2.75%	2.81%	1.45%	N/A	N/A	N/A	N/A	N/A
Lam Research	Technology	N/A	2.68%	2.75%	1.41%	1.45%	1.00%	0.96%	0.84%	1.14%	1.18%
Washington Hospital	Healthcare	N/A	2.68%	2.75%	1.70%	1.76%	1.98%	1.81%	2.18%	2.16%	2.25%
Western Digital	Hard Drives and Electronics	N/A	2.68%	2.75%	1.22%	1.26%	1.20%	1.81%	0.91%	1.05%	1.03%
Fremont Unified School District	Education	N/A	2.38%	2.75%	2.81%	2.90%	3.27%	3.02%	1.52%	1.51%	1.57%
Newark											
Newark Unified School District	Education	N/A	3.10%	3.20%	3.30%	3.40%	3.40%	3.40%	3.40%	N/A	N/A
Logitech	Computer Accessories	N/A	3.00%	3.10%	3.20%	3.00%	N/A	N/A	N/A	N/A	N/A
WorldPac	Auto Part Distribution	N/A	1.70%	1.30%	1.30%	1.40%	1.40%	1.40%	1.40%	N/A	N/A
Full Bloom Baking Company	Baking Products	N/A	1.20%	1.30%	1.30%	1.40%	1.40%	1.40%	1.40%	N/A	N/A
Risk Management Solutions	Catastrophe Risk Management	N/A	1.20%	1.20%	1.30%	1.30%	1.30%	1.30%	1.30%	N/A	N/A
Union City											
Southern Wine & Spirits	Beverages	N/A	3.44%	3.44%	3.54%	3.71%	1.13%	1.16%	2.32%	2.22%	3.55%
New Haven Unified School District	Education	N/A	3.01%	3.01%	3.07%	3.22%	3.69%	3.76%	3.70%	3.84%	4.18%
Wal Mart	Retailer	N/A	2.34%	2.34%	2.40%	2.52%	1.62%	1.65%	1.86%	1.77%	2.41%
Axygen Scientific, Inc.	Biotech	N/A	1.11%	1.11%	1.14%	1.19%	3.88%	3.96%	N/A	N/A	1.08%
Abaxis, Inc.	Biotech	N/A	1.11%	1.11%	1.14%	1.19%	N/A	N/A	N/A	N/A	N/A

More statistics will be added as the data becomes available.

***** Some employers report as of December 31.

Source: CA Dept. of Finance website,
New Haven Unified School District
Cities of Fremont, Newark and Union City

UNION SANITARY DISTRICT

Full-time Equivalent District Employees by Function/Program
Last 10 Fiscal Years

Function/Program	2016	2015	2014	2013	2012	2011	2010	2009	2008	2007
System operations and maintenance (CS Support, FMC, T&D, Warehouse)	53.45	53.45	50.45	51.45	13.45	11.45	8.45	6.00	0.00	49.23
Engineering and construction (CIP)	10.00	8.00	8.00	7.00	8.00	8.00	6.00	6.00	6.00	7.00
Collections System Maintenance (CS)	25.00	23.00	23.00	24.00	22.00	22.00	22.00	22.00	21.00	23.00
Office of the General Manager (GM)	2.00	3.00	1.00	2.00	3.00	2.00	2.00	2.00	2.00	2.00
Finance (FIST)	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	4.00
Information systems (IT)	5.00	5.00	5.00	5.00	5.00	4.00	5.00	5.00	5.00	5.00
Administration department (OA, Adm Specialist, MMT, non-HR OST)	14.00	13.00	14.00	15.00	14.00	16.00	15.00	15.50	15.50	16.00
Customer and community services (Rest of TS)	20.00	18.00	19.00	19.00	19.00	19.00	19.00	21.00	21.00	18.00
Human resources (HR)	2.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
Total # of Employees	136.45	131.45	128.45	131.45	92.45	90.45	85.45	85.50	78.50	127.23
Average years of service of employees as of 6/30/16:	10.54	11.25	11.97	11.70	17.28	17.01	17.23	16.35	16.63	9.80

CIP = Capital Improvements Projects Team
FMC = Fabrication, Maintenace and Construction
MMT = Materials Management Team
OST = Organizational Support Team
T&D = Treatment & Disposal Work Group
TS = Technical Services Work Group

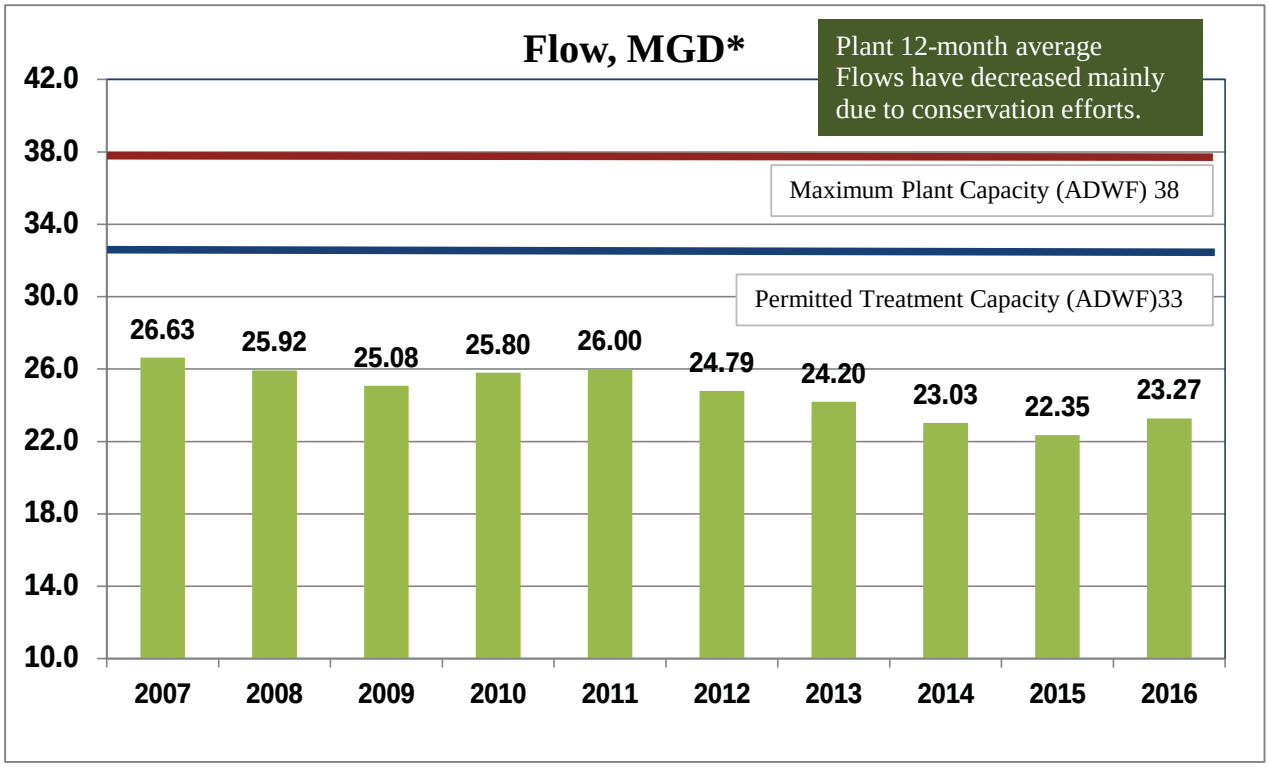
Source: USD Human Resources Dept.

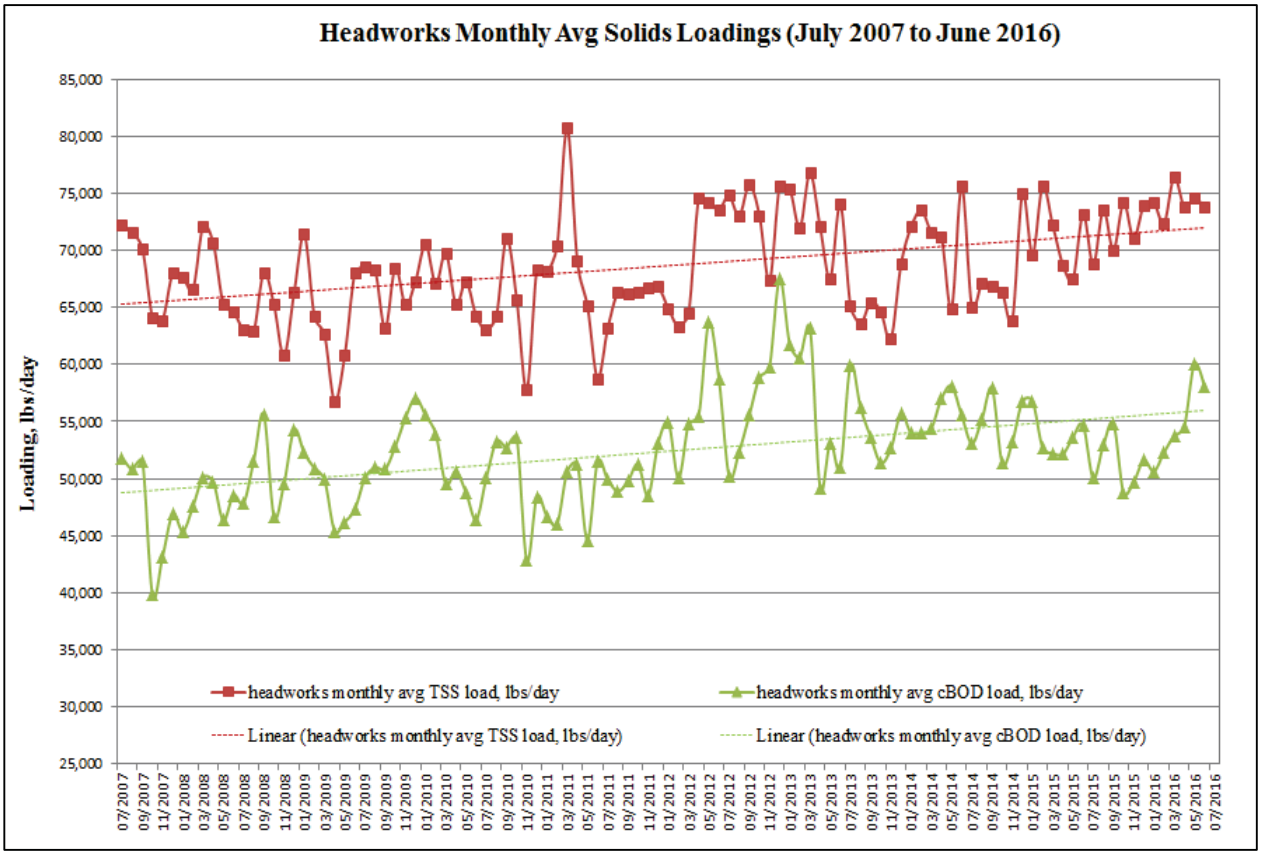
UNION SANITARY DISTRICT

Operating Indicators by Function/Program

Average Daily Flow

Plant Flow Data





Source: USD Treatment and Disposal Work Group

*Million gallons per day

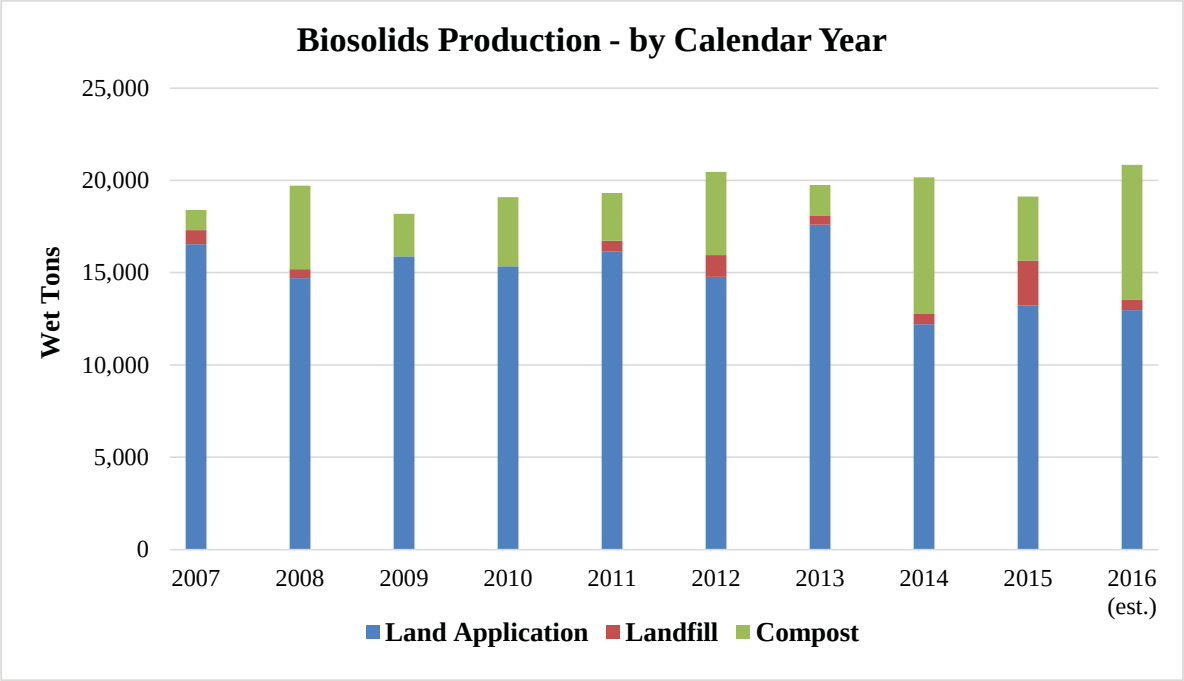
UNION SANITARY DISTRICT

Operating Indicators - Biosolids
Last Ten Calendar Years

Function/Program

Biosolids

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016 (est.)
Land Application	16,549	14,697	15,891	15,348	16,160	14,770	17,597	12,212	13,212	12,969
Landfill	748	491	0	0	571	1,187	501	545	2,450	563
Compost	1,096	4,523	2,291	3,751	2,585	4,501	1,642	7,414	3,470	7,303
Total (in Wet Tons)	18,393	19,712	18,182	19,099	19,315	20,458	19,741	20,171	19,132	20,836



Source: USD Treatment Disposal Work Group

UNION SANITARY DISTRICT

Miscellaneous Statistics
6/30/2016

Governing Body:	Elected 5-Member Board of Directors Fremont - 3 Members Newark - 1 Member Union City - 1 Member
Governmental Structure:	Established in 1918 and reorganized in 1923 under the Sanitary District Act
Staff:	136.45 full-time equivalent employees
CEO:	General Manager
CFO:	Business Services Manager
Authority:	California Health and Safety Code Section 4700 et. Seq.
Services:	Wastewater collection, treatment and disposal
Service Area:	60.2 square miles (Annexed areas - Fremont, Newark and Union City)
Total Population Served:	347,009
Number of Parcels	95,254 (85,657 Residential; 3,122 Non-Residential; 6,475 Other (vacant land))
Operations:	Total miles of pipeline - 811, including the force main and all gravity sewers (including trunk mains) Number of pumping stations - 7 Larger: Irvington, Newark, Alvarado Smaller: Fremont, Boyce, Paseo Padre, Cherry Street
Permitted Plant Treatment Capacity (ADWF)	33 million gallons per day (mgd)
Type of Treatment:	Secondary
Sewer Service Charge:	$377.00 annually per single family residential dwelling unit

Source: USD Treatment Disposal, Collections Work Groups, CA Dept. of Finance

INDEPENDENT AUDITORS' REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING AND ON COMPLIANCE AND OTHER MATTERS BASED ON AN AUDIT OF FINANCIAL STATEMENTS PERFORMED IN ACCORDANCE WITH *GOVERNMENT AUDITING STANDARDS*

To the Board of Directors
Union Sanitary District
Union City, California

We have audited, in accordance with the auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States, the financial statements of the Union Sanitary District, California (District), as of and for the year ended June 30, 2016, and the related notes to the financial statements, which collectively comprise the District's basic financial statements, and have issued our report thereon dated October 20, 2016. Our report included a reference to other auditors who audited the financial statements of East Bay Dischargers Authority. This report does not include the results of the other auditors' testing of internal control over financial reporting or compliance and other matters that are reported on separately by those auditors. Our report included an emphasis of a matter paragraph regarding the District's adoption of Governmental Accounting Standards Board (GASB) Statement No. 72, *Fair Value Measurement and Application* and GASB No. 76, *The Hierarchy of Generally Accepted Accounting Principles for State and Local Governments* as of July 1, 2015.

Internal Control Over Financial Reporting

In planning and performing our audit of the financial statements, we considered the District's internal control over financial reporting (internal control) to determine the audit procedures that are appropriate in the circumstances for the purpose of expressing our opinions on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of District's internal control. Accordingly, we do not express an opinion on the effectiveness of District's internal control.

A *deficiency in internal* control exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, misstatements on a timely basis. A *material weakness* is a deficiency, or a combination of deficiencies, in internal control such that there is a reasonable possibility that a material misstatement of the entity's financial statements will not be prevented, or detected and corrected on a timely basis. A *significant deficiency* is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

Our consideration of internal control was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control that might be material weaknesses or significant deficiencies. Given these limitations, during our audit we did not identify any deficiencies in internal control that we consider to be material weaknesses. However, material weaknesses may exist that have not been identified.

5000 Hopyard Road, Suite 335 Pleasanton, CA 94588-3351 Tel: 925.734.6600 www.vtdcpa.com Fax: 925.734.6611

Compliance and Other Matters

As part of obtaining reasonable assurance about whether the District's financial statements are free from material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements, noncompliance with which could have a direct and material effect on the determination of financial statement amounts. However, providing an opinion on compliance with those provisions was not an objective of our audit, and accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards.*

Purpose of this Report

The purpose of this report is solely to describe the scope of our testing of internal control and compliance and the result of that testing, and not to provide an opinion on the effectiveness of the entity's internal control or on compliance. This report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the entity's internal control and compliance. Accordingly, this communication is not suitable for any other purpose.

Vavrinek, Trine, Day & Co. LLP.

Pleasanton, California
October 20, 2016

To the Audit Committee
Union Sanitary District

We have audited the financial statements of the Union Sanitary District (the District) for the years ended June 30, 2016 and June 30, 2015. Professional standards require that we provide you with information about our responsibilities under generally accepted auditing standards and *Government Auditing Standards*, as well as certain information related to the planned scope and timing of our audit. We have communicated such information in our engagement letter. Professional standards also require that we communicate to you the following information related to our audit.

Significant Audit Findings

Qualitative Aspects of Accounting Practices

Management is responsible for the selection and use of appropriate accounting policies. The significant accounting policies used by Union Sanitary District are described in Note 1 to the financial statements. As further described in Footnote 1, the District adopted Governmental Accounting Standards Board (GASB) Statement No. 72 *Fair Value Measurement and Application*, and GASB Statement No. 76, *The Hierarchy of Generally Accepted Accounting Principles for State and Local Governments*, effective July 1, 2016. No other accounting policies were adopted and the application of existing policies was not changed during 2016. We noted no transactions entered into by Union Sanitary District during the year for which there is a lack of authoritative guidance or consensus. All significant transactions have been recognized in the financial statements in the proper period.

Accounting estimates are an integral part of the financial statements prepared by management and are based on management's knowledge and experience about past and current events and assumptions about future events. Certain accounting estimates and disclosures are particularly sensitive because of their significance to the financial statements and because of the possibility that future events affecting them may differ significantly from those expected. The most sensitive estimates and disclosures affecting the District's financial statements were related to the net pension liability, related deferred inflows of resources and deferred outflows of resources, and Other Post Employment Benefits, which were based on actuarial valuations. We evaluated the key factors and assumptions used to develop these estimates and disclosures in determining that they are reasonable in relation to the financial statements taken as a whole.

The financial statement disclosures are neutral, consistent, and clear.

Difficulties Encountered in Performing the Audit

We encountered no significant difficulties in dealing with management in performing and completing our audit.

Disagreements with Management

For purposes of this letter, professional standards define a disagreement with management as a financial accounting, reporting, or auditing matter, whether or not resolved to our satisfaction, that could be significant to the financial statements or the auditor's report. We are pleased to report that no such disagreements arose during the course of our audit.

5000 Hopyard Road, Suite 335 Pleasanton, CA 94588-3351 Tel: 925.734.6600 www.vtdcpa.com Fax: 925.734.6611

Management Representations

We have requested certain representations from management that are included in the management representation letter dated October 20, 2016.

Management Consultations with Other Independent Accountants

In some cases, management may decide to consult with other accountants about auditing and accounting matters, similar to obtaining a "second opinion" on certain situations. If a consultation involves application of an accounting principle to the Union Sanitary District's financial statements or a determination of the type of auditor's opinion that may be expressed on those statements, our professional standards require the consulting accountant to check with us to determine that the consultant has all the relevant facts. To our knowledge, there were no such consultations with other accountants.

Other Audit Findings or Issues

We generally discuss a variety of matters, including the application of accounting principles and auditing standards, with management each year prior to retention as Union Sanitary District' auditors. However, these discussions occurred in the normal course of our professional relationship and our responses were not a condition to our retention.

Other Matters

We applied certain limited procedures to the Management's Discussion and Analysis, the Schedule of Changes in Net Pension Liability and Related Ratios, the Schedule of Plan Contributions, and Schedule of Funding Progress for Retiree Health Benefit Plan, which are required supplementary information (RSI) that supplements the basic financial statements. Our procedures consisted of inquiries of management regarding the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We did not audit the RSI and do not express an opinion or provide any assurance on the RSI.

We were engaged to report on the supplementary information which accompany the financial statements but are not RSI. With respect to this supplementary information we made certain inquiries of management and evaluated the form, content, and methods of preparing the information to determine that the information complies with accounting principles generally accepted in the United States of America, the method of preparing it has not changed from the prior period, and the information is appropriate and complete in relation to our audit of the financial statements. We compared and reconciled the supplementary information to the underlying accounting records used to prepare the financial statements or to the financial statements themselves.

Restriction on Use

This information is intended solely for the use of the Audit Committee, Board of Directors and management of Union Sanitary District and is not intended to be and should not be used by anyone other than these specified parties.

Vavrinek, Trine, Day & Co. LLP.

Pleasanton, California
October 20, 2016

Directors
Manny Fernandez
Tom Handley
Pat Kite
Anjali Lathi
Jennifer Toy

Officers
Paul R. Eldredge
General Manager/
District Engineer

Karen W. Murphy
Attorney

DATE: November 8, 2016

MEMO TO: Board of Directors - Union Sanitary District

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

SUBJECT: Agenda Item No. 9 - Meeting of November 14, 2016
Board Member Compensation for 2017

Recommendation

The Budget & Finance Committee will present their recommendation to the Board.

Background

The California Health and Safety Code (code section 4733 and 6489) allows for an increase in Board Member compensation of up to 5% per year. In 2000, the Board adopted Ordinance #44 stating that on January 1 of each year, Board Member compensation shall be increased by the amount of increase of the classified employees' wages for the year. The Ordinance also provides for the Board to review the compensation increase prior to it going into effect on January 1. Board Members have voted not to increase their meeting stipend since 2003.

The classified employee contract provided for a cost of living increase in 2016 of 3.5% to the base salaries. The Bay Area Consumer Price Index (CPI) increased by 3.1% from August 2015 to August 2016.

Attached is a copy of Ordinance #44 as well as a summary of the Board actions on this matter since 2000.

(Alternate #1)

ORDINANCE #44

Directors' Compensation

I. Effective January 1, 2001, Directors of Union Sanitary District shall receive a stipend in the amount of $198.00 for each day of service to Union Sanitary District as authorized by Health and Safety Code Sections 4733 and 6489 as recently revised by Senate Bill 1559-Kelly. This compensation will be paid for no more than six (6) days of service per calendar month.

II. On January 1 of each year thereafter Director compensation shall increase by the same percentage as all increases in total compensation of Union Sanitary District Classified Employees using the compensation of classified employees effective January 1, 2001 as a basis of increases and $ 198.00 per day of service as the basis increases in Director stipends. In no event shall Director compensation exceed the 5% annual increase permitted by Health and Safety Sections 4933 and 6489 compounded from January 1, 1987.

III. The Board of Directors of Union Sanitary District shall have the option of reviewing compensation of Directors on an annual basis before the effective date of any increase set forth in Section II, above.

IV. The compensation of Directors set forth above will be in addition to any benefits currently provided to Directors or to be authorized and approved for sanitary district directors in the future.

Adopted by the following vote on October 23, 2000:

AYES: Handley, Kite, Roberts, Toy
NOES: Wilkowsky
ABSTAINED: None
ABSENT: None

TOM HANDLEY, Chairperson
Board of Directors
UNION SANITARY DISTRICT

Attest:

DANIEL I. WILKOWSKY
Secretary, Board of Directors
UNION SANITARY DISTRICT

A-USD6:BD-ORD1.44

History of Board Member Compensation 2000 – Present

Calendar Year	Board Meeting Compensation (per day of service, maximum 6/month)	Notes/Background
2000	$100	Per State Law, Health and Safety Code 4933, 6489
2001	$198 See Note 1 for calculation.	Per amended Health and Safety Code with Reference to Water Code, USD passed Ordinance 44 (4-1 vote on 10/23/2000) establishing new baseline of $198/day of service using allowable escalator from Water Code. Established annual increase equal to classified employee increase per USD/Union employee contract, with provision for Board to discuss annually.
2002	$205.92	Increase per Ordinance 44 based on 4% increase for classified employees in 2001. No action taken by Board of Directors.
2003	$212.10	Increase per Ordinance 44 based on 3% increase for classified employees in 2002. Board agreed to take no action on Ordinance 44 (11/11/2002)
2004	$212.10	Board voted 5-0 not to increase compensation for 2004. (11/24/2003)
2005	$212.10	Board voted 5-0 not to increase compensation for 2005. (11/22/2004)
2006	$212.10	Board agreed by consensus not to increase compensation for 2006. (1/9/2006)
2007	$212.10	Board agreed by consensus not to increase compensation for 2007. (12/11/2006)
2008	$212.10	Board agreed by consensus not to increase compensation for 2008. (12/10/2007)
2009	$212.10	Board voted unanimously not to increase compensation for 2009. (11/24/08)

Note 1: H&S and Water Codes established a method for calculating new baseline as a maximum of 5% per year since the last adjustment. The $100 per meeting was established in 1986. Ordinance 44 was adopted in 2000. The time period for adjustment was 1986-2000, or 14 years. The new meeting fee was calculated as $100 x 1.05^{14} = $198.00.

Calendar Year	Board Meeting Compensation (per day of service, maximum 6/month)	Notes/Background
2010	$212.10	Board voted unanimously not to increase compensation for 2010. (11/23/2009)
2011	$212.10	Board voted unanimously not to increase compensation for 2011. (11/22/2010)
2012	$212.10	Board voted unanimously not to increase compensation for 2012. (11/27/2011)
2013	$212.10	Board voted unanimously not to increase compensation for 2013. (11/26/2012)
2014	$212.10	Board voted unanimously not to increase compensation for 2014. (11/23/2013)
2015	$212.10	Board voted unanimously not to increase compensation for 2015. (11/10/2014)
2016	$212.10	Board voted unanimously not to increase compensation for 2016. (12/14/2015)

Note 1: H&S and Water Codes established a method for calculating new baseline as a maximum of 5% per year since the last adjustment. The $100 per meeting was established in 1986. Ordinance 44 was adopted in 2000. The time period for adjustment was 1986-2000, or 14 years. The new meeting fee was calculated as $100 x 1.05^{14} = $198.00.

Directors
Manny Fernandez
Tom Handley
Pat Kite
Anjali Lathi
Jennifer Toy

Officers
Paul R. Eldredge
General Manager/
District Engineer

Karen W. Murphy
Attorney

DATE: November 7, 2016

MEMO TO: Board of Directors - Union Sanitary District

FROM: Karen Murphy, General Counsel

SUBJECT: Agenda Item No. 10 - Meeting of November 14, 2016
Consider Second Amendment to Employment Agreement between Union Sanitary District and Paul Eldredge

Recommendation

Approve Second Amendment to Employment Agreement.

Background

The Union Sanitary District entered into an Employment Agreement with Paul Eldredge to serve as General Manager/District Engineer on June 25, 2014. Section 4 of the Employment Agreement provides that the General Manager's base salary may be annually adjusted following his annual performance evaluation. Further, section 2 of the Employment Agreement provides that in September of 2016, the General Manager and the Board will discuss renewal of the Agreement.

The Employment Agreement was amended as of September 28, 2015, to remove the automobile allowance and incorporate such amount into Mr. Eldredge's base salary, and to increase Mr. Eldredge's salary by $7,250.00, or approximately three percent.

The Board of Directors conducted Mr. Eldredge's 2016 annual performance evaluation on October 3 and 18, 2016. On October 10, 2016, the Board appointed an ad hoc subcommittee of President Handley and Secretary Lathi to negotiate any contract amendments with Mr. Eldredge, including renewal of the agreement. The following amendments to the Employment Agreement were agreed upon: (1) removal of the termination date; (2) salary increase to $261,697.25, or approximately three percent; and (3) deferred compensation increase from

$4,200.00 to $14,363.00 annually. These amendments would bring the General Manager's total compensation into closer alignment with other water and wastewater districts in the area. The most recent comparable survey shows that the General Manager's total compensation without medical was approximately 10.3 percent below the average of other agencies.

The attached Second Amendment incorporates these revisions, effective as of September 1, 2016.

Attachment

SECOND AMENDMENT TO EMPLOYMENT AGREEMENT

This Second Amendment to Employment Agreement (the "**Second Amendment**") is made and entered into on November 14, 2016, by and between Union Sanitary District, a public sanitary district ("**USD**" or "**District**") and Paul R. Eldredge (the "**Manager**").

Recitals

A. District and Manager entered into that certain Employment Agreement dated June 25, 2014, wherein District hired Manager and Manager accepted employment as General Manager and District Engineer of Union Sanitary District (the "**Original Agreement**").

B. The Original Agreement was amended by that certain First Amendment to Employment Agreement between USD and Manager dated as of September 28, 2015 (the "**First Amendment**"). The First Amendment removed Manager's automobile allowance and incorporated such amount into Manager's base salary, and increased Manager's salary by $7,250.00, or approximately three percent. The Original Agreement as amended by the First Amendment shall be referred to as the "**Agreement**."

C. Section 2 of the Agreement provides that in "September of 2016, the Manager and Board will discuss renewal of the Agreement."

D. Section 4 of the Agreement provides that Manager's base salary may be annually adjusted following the Manager's annual performance evaluation.

E. District and Manager both desire to amend the Agreement to: (1) remove the termination date; (2) increase Manager's salary to $261,697.25, or approximately three percent; and (3) increase Manager's deferred compensation from $4,200.00 to $14,363.00 annually.

NOW, THEREFORE, THE DISTRICT AND MANAGER AGREE AS FOLLOWS:

1. Section 2 of the Agreement is hereby amended in its entirety as follows: "**Section 2. Term -** The Agreement shall continue and remain in full force and effect until terminated by either party in the manner provided herein. Nothing in this Agreement shall prevent, limit or otherwise interfere with (a) Manager's at-will status; (b) the right of the Board to terminate the

services of Manager as provided herein; and (c) the right of Manager to resign from his position as provided herein."

2. The first two sentences of Section 3.A are hereby deleted and restated as follows: "In the event that Manager is terminated by a majority vote of the Board while Manager continues to be willing and able to perform his duties under the Agreement, USD agrees to pay Manager equal payments over an agreed upon period of time equal to Manager's monthly salary multiplied by nine (9)."

3. Section 4 of the Agreement is hereby amended to increase Manager's annual base salary to $261,697.25, as of the Effective Date (as defined in Section 5 below).

4. Section 8 of the Agreement is hereby amended to increase USD's matching contribution to Manager's Deferred Compensation Plan to a maximum of $14,363.00 per year, as of the Effective Date.

5. The terms and conditions of this Second Amendment are effective as of September 1, 2016 ("**Effective Date**").

6. Except as amended by this Second Amendment, the Agreement remains in full force and effect.

[Signatures follow on next page]

IN WITNESS WHEREOF, the District and Manager have signed and executed this Second Amendment.

UNION SANITARY DISTRICT

By: _____
Tom Handley
President

MANAGER

By: _____
Paul R. Eldredge

ATTEST:

By: _____
Anjali Lathi
Secretary

APPROVED AS TO FORM:

DISTRICT LEGAL COUNSEL

By: _____
Karen W. Murphy

Directors
Manny Fernandez
Tom Handley
Pat Kite
Anjali Lathi
Jennifer Toy

Officers
Paul R. Eldredge
General Manager/
District Engineer

Karen W. Murphy
Attorney

DATE: November 7, 2016

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
Kevin Chun, Associate Engineer

SUBJECT: Agenda Item No. 11 - Meeting of November 14, 2016
Authorize the General Manager to Execute an Agreement and Task Order No. 1 with Brown and Caldwell for the Standby Power Generation System Upgrade Project

Recommendation

Staff recommends the Board authorize the General Manager to execute an Agreement and Task Order No. 1 with Brown and Caldwell in the amount of $175,064 for the Standby Power Generation System Upgrade Project.

Background

The standby power system at the Alvarado Wastewater Treatment Plant (WWTP) is critical to the operation of the facility. The system provides backup power to the WWTP should the primary PG&E power become unavailable. Upon a PG&E power outage, the generator control system will call the generators to start, synchronize the generator voltages, and transfer generator power to the primary WWTP switchgear. At the conclusion of the power transfer, staff will turn on the process equipment so that the WWTP operation can resume.

The existing standby power system at the WWTP consists of six diesel engine-driven generators at the locations described below and shown in Figure 1:

- Standby Generator Nos. 2 and 3 – Each is rated at 750 kilowatt (kW) and both are located in Generator Room No. 1, which is located on the west end of the Maintenance Shop Building. Generator Nos. 1 and 4 were the previous cogeneration equipment located in the Maintenance Shop Building. In 2014, Generator No. 1 was

decommissioned when the new cogeneration system went into operation, and it still remains in the building. In 2010, Generator No. 4 had failed and was removed from the building.

- Standby Generator Nos. 5 and 6 – Each is rated at 750 kW and both are located in Generator Room No. 2, which is located south of the Centrifuge Building.
- Standby Generator Nos. 7 and 8 – Each is rated at 1,600 kW and both are located in Generator Room No. 3, which is located on the west end of the Main Electrical Distribution Building.

Each of the three sets of generator equipment was constructed separately. Generator Nos. 2 and 3 were constructed as part of the 1978 Plant Expansion Project, Generator Nos. 5 and 6 were constructed as part of the 1985 Emergency Power Odor Control Project, and Generator Nos. 7 and 8 were constructed as part of the 1993 Plant Upgrade Project. No major improvements or upgrades have been made to the generator equipment since the original installation of the generators. When Generator Nos. 7 and 8 were constructed, a new generator control system was installed to monitor and operate the three sets of generators via their individual control systems. However, the generator control system is complicated due to the need to communicate with three sets of generator equipment and control systems that were built by different manufacturers and were of different vintage.

The generator equipment has become antiquated with replacement parts no longer available from manufacturers. In addition, the generator control system utilizes four programmable logic controllers (PLCs) to communicate with the three sets of generators and the PLCs are the old Siemens technology from 20 years ago. Staff has replaced most of the Siemens PLCs with Allen Bradley PLCs during the past several years but postponed the replacement of the four PLCs in the generator system due to concerns with being able to duplicate the complete generator control system in the new PLCs. The reliability of the standby power system had deteriorated in recent years, and staff had difficulty with the engine controls not operating correctly and generators not synchronizing and transferring power due to the above reasons.

In 2014, the District contracted with Beecher Engineering to conduct a pre-design study to evaluate the current standby generation system and provide recommendations to upgrade the existing generator control systems. Beecher completed the study and concluded that the existing standby generator equipment, generator control systems, and electrical switchgear equipment are outdated, unreliable, and difficult to maintain due to the age and obsolescence of the equipment and systems. Beecher evaluated several alternatives for replacement of the existing standby generator system and recommended an alternative with the following major elements:

- Replace the six existing engine-driven generators with three new units rated at 2 megawatt (MW) each. One MW equals 1,000 kW.

- Install new 5 and 12 kilovolt standby switchgears to connect the new generators to the existing primary WWTP switchgear.
- Site and/or building improvements depending on where the new generators will be located.
- Upgrade the electrical distribution equipment located at the Odor Control Building and Substation No. 2.

Staff will also include the ability to operate the cogeneration engine generators in parallel with the standby power system. This will allow the District to utilize the cogeneration engine generators in lieu of some of the standby generators during a prolong PG&E power outage. However, the cogeneration system is not considered a part of the standby system's capacity because the biogas fuel source would not be immediately available after a PG&E power outage, and the cogeneration system must operate in parallel to an existing power source and will only synchronize to either PG&E or the standby system's generators.

Staff had previously assessed the condition of the switchgear, motor control centers, and transformer located at the Odor Control Building. The electrical equipment was installed during the 1985 Plant Expansion Project and had become obsolete and unreliable. Staff had intended to replace this equipment during the MCC and PLC Replacement Project – Phase 3 but decided to wait until the pre-design study was completed for the Standby Power Generation System Upgrade Project since the approach to replace the equipment will depend on the recommended alternative. In the pre-design study report, Beecher's recommendation included combining the existing Substation No. 2 and Odor Control Building electrical equipment into a single power supply configuration that will consolidate all of the downstream electrical loads. Substation No. 2 was constructed during the 1993 Plant Upgrade Project and would have been due for replacement in the next five years.

In the FY16 CIP budget, staff had previously included projects to replace Generators 5, 6, 7, and 8 in FY20. Staff combined those projects into the new Standby Power Generation System Upgrade Project in the FY17 CIP budget.

Request for Proposal

Based on the pre-design study report recommendations by Beecher Engineering, the District prepared a Request for Proposal (RFP) to retain a consultant for the design of a new standby generator system. Before beginning the final design phase, the District will proceed with a pre-design phase to evaluate site location alternatives for the new generator system, establish criteria for final design, develop a preliminary construction sequencing plan, evaluate the implementation of a microgrid system, and evaluate the consolidation of the existing fuel island equipment and underground gasoline and diesel fuel storage tanks.

A microgrid is a small-scale power grid that can operate independently or in conjunction with the utility power. A microgrid can be powered by generators, batteries, and/or renewable resources such as solar panels. The primary purpose is to ensure local, reliable, and affordable energy. The project scope will include an evaluation of what it will take to implement a microgrid system at the WWTP.

Staff issued the RFP to four firms in May 2016. The four firms included Carollo Engineers, Brown and Caldwell, CH2M Engineers, and Beecher Engineering. Staff received only one proposal from Carollo. CH2M and Brown and Caldwell declined to submit a proposal due to staff availability, and Beecher Engineering decided to offer their services as a subconsultant on Carollo's team.

Due to the size and complexity of this project, staff decided to re-issue the RFP in August 2016 to CH2M, Brown and Caldwell, CDM Smith, and Lee and Ro. The District received one additional proposal from Brown and Caldwell with Beecher Engineering listed as a subconsultant. A panel consisting of engineering, maintenance, and operations staff reviewed the proposals and selected Brown and Caldwell for the project due to their team's relevant experience, qualifications, and approach to the project.

Task Order No. 1

The purpose of Task Order No. 1 is for the pre-design development of the Standby Power Generation System Upgrade Project. The primary elements of the pre-design effort are to evaluate and select a site location for the new standby generator system, establish criteria for final design, develop a preliminary construction sequencing plan, evaluate a microgrid system, and evaluate the relocation of the existing fuel island. This work will build on and expand on the previous work completed as part of the April 2016 Standby Power Generation System Upgrade Report completed by Beecher Engineering.

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

Task No.	Task Description	Fee
1	Project Management	$19,724
2.1	Review Background Information and Site Visit	$5,455
2.2	Evaluate Alternative Site Locations	$28,491
2.3	Develop Draft Construction Sequencing Plan	$3,483
2.4	Field Investigation/Site Assessment	$4,095
2.5	Coordination with External Stakeholders	$10,006
2.6	Evaluate Microgrid System	$9,660
2.7	Evaluate Relocation of Vehicle Fuel Island	$4,665

Task No.	Task Description	Fee
2.8	Engineering Analysis	$43,877
2.9	Pre-Design Report	$45,608
	Total Not-to-Exceed Fee	**$175,064**

Staff believes the total not-to-exceed fee of $175,064 is reasonable given the effort needed to evaluate a complex system, select a location for the new generator equipment, and coordinate with external stakeholders such as the Bay Area Air Quality Management District and PG&E. Staff anticipates the pre-design scope of services to be complete by the summer of 2017.

Staff recommends the Board authorize the General Manager to execute an Agreement and Task Order No. 1 with Brown and Caldwell in the amount of $175,064 for the Standby Power Generation System Upgrade Project.

PRE/SEG/RC/KC:ks

Attachments: Figure 1
Agreement
Task Order No. 1

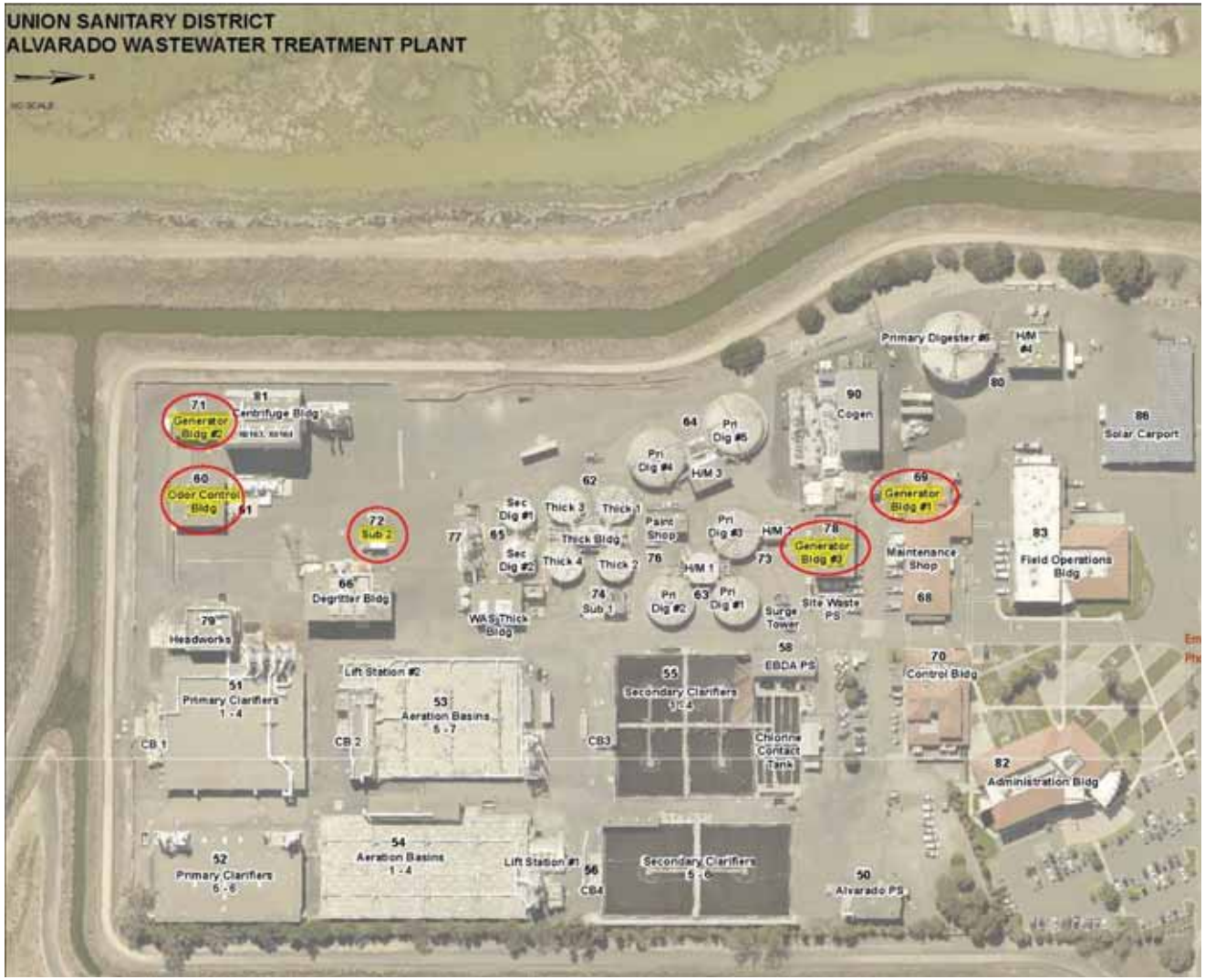


Figure No. 1 - Aerial view of the Alvarado WWTP. Generator Building Nos. 1 – 3, Odor Control Building, and Substation No. 2 are highlighted

STANDBY POWER GENERATION SYSTEM UPGRADE PROJECT

AGREEMENT

BETWEEN

UNION SANITARY DISTRICT

AND

BROWN AND CALDWELL

FOR

PROFESSIONAL SERVICES

THIS IS AN AGREEMENT MADE AS OF November _____, 2016, BETWEEN UNION SANITARY DISTRICT (hereinafter referred to as District), and BROWN AND CALDWELL (hereinafter referred to as Engineer).

WITNESSETH:

WHEREAS, District intends to replace the existing standby diesel engine generator and control systems located at the Alvarado Wastewater Treatment Plant and intends to design and construct the Standby Power Generation System Upgrade Project (hereinafter referred to as Project), and,

WHEREAS, District requires certain professional services in connection with the Project (hereinafter referred as Services); and

WHEREAS, Engineer is qualified and prepared to provide such Services;

NOW, THEREFORE, in consideration of the promises contained herein, the parties agree as follows:

ARTICLE 1 - SERVICES TO BE PERFORMED BY ENGINEER

1.1 Specific Services and the associated scope of services, payment, schedule, and personnel will be defined in specific Task Order as mutually agreed by District and Engineer.

1.2 All Task Orders will by reference incorporate the terms and conditions of this Agreement, and become formal amendments hereto.

ARTICLE 2 - COMPENSATION

2.1 Compensation for consulting services performed under this Agreement shall include:

(1) Direct labor costs, multiplied by an agreed upon fixed factor (the Multiplier), to compensate for fringe benefits, indirect costs, and profit.

(2) Non-labor direct project charge not included in the fixed factor and acceptable, without any markup.

(3) Subconsultant costs, with a maximum markup of 5%.

Definitions are as follows:

(a) Direct labor is salaries and wages paid to personnel for time directly chargeable to the project. Direct labor does not include the cost of Engineer's statutory and customary benefits, such as sick leave, holidays, vacations, and medical and retirement benefits nor the cost of the time of executive and administrative personnel and others whose time is not identifiable to the project.

(b) Fringe benefits include Engineer's statutory and customary benefits, such as sick leave, holidays, vacations, medical and retirement benefits, incentive pay, tuition, and other costs classified as employee benefits.

(c) Indirect costs are allocations of costs that are not directly chargeable to a specific engagement and are commonly referred to as Engineer's overhead. Indirect costs include provisions for such things as clerical support, office space, light and heat, insurance, statutory and customary employee benefits, and the time of executive and administrative personnel and others whose time is not identifiable to the Project or to any other project. Under no circumstances can the same labor costs be charged as direct labor and also appear at the same time as indirect costs, and vice versa.

(d) The Multiplier is a multiplicative factor which is applied to direct labor costs, and compensates Engineer for fringe benefits and indirect costs (overhead) and profit.

(e) Other non-labor direct project charges shall be included in the overhead and these charges include typical expenses as cost

of transportation and subsistence, printing and reproduction, computer time and programming costs, identifiable supplies, outside consultant's charges, subcontracts, and charges by reviewing authorities."

Alternatively, the District and the Engineer may agree to utilize the fully-encumbered hourly rates and fees for Services performed by the Engineer. These hourly rates and fees shall be based on the Engineer's rate schedule published at the time this Agreement or Task Order is executed and shall be attached to each applicable Task Order.

2.2 Reimbursement for mileage shall not exceed the prevailing Internal Revenue Service's standard mileage rate.

2.3 A *Cost Ceiling* will be established for each Task Order which is based upon estimated labor-hours and cost estimates. Costs as described above, comprising direct labor, overhead cost, and other direct costs, shall be payable up to a Cost Ceiling as specified in the Task Order. A *Maximum Fee Ceiling,* or *Task Order Firm Ceiling*, will also be established for each Task Order which includes the Cost Ceiling plus the Professional Fee.

2.4 Engineer shall invoice District monthly for the actual costs incurred, and a pro-rated portion of the Professional Fee for work performed during the previous month. If the Maximum Fee Ceiling is reached, the Engineer will complete the agreed-upon work for the Maximum Fee Ceiling. With District staff approval, labor hours may be reallocated within the tasks without renegotiation in such a manner so as not to exceed the Maximum Fee Ceiling.

2.5 The Engineer shall provide the District with a review of the budget amounts when 75 percent of the Cost Ceiling for any task has been expended. Engineer may request a revision in the Cost Ceiling for performance of this Agreement, and will relate the rationale for the revision to the specific basis of estimate as defined in the Scope of Services. Such notification will be submitted to the District at the earliest possible date. The authorized Cost Ceiling shall not be exceeded without written approval of the District.

2.6 The Professional Fee will not be changed except in the case of a written amendment to the Agreement which alters the Scope of Services. District and Engineer agree to negotiate an increase or decrease in Cost Ceiling and Professional Fee for any change in Scope of Services required at any time during the term of this Agreement. Engineer will not commence work on the altered Scope of Services until authorized by District.

2.7 Direct labor rates are subject to revision to coincide with Engineer's normal salary review schedule. Adjustments in direct labor rates shall not affect the firm ceiling without prior written authorization of the District.

2.8 District shall pay Engineer in accordance with each Task Order for Services.

2.9 Engineer shall submit monthly statements for Services rendered. District will make prompt monthly payments in response to Engineer's monthly statements.

ARTICLE 3 - PERIOD OF SERVICE

3.1 Engineer's services will be performed and the specified services rendered and deliverables submitted within the time period or by the date stipulated in each Task Order.

3.2 Engineer's services under this Agreement will be considered complete when the services are rendered and/or final deliverable is submitted and accepted by District.

3.3 If any time period within or date by which any of the Engineer's services are to be completed is exceeded through no fault of Engineer, all rates, measures and amounts of compensation and the time for completion of performance shall be subject to equitable adjustment.

ARTICLE 4 - DISTRICT'S RESPONSIBILITIES

District will do the following in a timely manner so as not to delay the services of Engineer.

4.1 Provide all criteria and full information as to District's requirements for the services assignment and designate in writing a person with authority to act on District's behalf on all matters concerning the Engineer's services.

4.2 Furnish to Engineer all existing studies, reports and other available data pertinent to the Engineer's services, obtain or authorize Engineer to obtain or provide additional reports and data as required, and furnish to Engineer services of others required for the performance of Engineer's services hereunder, and Engineer shall be entitled to use

and rely upon all such information and services provided by District or others in performing Engineer's services under this Agreement.

4.3 Arrange for access to and make all provisions for Engineer to enter upon public and private property as required for Engineer to perform services hereunder.

4.4 Perform such other functions as are indicated in each Task Order related to duties of District.

4.5 Bear all costs incident to compliance with the requirements of this Section.

ARTICLE 5 - STANDARD OF CARE

5.1 Engineer shall exercise the same degree of care, skill, and diligence in the performance of the Services as is ordinarily provided by a professional Engineer under similar circumstance and Engineer shall, at no cost to District, re-perform services which fail to satisfy the foregoing standard of care.

ARTICLE 6 - OPINIONS OF COST AND SCHEDULE

6.1 Since Engineer has no control over the cost of labor, materials, equipment or services furnished by others, or over contractors', subcontractors' , or vendors' methods of determining prices, or over competitive bidding or market conditions or economic conditions, Engineer's cost estimate and economic analysis shall be made on the basis of qualification and experience as a professional engineer.

6.2 Since Engineer has no control over the resources provided by others to meet contract schedules, Engineer's forecast schedules shall be made on the basis of qualification and experience as a professional Engineer.

6.3 Engineer cannot and does not guarantee that proposals, bids or actual project costs will not vary from his cost estimates or that actual schedules will not vary from his forecast schedules.

ARTICLE 7 - SUBCONTRACTING

7.1 No subcontract shall be awarded by Engineer until prior written approval is obtained from the District.

ARTICLE 8 - ENGINEER-ASSIGNED PERSONNEL

8.1 Engineer shall designate in writing an individual to have immediate responsibility for the performance of the services and for all matters relating to performance under this Agreement. Key personnel to be assigned by Engineer will be stipulated in each Task Order. Substitution of any assigned person shall require the prior written approval of the District, which shall not be unreasonably withheld. If the District determines that a proposed substitution is not responsible or qualified to perform the services then, at the request of the District, Engineer shall substitute a qualified and responsible person.

ARTICLE 9 - OWNERSHIP OF DOCUMENTS

9.1 All work products, drawings, data, reports, files, estimate and other such information and materials (except proprietary computer programs, including source codes purchased or developed with Engineer monies) as may be accumulated by Engineer to complete services under this Agreement shall be owned by the District.

9.2 Engineer shall retain custody of all project data and documents other than deliverables specified in each Task Order, but shall make access thereto available to the District at all reasonable times the District may request. District may make and retain copies for information and reference.

9.3 All deliverables and other information prepared by Engineer pursuant to this Agreement are instruments of service in respect to this project. They are not intended or represented to be suitable for reuse by District or others on extensions of this Project or on any other project. Any reuse without written verification or adaptation by Engineer for the specific purpose intended will be at District's sole risk and without liability or legal exposure to Engineer; and District shall indemnify and hold harmless Engineer against all claims, damages, losses, and expenses including attorney's fees arising out of or resulting from such reuse. Any such verification or adaptation will entitle Engineer to further compensation at rates to be agreed upon by District and Engineer.

ARTICLE 10 - RECORDS OF LABOR AND COSTS

10.1 Engineer shall maintain for all Task Orders, records of all labor and costs used in claims for compensation under this Agreement. Records shall mean a contemporaneous record of time for personnel; a methodology and calculation of the Multiplier for fringe benefits and indirect costs; and invoices, time sheets, or other factors used as a basis for determining other non-labor Project charges. These records must be made available to the District upon reasonable notice of no more than 48 hours during the period of the performance of this Agreement.

10.2 After delivery of Services (completion of Task Orders) under this Agreement, the Engineer's records of all costs used in claims for compensation under this Agreement shall be available to District's accountants and auditors for inspection and verification. These records will be maintained by Engineer and made reasonably accessible to the District for a period of three (3) years after completion of Task Orders under this Agreement.

10.3 Engineer agrees to cooperate and provide any and all information concerning the Project costs which are a factor in determining compensation under this Agreement as requested by the District or any public agency which has any part in providing financing for, or authority over, the Services which are provided under the Agreement.

10.4 Failure to provide documentation or substantiation of all Project costs used as a factor in compensation paid under Article 2 hereof will be grounds for District to refuse payment of any statement submitted by the Engineer and for a back charge for any District funds, including interest from payment; or grant, matching, or other funds from agencies assisting District in financing the Services specified in this Agreement.

ARTICLE 11 - INSURANCE

Engineer shall provide and maintain at all times during the performance of the Agreement the following insurances:

11.1 Workers' Compensation and Employer's Liability Insurance for protection of Engineer's employees as required by law and as will protect Engineer from loss or damage because of personal injuries, including death to any of his employees.

11.2 Comprehensive Automobile Liability Insurance. Engineer agrees to carry a Comprehensive Automobile Liability Policy providing bodily injury liability. This policy shall protect Engineer against all liability arising out of the use of owned or leased automobiles both passenger and commercial. Automobiles, trucks, and other vehicles and equipment (owned, not owned, or hired, licensed or unlicensed for road use) shall be covered under this policy. Limits of liability for Comprehensive Automobile Liability Insurance shall not be less than $1,000,000 Combined Single Limit.

11.3 Comprehensive General Liability Insurance as will protect Engineer and District from any and all claims for damages or personal injuries, including death, which may be suffered by persons, or for damages to or destruction to the property of others, which may arise from the Engineer's operations under this Agreement, which insurance shall name the District as additional insured. Said insurance shall provide a minimum of $1,000,000 Combined Single Limit coverage for personal injury, bodily injury, and property damage for each occurrence and aggregate. Such insurance will insure Engineer and District from any and all claims arising from the following:

1. Personal injury;
2. Bodily injury;
3. Property damage;
4. Broad form property damage;
5. Independent contractors;
6. Blanket contractual liability.

11.4 Engineer shall maintain a policy of professional liability insurance, protecting it against claims arising out of negligent acts, errors, or omissions of Engineer pursuant to this Agreement, in an amount of not less than $1,000,000. The said policy shall cover the indemnity provisions under this Agreement.

11.5 Engineer agrees to maintain such insurance at Engineer's expense in full force and effect in a company or companies satisfactory to the District. All coverage shall remain in effect until completion of the Project.

11.6 Engineer will furnish the District with certificates of insurance and endorsements issued by Engineer's insurance carrier and countersigned by an authorized agent or representative of the insurance company. The certificates shall show that the insurance will not be cancelled without at least thirty (30) days' prior written notice to the District. The certificates for liability insurance will show that liability assumed under this Agreement is included. The endorsements will

show the District as an additional insured on Engineer's insurance policies for the coverage required in Article 11 for services performed under this Agreement, except for workers' compensation and professional liability insurance.

11.7 Waiver of Subrogation: Engineer hereby agrees to waive subrogation which any insurer of Engineer may acquire from Engineer by virtue of the payment of any loss. Engineer agrees to obtain any endorsement that may be necessary to effect this waiver of subrogation.

The Workers' Compensation policy shall be endorsed with a waiver of subrogation in favor of the District for all work performed by the Engineer, its employees, agents and subconsultants.

ARTICLE 12 - LIABILITY AND INDEMNIFICATION

12.1 Having considered the risks and potential liabilities that may exist during the performance of the Services, and in consideration of the promises included herein, District and Engineer agree to allocate such liabilities in accordance with this Article 12. Words and phrases used in this Article shall be interpreted in accordance with customary insurance industry usage and practice.

12.2 Engineer shall indemnify and save harmless the District and all of their agents, officers, and employees from and against all claims, demands, or causes of action of every name or nature to the extent caused by the negligent error, omission, or act of Engineer, its agents, servants, or employees in the performance of its services under this Agreement.

12.3 In the event an action for damages is filed in which negligence is alleged on the part of District and Engineer, Engineer agrees to defend District. In the event District accepts Engineer's defense, District agrees to indemnify and reimburse Engineer on a pro rata basis for all expenses of defense and any judgment or amount paid by Engineer in resolution of such claim. Such pro rata share shall be based upon a final judicial determination of negligence or, in the absence of such determination, by mutual agreement.

12.4 Engineer shall indemnify District against legal liability for damages arising out of claims by Engineer's employees. District shall indemnify Engineer against legal liability for damages arising out of claims by District's employees.

12.5 Indemnity provisions will be incorporated into all Project contractual arrangements entered into by District and will protect District and Engineer to the same extent.

12.6 Upon completion of all services, obligations and duties provided for in the Agreement, or in the event of termination of this Agreement for any reason, the terms and conditions of this Article shall survive.

12.7 To the maximum extent permitted by law, Engineer's liability for District's damage will not exceed the aggregate compensation received by Engineer under this Agreement or the maximum amount of professional liability insurance available at the time of any settlement or judgment, which ever is greater.

ARTICLE 13 - INDEPENDENT CONTRACTOR

Engineer undertakes performance of the Services as an independent contractor and shall be wholly responsible for the methods of performance. District will have no right to supervise the methods used, but District will have the right to observe such performance. Engineer shall work closely with District in performing Services under this Agreement.

ARTICLE 14 - COMPLIANCE WITH LAWS

In performance of the Services, Engineer will comply with applicable regulatory requirements including federal, state, and local laws, rules, regulations, orders, codes, criteria and standards. Engineer shall procure the permits, certificates, and licenses necessary to allow Engineer to perform the Services. Engineer shall not be responsible for procuring permits, certificates, and licenses required for any construction unless such responsibilities are specifically assigned to Engineer in Task Order.

ARTICLE 15 - NONDISCLOSURE OF PROPRIETARY INFORMATION

Engineer shall consider all information provided by District and all drawings, reports, studies, design calculations, specifications, and other documents resulting from the Engineer's performance of the Services to be proprietary unless such information is available from public sources. Engineer shall not publish or disclose proprietary information for any purpose other than the performance of the Services without the prior written authorization of District or in response to legal process.

ARTICLE 16 - TERMINATION OF CONTRACT

16.1 The obligation to continue Services under this Agreement may be terminated by either party upon seven days written notice in the event of substantial failure by the other party to perform in accordance with the terms hereof through no fault of the terminating party.

16.2 District shall have the right to terminate this Agreement or suspend performance thereof for District's convenience upon written notice to Engineer, and Engineer shall terminate or suspend performance of Services on a schedule acceptable to District. In the event of termination or suspension for District's convenience, District will pay Engineer for all services performed and costs incurred including termination or suspension expenses. Upon restart of a suspended project, equitable adjustment shall be made to Engineer's compensation.

ARTICLE 17 - UNCONTROLLABLE FORCES

17.1 Neither District nor Engineer shall be considered to be in default of this Agreement if delays in or failure of performance shall be due to uncontrollable forces, the effect of which, by the exercise of reasonable diligence, the nonperforming party could not avoid. The term "uncontrollable forces" shall mean any event which results in the prevention or delay of performance by a party of its obligations under this Agreement and which is beyond the control of the nonperforming party. It includes, but is not limited to, fire, flood, earthquake, storms, lightening, epidemic, war, riot, civil disturbance, sabotage, inability to procure permits, licenses, or authorizations from any state, local, or federal agency or person for any of the supplies, materials, accesses, or services required to be provided by either District or Engineer under this Agreement, strikes, work slowdowns or other labor disturbances, and judicial restraint.

17.2 Neither party shall, however, be excused from performance if nonperformance is due to uncontrollable forces which are removable or remediable, and which the nonperforming party could have, with the exercise of reasonable diligence, removed or remedied with reasonable dispatch. The provisions of this Article shall not be interpreted or construed to require Engineer or District to prevent, settle, or otherwise avoid a strike, work slowdown, or other labor action. The nonperforming party shall, within a reasonable time of being prevented or delayed from performance by an uncontrollable force, give written notice to the other party describing the circumstances and uncontrollable forces preventing continued

performance of the obligations of this Agreement. The Engineer will be allowed reasonable negotiated extension of time or adjustments for District initiated temporary stoppage of services.

ARTICLE 18 - MISCELLANEOUS

18.1 A waiver by either District or Engineer of any breach of this Agreement shall not be binding upon the waiving party unless such waiver is in writing. In the event of a written waiver, such a waiver shall not affect the waiving party's rights with respect to any other or further breach.

18.2 The invalidity, illegality, or unenforceability of any provision of this Agreement, or the occurrence of any event rendering any portion or provision of this Agreement void, shall in no way effect the validity or enforceability of any other portion or provision of the Agreement. Any void provision shall be deemed severed from the Agreement and the balance of the Agreement shall be construed and enforced as if the Agreement did not contain the particular portion or provision held to be void.

ARTICLE 19 - INTEGRATION AND MODIFICATION

19.1 This Agreement (consisting of pages 1 to 15), together with all Task Orders executed by the undersigned, is adopted by District and Engineer as a complete and exclusive statement of the terms of the Agreement between District and Engineer. This Agreement supersedes all prior agreements, contracts, proposals, representations, negotiations, letters, or other communications between the District and Engineer pertaining to the Services, whether written or oral.

19.2 The Agreement may not be modified unless such modifications are evidenced in writing signed by both District and Engineer.

ARTICLE 20 - SUCCESSORS AND ASSIGNS

20.1 District and Engineer each binds itself and its directors, officers, partners, successors, executors, administrators, assigns and legal representatives to the other party to this Agreement and to the partners, successors, executors, administrators, assigns, and legal representatives of such other party, in respect to all covenants, agreements, and obligations of this Agreement.

20.2 Neither District nor Engineer shall assign, sublet, or transfer any rights under or interest in (including, but without limitation, monies that may become due or monies that are due) this Agreement without the written consent of the other, except to the extent that the effect of this limitation may be restricted by law. Unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under this Agreement. Nothing contained in this paragraph shall prevent Engineer from employing such independent engineers, associates, and subcontractors as he may deem appropriate to assist him/her in the performance of the Services hereunder and in accordance with Article 7.

20.3 Nothing herein shall be construed to give any rights or benefits to anyone other than District and Engineer.

ARTICLE 21 – INFORMATION SYSTEM SECURITY

When the District determines this article is applicable, the Engineer shall obtain written approval from the District representative prior to accessing District internal systems through real-time computer connections. Upon approval, the Engineer will use only in-bound connections to accomplish a legitimate business need and a previously defined and approved task. As a condition of approval, the Engineer shall:

a) Be running a current operating system supported by the District with up-to-date security patches applied as defined in the District COE/Non-COE document.

b) Have anti-virus software installed on his/her personal computer with up-to-date virus signatures.

c) Have personal firewall software installed and enabled on their computer.

d) Understand and sign the District's Electronic Equipment Use Policy, number 2160.

The District reserves the right to audit the security measures in effect on Engineer's connected systems without prior notice. The District also reserves the right to terminate network connections immediately with all Engineer's systems not meeting the above requirements.

ARTICLE 22 – EMPLOYEE BACKGROUND CHECK

Engineer, at no additional expense to the District, shall conduct a background check for each of its employees, as well as for the employees of its subconsultants (collectively "Consultant Employees") who will have access to District's computer systems, either through on-site or remote access, or whose contract work requires an extended presence on the District's premises. The minimum background check process for any District consultant shall include, but not be limited to:

1. California residents: Criminal Records (County and State Criminal Felony and Misdemeanor
2. Out of State residents: Federal criminal search of the National Criminal Database,

The background check shall be conducted and the results submitted to the District prior to initial access by Consultant Employees. If at any time, it is discovered that a Consultant Employee has a criminal record that includes a felony or misdemeanor, the Engineer is required to inform the District immediately and the District will assess the circumstances surrounding the conviction, time frame, nature, gravity, and relevancy of the conviction to the job duties, to determine whether the Consultant Employee will be placed or remain on a District assignment. The District may withhold consent at its sole discretion. The District may also conduct its own criminal background check of the Consultant Employees. Failure of the Engineer to comply with the terms of this paragraph may result in the termination of its contract with the District.

ARTICLE 23 - EXCEPTIONS

23.1 Article 11.3 – CHANGE "Comprehensive General Liability Insurance" to "Commercial General Liability Insurance."

23.2 Article 11.4 – DELETE the last sentence "The said policy shall cover the indemnity provisions under this Agreement."

23.3 Article 11.6 – In the third sentence, ADD "general" prior to "liability Insurance."

23.4 Article 12.3 – DELETE in its entirety, ADD "Not Used."

23.5 Article 12.7 – CHANGE "or the maximum amount of professional liability insurance required by this Agreement available at the time of any settlement or judgement, whichever is greater." to ".or the minimum amount of professional liability insurance required by this Agreement."

IN WITNESS THEREOF, the parties hereto have made and executed this Agreement as of the day and year first above written.

UNION SANITARY DISTRICT	BROWN AND CALDWELL
By: _____	By: _____
Paul R. Eldredge, P.E. General Manager/District Engineer	Jeffrey R. Kivett Vice President
Date: _____	Date: _____

STANDBY POWER GENERATION SYSTEM UPGRADE PROJECT

TASK ORDER NO. 1

to

AGREEMENT

BETWEEN

UNION SANITARY DISTRICT

AND

BROWN AND CALDWELL

FOR

PROFESSIONAL SERVICES

Dated November ___, 2016

1. PURPOSE

The purpose of Task Order No. 1 is for the pre-design development of the Standby Power Generation System Upgrade Project. The scope of services aligns with the cost proposal presented in Exhibit A and the pre-design schedule presented in Exhibit B. The major goal of this Pre-Design effort is to evaluate and select a site location, establish criteria for final design, develop a preliminary construction sequencing plan, and update the construction cost. This work will build on and expand on the previous work completed as part of the April 2016 Standby Power Generation System Upgrade Report completed by Beecher Engineering. The scope of work for final design will be completed after this pre-design effort is completed. Additional subconsultants such as geotechnical, surveying, potholing, hazardous material (asbestos and lead) survey, and environmental support are not part of this effort and if needed, will be determined based on the selected alternative and the work completed during final design.

2. PROJECT COORDINATION

All work related to this task order shall be coordinated through the District's Project Manager, Raymond Chau and the District's Project Engineer, Kevin K. Chun.

3. SCOPE OF SERVICES

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

Task 1: Project Management

The Engineer shall manage the coordination and oversight of the Engineer's staff and administration of the contract, including project management plan development, project resources oversight, quality, costs, deliverables and schedule, periodic status calls, monthly progress reporting, invoicing, and coordinating communications between the Engineer's staff and District staff.

The Engineer shall provide quality assurance/quality control (QA/QC) in conformance with the approved Quality Plan contained in the Engineer's project management plan.

The Engineer shall conduct a project kickoff meeting within two weeks of the notice-to-proceed (NTP). The Engineer shall develop and distribute an agenda and presentation before the start of the meeting. Engineer shall also provide a summary of the meeting results, decisions, and action items. Three members of the Engineer's project team shall attend a kickoff meeting located at the District's Office. The kickoff meeting will be combined with a site visit to investigate potential locations for the new standby generators described in Subtask 2.1 and brainstorm alternatives that will be included in the Subtask 2.2 Technical Memorandum (TM).

<u>Assumptions</u>:

- The pre-design phase of the project will last six months from NTP.

Task 2: Pre-Design

The major goals of the Pre-Design Report will be to select a location for a consolidated standby power generation system, locate the new Odor Control Building substation and switchgear, establish design criteria for final design, determine the feasibility of a microgrid system, and evaluate relocating the Vehicle Fuel Island. The Engineer shall perform the following subtasks:

- Subtask 2.1 – Review Background Information and site visit to investigate potential standby diesel engine generator locations.
- Subtask 2.2 – Brainstorm Session and Evaluate Alternative Site Locations.
- Subtask 2.3 – Develop Draft Construction Sequencing Plan

- Subtask 2.4 – Field Investigation/Site Assessment
- Subtask 2.5 – Coordination with External Stakeholders
- Subtask 2.6 – Evaluate Microgrid System
- Subtask 2.7 – Evaluate Relocation of Vehicle Fuel Island
- Subtask 2.8 – Engineering Analysis
- Subtask 2.9 – Pre-Design Report

Subtask 2.1: Review Background Information and Site Visit

The Engineer shall gather and review existing design drawings from 1978, 1985, and 1993 related to the existing standby power generation system consisting of the six existing standby diesel engine generators (Nos. 2, 3, 5, 6, 7, and 8). The subtask shall also include reviewing the drawings for the newly constructed cogeneration plant.

The Engineer shall conduct an initial site visit with District's operations and maintenance staff to document and understand the operation of the existing generators and how the transition of the new generation equipment will be implemented and coordinated with the cogeneration system. Evaluation of standby power needs will be evaluated to determine if temporary power will be needed during construction.

Assumptions:

- This site visit will occur on the same day of the kickoff meeting described in Task 1.
- Three members from the Engineer's project team shall attend the site visit.

Subtask 2.2: Evaluate Alternative Site Locations

The Engineer shall evaluate two alternative site locations for the new standby power generation system. The Engineer shall include a brainstorming agenda item as part of the kickoff meeting in Subtask 2.1 to develop two potential site locations.

This task will also include up to three site visits to power generator facilities of similar size and operation within the San Francisco Bay area. Engineer shall contact three local suppliers to obtain a list of local references and set up the three site visits. Engineer shall also develop a site visit memorandum for each site visit.

The Engineer shall develop a draft TM for the three locations discussing advantages and disadvantages of each alternative with an AACE Class 4

level construction cost estimate for each alternative. A site layout with approximate equipment and enclosure sizes will also be developed for each alternative. Format for the proposed layouts will be done using PDF drawings based on scans of as-built plan drawings indicating general arrangement of equipment only. Detailed site plan drawings indicating location of standby power equipment, switchgear, tanks and ancillary components will be developed during final design. The draft TM will be approximately six pages long with the construction cost estimate details located in an appendix.

The Engineer shall conduct a site alternative locations workshop to discuss the draft TM and to select one of the two alternatives described in the TM. Engineer shall develop and distribute an agenda prior to the workshop. Engineer shall also provide a summary of the meeting results, decisions, and action items.

Assumptions:

- Three members of the Engineer's project team shall attend the site alternative locations workshop.

Subtask 2.3: Develop Draft Construction Sequencing Plan

The Engineer shall develop a draft construction sequencing plan based on the selected site alternative in Subtask 2.2. The construction sequencing plan will be a general overview of the work approach based on project schedule, constructability issues involving large equipment only, reconnection of electrical feeds, known project constraints and limitations, and specific milestones. The construction sequencing plan will be included in the draft and final Pre-Design Report.

Subtask 2.4: Field Investigation/Site Assessment

Following the development of the site location and draft construction sequencing plan, the Engineer shall conduct a field investigation/site assessment to identify critical and non-critical loads for the standby power generation system and the feeds that need to be reconnected. Engineer shall also identify general demolition requirements as part of this subtask for large equipment only and not include associated components such as conduits, cables, and required modification work to existing equipment.

Assumptions:

- The Engineer has budgeted two electrical engineers for one day to complete the field investigation/site assessment.

- The District staff familiar with the existing electrical and standby power generation systems will accompany the Engineer and provide assistance during the field investigation/site assessment.

Subtask 2.5: Coordination with External Stakeholders

The Engineer shall coordinate with entities outside of the District and conduct phone calls with the following entities:

- PG&E – the requirements for Rule 21 interconnection compliance and the Interconnection Study will be the primary discussion topics of this phone call.
- BAAQMD – air permitting requirements and the yearly allowable maintenance run-time will be the primary discussion topics for this phone call.
- Fire Marshal – fire protection, code requirements, diesel fuel and gasoline storage tanks, and relocation of the Vehicle Fuel Island will be the primary discussion topics for this phone call.
- Western Energy – requirements for parallel operation of the existing cogeneration units with the new standby power generation system will be the discussion topic for this phone call.

The Engineer shall provide summary notes for each phone call in the draft and final Pre-Design Report.

Subtask 2.6: Evaluate Microgrid System

The Engineer shall evaluate the feasibility of implementing a microgrid system at the WWTP. Engineer shall evaluate two conceptual level designs as part of this subtask. The microgrid assessment will include items such as an energy storage system, a microgrid controller and automation, additional photovoltaic cells, selective catalytic reduction system that could allow for an increased utilization of natural gas for energy generation, infrastructure adaptability, electrical connection layout, operational strategy adjustments and modifications to the SCADA/controls system. Benefits will be listed with rough construction costs. The assessment will be included in the Pre-Design Report and will be approximately five pages.

Subtask 2.7: Evaluate Relocation of Vehicle Fuel Island

The Engineer shall evaluate the feasibility of relocating the Vehicle Fuel Island equipment and gasoline storage tanks to consolidate the diesel and gasoline storage tanks. The task will include identifying regulatory requirements for relocating these facilities including reviewing the latest

code requirements, identifying the types of vehicles that would be delivering and using the fuel, and developing a traffic routing plan. The evaluation will be included in the Pre-Design Report and will be approximately four pages.

Subtask 2.8: Engineering Analysis

The Engineer shall conduct the following engineering analyses:

- Existing and future plant electrical loads and a summary of types of critical and non-critical loads
- Size (footprint) and number of diesel engine generators
- 12kV switchgear initial information
- 4160V paralleling switchgear initial information
- OCB new substation and switchgear initial information
- Enclosure/building requirements and evaluation of modular design
- Redundancy requirements (“N+1”)
- Fuel storage tank type and size and determination of full load run time requirements
- Day tank requirements
- Control scheme for manual operation, operation with the cogeneration system, testing and paralleling with PG&E, and SCADA modifications
- Battery size and requirements
- Load bank sizing and location
- Single-line diagrams and elevation drawings

Subtask 2.9: Pre-design Report

The Engineer shall prepare a draft and final Pre-Design Report for the standby power generation system and ancillary equipment. The information and results from Subtasks 2.1 through 2.8 shall be consolidated into one document. The Pre-design Report will include the following chapters:

- Executive Summary
- Introduction
- Review of Background Information
- Design Loads and Criteria
- Evaluation of Alternatives
- Summary of PG&E, BAAQMD, Fire Marshal, and Western Energy Requirements

- Procurement Evaluation
- Demolition/Salvage Requirements
- Summary of Construction Sequencing Plan
- Recommendations and Conclusions
- Appendices:
  - Discipline Design Criteria
  - Construction Sequencing Plan
  - Project Schedule (Microsoft Project format)
  - Microgrid Assessment
  - Vehicle Fuel Island Evaluation
  - Detailed Cost Estimate
  - List of Drawings
  - List of Specifications

The Engineer shall conduct a review workshop of the draft Pre-Design Report. The Engineer shall develop and distribute an agenda and presentation before the start of the workshop and provide a summary of the meeting results, decisions, and action items.

Assumptions:

- Three members of the Engineer's project team shall attend the workshop.

4. DELIVERABLES

- Draft site evaluation TM (final site location TM will be included in the Pre-Design Report)
- Site evaluation presentation materials for the workshop
- Site evaluation workshop summary notes
- Draft construction sequencing plan (construction sequencing plan will be updated in draft and final Pre-Design Report)
- Draft Pre-Design Report Review Workshop presentation materials
- Draft Pre-Design Report Review Workshop summary notes
- Draft and final pre-design reports
- AACE Class 4 level construction cost estimate (included as part of the draft and final pre-design reports)

The Engineer shall submit the final reports and technical memoranda in both Word and .pdf formats and drawings in AutoCAD to the District electronically.

5. NOT USED

6. NOT USED

7. PAYMENT TO THE ENGINEER

Payment to the Engineer shall be as called for in Article 2 of the Agreement. The Multiplier for this work shall be 3.23, the profit shall be 13 percent, and the not-to-exceed amount shall be $175,064. 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:

Task Order / Amendment	**Not to Exceed Amount**	**Board Authorization Required? (Yes/No)**	**District Staff Approval**
Task Order No. 1 – Predesign Services	$175,064	Yes	Paul Eldredge
Total	**$175,064**		

8. TIME OF COMPLETION

All work defined in this Task Order shall be complete in 180 calendar days after the execution of this Task Order and subject to the conditions of Article 3 of this Agreement. The anticipated milestone dates are as follows:

- Pre-Design NTP – November 15, 2016
- Kickoff Meeting/Brainstorming Session/Site Visit – Week of November 28, 2016
- Draft Site Evaluation TM – December 16, 2016
- Site Evaluation Workshop – January 5, 2017
- Draft Construction Sequencing Plan – January 27, 2017
- PG&E Phone Call – February 2, 2017

- BAAQMD Phone Call – February 9, 2017
- Fire Marshal Phone Call – March 9, 2017
- Western Energy Phone Call – March 16, 2017
- Draft Pre-design Report – April 7, 2017
- Draft Pre-Design Report Review Workshop – April 21, 2017
- Final Pre-design Report – May 12, 2017

9. KEY PERSONNEL

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

Role	Key Person to be Assigned
Principal in Charge	Grace Chow
Project Manager	Donna Rammell
Project Engineer	Tim Banyai
Electrical Engineer	Robb McComb
Instrument and Controls Engineer	Lou Verduzco
Mechanical Engineer	David Greenfield
Structural Engineer	Eric Wilkins
Air Permitting	Don Trueblood
Electrical Subconsultant	Todd Beecher

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. 1 as of November ___, 2016 and therewith incorporate it as part of the Agreement.

DISTRICT	ENGINEER
Union Sanitary District	**Brown and Caldwell**
By: _____	By: _____
Paul R. Eldredge, P.E. General Manager/District Engineer	Jeffrey R. Kivett Vice President
Date: _____	Date: _____

Exhibit A - Fee Summary
Standby Power Generation System Upgrade Project

Exhibit A - Union Sanitary District (CA) -- Standby Power Generation System Upgrade Project

Phase	Phase Description	Rammell, Donna L	Martindell, Susan M	Banyai, Timothy R	McComb, Robb J	Verduzco, Louis T	Greenfield, David P	Wilkins, Eric J	Trueblood, Donald C	Bali, Nitan	Agster, William P	Burke, Fred	Tanner, Deanna L	Anderson, Gary L	Total Labor Hours	Total Labor Effort	APC	Travel	Total ODCs	Todd Beecher Hours	Todd Beecher Cost	Total Sub Cost	Total Expense Cost	Total Expense Effort	Total Effort
		PM	PA	PE	EE	I&C	ME	SE	Air	EE	Cost	CAD	WP	QC											
		$248.85	$117.80	$261.29	$174.87	$224.19	$167.83	$179.66	$230.91	$102.84	$225.32	$162.79	$101.38	$219.44											
Task 1	**Project Management**	24	12	4	0	0	0	0	0	0	0	0	6	32	**78**	**16,543**	**624**	100	**100**	**12**	2,340	**2,340**	**2,440**	**3,181**	**19,724**
1.1	Project Coordination	18	12	0	0	0	0	0	0	0	0	0	2	0	**32**	6,278	256	0	**0**	**4**	**780**	**780**	**780**	**1,075**	**7,353**
1.2	Quality Control	0	0	0	0	0	0	0	0	0	0	0	2	32	**34**	7,442	272	0	**0**	**0**	**0**	**0**	**0**	**272**	**7,714**
1.3	Client Kick off Meeting	6	0	4	0	0	0	0	0	0	0	0	2	0	**12**	2,823	96	100	**100**	**8**	**1,560**	**1,560**	**1,660**	**1,834**	**4,657**
Task 2	**Pre-Design**																								
2.1	**Information Review & Site Visit**	4	0	4	8	0	0	0	0	4	0	0	0	0	**20**	**3,966**	**160**	100	**100**	**6**	1,170	**1,170**	**1,270**	**1,489**	**5,455**
2.1.1	Review Drawings & Reports	2	0	2	8	0	0	0	0	4	0	0	0	0	**16**	2,916	128	0	**0**	**4**	**780**	**780**	**780**	**947**	**3,863**
2.1.2	USD Site Visit	2	0	2	0	0	0	0	0	0	0	0	0	0	**4**	1,051	32	100	**100**	**2**	**390**	**390**	**490**	**542**	**1,592**
2.2	**Evaluate Alternatives Site Locations**	14	0	6	24	0	0	0	0	12	12	6	6	0	**80**	**15,299**	**644**	200	**200**	**60**	11,760	**11,760**	**11,960**	**13,192**	**28,491**
2.2.1	Brainstorming Workshop	4	0	2	0	0	0	0	0	0	0	0	2	0	**8**	1,772	64	100	**100**	**4**	**780**	**780**	**880**	**983**	**2,755**
2.2.2	Draft TM	2	0	4	16	0	0	0	0	12	12	6	2	0	**54**	9,827	436	0	**0**	**52**	**10,200**	**10,200**	**10,200**	**11,146**	**20,972**
2.2.3	Site Evaluation Workshop	8	0	0	8	0	0	0	0	0	0	0	2	0	**18**	3,700	144	100	**100**	**4**	**780**	**780**	**880**	**1,063**	**4,763**
2.2.4	Local Site Visits	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**
2.3	**Construction Sequencing Plan Draft**	2	0	2	6	0	0	0	0	2	0	0	2	0	**14**	**2,552**	**112**	0	**0**	**4**	780	**780**	**780**	**931**	**3,483**
2.4	**Field Investigation Visit**	0	0	0	12	0	0	0	0	0	0	0	0	0	**12**	**2,161**	**96**	200	**200**	**8**	1,560	**1,560**	**1,760**	**1,934**	**4,095**
2.5	**Exterior Stakeholder Coordination**	16	0	4	0	0	0	0	4	0	0	0	0	0	**24**	**6,129**	**192**	0	**0**	**18**	3,510	**3,510**	**3,510**	**3,878**	**10,006**
2.5.1	PG&E	4	0	0	0	0	0	0	0	0	0	0	0	0	**4**	1,025	32	0	**0**	**10**	**1,950**	**1,950**	**1,950**	**2,080**	**3,105**
2.5.2	BAAQMD	4	0	0	0	0	0	0	4	0	0	0	0	0	**8**	1,977	64	0	**0**	**0**	**0**	**0**	**0**	**64**	**2,041**
2.5.3	Fire Marshal	4	0	4	0	0	0	0	0	0	0	0	0	0	**8**	2,102	64	0	**0**	**0**	**0**	**0**	**0**	**64**	**2,166**
2.5.4	Western Energy	4	0	0	0	0	0	0	0	0	0	0	0	0	**4**	1,025	32	0	**0**	**8**	**1,560**	**1,560**	**1,560**	**1,670**	**2,695**
2.6	**Evaluate Microgrid System**	2	0	4	8	0	0	0	0	24	8	0	2	0	**48**	**7,638**	**384**	0	**0**	**8**	1,560	**1,560**	**1,560**	**2,022**	**9,660**
2.7	**Evaluate Fuel Island Relocation**	2	0	4	4	0	0	0	0	18	0	0	2	0	**30**	**4,425**	**240**	0	**0**	**0**	0	**0**	**0**	**240**	**4,665**
2.8	**Engineering Analysis**	2	0	2	44	24	16	4	4	32	16	32	0	0	**176**	**31,444**	**1,408**	0	**0**	**54**	10,500	**10,500**	**10,500**	**12,433**	**43,877**
2.9	**Pre-Design Report**	18	0	18	36	20	12	8	8	16	8	16	12	0	**172**	**33,505**	**1,376**	100	**100**	**52**	10,120	**10,120**	**10,220**	**12,102**	**45,607**
2.9.1	Draft Report	6	0	6	24	16	8	4	4	8	4	8	8	0	**96**	18,197	768	0	**0**	**36**	**7,000**	**7,000**	**7,000**	**8,118**	**26,315**
2.9.2	Review Workshop	8	0	8	0	0	0	0	0	0	0	0	0	0	**16**	4,204	128	100	**100**	**8**	**1,560**	**1,560**	**1,660**	**1,866**	**6,070**
2.9.3	Final Report	4	0	4	12	4	4	4	4	8	4	8	4	0	**60**	11,105	480	0	**0**	**8**	**1,560**	**1,560**	**1,560**	**2,118**	**13,223**
	GRAND TOTAL	**84**	**12**	**48**	**142**	**44**	**28**	**12**	**16**	**108**	**44**	**54**	**30**	**32**	**654**	**123,663**	**5,236**	**700**	**700**	**222**	**43,300**	**43,300**	**44,000**	**51,401**	**175,064**

Labor Multiplier: 3.23
5 percent markup on Subconsultants
$8/hour Associated Project Costs

Directors
Manny Fernandez
Tom Handley
Pat Kite
Anjali Lathi
Jennifer Toy

Officers
Paul R. Eldredge
General Manager/
District Engineer

Karen W. Murphy
Attorney

DATE: November 7, 2016

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. 12 - Meeting of November 14, 2016
Authorize the General Manager to Execute an Agreement and Task Order No. 1 with Brown and Caldwell for the Primary Digester No. 7 Project

Recommendation

Staff recommends the Board authorize the General Manager to execute an Agreement and Task Order No. 1 with Brown and Caldwell in the amount of $127,577 for the Primary Digester No. 7 Project.

Funds for the Project have been budgeted in the Capacity Fund.

Background

Wastewater biosolids, or sludge, from the treatment process are stabilized when microorganisms break down biodegradable material within large heated process vessels called anaerobic digesters. The Plant currently has six primary anaerobic digesters, of different sizes, that were constructed during various upgrade projects from 1960s through the 1990s.

On November 23, 2015, the Board authorized staff to execute an agreement and task order with Carollo Engineers to determine the current capacity of the treatment plant for the removal of conventional pollutants (BOD, TSS) for all unit processes, operations, and associated conveyance systems, including but not limited to, sludge degritting, gravity thickening, gravity belt thickening, anaerobic digestion, and sludge dewatering. Results from this assessment concluded that

current biosolids loadings for anaerobic digestion have reached the original design capacity with all digesters in service. Additionally, it was determined that Primary Digester No. 6, the largest existing digester, cannot reliably be taken out of service for cleaning until additional digestion capacity is provided.

Project Scope

The scope of services for this project will include the following:

- Construction of a new anaerobic digester, Primary Digester No. 7, with an effective volume of approximately 1.5 million gallons, the same as Primary Digester No. 6.
- Installation of new heating, mixing and conveyance equipment and piping within or adjacent to existing Heating and Mixing Building No. 4.
- Integration of new digester equipment and piping with existing digester feed, withdrawal, transfer, heating and gas systems.
- Improvements to existing digester heat generation and conveyance systems.
- Installation of electrical and instrumentation equipment for interfacing with existing electrical systems and controls.

The attached Figure 1 includes a partial site plan of the plant showing the locations of the existing primary digesters and the future Primary Digester No. 7.

Predesign Services

Staff conducted a consultant selection process and invited six consultants, Brown and Caldwell, Carollo Engineers, West Yost Associates, CH2M, RMC Water and Environment, and Water Works Engineers, to participate. West Yost Associates, CH2M, RMC Water and Environment, and Water Works Engineers all declined the invitation because of a lack of personnel available to work on the Project. Staff conducted interviews with the other two consultants in October 2016, and selected Brown and Caldwell due to the experience of their engineering staff, intimate knowledge of the Plant, and past experience with designing anaerobic digesters.

Brown and Caldwell prepared a scope of services for the predesign phase of the Project and the cost of Task Order No. 1 is summarized below.

Task No.	Task Description	Fee
1.0	Project Management	$6,575
2.0	Develop Design Criteria	$14,808
3.0	Digester Mixing, Covers and Bottom Configuration	$20,653
4.0	Integration with Digester Systems	$18,474
5.0	Advanced Digestion Processes	$7,403

Task No.	Task Description	Fee
6.0	Siting Analysis	$4,511
7.0	Preliminary Design Report	$45,485
8.0	Site Visits (Optional Services)	$9,668
Task Order Not-to-Exceed Fee (Tasks 1-8)		**$127,577**

Staff believes the total not-to-exceed fee of $127,577 is reasonable given the effort needed to evaluate the location and structural configuration of the new digester and the integration of the new digester to the existing systems.

The Primary Digester No. 7 Project will require an evaluation of the existing digester heat generation and conveyance systems. This includes the potential replacement of the existing boiler and the possible rerouting or replacement of portions of the existing hot water piping system. Part of this evaluation will also include identifying air permitting considerations that could impact the final design.

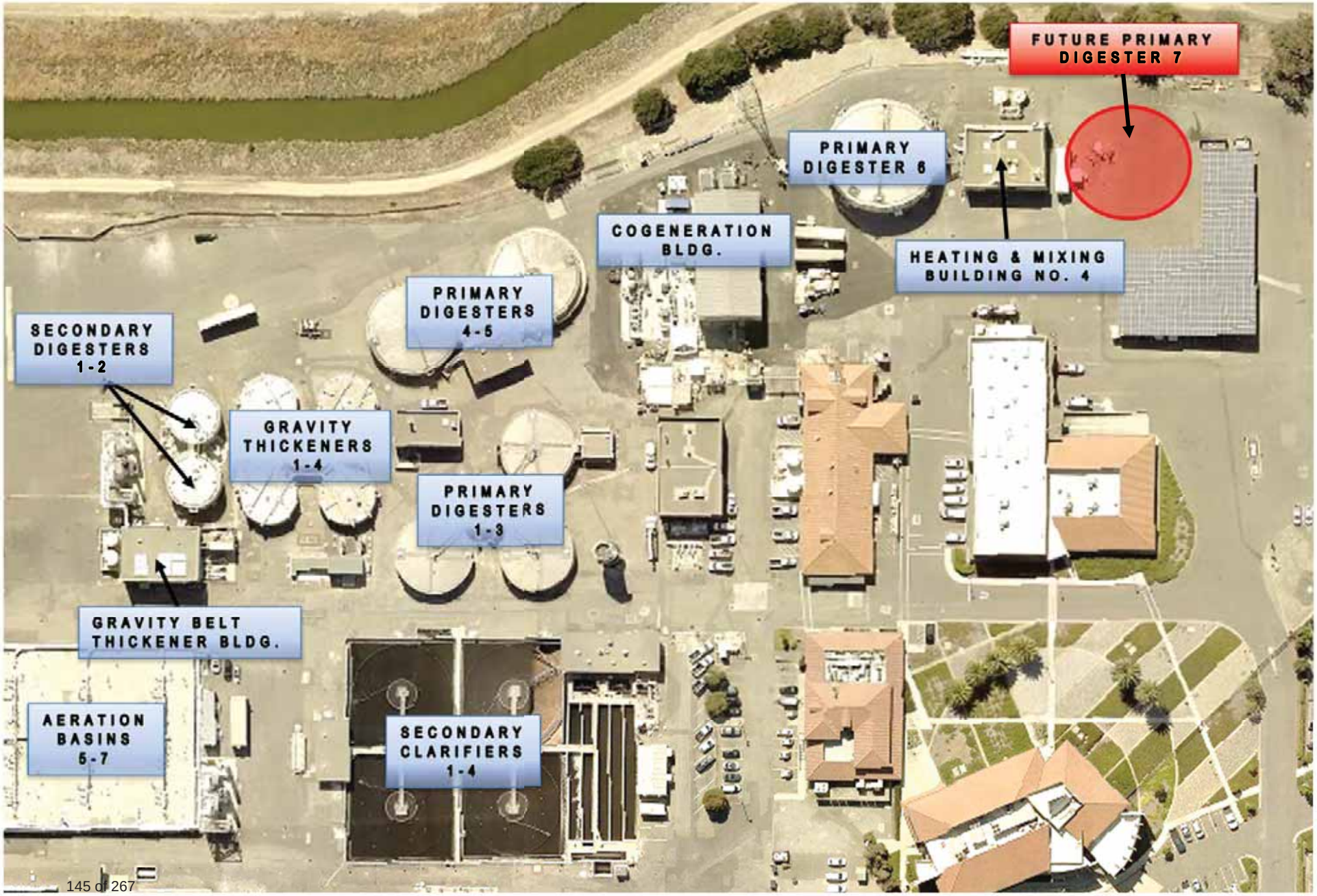
Brown and Caldwell will complete the predesign phase services by Summer 2017. Staff anticipates final design will begin in the summer of 2017 and be complete in early 2018, and construction could begin by Summer 2018.

Staff recommends the Board authorize the General Manager to execute an Agreement and Task Order No. 1 with Brown and Caldwell in the amount of $127,577 for the Primary Digester No. 7 Project.

PRE/SEG/RC/CB:ks

Attachment: Figure 1 – Plant Site Plan
Agreement
Task Order No. 1

FIGURE 1 – PRIMARY DIGESTER NO. 7 PROJECT



PRIMARY DIGESTER NO. 7 PROJECT

AGREEMENT

BETWEEN

UNION SANITARY DISTRICT

AND

BROWN AND CALDWELL

FOR

PROFESSIONAL SERVICES

THIS IS AN AGREEMENT MADE AS OF NOVEMBER ____, 2016, BETWEEN UNION SANITARY DISTRICT (hereinafter referred to as District), and BROWN AND CALDWELL (hereinafter referred to as Engineer).

WITNESSETH:

WHEREAS, District intends to construct the Primary Digester No. 7 Project (hereinafter referred to as Project), and,

WHEREAS, District requires certain professional services in connection with the Project (hereinafter referred as Services); and

WHEREAS, Engineer is qualified and prepared to provide such Services;

NOW, THEREFORE, in consideration of the promises contained herein, the parties agree as follows:

ARTICLE 1 - SERVICES TO BE PERFORMED BY ENGINEER

1.1 Specific Services and the associated scope of services, payment, schedule, and personnel will be defined in specific Task Order as mutually agreed by District and Engineer.

1.2 All Task Orders will by reference incorporate the terms and conditions of this Agreement, and become formal amendments hereto.

ARTICLE 2 - COMPENSATION

2.1 Compensation for consulting services performed under this Agreement shall include:

(1) Direct labor costs, multiplied by an agreed upon fixed factor (the Multiplier), to compensate for fringe benefits, indirect costs, and profit.

(2) Non-labor direct project charge not included in the fixed factor and acceptable, without any markup.

(3) Subconsultant costs, with a maximum markup of 5%.

Definitions are as follows:

(a) Direct labor is salaries and wages paid to personnel for time directly chargeable to the project. Direct labor does not include the cost of Engineer's statutory and customary benefits, such as sick leave, holidays, vacations, and medical and retirement benefits nor the cost of the time of executive and administrative personnel and others whose time is not identifiable to the project.

(b) Fringe benefits include Engineer's statutory and customary benefits, such as sick leave, holidays, vacations, medical and retirement benefits, incentive pay, tuition, and other costs classified as employee benefits.

(c) Indirect costs are allocations of costs that are not directly chargeable to a specific engagement and are commonly referred to as Engineer's overhead. Indirect costs include provisions for such things as clerical support, office space, light and heat, insurance, statutory and customary employee benefits, and the time of executive and administrative personnel and others whose time is not identifiable to the Project or to any other project. Under no circumstances can the same labor costs be charged as direct labor and also appear at the same time as indirect costs, and vice versa.

(d) The Multiplier is a multiplicative factor which is applied to direct labor costs, and compensates Engineer for fringe benefits and indirect costs (overhead) and profit.

(e) Other non-labor direct project charges shall be included in the overhead and these charges include typical expenses as cost of transportation and subsistence, printing and reproduction, computer time and programming costs, identifiable supplies, outside consultant's charges, subcontracts, and charges by reviewing authorities."

Alternatively, the District and the Engineer may agree to utilize the fully-encumbered hourly rates and fees for Services performed by the Engineer. These hourly rates and fees shall be based on the Engineer's rate schedule published at the time this Agreement or Task Order is executed and shall be attached to each applicable Task Order.

2.2 Reimbursement for mileage shall not exceed the prevailing Internal Revenue Service's standard mileage rate.

2.3 A *Cost Ceiling* will be established for each Task Order which is based upon estimated labor-hours and cost estimates. Costs as described above, comprising direct labor, overhead cost, and other direct costs, shall be payable up to a Cost Ceiling as specified in the Task Order. A *Maximum Fee Ceiling,* or *Task Order Firm Ceiling*, will also be established for each Task Order which includes the Cost Ceiling plus the Professional Fee.

2.4 Engineer shall invoice District monthly for the actual costs incurred, and a pro-rated portion of the Professional Fee for work performed during the previous month. If the Maximum Fee Ceiling is reached, the Engineer will complete the agreed-upon work for the Maximum Fee Ceiling. With District staff approval, labor hours may be reallocated within the tasks without renegotiation in such a manner so as not to exceed the Maximum Fee Ceiling.

2.5 The Engineer shall provide the District with a review of the budget amounts when 75 percent of the Cost Ceiling for any task has been expended. Engineer may request a revision in the Cost Ceiling for performance of this Agreement, and will relate the rationale for the revision to the specific basis of estimate as defined in the Scope of Services. Such notification will be submitted to the District at the earliest possible date. The authorized Cost Ceiling shall not be exceeded without written approval of the District.

2.6 The Professional Fee will not be changed except in the case of a written amendment to the Agreement which alters the Scope of Services. District and Engineer agree to negotiate an increase or decrease in Cost Ceiling and Professional Fee for any change in Scope of Services required at any time during the term of this Agreement. Engineer will not commence work on the altered Scope of Services until authorized by District.

2.7 Direct labor rates are subject to revision to coincide with Engineer's normal salary review schedule. Adjustments in direct labor rates shall

not affect the firm ceiling without prior written authorization of the District.

2.8 District shall pay Engineer in accordance with each Task Order for Services.

2.9 Engineer shall submit monthly statements for Services rendered. District will make prompt monthly payments in response to Engineer's monthly statements.

ARTICLE 3 - PERIOD OF SERVICE

3.1 Engineer's services will be performed and the specified services rendered and deliverables submitted within the time period or by the date stipulated in each Task Order.

3.2 Engineer's services under this Agreement will be considered complete when the services are rendered and/or final deliverable is submitted and accepted by District.

3.3 If any time period within or date by which any of the Engineer's services are to be completed is exceeded through no fault of Engineer, all rates, measures and amounts of compensation and the time for completion of performance shall be subject to equitable adjustment.

ARTICLE 4 - DISTRICT'S RESPONSIBILITIES

District will do the following in a timely manner so as not to delay the services of Engineer.

4.1 Provide all criteria and full information as to District's requirements for the services assignment and designate in writing a person with authority to act on District's behalf on all matters concerning the Engineer's services.

4.2 Furnish to Engineer all existing studies, reports and other available data pertinent to the Engineer's services, obtain or authorize Engineer to obtain or provide additional reports and data as required, and furnish to Engineer services of others required for the performance of Engineer's services hereunder, and Engineer shall be entitled to use and rely upon all such information and services provided by District or others in performing Engineer's services under this Agreement.

4.3 Arrange for access to and make all provisions for Engineer to enter upon public and private property as required for Engineer to perform services hereunder.

4.4 Perform such other functions as are indicated in each Task Order related to duties of District.

4.5 Bear all costs incident to compliance with the requirements of this Section.

ARTICLE 5 - STANDARD OF CARE

5.1 Engineer shall exercise the same degree of care, skill, and diligence in the performance of the Services as is ordinarily provided by a professional Engineer under similar circumstance and Engineer shall, at no cost to District, re-perform services which fail to satisfy the foregoing standard of care.

ARTICLE 6 - OPINIONS OF COST AND SCHEDULE

6.1 Since Engineer has no control over the cost of labor, materials, equipment or services furnished by others, or over contractors', subcontractors' , or vendors' methods of determining prices, or over competitive bidding or market conditions or economic conditions, Engineer's cost estimate and economic analysis shall be made on the basis of qualification and experience as a professional engineer.

6.2 Since Engineer has no control over the resources provided by others to meet contract schedules, Engineer's forecast schedules shall be made on the basis of qualification and experience as a professional Engineer.

6.3 Engineer cannot and does not guarantee that proposals, bids or actual project costs will not vary from his cost estimates or that actual schedules will not vary from his forecast schedules.

ARTICLE 7 - SUBCONTRACTING

7.1 No subcontract shall be awarded by Engineer until prior written approval is obtained from the District.

ARTICLE 8 - ENGINEER-ASSIGNED PERSONNEL

8.1 Engineer shall designate in writing an individual to have immediate responsibility for the performance of the services and for all matters relating to performance under this Agreement. Key personnel to be assigned by Engineer will be stipulated in each Task Order. Substitution of any assigned person shall require the prior written approval of the District, which shall not be unreasonably withheld. If the District determines that a proposed substitution is not responsible or qualified to perform the services then, at the request of the District, Engineer shall substitute a qualified and responsible person.

ARTICLE 9 - OWNERSHIP OF DOCUMENTS

9.1 All work products, drawings, data, reports, files, estimate and other such information and materials (except proprietary computer programs, including source codes purchased or developed with Engineer monies) as may be accumulated by Engineer to complete services under this Agreement shall be owned by the District.

9.2 Engineer shall retain custody of all project data and documents other than deliverables specified in each Task Order, but shall make access thereto available to the District at all reasonable times the District may request. District may make and retain copies for information and reference.

9.3 All deliverables and other information prepared by Engineer pursuant to this Agreement are instruments of service in respect to this project. They are not intended or represented to be suitable for reuse by District or others on extensions of this Project or on any other project. Any reuse without written verification or adaptation by Engineer for the specific purpose intended will be at District's sole risk and without liability or legal exposure to Engineer; and District shall indemnify and hold harmless Engineer against all claims, damages, losses, and expenses including attorney's fees arising out of or resulting from such reuse. Any such verification or adaptation will entitle Engineer to further compensation at rates to be agreed upon by District and Engineer.

ARTICLE 10 - RECORDS OF LABOR AND COSTS

10.1 Engineer shall maintain for all Task Orders, records of all labor and costs used in claims for compensation under this Agreement. Records shall mean a contemporaneous record of time for personnel; a methodology and calculation of the Multiplier for fringe benefits and indirect costs; and invoices, time sheets, or other factors used as a basis for determining other non-labor Project charges. These records must be made available to the District upon reasonable notice of no more than 48 hours during the period of the performance of this Agreement.

10.2 After delivery of Services (completion of Task Orders) under this Agreement, the Engineer's records of all costs used in claims for compensation under this Agreement shall be available to District's accountants and auditors for inspection and verification. These records will be maintained by Engineer and made reasonably accessible to the District for a period of three (3) years after completion of Task Orders under this Agreement.

10.3 Engineer agrees to cooperate and provide any and all information concerning the Project costs which are a factor in determining compensation under this Agreement as requested by the District or any public agency which has any part in providing financing for, or authority over, the Services which are provided under the Agreement.

10.4 Failure to provide documentation or substantiation of all Project costs used as a factor in compensation paid under Article 2 hereof will be grounds for District to refuse payment of any statement submitted by the Engineer and for a back charge for any District funds, including interest from payment; or grant, matching, or other funds from agencies assisting District in financing the Services specified in this Agreement.

ARTICLE 11 - INSURANCE

Engineer shall provide and maintain at all times during the performance of the Agreement the following insurances:

11.1 Workers' Compensation and Employer's Liability Insurance for protection of Engineer's employees as required by law and as will protect Engineer from loss or damage because of personal injuries, including death to any of his employees.

11.2 Comprehensive Automobile Liability Insurance. Engineer agrees to carry a Comprehensive Automobile Liability Policy providing bodily injury liability. This policy shall protect Engineer against all liability arising out of the use of owned or leased automobiles both passenger and commercial. Automobiles, trucks, and other vehicles and equipment (owned, not owned, or hired, licensed or unlicensed for road use) shall be covered under this policy. Limits of liability for Comprehensive Automobile Liability Insurance shall not be less than $1,000,000 Combined Single Limit.

11.3 Comprehensive General Liability Insurance as will protect Engineer and District from any and all claims for damages or personal injuries, including death, which may be suffered by persons, or for damages to or destruction to the property of others, which may arise from the Engineer's operations under this Agreement, which insurance shall name the District as additional insured. Said insurance shall provide a minimum of $1,000,000 Combined Single Limit coverage for personal injury, bodily injury, and property damage for each occurrence and aggregate. Such insurance will insure Engineer and District from any and all claims arising from the following:

1. Personal injury;
2. Bodily injury;
3. Property damage;
4. Broad form property damage;
5. Independent contractors;
6. Blanket contractual liability.

11.4 Engineer shall maintain a policy of professional liability insurance, protecting it against claims arising out of negligent acts, errors, or omissions of Engineer pursuant to this Agreement, in an amount of not less than $1,000,000. The said policy shall cover the indemnity provisions under this Agreement.

11.5 Engineer agrees to maintain such insurance at Engineer's expense in full force and effect in a company or companies satisfactory to the District. All coverage shall remain in effect until completion of the Project.

11.6 Engineer will furnish the District with certificates of insurance and endorsements issued by Engineer's insurance carrier and countersigned by an authorized agent or representative of the insurance company. The certificates shall show that the insurance will not be cancelled without at least thirty (30) days' prior written notice to the District. The certificates for liability insurance will show that liability assumed under this Agreement is included. The endorsements will

show the District as an additional insured on Engineer's insurance policies for the coverage required in Article 11 for services performed under this Agreement, except for workers' compensation and professional liability insurance.

11.7 Waiver of Subrogation: Engineer hereby agrees to waive subrogation which any insurer of Engineer may acquire from Engineer by virtue of the payment of any loss. Engineer agrees to obtain any endorsement that may be necessary to effect this waiver of subrogation.

The Workers' Compensation policy shall be endorsed with a waiver of subrogation in favor of the District for all work performed by the Engineer, its employees, agents and subconsultants.

ARTICLE 12 - LIABILITY AND INDEMNIFICATION

12.1 Having considered the risks and potential liabilities that may exist during the performance of the Services, and in consideration of the promises included herein, District and Engineer agree to allocate such liabilities in accordance with this Article 12. Words and phrases used in this Article shall be interpreted in accordance with customary insurance industry usage and practice.

12.2 Engineer shall indemnify and save harmless the District and all of their agents, officers, and employees from and against all claims, demands, or causes of action of every name or nature to the extent caused by the negligent error, omission, or act of Engineer, its agents, servants, or employees in the performance of its services under this Agreement.

12.3 In the event an action for damages is filed in which negligence is alleged on the part of District and Engineer, Engineer agrees to defend District. In the event District accepts Engineer's defense, District agrees to indemnify and reimburse Engineer on a pro rata basis for all expenses of defense and any judgment or amount paid by Engineer in resolution of such claim. Such pro rata share shall be based upon a final judicial determination of negligence or, in the absence of such determination, by mutual agreement.

12.4 Engineer shall indemnify District against legal liability for damages arising out of claims by Engineer's employees. District shall indemnify Engineer against legal liability for damages arising out of claims by District's employees.

12.5 Indemnity provisions will be incorporated into all Project contractual arrangements entered into by District and will protect District and Engineer to the same extent.

12.6 Upon completion of all services, obligations and duties provided for in the Agreement, or in the event of termination of this Agreement for any reason, the terms and conditions of this Article shall survive.

12.7 To the maximum extent permitted by law, Engineer's liability for District's damage will not exceed the aggregate compensation received by Engineer under this Agreement or the maximum amount of professional liability insurance available at the time of any settlement or judgment, which ever is greater.

ARTICLE 13 - INDEPENDENT CONTRACTOR

Engineer undertakes performance of the Services as an independent contractor and shall be wholly responsible for the methods of performance. District will have no right to supervise the methods used, but District will have the right to observe such performance. Engineer shall work closely with District in performing Services under this Agreement.

ARTICLE 14 - COMPLIANCE WITH LAWS

In performance of the Services, Engineer will comply with applicable regulatory requirements including federal, state, and local laws, rules, regulations, orders, codes, criteria and standards. Engineer shall procure the permits, certificates, and licenses necessary to allow Engineer to perform the Services. Engineer shall not be responsible for procuring permits, certificates, and licenses required for any construction unless such responsibilities are specifically assigned to Engineer in Task Order.

ARTICLE 15 - NONDISCLOSURE OF PROPRIETARY INFORMATION

Engineer shall consider all information provided by District and all drawings, reports, studies, design calculations, specifications, and other documents resulting from the Engineer's performance of the Services to be proprietary unless such information is available from public sources. Engineer shall not publish or disclose proprietary information for any purpose other than the performance of the Services without the prior written authorization of District or in response to legal process.

ARTICLE 16 - TERMINATION OF CONTRACT

16.1 The obligation to continue Services under this Agreement may be terminated by either party upon seven days written notice in the event of substantial failure by the other party to perform in accordance with the terms hereof through no fault of the terminating party.

16.2 District shall have the right to terminate this Agreement or suspend performance thereof for District's convenience upon written notice to Engineer, and Engineer shall terminate or suspend performance of Services on a schedule acceptable to District. In the event of termination or suspension for District's convenience, District will pay Engineer for all services performed and costs incurred including termination or suspension expenses. Upon restart of a suspended project, equitable adjustment shall be made to Engineer's compensation.

ARTICLE 17 - UNCONTROLLABLE FORCES

17.1 Neither District nor Engineer shall be considered to be in default of this Agreement if delays in or failure of performance shall be due to uncontrollable forces, the effect of which, by the exercise of reasonable diligence, the nonperforming party could not avoid. The term "uncontrollable forces" shall mean any event which results in the prevention or delay of performance by a party of its obligations under this Agreement and which is beyond the control of the nonperforming party. It includes, but is not limited to, fire, flood, earthquake, storms, lightening, epidemic, war, riot, civil disturbance, sabotage, inability to procure permits, licenses, or authorizations from any state, local, or federal agency or person for any of the supplies, materials, accesses, or services required to be provided by either District or Engineer under this Agreement, strikes, work slowdowns or other labor disturbances, and judicial restraint.

17.2 Neither party shall, however, be excused from performance if nonperformance is due to uncontrollable forces which are removable or remediable, and which the nonperforming party could have, with the exercise of reasonable diligence, removed or remedied with reasonable dispatch. The provisions of this Article shall not be interpreted or construed to require Engineer or District to prevent, settle, or otherwise avoid a strike, work slowdown, or other labor action. The nonperforming party shall, within a reasonable time of being prevented or delayed from performance by an uncontrollable force, give written notice to the other party describing the circumstances and uncontrollable forces preventing continued

performance of the obligations of this Agreement. The Engineer will be allowed reasonable negotiated extension of time or adjustments for District initiated temporary stoppage of services.

ARTICLE 18 - MISCELLANEOUS

18.1 A waiver by either District or Engineer of any breach of this Agreement shall not be binding upon the waiving party unless such waiver is in writing. In the event of a written waiver, such a waiver shall not affect the waiving party's rights with respect to any other or further breach.

18.2 The invalidity, illegality, or unenforceability of any provision of this Agreement, or the occurrence of any event rendering any portion or provision of this Agreement void, shall in no way effect the validity or enforceability of any other portion or provision of the Agreement. Any void provision shall be deemed severed from the Agreement and the balance of the Agreement shall be construed and enforced as if the Agreement did not contain the particular portion or provision held to be void.

ARTICLE 19 - INTEGRATION AND MODIFICATION

19.1 This Agreement (consisting of pages 1 to 15), together with all Task Orders executed by the undersigned, is adopted by District and Engineer as a complete and exclusive statement of the terms of the Agreement between District and Engineer. This Agreement supersedes all prior agreements, contracts, proposals, representations, negotiations, letters, or other communications between the District and Engineer pertaining to the Services, whether written or oral.

19.2 The Agreement may not be modified unless such modifications are evidenced in writing signed by both District and Engineer.

ARTICLE 20 - SUCCESSORS AND ASSIGNS

20.1 District and Engineer each binds itself and its directors, officers, partners, successors, executors, administrators, assigns and legal representatives to the other party to this Agreement and to the partners, successors, executors, administrators, assigns, and legal representatives of such other party, in respect to all covenants, agreements, and obligations of this Agreement.

20.2 Neither District nor Engineer shall assign, sublet, or transfer any rights under or interest in (including, but without limitation, monies that may become due or monies that are due) this Agreement without the written consent of the other, except to the extent that the effect of this limitation may be restricted by law. Unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under this Agreement. Nothing contained in this paragraph shall prevent Engineer from employing such independent engineers, associates, and subcontractors as he may deem appropriate to assist him/her in the performance of the Services hereunder and in accordance with Article 7.

20.3 Nothing herein shall be construed to give any rights or benefits to anyone other than District and Engineer.

ARTICLE 21 – INFORMATION SYSTEM SECURITY

When the District determines this article is applicable, the Engineer shall obtain written approval from the District representative prior to accessing District internal systems through real-time computer connections. Upon approval, the Engineer will use only in-bound connections to accomplish a legitimate business need and a previously defined and approved task. As a condition of approval, the Engineer shall:

a) Be running a current operating system supported by the District with up-to-date security patches applied as defined in the District COE/Non-COE document.

b) Have anti-virus software installed on his/her personal computer with up-to-date virus signatures.

c) Have personal firewall software installed and enabled on their computer.

d) Understand and sign the District's Electronic Equipment Use Policy, number 2160.

The District reserves the right to audit the security measures in effect on Engineer's connected systems without prior notice. The District also reserves the right to terminate network connections immediately with all Engineer's systems not meeting the above requirements.

ARTICLE 22 – EMPLOYEE BACKGROUND CHECK

Engineer, at no additional expense to the District, shall conduct a background check for each of its employees, as well as for the employees of its subconsultants (collectively "Consultant Employees") who will have access to District's computer systems, either through on-site or remote access, or whose contract work requires an extended presence on the District's premises. The minimum background check process for any District consultant shall include, but not be limited to:

1. California residents: Criminal Records (County and State Criminal Felony and Misdemeanor
2. Out of State residents: Federal criminal search of the National Criminal Database,

The background check shall be conducted and the results submitted to the District prior to initial access by Consultant Employees. If at any time, it is discovered that a Consultant Employee has a criminal record that includes a felony or misdemeanor, the Engineer is required to inform the District immediately and the District will assess the circumstances surrounding the conviction, time frame, nature, gravity, and relevancy of the conviction to the job duties, to determine whether the Consultant Employee will be placed or remain on a District assignment. The District may withhold consent at its sole discretion. The District may also conduct its own criminal background check of the Consultant Employees. Failure of the Engineer to comply with the terms of this paragraph may result in the termination of its contract with the District.

ARTICLE 23 - EXCEPTIONS

23.1 Article 11.3 – CHANGE "Comprehensive General Liability Insurance" to "Commercial General Liability Insurance."

23.2 Article 11.4 – DELETE the last sentence "The said policy shall cover the indemnity provisions under this Agreement."

23.3 Article 11.6 – In the third sentence, ADD "general" prior to "liability Insurance."

23.4 Article 12.3 – DELETE in its entirety, ADD "Not Used."

23.5 Article 12.7 – CHANGE "…or the maximum amount of professional liability insurance required by this Agreement available at the time of any settlement or judgement, which ever is greater." to "…or the minimum amount of professional liability insurance required by this Agreement."

IN WITNESS THEREOF, the parties hereto have made and executed this Agreement as of the day and year first above written.

UNION SANITARY DISTRICT	BROWN AND CALDWELL
By: _____	By: _____
Paul R. Eldredge, P.E. General Manager/District Engineer	Jeffrey R. Kivett Vice President
Date: _____	Date: _____

PRIMARY DIGESTER NO. 7 PROJECT

TASK ORDER NO. 1

to

AGREEMENT

BETWEEN

UNION SANITARY DISTRICT

AND

BROWN AND CALDWELL

FOR

PROFESSIONAL SERVICES

Dated November ___, 2016

1. PURPOSE

The purpose of Task Order No. 1 is to provide professional engineering preliminary design services for the Primary Digester No. 7 Project (Project). The Project will involve establishing design criteria for the digester, evaluating alternative design features and confirming the approach to integrating the digester with existing facilities. The Preliminary Design Report (PDR) prepared under this task will establish the design basis for the subsequent design effort.

2. PROJECT COORDINATION

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

3. SCOPE OF SERVICES

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

Task 1: Project Management

The Engineer shall manage the coordination and oversight of the Engineer's staff and administration of the contract, including project management plan development, project resources oversight, quality, costs, deliverables and schedule, periodic status calls, monthly progress reporting, invoicing, and coordinating communications between the Engineer's staff and District staff.

The project management plan will include a quality assurance/quality control (QA/QC) plan. QA/QC reviews for deliverables will be performed under each task.

Additionally, Engineer shall maintain a risk register, action item log and decision log to track and document project risks, decisions and action items. It is assumed that the duration of activities will not exceed the 6-month schedule provided with this scope of work.

The Engineer shall conduct a project kickoff meeting within two weeks of the notice-to-proceed (NTP). The Engineer shall develop and distribute an agenda and presentation before the start of the meeting. Engineer shall also provide a summary of the meeting results, decisions, and action items. Three members of the Engineer's project team shall attend a kickoff meeting located at the District's Office.

Assumptions:

- Preliminary design activities will be completed within 6 months of Notice to Proceed.
- USD will provide historical information such as design drawings and as-built documents for existing digester and ancillary facilities.

Deliverables:

- Monthly Project Status Reports
- Meeting Minutes from Kickoff Meeting

Task 2: Develop Design Criteria

The Engineer shall review previous evaluations and recent performance data to confirm the design criteria for the Project. Design criteria will focus on confirming the digester flows and loads, digester volume, organic loading rate, rapid rise overflow rate and equipment redundancy. Permitting considerations that may impact design criteria will be identified. Engineer shall submit a draft chapter as part of the Preliminary Design Report that summarizes the design criteria and shall

conduct a workshop with the District to review the chapter conclusions and recommendations.

Assumptions:

- Digester design criteria will be based on mesophilic digester operation to produce Class B biosolids.
- The Plant Solids System/Capacity Assessment will identify assumptions for feed sludge quality (e.g., percent solids concentration) if the District intends to implement solids thickening improvements. If improvements to solids thickening are not planned, Engineer shall assume historical solids concentrations for design conditions.
- Engineer shall incorporate comments on the Draft Design Criteria chapter and submit with the Preliminary Design Report.

Deliverables:

- Meeting minutes from Workshop 1
- Draft Design Criteria chapter from PDR

Task 3: Digester Mixing, Covers and Bottom Configuration

The Engineer shall compare and evaluate digester mixing types, cover types and bottom configurations. Engineer shall confirm with the District the mixing, covers and bottom configurations to be evaluated prior to starting this effort. Up to three cover types will be reviewed, such as membrane covers, standard (non-submerged) fixed covers, and submerged-fixed covers. Engineer shall review and evaluate with the District materials of construction for the covers (e.g., steel or concrete). Engineer shall review up to two digester bottom type configurations, such as waffle bottoms and cone bottoms and up to two mixing configurations such as gas lances in draft tubes and external pump mixing.

The Engineer shall evaluate order of magnitude (conceptual level) life cycle costs of the cover and mixing type together with the non-economic considerations of each option. The following information will be developed for the selected cover, bottom type and mixing configuration: cover type and material; cover materials of construction; overflow description including use of standpipes; maximum solids concentration that mixing equipment can accommodate, and recommended appurtenances.

Workshop 2 will be held with the District to review the mixing, covers and bottom configuration. The Engineer shall prepare a draft chapter of the Preliminary Design Report that summarizes the alternatives evaluation and the

selected/recommended alternatives. Engineer shall incorporate comments and issue the final chapter as part of the Preliminary Design Report.

Assumptions:

- The evaluation for cover, mixer and bottom configuration will consist of economic and non-economic criteria. The criteria will not be ranked and scored; a qualitative evaluation will be performed.
- Cost estimates will be developed at a conceptual, order of magnitude basis.
- Comments received on the draft Digester Mixing, Covers and Bottom Configuration chapter will be incorporated and issued with the Preliminary Design Report.

Deliverables:

- Meeting Minutes from Workshop 2
- Draft Digester Mixing, Covers and Bottom Configuration chapter from PDR

Task 4: Integration with Digester Systems: Digester Feed, Withdrawal, Transfer, and Heating

The Engineer shall review the existing digester feed, withdrawal, transfer, and heating systems. The evaluation will include a capacity analysis and redundancy requirements of the existing hot water heating system and heat exchangers, an estimate of future heating requirements, and establishing equipment needs and sizes to accommodate Digester No. 7. A mechanical condition assessment of the existing boiler will not be performed. Spiral heat exchangers are assumed for Digester No. 7. The evaluation will address how the new digester will tie into the existing feed, withdrawal, transfer and heating systems. The evaluation will also include identifying improvements that could be implemented to improve the efficiency of heating the existing digesters.

Under this task, Engineer shall evaluate the benefits of an additional, smaller boiler that would operate in parallel to the District's existing boiler. The evaluation will include consideration of air permitting, heating and energy efficiency, and integration with existing hot water loop system. A life cycle cost estimate will be prepared for this option (smaller boiler operation in parallel with existing, larger boiler) as well as the option of operating one single, larger boiler. The life cycle cost estimates will focus on order of magnitude capital cost estimates and annual energy cost estimates.

The Engineer shall develop a draft chapter to summarize the evaluation, findings and recommendations and conduct Workshop 3 to review the analysis. Workshop

3 will be conducted on the same day as Workshop 2. Engineer shall incorporate comments and issue the revised chapter as part of the Preliminary Design Report.

Assumptions:

- Spiral heat exchangers will be used for Digester No. 7; an analysis of alternative heat exchangers will not be performed.
- It is assumed that spiral heat exchangers will be sized for one operating condition (e.g., mesophilic condition).
- A condition assessment of the existing boiler will not be performed. Engineer shall coordinate with District staff to determine the mechanical condition and reliability of the boiler. The need for boiler replacement will be based on operational and maintenance history provided by District staff.
- Air permitting considerations for the boiler do not include contact or coordination with the BAAQMD.
- Cost estimates will be developed at a conceptual, order of magnitude basis.
- Engineer shall incorporate comments on the Digester Feed, Withdrawal, Transfer, and Heating chapter with the Preliminary Design Report

Deliverables:

- Meeting Minutes from Workshop 3
- Draft Digester Feed, Withdrawal, Transfer, and Heating chapter from PDR

<u>Task 5: Advanced Digestion Processes</u>

The Engineer shall recommend design features and concepts that can be included to accommodate recuperative thickening (e.g., Omnivore). The design features and concepts will be limited to identifying the incremental increase in heat exchanger sizing, selection of heating and mixing equipment and process piping connections.

Under this task, Engineer shall also evaluate and identify design features to facilitate struvite management such as alternative pipe lining and chemical addition. Under this effort, BC will identify the planning level construction costs for alternative pipe lining and chemical addition. The Engineer shall utilize construction cost estimates developed under the Plant Solids System/Capacity Assessment, when feasible.

Engineer shall include the evaluation, findings and recommendations in the draft Digester Feed, Withdrawal, Transfer and Heating chapter of the Preliminary Design Report. Workshop 4 will be conducted on the same day as Workshops 2 and 3.

Assumptions:

- The findings and recommendations of this evaluation will be incorporated and included in draft Digester Feed, Withdrawal, Transfer, and Heating chapter of the Preliminary Design Report.
- Planning level construction cost estimates for ferric chloride storage and metering were prepared in the Plant Solids System/Capacity Assessment and will be available for use in this task.

Deliverables:

- Meeting Minutes from Workshop 4

Task 6: Siting Analysis

Engineer shall assume the location of Digester No. 7 to be north of the existing Heating and Mixing Building No. 4. The location of the ancillary equipment will take into consideration impacts to existing underground utilities, constructability at the site, access, and ability for expansion in future project phases. The objective of this analysis will be to identify a location for the ancillary equipment.

Engineer shall review geotechnical conditions for one Digester No. 7 location using previous geotechnical investigations and evaluations.

The siting analysis will be reviewed with the District in the combined Workshops 2, 3 and 4. The recommendations will be incorporated into the PDR.

Assumptions

- A desktop geotechnical analysis is assumed for one Digester No. 7 location. No subsurface investigations will be performed.
- Subsequent project phases will evaluate if equipment is located in a new building or under a canopy.
- The combined Workshops 2, 3 and 4 will include discussion of siting the digester and ancillary equipment.

Deliverables:

- Siting analysis will be included in the Preliminary Design Report.

Task 7: Preliminary Design Report

The Engineer shall develop the Preliminary Design Report that will develop the design up to about 5 percent. The Preliminary Design Report will include the final versions of the chapters prepared under Tasks 2 through 6. Engineer shall prepare a draft and final Preliminary Design Report. In addition to the chapters prepared under Tasks 2 through 6, Engineer shall develop the following information for the recommended alternatives and present them in the report:

- Permitting considerations
- Preliminary structural design criteria focused on identifying pile foundation depths and impacts to adjacent facilities (if appropriate)
- Confirmation that projected electrical demands do not exceed the capacity of the system
- Considerations for ancillary systems
- Preliminary equipment list
- Construction phasing strategy
- Cost estimate (Class V estimate)
- Project Schedule

Assumptions:

- Permitting considerations will include identifying the types of permits needed and the approach to obtaining the necessary permits. Contact with regulatory agencies will not be performed under this task.
- CEQA activities will be performed as part of Detailed Design and are not included under this Task Order. Under this task the CEQA permitting approach will be identified.
- Detailed electrical design criteria will be established during detailed design. The electrical evaluation under this task will be limited to confirmation that there is adequate capacity to serve the anticipated electrical loads for Digester 7.
- Detailed structural design criteria will be developed during detailed design. The structural effort under this task will focus on confirming the depth of pile foundations and confirming potential impacts (if any) to adjacent structures.
- Final chapters from Tasks 2 through 6 will be included in the report.

Deliverables:

- Draft Preliminary Design Report (electronic copy)
- Final Preliminary Design Report, electronic and 5 hard copies will be provided.

Task 8: Site Visits (Optional Services)

Under this task, at the discretion of District Staff, Engineer shall perform the following activities:

- Site visits to Bay Area facilities for digester and gas storage features. Up to two days of site visits are assumed.

Assumptions:

- Up to two days of site visits are assumed to occur at different time periods.

4. DELIVERABLES

Task Order No. 1: Preliminary Design

Task 2:	Draft Design Criteria chapter from PDR
Task 3:	Draft Digester Mixing, Covers and Bottom Configuration chapter from PDR
Task 4:	Draft Digester Feed, Withdrawal, Transfer, and Heating chapter from PDR
Task 7:	Draft Preliminary Design Report Final Preliminary Design Report

The Engineer shall submit the final reports and draft chapters in both Word and .pdf formats to the District electronically. Five hard copies of the final report are assumed.

5. NOT USED

6. NOT USED

7. PAYMENT TO THE ENGINEER

Payment to the Engineer shall be as called for in Article 2 of the Agreement. The Multiplier for this work shall be 3.22, the profit shall be 13 percent, and the not-to-exceed amount shall be $127,577. 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:

Task Order / Amendment	**Not to Exceed Amount**	**Board Authorization Required? (Yes/No)**	**District Staff Approval**
Task Order No. 1 – Predesign Services	$127,577	Yes	Paul Eldredge
Total	**$127,577**		

8. TIME OF COMPLETION

All work defined in this Task Order shall be complete in 180 calendar days after the execution of this Task Order and subject to the conditions of Article 3 of this Agreement. The anticipated milestone dates are as follows:

Deliverable/Workshop	Anticipated Date
Project Kickoff Meeting	1 week after NTP (week November 21, 2016)
Draft Design Criteria Chapter	1 month after Kickoff (week of December 12, 2016)
Design Criteria Workshop 1	1 month after Kickoff (week of December 19, 2016)
Draft Digester Mixing, Covers and Bottom Configuration Chapter	3 months after Kickoff (week of February 6, 2017)
Draft Digester Feed, Withdrawal, Transfer, and Heating Chapter	3 months after Kickoff (week of February 6, 2017)
Workshops 2, 3 and 4	3 months after Kickoff (week of February 13, 2017)
Draft Preliminary Design Report	5 months after Kickoff (week of April 10, 2017)
Final Preliminary Design Report	6 months after Kickoff (week of May 8, 2017)

9. KEY PERSONNEL

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

Role	Key Person to be Assigned
Principal-in-Charge	Grace Chow
Project Manager	Adam Ross
Project Engineer	Tom Chapman
Process Engineer	Mallika Ramanathan
Permitting Support	Paul Scheidegger
Geotechnical Support	Dave Mathy

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. 1 as of November ___, 2016 and therewith incorporate it as part of the Agreement.

DISTRICT	ENGINEER
Union Sanitary District	Brown and Caldwell
By: _____	By: _____
Paul R. Eldredge, P.E. General Manager/District Engineer	Jeffrey R. Kivett Vice President
Date: _____	Date: _____

EXHIBIT A - FEE SUMMARY
PRIMARY DIGESTER NO. 7 PROJECT

Union Sanitary District (CA) -- USD Digester 7 Design

Phase	Phase Description	Ross, Adam D	Stubblefield, Kimberly D	Ramanathan, Malika	Slezak, Lloyd A	Chapman, Thomas M	Chow, Grace C	Nojima, Alison C	Rammell, Donna L	Goodson, Mary W	Salerno, Lance P	Trueblood, Donald C	McNamer, Danna E	Goodburn, Daniel L				Company Vehicles		Scheidegger	Dave Mathy		
		Project Manager	Project Assistant	Process Engineer	QA/QC	Project Engineer	PIC	Mechanical	Electrical	Structural	O&M	Air Permitting	Admin Support	Cost Estimating	Total Labor Hours	Total Labor Effort	APC		Total Unit Pricing Effort	Cost	Cost	Total Expense Effort	Total Effort
		$217.87	$93.01	$242.15	$289.07	$201.28	$297.77	$115.26	$247.98	$279.09	$254.61	$230.10	$105.95	$185.69									
001	**Project Management**	14	12	4	0	0	0	0	0	0	0	0	8	0	**38**	**6,267**	**308**	0	**0**	0	0	**308**	**6,575**
002	**Design Criteria**	12	0	22	2	6	0	8	4	4	0	3	4	0	**65**	**14,288**	**520**	0	**0**	0	0	**520**	**14,808**
003	**Digstr Mixing-Covers & Bottm Co**	22	0	0	2	58	0	8	0	0	2	0	5	0	**97**	**19,577**	**776**	300	**300**	0	0	**1,076**	**20,653**
004	**Integration w/Digstr Sys**	30	0	6	2	6	0	45	0	0	2	5	5	0	**101**	**17,666**	**808**	0	**0**	0	0	**808**	**18,474**
005	**Advanced Digestion Processes**	16	0	8	2	0	0	8	0	0	0	0	0	0	**34**	**7,131**	**272**	0	**0**	0	0	**272**	**7,403**
006	**Siting Analysis**	12	0	0	0	8	0	0	0	0	0	0	0	0	**20**	**4,351**	**160**	0	**0**	0	0	**160**	**4,511**
007	**Preliminary Design Report**	24	0	0	2	36	0	24	16	16	2	6	8	16	**150**	**30,860**	**1,200**	300	**300**	2,000	10,500	**14,625**	**45,485**
009	**Site Visits (Optional)**	16	4	8	0	16	0	0	0	0	0	0	0	0	**44**	**9,016**	**352**	300	**300**	0	0	**652**	**9,668**
	GRAND TOTAL	**146**	**16**	**48**	**10**	**130**	**0**	**93**	**20**	**20**	**6**	**14**	**30**	**16**	**549**	**109,156**	**4,396**	**900**	**900**	**2,000**	**10,500**	**18,421**	**127,577**

Labor Multiplier: 3.2205

5 percent markup on Subconsultants

$8/hr Associated Project Costs

Directors
Manny Fernandez
Tom Handley
Pat Kite
Anjali Lathi
Jennifer Toy

Officers
Paul R. Eldredge
General Manager/
District Engineer

Karen W. Murphy
Attorney

DATE: November 7, 2016

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
Andrew C. Baile, Assistant Engineer

SUBJECT: Agenda Item No. 13 - Meeting of November 14, 2016
Authorize the General Manager to Execute an Agreement and Task Order No. 1 with RMC Water and Environment for the Force Main Condition Assessment

Recommendation

Staff recommends the Board authorize the General Manager to execute an Agreement and Task Order No. 1 in the amount of $121,390 with RMC Water and Environment for the Force Main Condition Assessment. This assessment is budgeted in the FY17 Special Projects Fund.

Background

The District's service area is divided into three drainage basins: Alvarado, Newark and Irvington (See Figure 1). The wastewater from the Newark and Irvington basins is collected into the Newark Pump Station (PS) and Irvington PS, respectively. Both pump stations transport the wastewater to the Alvarado Wastewater Treatment Plant (WWTP) headworks via the twin force main system that was constructed in 1982. The wastewater from the Alvarado basin is collected into the Alvarado Influent PS located within the District's WWTP and is not transported via the twin force mains. The twin force main system consists of two distinct segments. The segment between Irvington PS and Newark PS is approximately 7.7 miles (40,500 feet) of twin 33-inch diameter reinforced concrete pipe (RCP). The segment between Newark PS and the Alvarado WWTP is approximately 5 miles (26,200 feet) of twin 39-inch diameter RCP. The reinforced

concrete pipeline was manufactured in 12-foot long sections with bell and spigot single gasketed joints (See Figures 2 and 3).

On August 25, 2003, the Board authorized the General Manager to execute an agreement and Task Order No. 1 in the amount of $159,959 with Brown and Caldwell for the Force Main Study. The Study, completed in 2004, included the internal and external inspection of portions of the force mains and the consultant's condition assessment of the force mains. The consultant concluded the internal and external surfaces of the force mains were in excellent condition, and determined the District's ferrous chloride dosing and maintenance program had worked effectively to minimize the degradation of the force mains.

The internal inspection revealed some normal wear and tear, such as superficial pitting and abrasion, but this was determined to not be a cause for concern as this did not affect the structural integrity of the force mains. The external inspection revealed that the concrete was structurally sound with no evidence of delamination or corrosion. Laboratory analysis of the soils in the backfill area around the force mains revealed the soils to be corrosive toward steel due to the high concentrations of chlorides in the groundwater table. However, the soils were not considered corrosive toward the buried RCP of the force mains.

The consultant recommended the District conduct an internal inspection every 10 years and an external inspection every 20 years unless there is a marked change in the groundwater table surrounding the force main easement.

In 2015, staff discovered active corrosion of steel components inside some of the force main manholes that house the pipeline access points, air relief valves, and drainage valves. In 2016, staff hired consultants to measure the remaining wall thicknesses of the steel components inside all of the manholes and recommend the type of repairs. However, due to the need to evaluate the construction constraints and sequence of making repairs, potential environmental impacts from the construction activities, and the prioritizing of the repairs, staff hired a consultant to plan and design the project. In FYs 17 through 19, staff budgeted a couple of projects to repair or replace these corroded components. The District recently hired West Yost Associates to begin the pre-design phase of the project.

Force Main Leaks

On two separate occasions in 2007 and 2008, the District discovered leaks from the RCP joints in the force main segment between Irvington PS and Newark PS. In 2007, the leak occurred in the west barrel of the force mains and in 2008, the leak occurred in the east barrel. In both cases, the gasket had slipped out of the RCP bell and spigot joint, likely due to localized settlements. The District successfully repaired the leaks by installing a Victaulic encapsulating coupling over each joint.

Force Main Condition Assessment – Task Order No. 1

Staff prepared a Request for Proposal for the Force Main Condition Assessment and issued it to Brown and Caldwell, Carollo Engineers, RMC Water and Environment, Water Works Engineers and West Yost Associates. Staff received proposals from RMC and West Yost. The other consultants did not submit proposals due to their inability to assign the appropriate personnel to their project teams. Staff reviewed the two proposals and selected RMC because of the project manager's prior experience in managing the District's 2004 Force Main Study.

RMC's scope of services will include the following elements:

1. Review the CCTV footage of the internal inspection of the force mains. District staff will perform the CCTV recording.
2. Conduct an external inspection and testing of the force main pipeline that will be removed as part of the developer's force main relocation project. This task will include collecting and analyzing the soil samples from the excavation site.
3. Develop recommendations for a lining repair method to prevent future joint leaks along the force mains. This task will include a discussion of lining options, a final lining recommendation, a planning level cost estimate, and a suggested schedule for implementation.
4. Evaluate short- and long-term maintenance needs that should be addressed, including evaluation of the existing maintenance and chemical dosing program.
5. Identify potential projects for repair or replacement of and the force main infrastructure.
6. Prepare a Final Technical Memorandum of the Force Main Condition Assessment to summarize findings, conclusions, and recommendations.

The table below includes a breakdown of fees for the individual tasks of Task Order No. 1:

Task No.	Description	Fee
1	Project Management	$20,090
2	Review and Assess Existing Force Main Systems	$2,180
3	Condition Assessment of Pipe	$49,060
4	Review, Mitigation, and Prevention of Future Force Main Joint Leaks	$6,706
5	Identify and Evaluate Short-Term and Long-Term Maintenance	$1,682
6	Identify and Assess Potential Projects for Repair or Replacement	$12,723
7	Draft and Final Force Main Condition Assessment Report	$28,949
	Total Not-to-Exceed Fee	**$121,390**

Staff believes the total not-to-exceed fee of $121,390 is reasonable given the number of sites RMC will visit along the force mains and the time required to review approximately 30,000 feet of pipe that will be televised. Staff anticipates completion of the assessment tasks by the fall of 2017.

Staff recommends the Board authorize the General Manager to execute an Agreement and Task Order No.1 in the amount of $121,390 with RMC Water and Environment for the Force Main Condition Assessment.

PRE/SEG/RC/ACB:ks

Attachments: Figures 1-3
Agreement
Task Order No. 1

Figure 1: Union Sanitary District Sewer Drainage Basins

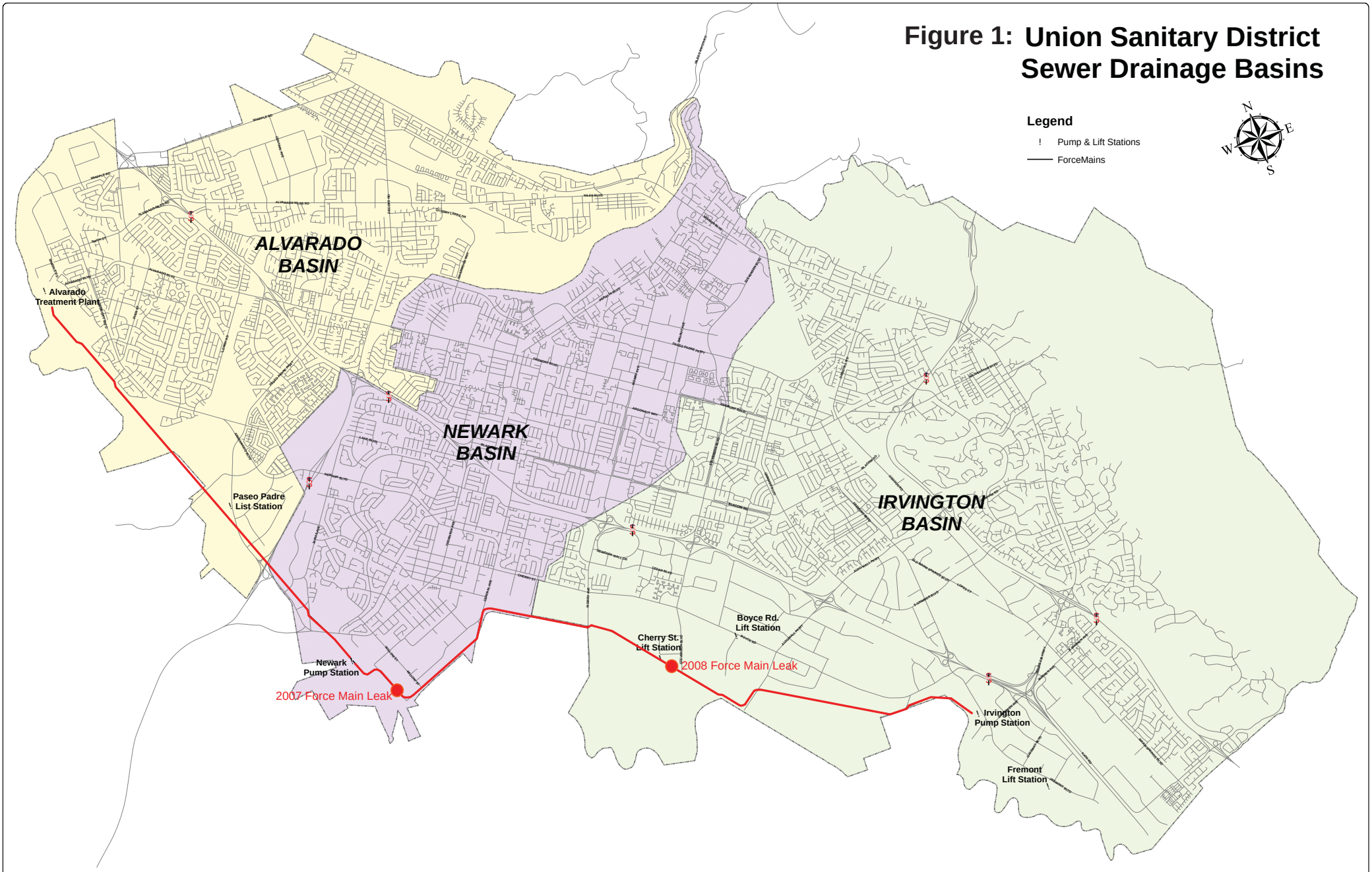


Figure 2. Bell fitting at end of 39” reinforced concrete pipe (RCP).

Figure 3. Spigot fitting at end of 39” reinforced concrete pipe (RCP). This spigot end is inserted into the bell (Figure 2.) during installation of the pipe, this connection point is called a “joint.” The groove indicated by the arrow, shows where the rubber compression gasket would normally be located, this allows for a water tight seal at the joint.

FORCE MAIN CONDITION ASSESSMENT

AGREEMENT

BETWEEN

UNION SANITARY DISTRICT

AND

RMC WATER AND ENVIRONMENT

FOR

PROFESSIONAL SERVICES

THIS IS AN AGREEMENT MADE AS OF November _____, 2016, BETWEEN UNION SANITARY DISTRICT (hereinafter referred to as District), and RMC Water and Environment (hereinafter referred to as Engineer).

WITNESSETH:

WHEREAS, District intends to conduct an internal and external condition assessment of its existing twin force main system (hereinafter referred to as Project), and,

WHEREAS, District requires certain professional services in connection with the Project (hereinafter referred as Services); and

WHEREAS, Engineer is qualified and prepared to provide such Services;

NOW, THEREFORE, in consideration of the promises contained herein, the parties agree as follows:

ARTICLE 1 - SERVICES TO BE PERFORMED BY ENGINEER

1.1 Specific Services and the associated scope of services, payment, schedule, and personnel will be defined in specific Task Order as mutually agreed by District and Engineer.

1.2 All Task Orders will by reference incorporate the terms and conditions of this Agreement, and become formal amendments hereto.

ARTICLE 2 - COMPENSATION

2.1 Compensation for consulting services performed under this Agreement shall include:

(1) Direct labor costs, multiplied by an agreed upon fixed factor (the Multiplier), to compensate for fringe benefits, indirect costs, and profit.

(2) Non-labor direct project charge not included in the fixed factor and acceptable, without any markup.

(3) Subconsultant costs, with a maximum markup of 5%.

Definitions are as follows:

(a) Direct labor is salaries and wages paid to personnel for time directly chargeable to the project. Direct labor does not include the cost of Engineer's statutory and customary benefits, such as sick leave, holidays, vacations, and medical and retirement benefits nor the cost of the time of executive and administrative personnel and others whose time is not identifiable to the project.

(b) Fringe benefits include Engineer's statutory and customary benefits, such as sick leave, holidays, vacations, medical and retirement benefits, incentive pay, tuition, and other costs classified as employee benefits.

(c) Indirect costs are allocations of costs that are not directly chargeable to a specific engagement and are commonly referred to as Engineer's overhead. Indirect costs include provisions for such things as clerical support, office space, light and heat, insurance, statutory and customary employee benefits, and the time of executive and administrative personnel and others whose time is not identifiable to the Project or to any other project. Under no circumstances can the same labor costs be charged as direct labor and also appear at the same time as indirect costs, and vice versa.

(d) The Multiplier is a multiplicative factor which is applied to direct labor costs, and compensates Engineer for fringe benefits and indirect costs (overhead) and profit.

(e) Other non-labor direct project charges shall be included in the overhead and these charges include typical expenses as cost of transportation and subsistence, printing and reproduction, computer time and programming costs, identifiable supplies, outside consultant's charges, subcontracts, and charges by reviewing authorities."

Alternatively, the District and the Engineer may agree to utilize the fully-encumbered hourly rates and fees for Services performed by the Engineer. These hourly rates and fees shall be based on the Engineer's rate schedule published at the time this Agreement or Task Order is executed and shall be attached to each applicable Task Order.

2.2 Reimbursement for mileage shall not exceed the prevailing Internal Revenue Service's standard mileage rate.

2.3 A *Cost Ceiling* will be established for each Task Order which is based upon estimated labor-hours and cost estimates. Costs as described above, comprising direct labor, overhead cost, and other direct costs, shall be payable up to a Cost Ceiling as specified in the Task Order. A *Maximum Fee Ceiling,* or *Task Order Firm Ceiling*, will also be established for each Task Order which includes the Cost Ceiling plus the Professional Fee.

2.4 Engineer shall invoice District monthly for the actual costs incurred, and a pro-rated portion of the Professional Fee for work performed during the previous month. If the Maximum Fee Ceiling is reached, the Engineer will complete the agreed-upon work for the Maximum Fee Ceiling. With District staff approval, labor hours may be reallocated within the tasks without renegotiation in such a manner so as not to exceed the Maximum Fee Ceiling.

2.5 The Engineer shall provide the District with a review of the budget amounts when 75 percent of the Cost Ceiling for any task has been expended. Engineer may request a revision in the Cost Ceiling for performance of this Agreement, and will relate the rationale for the revision to the specific basis of estimate as defined in the Scope of Services. Such notification will be submitted to the District at the earliest possible date. The authorized Cost Ceiling shall not be exceeded without written approval of the District.

2.6 The Professional Fee will not be changed except in the case of a written amendment to the Agreement which alters the Scope of Services. District and Engineer agree to negotiate an increase or decrease in Cost Ceiling and Professional Fee for any change in Scope of Services required at any time during the term of this Agreement. Engineer will not commence work on the altered Scope of Services until authorized by District.

2.7 Direct labor rates are subject to revision to coincide with Engineer's normal salary review schedule. Adjustments in direct labor rates shall not affect the firm ceiling without prior written authorization of the District.

2.8 District shall pay Engineer in accordance with each Task Order for Services.

2.9 Engineer shall submit monthly statements for Services rendered. District will make prompt monthly payments in response to Engineer's monthly statements.

ARTICLE 3 - PERIOD OF SERVICE

3.1 Engineer's services will be performed and the specified services rendered and deliverables submitted within the time period or by the date stipulated in each Task Order.

3.2 Engineer's services under this Agreement will be considered complete when the services are rendered and/or final deliverable is submitted and accepted by District.

3.3 If any time period within or date by which any of the Engineer's services are to be completed is exceeded through no fault of Engineer, all rates, measures and amounts of compensation and the time for completion of performance shall be subject to equitable adjustment.

ARTICLE 4 - DISTRICT'S RESPONSIBILITIES

District will do the following in a timely manner so as not to delay the services of Engineer.

4.1 Provide all criteria and full information as to District's requirements for the services assignment and designate in writing a person with authority to act on District's behalf on all matters concerning the Engineer's services.

4.2 Furnish to Engineer all existing studies, reports and other available data pertinent to the Engineer's services, obtain or authorize Engineer to obtain or provide additional reports and data as required, and furnish to Engineer services of others required for the performance of Engineer's services hereunder, and Engineer shall be entitled to use and rely upon all such information and services provided by District or others in performing Engineer's services under this Agreement.

4.3 Arrange for access to and make all provisions for Engineer to enter upon public and private property as required for Engineer to perform services hereunder.

4.4 Perform such other functions as are indicated in each Task Order related to duties of District.

4.5 Bear all costs incident to compliance with the requirements of this Section.

ARTICLE 5 - STANDARD OF CARE

5.1 Engineer shall exercise the same degree of care, skill, and diligence in the performance of the Services as is ordinarily provided by a professional Engineer under similar circumstance and Engineer shall, at no cost to District, re-perform services which fail to satisfy the foregoing standard of care.

ARTICLE 6 - OPINIONS OF COST AND SCHEDULE

6.1 Since Engineer has no control over the cost of labor, materials, equipment or services furnished by others, or over contractors', subcontractors' , or vendors' methods of determining prices, or over competitive bidding or market conditions or economic conditions, Engineer's cost estimate and economic analysis shall be made on the basis of qualification and experience as a professional engineer.

6.2 Since Engineer has no control over the resources provided by others to meet contract schedules, Engineer's forecast schedules shall be made on the basis of qualification and experience as a professional Engineer.

6.3 Engineer cannot and does not guarantee that proposals, bids or actual project costs will not vary from his cost estimates or that actual schedules will not vary from his forecast schedules.

ARTICLE 7 - SUBCONTRACTING

7.1 No subcontract shall be awarded by Engineer until prior written approval is obtained from the District.

ARTICLE 8 - ENGINEER-ASSIGNED PERSONNEL

8.1 Engineer shall designate in writing an individual to have immediate responsibility for the performance of the services and for all matters relating to performance under this Agreement. Key personnel to be assigned by Engineer will be stipulated in each Task Order. Substitution

of any assigned person shall require the prior written approval of the District, which shall not be unreasonably withheld. If the District determines that a proposed substitution is not responsible or qualified to perform the services then, at the request of the District, Engineer shall substitute a qualified and responsible person.

ARTICLE 9 - OWNERSHIP OF DOCUMENTS

9.1 All work products, drawings, data, reports, files, estimate and other such information and materials (except proprietary computer programs, including source codes purchased or developed with Engineer monies) as may be accumulated by Engineer to complete services under this Agreement shall be owned by the District.

9.2 Engineer shall retain custody of all project data and documents other than deliverables specified in each Task Order, but shall make access thereto available to the District at all reasonable times the District may request. District may make and retain copies for information and reference.

9.3 All deliverables and other information prepared by Engineer pursuant to this Agreement are instruments of service in respect to this project. They are not intended or represented to be suitable for reuse by District or others on extensions of this Project or on any other project. Any reuse without written verification or adaptation by Engineer for the specific purpose intended will be at District's sole risk and without liability or legal exposure to Engineer; and District shall indemnify and hold harmless Engineer against all claims, damages, losses, and expenses including attorney's fees arising out of or resulting from such reuse. Any such verification or adaptation will entitle Engineer to further compensation at rates to be agreed upon by District and Engineer.

ARTICLE 10 - RECORDS OF LABOR AND COSTS

10.1 Engineer shall maintain for all Task Orders, records of all labor and costs used in claims for compensation under this Agreement. Records shall mean a contemporaneous record of time for personnel; a methodology and calculation of the Multiplier for fringe benefits and indirect costs; and invoices, time sheets, or other factors used as a basis for determining other non-labor Project charges. These records must be made available to the District upon reasonable notice of no more than 48 hours during the period of the performance of this Agreement.

10.2 After delivery of Services (completion of Task Orders) under this Agreement, the Engineer's records of all costs used in claims for compensation under this Agreement shall be available to District's accountants and auditors for inspection and verification. These records will be maintained by Engineer and made reasonably accessible to the District for a period of three (3) years after completion of Task Orders under this Agreement.

10.3 Engineer agrees to cooperate and provide any and all information concerning the Project costs which are a factor in determining compensation under this Agreement as requested by the District or any public agency which has any part in providing financing for, or authority over, the Services which are provided under the Agreement.

10.4 Failure to provide documentation or substantiation of all Project costs used as a factor in compensation paid under Article 2 hereof will be grounds for District to refuse payment of any statement submitted by the Engineer and for a back charge for any District funds, including interest from payment; or grant, matching, or other funds from agencies assisting District in financing the Services specified in this Agreement.

ARTICLE 11 - INSURANCE

Engineer shall provide and maintain at all times during the performance of the Agreement the following insurances:

11.1 Workers' Compensation and Employer's Liability Insurance for protection of Engineer's employees as required by law and as will protect Engineer from loss or damage because of personal injuries, including death to any of his employees.

11.2 Comprehensive Automobile Liability Insurance. Engineer agrees to carry a Comprehensive Automobile Liability Policy providing bodily injury liability. This policy shall protect Engineer against all liability arising out of the use of owned or leased automobiles both passenger and commercial. Automobiles, trucks, and other vehicles and equipment (owned, not owned, or hired, licensed or unlicensed for road use) shall be covered under this policy. Limits of liability for Comprehensive Automobile Liability Insurance shall not be less than $1,000,000 Combined Single Limit.

11.3 Comprehensive General Liability Insurance as will protect Engineer and District from any and all claims for damages or personal injuries, including death, which may be suffered by persons, or for damages to or destruction to the property of others, which may arise from the

Engineer's operations under this Agreement, which insurance shall name the District as additional insured. Said insurance shall provide a minimum of $1,000,000 Combined Single Limit coverage for personal injury, bodily injury, and property damage for each occurrence and aggregate. Such insurance will insure Engineer and District from any and all claims arising from the following:

1. Personal injury;
2. Bodily injury;
3. Property damage;
4. Broad form property damage;
5. Independent contractors;
6. Blanket contractual liability.

11.4 Engineer shall maintain a policy of professional liability insurance, protecting it against claims arising out of negligent acts, errors, or omissions of Engineer pursuant to this Agreement, in an amount of not less than $1,000,000. The said policy shall cover the indemnity provisions under this Agreement.

11.5 Engineer agrees to maintain such insurance at Engineer's expense in full force and effect in a company or companies satisfactory to the District. All coverage shall remain in effect until completion of the Project.

11.6 Engineer will furnish the District with certificates of insurance and endorsements issued by Engineer's insurance carrier and countersigned by an authorized agent or representative of the insurance company. The certificates shall show that the insurance will not be cancelled without at least thirty (30) days' prior written notice to the District. The certificates for liability insurance will show that liability assumed under this Agreement is included. The endorsements will show the District as an additional insured on Engineer’s insurance policies for the coverage required in Article 11 for services performed under this Agreement, except for workers’ compensation and professional liability insurance.

11.7 Waiver of Subrogation: Engineer hereby agrees to waive subrogation which any insurer of Engineer may acquire from Engineer by virtue of the payment of any loss. Engineer agrees to obtain any endorsement that may be necessary to effect this waiver of subrogation.

The Workers’ Compensation policy shall be endorsed with a waiver of subrogation in favor of the District for all work performed by the Engineer, its employees, agents and subconsultants.

ARTICLE 12 - LIABILITY AND INDEMNIFICATION

12.1 Having considered the risks and potential liabilities that may exist during the performance of the Services, and in consideration of the promises included herein, District and Engineer agree to allocate such liabilities in accordance with this Article 12. Words and phrases used in this Article shall be interpreted in accordance with customary insurance industry usage and practice.

12.2 Engineer shall indemnify and save harmless the District and all of their agents, officers, and employees from and against all claims, demands, or causes of action of every name or nature to the extent caused by the negligent error, omission, or act of Engineer, its agents, servants, or employees in the performance of its services under this Agreement.

12.3 In the event an action for damages is filed in which negligence is alleged on the part of District and Engineer, Engineer agrees to defend District. In the event District accepts Engineer's defense, District agrees to indemnify and reimburse Engineer on a pro rata basis for all expenses of defense and any judgment or amount paid by Engineer in resolution of such claim. Such pro rata share shall be based upon a final judicial determination of negligence or, in the absence of such determination, by mutual agreement.

12.4 Engineer shall indemnify District against legal liability for damages arising out of claims by Engineer's employees. District shall indemnify Engineer against legal liability for damages arising out of claims by District's employees.

12.5 Indemnity provisions will be incorporated into all Project contractual arrangements entered into by District and will protect District and Engineer to the same extent.

12.6 Upon completion of all services, obligations and duties provided for in the Agreement, or in the event of termination of this Agreement for any reason, the terms and conditions of this Article shall survive.

12.7 To the maximum extent permitted by law, Engineer’s liability for District’s damage will not exceed the aggregate compensation received by Engineer under this Agreement or the maximum amount of professional liability insurance available at the time of any settlement or judgment, which ever is greater.

ARTICLE 13 - INDEPENDENT CONTRACTOR

Engineer undertakes performance of the Services as an independent contractor and shall be wholly responsible for the methods of performance. District will have no right to supervise the methods used, but District will have the right to observe such performance. Engineer shall work closely with District in performing Services under this Agreement.

ARTICLE 14 - COMPLIANCE WITH LAWS

In performance of the Services, Engineer will comply with applicable regulatory requirements including federal, state, and local laws, rules, regulations, orders, codes, criteria and standards. Engineer shall procure the permits, certificates, and licenses necessary to allow Engineer to perform the Services. Engineer shall not be responsible for procuring permits, certificates, and licenses required for any construction unless such responsibilities are specifically assigned to Engineer in Task Order.

ARTICLE 15 - NONDISCLOSURE OF PROPRIETARY INFORMATION

Engineer shall consider all information provided by District and all drawings, reports, studies, design calculations, specifications, and other documents resulting from the Engineer's performance of the Services to be proprietary unless such information is available from public sources. Engineer shall not publish or disclose proprietary information for any purpose other than the performance of the Services without the prior written authorization of District or in response to legal process.

ARTICLE 16 - TERMINATION OF CONTRACT

16.1 The obligation to continue Services under this Agreement may be terminated by either party upon seven days written notice in the event of substantial failure by the other party to perform in accordance with the terms hereof through no fault of the terminating party.

16.2 District shall have the right to terminate this Agreement or suspend performance thereof for District's convenience upon written notice to Engineer, and Engineer shall terminate or suspend performance of Services on a schedule acceptable to District. In the event of termination or suspension for District's convenience, District will pay Engineer for all services performed and costs incurred including termination or suspension expenses. Upon restart of a suspended project, equitable adjustment shall be made to Engineer's compensation.

ARTICLE 17 - UNCONTROLLABLE FORCES

17.1 Neither District nor Engineer shall be considered to be in default of this Agreement if delays in or failure of performance shall be due to uncontrollable forces, the effect of which, by the exercise of reasonable diligence, the nonperforming party could not avoid. The term "uncontrollable forces" shall mean any event which results in the prevention or delay of performance by a party of its obligations under this Agreement and which is beyond the control of the nonperforming party. It includes, but is not limited to, fire, flood, earthquake, storms, lightening, epidemic, war, riot, civil disturbance, sabotage, inability to procure permits, licenses, or authorizations from any state, local, or federal agency or person for any of the supplies, materials, accesses, or services required to be provided by either District or Engineer under this Agreement, strikes, work slowdowns or other labor disturbances, and judicial restraint.

17.2 Neither party shall, however, be excused from performance if nonperformance is due to uncontrollable forces which are removable or remediable, and which the nonperforming party could have, with the exercise of reasonable diligence, removed or remedied with reasonable dispatch. The provisions of this Article shall not be interpreted or construed to require Engineer or District to prevent, settle, or otherwise avoid a strike, work slowdown, or other labor action. The nonperforming party shall, within a reasonable time of being prevented or delayed from performance by an uncontrollable force, give written notice to the other party describing the circumstances and uncontrollable forces preventing continued performance of the obligations of this Agreement. The Engineer will be allowed reasonable negotiated extension of time or adjustments for District initiated temporary stoppage of services.

ARTICLE 18 - MISCELLANEOUS

18.1 A waiver by either District or Engineer of any breach of this Agreement shall not be binding upon the waiving party unless such waiver is in writing. In the event of a written waiver, such a waiver shall not affect the waiving party's rights with respect to any other or further breach.

18.2 The invalidity, illegality, or unenforceability of any provision of this Agreement, or the occurrence of any event rendering any portion or provision of this Agreement void, shall in no way effect the validity or enforceability of any other portion or provision of the Agreement. Any void provision shall be deemed severed from the Agreement and the balance of the Agreement shall be construed and enforced as if the Agreement did not contain the particular portion or provision held to be void.

ARTICLE 19 - INTEGRATION AND MODIFICATION

19.1 This Agreement (consisting of pages 1 to 14), together with all Task Orders executed by the undersigned, is adopted by District and Engineer as a complete and exclusive statement of the terms of the Agreement between District and Engineer. This Agreement supersedes all prior agreements, contracts, proposals, representations, negotiations, letters, or other communications between the District and Engineer pertaining to the Services, whether written or oral.

19.2 The Agreement may not be modified unless such modifications are evidenced in writing signed by both District and Engineer.

ARTICLE 20 - SUCCESSORS AND ASSIGNS

20.1 District and Engineer each binds itself and its directors, officers, partners, successors, executors, administrators, assigns and legal representatives to the other party to this Agreement and to the partners, successors, executors, administrators, assigns, and legal representatives of such other party, in respect to all covenants, agreements, and obligations of this Agreement.

20.2 Neither District nor Engineer shall assign, sublet, or transfer any rights under or interest in (including, but without limitation, monies that may become due or monies that are due) this Agreement without the written consent of the other, except to the extent that the effect of this limitation may be restricted by law. Unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under this Agreement. Nothing contained in this paragraph shall prevent Engineer from employing such independent engineers, associates, and subcontractors as he may deem appropriate to assist him/her in the performance of the Services hereunder and in accordance with Article 7.

20.3 Nothing herein shall be construed to give any rights or benefits to anyone other than District and Engineer.

ARTICLE 21 – INFORMATION SYSTEM SECURITY

When the District determines this article is applicable, the Engineer shall obtain written approval from the District representative prior to accessing District internal systems through real-time computer connections. Upon approval, the Engineer will use only in-

bound connections to accomplish a legitimate business need and a previously defined and approved task. As a condition of approval, the Engineer shall:

a) Be running a current operating system supported by the District with up-to-date security patches applied as defined in the District COE/Non-COE document.

b) Have anti-virus software installed on his/her personal computer with up-to-date virus signatures.

c) Have personal firewall software installed and enabled on their computer.

d) Understand and sign the District's Electronic Equipment Use Policy, number 2160.

The District reserves the right to audit the security measures in effect on Engineer's connected systems without prior notice. The District also reserves the right to terminate network connections immediately with all Engineer's systems not meeting the above requirements.

ARTICLE 22 – EMPLOYEE BACKGROUND CHECK

Engineer, at no additional expense to the District, shall conduct a background check for each of its employees, as well as for the employees of its subconsultants (collectively "Consultant Employees") who will have access to District's computer systems, either through on-site or remote access, or whose contract work requires an extended presence on the District's premises. The minimum background check process for any District consultant shall include, but not be limited to

1. California residents: Criminal Records (County and State Criminal Felony and Misdemeanor
2. Out of State residents: Federal criminal search of the National Criminal Database,

The background check shall be conducted and the results submitted to the District prior to initial access by Consultant Employees. If at any time, it is discovered that a Consultant Employee has a criminal record that includes a felony or misdemeanor, the Engineer is required to inform the District immediately and the District will assess the circumstances surrounding the conviction, time frame, nature, gravity, and relevancy of the conviction to the job duties, to determine whether the Consultant Employee will be placed or remain on a District assignment. The District may withhold consent at its sole discretion. The District may also conduct its own criminal background check of the Consultant Employees.

Failure of the Engineer to comply with the terms of this paragraph may result in the termination of its contract with the District.

ARTICLE 23 - EXCEPTIONS

No exceptions.

IN WITNESS THEREOF, the parties hereto have made and executed this Agreement as of the day and year first above written.

UNION SANITARY DISTRICT	ENGINEER
By: _____	By: _____
Paul R. Eldredge, P.E. General Manager/District Engineer	Name: _____
	Title: _____
Date: _____	Date: _____

FORCE MAIN CONDITION ASSESSMENT

TASK ORDER NO. 1

to

AGREEMENT

BETWEEN

UNION SANITARY DISTRICT

AND

RMC WATER AND ENVIRONMENT

FOR

PROFESSIONAL SERVICES

Dated November___, 2016

1. PURPOSE

The purpose of Task Order No. 1 is to authorize RMC Water and Environment to complete an internal and external condition assessment of the District's twin force mains, identify short- and long-term maintenance needs, identify projects for repair or replacement of aging facilities and prepare financial planning criteria.

2. PROJECT COORDINATION

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

3. SCOPE OF SERVICES

This scope of work is for the condition of assessment of Union Sanitary District's twin force mains.

TASK 1 – PROJECT MANAGEMENT

Task 1.1 – Project Management

The Engineer shall provide coordination and management of all subconsultants and other team members involved in the project. This task also includes close coordination of any activities or project related issues with the District's designated Project Manager.

Task 1.2 – Project Reporting/Invoicing

The Engineer shall provide monthly progress reports that shall include, at a minimum, a narrative status of monthly progress, an indication of any scheduling changes, and cost updates. The status report shall include an identification and evaluation of project related constraints and issues that might affect project progress. Monthly invoices detailing the budget for each task and the amount spent during the month and cumulative for the project shall also be provided. In addition, the monthly invoices shall identify labor, indirect and other project related costs incurred during the month.

Deliverables:

- Monthly Invoices and Progress Reports

Task 1.3 – Project Planning

The Engineer shall develop a project plan that includes the process that will be used to fulfill the requirements of the Force Main Condition Assessment and the schedule for completing its tasks.

Deliverables:

- Project plan
- Schedule

Task 1.4 – Meetings

Kickoff Meeting: The Engineer shall conduct a project kickoff meeting with District staff. The kickoff meeting will be used to communicate the project plan and proposed schedule, gather background information, and solicit comments and questions from the District.

Condition Assessment Report Review Workshop: The Engineer shall meet with District Staff to review the draft Condition Assessment Report and its findings. This meeting is also to solicit comments from the District prior to preparing the final report.

Deliverables:

- Kickoff meeting with District staff: agenda and meeting minutes
- Condition Assessment Report Review Workshop: agenda and meeting minutes

TASK 2 – REVIEW AND ASSESS EXISTING FORCE MAIN SYSTEMS

The Engineer shall review, understand, and assess the District's existing force main system using existing as-built documentation and previous studies provided by the District.

Deliverables:

- None

TASK 3 – CONDITION ASSESSMENT OF PIPE

Task 3.1 – Internal Condition Assessment

District staff will perform the closed circuit television (CCTV) inspection of the force mains where access is available. For the purposes of this scope of work, it is assumed that the same access points that were used in the 2004 Condition Assessment project will be used again for this internal investigation. Because of the uncertainty of the schedule associated with the relocation of the twin 33-inch force mains for the planned housing development, Engineer did not consider that location as an access point for internal inspection. However, if the relocation project moves forward, Engineer shall incorporate that location into the investigation as necessary.

In 2004, there were five access points for each of the east and west barrels which were chosen based on ease of access, history of difficult or labor intensive maintenance, highest elevations along the force mains, and furthest points from chemical dosing locations. The CCTV camera can travel a maximum of 1,500 feet in each direction from an access point for a total of 3,000 feet of CCTV inspection at each access point for each barrel. Therefore, this scope of work is based upon CCTV investigation of approximately 15,000 feet of the east barrel and 15,000 feet of the west barrel.

The Engineer's project team members shall accompany the District's CCTV crew in the field during internal field investigations. Engineer assumes a total of 5 days of field time (40 hours) will be required. Engineer shall review

and evaluate the CCTV footage to assess the internal condition of the existing force mains.

Deliverables:

- None. Results of the evaluation will be presented in the Condition Assessment Report as outlined in Task 7.

Assumptions:

- Engineer's scope does not include:
  - Bypass pumping and operating pump stations
  - Environmental/erosion control
  - Permits, licenses and performance bonds
  - Excavation of any kind
  - Access (Owner shall provide adequate access)
  - CCTV inspection. (Owner shall provide crew and equipment for CCTV inspection)
  - Traffic control
  - Cleaning of lines

Engineer assumes the District will provide all of the above as necessary to complete this work.

Task 3.2 – Core Sampling/Testing of Extracted Pipeline

A section of force main is to be relocated due to a new residential housing development being constructed. This scope of work assumes that the existing force main will be excavated, removed and made available for inspection and destructive testing and that all destructive test samples can be collected in one day. Engineer shall take seven (7) core samples from this section of relocated piping. Two core samples will be tested for compressive strength and five samples will be analyzed for pH and chloride penetration. Also, the core will penetrate through the reinforcing steel in a few samples to see if there is any corrosion evident on the embedded reinforcing steel.

Engineer shall accompany the corrosion subconsultant in the field during external field investigations. It is assumed that this will take one day (8 hours).

The exterior inspection work will include the following operations and assumptions:

1. Engineer shall examine the exterior and interior surfaces of the pipe that has been excavated and removed noting signs of degradation such as cracks, spalls or any other type of anomaly and document where this has occurred on the pipe. For instance, the interior surfaces will be examined to determine if there is any noticeable signs of degradation on the crown of the pipe, which may be representative of an air pocket in the force main.

2. Engineer shall collect soil samples from the excavation site and perform chemical analysis of the collected samples in order to determine the corrosion classification of the soils at this location and compare this data to the data that was collected in the previous study of the force main alignment.

3. Engineer shall inspect and sound the exterior surface of the extracted pipe for hollowness and record the extent of potential delaminations found. A delamination is a separation of concrete planes, generally parallel to the reinforcement, resulting from the expansive forces of corrosion products. Upon attainment of critical size, a delamination will result in a spall. A sounding technique involving striking the surface of the concrete with a 1-lb. hammer will be used. Good sound concrete will produce a sharp ringing tone, whereas, delaminated areas emit a dull, hollow tone. All testing will be conducted per ASTM C4580 test method.

4. Engineer shall photograph and record any degradation found during our site inspection in order to properly document the current condition of the pipe.

5. Engineer shall collect two (2) through wall core samples that are 3 inches in diameter for compressive strength testing.

6. Engineer shall collect five (5) through wall core samples that are 3 inches in diameter for rebar and chemical analysis as follows:

    a. pH analysis across the cross section

b. Chloride penetration analysis across the cross section

c. Evidence of corrosion on surface of embedded reinforcing steel

7. Engineer shall collect approximately four (4) soil samples for corrosivity analysis as follows:

   a. Chloride analysis

   b. Sulfate analysis

   c. pH analysis

   d. Resistivity “as-received” and at “100 percent saturation”

   e. Redox potential

8. Engineer shall observe and note all other anomalies

9. Engineer shall record all observations on forms

10. When documenting the conditions at a given pipe segment, Engineer shall note the distance from the nearest manhole, ARV or Blow-off and identify the locations of all anomalies

11. Engineer shall prepare a condition assessment report which contains copies of all field data collected, the results from all laboratory testing and an analysis of all of this data.

Deliverable:

- Data collected as part of this task will be included in the Pipeline Corrosion Assessment Report in Task 3.2

Assumptions:

Extracted pipe will be made available to Engineer’s corrosion subconsultant all at one time and crown of the pipe will be marked with a permanent marker prior to removal of the pipe from its existing trench. This scope of work does not include any excavation and assumes one mobilization and one eight hour day for field work associated with taking core samples from the existing pipeline.

TASK 4 – REVIEW, MITIGATION, AND PREVENTION OF FUTURE FORCE MAIN JOINT LEAKS

Engineer shall review the District's information associated with previous repair of force main joint leaks and develop recommendations for a lining repair method to prevent future joint leaks along the force mains. This task shall include a discussion of lining options, a final lining recommendation, a planning level cost estimate, and a suggested schedule for implementation.

Deliverables:

- Brief draft and final letter technical memorandum outlining lining options and recommendations, planning level cost estimate, and suggested schedule for implementation.

TASK 5 – IDENTIFY AND EVALUATE SHORT-TERM AND LONG-TERM MAINTENANCE

Engineer shall identify and evaluate short term and long term maintenance needs that should be addressed, including evaluation of the existing maintenance and chemical dosing program.

Deliverables:

- None. This information will be provided as part of Task 7 below.

Assumptions:

- District will provide existing procedures and protocols and provide access to operations and maintenance staff

TASK 6 – IDENTIFY AND ASSESS POTENTIAL PROJECTS FOR REPAIR OR REPLACEMENT

Engineer shall identify and assess potential projects for repair or replacement of the existing force main. This assessment includes the presentation of up to three rehabilitation alternatives with preliminary planning cost estimates.

Deliverables:

- None. This information will be provided as part of Task 7 below.

TASK 7 – DRAFT AND FINAL FORCE MAIN CONDITION ASSESSMENT REPORT

Engineer shall develop an outline and table of contents for the proposed Force Main Condition Assessment report and prepare draft and final deliverables of the report for review by District staff.

Deliverables:

- Outline and table of contents for proposed Force Main Condition Assessment report
- Draft Force Main Condition Assessment Report
- Final Force Main Condition Assessment Report

4. TIME OF PERFORMANCE

The anticipated schedule for completion of Engineer's scope of services is as follows.

- Notice to Proceed (NTP): November 15, 2016.
- Kickoff Meeting: Week of November 21, 2016.
- Complete Internal Condition Assessment: June 2, 2017.
- Complete Core Sampling and Testing: July 10, 2017.
- Submit Draft Condition Assessment Report: September 4, 2017.
- Final Condition Assessment Report: Two weeks following receipt of District comments on draft report.

5. NOT USED

6. NOT USED

7. PAYMENT TO THE ENGINEER

Payment to the Engineer shall be as called for in Article 2 of the Agreement. The Multiplier for this work shall be 3.37, the profit shall be 10%, and the not-to-exceed amount shall be $121,390. A summary of the distribution of estimated cost and labor hours including other direct costs and outside services are shown in Exhibit A.

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

Task Order / Amendment	Not to Exceed Amount	Board Authorization Required? (Yes/No)	District Staff Approval
Task Order No. 1	$121,390	Yes	Paul R. Eldredge
Total	**$121,390**		

8. TIME OF COMPLETION

All work defined in this Task Order shall be complete in 235 calendar days after the execution of this Task Order and subject to the conditions of Article 3 of this Agreement.

9. KEY PERSONNEL

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

Role	Key Person to be Assigned
Project Manager	Jennifer Glynn
Project Engineer	James Kohne
QA/QC	Glenn Hermanson
Corrosion Subconsultant	JDH Corrosion Consultants, Inc.

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. 1 as of November ___, 2016 and therewith incorporate it as part of the Agreement.

DISTRICT	**ENGINEER**
Union Sanitary District	RMC Water and Environment
By: _____	By: _____
Paul R. Eldredge, P.E. General Manager/District Engineer	Dave Richardson Principal Engineer
Date: _____	Date: _____

Exhibit A

Fee Estimate

Union Sanitary District
Force Main Condition Assessment

11/8/2016

Tasks	Labor						Outside Services			ODCs		Total
	Jennifer Glynn	Glenn Hermanson	James Kohne	Admin.	Total Hours	Total Labor Costs (1)	JDH Corrosion Inc.	Subtotal	Sub Consultant Total Cost (2)	ODCs	Total ODCs (3)	Total Fee
	PM	QA/QC	PE	Graphics and Support Team			Corrosion/ External Inspection					
	$249	$282	$148	$100								
Task 1: Project Management												
1.1 Project Management	25	4	2	4	35	$8,049		$0	$0		$0	$8,049
1.2 Project Reporting / Invoicing	24			12	36	$7,176		$0	$0		$0	$7,176
1.3 Project Planning	3				3	$747		$0	$0		$0	$747
1.4 Meetings	8		12	2	22	$3,968		$0	$0	$150	$150	$4,118
Subtotal Task 1:	60	4	14	18	96	$19,940	$0	$0	$0	$150	$150	$20,090
Task 2: Review and Assess Existing Force Main Systems												
2.1 Review and Assess Existing Force Main Systems	4		8		12	$2,180		$0	$0		$0	$2,180
Subtotal Task 2:	4	0	8	0	12	$2,180	$0	$0	$0	$0	$0	$2,180
Task 3: Condition Assessment of Pipe												
3.1 Internal Condition Assessment	16		80		96	$15,824		$0	$0	$685	$685	$16,509
3.2 Core Sampling/Testing of Extracted Pipe	4		10		14	$2,476	$28,500	$28,500	$29,925	$150	$150	$32,551
Subtotal Task 3:	20	0	90	0	110	$18,300	$28,500	$28,500	$29,925	$835	$835	$49,060
Task 4: Review, Mitigation, and Prevention of Future Force Main Leaks												
4.1 Review, Mitigation, and Prevention of Future Force Main Leaks	8		16		24	$4,360		$0	$0		$0	$4,360
4.2 Draft and Final Letter TM	2	2	8	1	13	$2,346		$0	$0		$0	$2,346
Subtotal Task 4:	10	2	24	1	37	$6,706	$0	$0	$0	$0	$0	$6,706
Task 5: Identify and Evaluate Short- and Long-Term Maintenance												
5.1 Identify and Evaluate Short- and Long-Term Maintenance	2		8		10	$1,682		$0	$0		$0	$1,682
Subtotal Task 5:	2	0	8	0	10	$1,682	$0	$0	$0	$0	$0	$1,682
Task 6: Identify and Assess Potential Projects for Repair or Replacement												
6.1 Identify and Assess Potential Projects for Repair or Replacement	19		54		73	$12,723		$0	$0		$0	$12,723
Subtotal Task 6:	19	0	54	0	73	$12,723	$0	$0	$0	$0	$0	$12,723
Task 7: Draft and Final Force Main Condition Assessment Report												
7.1 Report Outline and Table of Contents	1		2		3	$545		$0	$0		$0	$545
7.2 Draft Force Main Condition Assessment Report	40	8	60	8	116	$21,896		$0	$0		$0	$21,896
7.3 Final Force Main Condition Assessment Report	8	2	24	4	38	$6,508		$0	$0		$0	$6,508
Subtotal Task 7:	49	10	86	12	157	$28,949	$0	$0	$0	$0	$0	$28,949
TOTAL	164	16	284	31	495	$90,480	$28,500	$28,500	$29,925	$985	$985	$121,390

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.

UNION SANITARY DISTRICT
CHECK REGISTER
10/15/2016-11/04/2016

Check No.	Date	Invoice No.	Vendor	Description	Invoice Amt	Check Amt
162591	10/20/2016	20889	MCGUIRE & HESTER	NEWARK BACKYARD SS RELOCATION - PHASE 3	$415,281.10	$415,281.10
162673	10/27/2016	800444.5	MOUNTAIN CASCADE INC	FREMONT & PASEO PADRE LS IMPROVEMENTS	$282,447.45	$282,447.45
162751	11/3/2016	20160928.2	SWRCB - STATE WATER RESOURCES	SRF LOAN #C065045110 - LOWER HETCH	$139,633.70	$248,018.43
	11/3/2016	20160928.1		SRF LOAN #C065053110 - WILLOW/CENTRAL	$108,384.73	
162643	10/27/2016	3020	EAST BAY DISCHARGERS AUTHORITY	O&M ASSESSMENT, OCT-DEC 2016 (INCLUDES	$203,862.59	$203,862.59
162689	10/27/2016	7405-2	VALENTINE CORPORATION	PINE STREET EASEMENT	$87,238.79	$87,238.79
162598	10/20/2016	140120161005	PACIFIC GAS AND ELECTRIC	SERV TO 10/03/16 IRVINGTON PS	$27.46	$79,842.11
	10/20/2016	013720161005		SERV TO 10/04/16 BOYCE RD PS	$2,693.62	
	10/20/2016	170120161006		SERV TO 09/20/16 PLANT	$77,121.03	
162582	10/20/2016	6729	DW NICHOLSON CORP	PLANT FACILITIES IMPROVEMENTS	$72,771.43	$72,771.43
162693	10/27/2016	37450	WECO INDUSTRIES LLC	1 CAMERA OZIII & 1 WTR WHEELED TRANSPORTER	$72,182.19	$72,182.19
162638	10/27/2016	201303529	COVELLO GROUP INC	THICKENER CONROL BUILDING IMPROVEMENTS PHASE II	$40,562.21	$67,246.71
	10/27/2016	20150237		FREMONT & PASEO PADRE LS IMPROVEMENTS	$26,684.50	
162642	10/27/2016	6730	DW NICHOLSON CORP	PLANT FACILITIES IMPROVEMENTS	$48,626.22	$48,626.22

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162694	10/27/2016	2030588	WEST YOST ASSOCIATES	NEWARK BACKYARD SS RELOCATION - PHASE 3	$1,958.50	$45,277.51
	10/27/2016	2030680		PLANT FACILITIES IMPROVEMENTS	$1,527.50	
	10/27/2016	2030681		HYPO TANKS & PIPING REPLACEMENT	$834.53	
	10/27/2016	2030589		STANDARD SPECIFICATIONS & INFO BULLETIN	$8,162.40	
	10/27/2016	2030704		SLUDGE DEGRITTER SYSTEM	$5,696.00	
	10/27/2016	2030575		PLANT FACILITIES IMPROVEMENTS	$10,636.08	
	10/27/2016	2030587		ALVARADO-NILES ROAD SS REHABILITATION	$628.50	
	10/27/2016	2030679		PINE STREET EASEMENT	$15,834.00	
162584	10/20/2016	902801214	EVOQUA WATER TECHNOLOGIES	4,498 GAL HYDROGEN PEROXIDE	$20,978.67	$32,708.63
	10/20/2016	902801266		2,515 GAL HYDROGEN PEROXIDE	$11,729.96	
162592	10/20/2016	20889R	MCGUIRE & HESTER	NEWARK BACKYARD SS RELOCATION - PHASE 3 - ESCROW PYMT	$21,856.90	$21,856.90
162551	10/20/2016	66257	3T EQUIPMENT COMPANY INC	19 PIPEPATCH KIT - WINTER	$11,022.66	$18,298.77
	10/20/2016	66258		1 INSTALLATION KIT & 6 PIPEPATCH KIT - WINTER	$6,946.11	
	10/20/2016	66275		6 TIGER TAILS	$330.00	
162641	10/27/2016	6661	DW NICHOLSON CORP	MCC & PLC REPLACEMENT - PHASE 3	$18,180.53	$18,180.53
162646	10/27/2016	902821564	EVOQUA WATER TECHNOLOGIES	3,691 GAL HYDROGEN PEROXIDE	$17,214.82	$17,937.22
	10/27/2016	902819662		DI WATER SYSTEM	$345.00	
	10/27/2016	902823311		DI WATER SYSTEM	$377.40	

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162713	11/3/2016	1901431A	DELTA DENTAL SERVICE	OCTOBER 2016 DENTAL	$1,896.19	$16,228.69
	11/3/2016	1901431C		OCTOBER 2016 DENTAL	$14,332.50	
162728	11/3/2016	789095	MANSFIELD OIL CO OF GAINSVILLE	5965 GALLONS ULSD CARB DYED DIESEL	$13,333.98	$13,333.98
162575	10/20/2016	7347	CDW GOVERNMENT LLC	CREDIT CISCO MARTNET	$-30.69	$12,359.31
	10/20/2016	1165		CISCO PHONE SYSTEM ANNUAL SUPPORT	$12,390.00	
162708	11/3/2016	29767	CALIFORNIA WATER TECHNOLOGIES	41,900 LBS FERROUS CHLORIDE	$3,698.70	$11,321.96
	11/3/2016	29804		43,320 LBS FERROUS CHLORIDE	$3,905.83	
	11/3/2016	29848		42,200 LBS FERROUS CHLORIDE	$3,717.43	
162574	10/20/2016	152118	CAROLLO ENGINEERS	FREMONT & PASEO PADRE LS IMPROVEMENTS	$11,068.35	$11,068.35
162610	10/20/2016	775158	UNIVAR USA INC	5,010 GALS SODIUM HYPOCHLORITE	$2,212.67	$10,965.72
	10/20/2016	775067		4,901 GALS SODIUM HYPOCHLORITE	$2,164.52	
	10/20/2016	775840		4,900 GALS SODIUM HYPOCHLORITE	$2,164.08	
	10/20/2016	775162		5,010 GALS SODIUM HYPOCHLORITE	$2,212.67	
	10/20/2016	775730		5,008 GALS SODIUM HYPOCHLORITE	$2,211.78	
162741	11/3/2016	22692	RMC WATER AND ENVIRONMENT	ALVARADO BASIN SEWER MASTER PLAN UPDATE	$3,810.50	$10,308.00
	11/3/2016	22687		ALVARADO BASIN SEWER MASTER PLAN UPDATE	$6,497.50	
162558	10/20/2016	5148176	ALL INDUSTRIAL ELECTRIC SUPPLY	2ND CLARIFIER 1-4 LIGHTS	$9,993.50	$9,993.50
162597	10/20/2016	167809	PACIFIC COAST CHEMICALS CO	1,320 GALS CAPTOR CALCIUM THIOSULFATE	$8,929.80	$8,929.80
162691	10/27/2016	275409474	VALMET INC	REPAIR OF VALMET TS 4"	$6,604.00	$6,604.00

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162753	11/3/2016	777621	UNIVAR USA INC	4,911 GALS SODIUM HYPOCHLORITE	$2,168.95	$6,567.35
	11/3/2016	778459		5,010 GALS SODIUM HYPOCHLORITE	$2,212.67	
	11/3/2016	777906		4,949 GALS SODIUM HYPOCHLORITE	$2,185.73	
162628	10/27/2016	1025	BAYWORK	ANNUAL FEE - 2016/2017 SIGNATORY FEE	$6,105.00	$6,105.00
162585	10/20/2016	180	FORMULA DESIGN	PUBLIC WEBSITE IMPROVEMENTS	$5,300.00	$5,300.00
162566	10/20/2016	1299487	BMC SOFTWARE INC	FOOTPRINTS RENEWAL	$5,107.21	$5,107.21
162645	10/27/2016	1065	ENGINE SYSTEMS INTEGRATION LLC	COGEN PIPING, COOLING SYS, AND GAS SKID ASSESMENT	$5,000.00	$5,000.00
162578	10/20/2016	269844	CURTIS & TOMPKINS, LTD	50 LAB SAMPLE ANALYSIS	$1,670.00	$4,755.00
	10/20/2016	269585		12 LAB SAMPLE ANALYSIS	$1,050.00	
	10/20/2016	269845		71 LAB SAMPLE ANALYSIS	$2,035.00	
162688	10/27/2016	776720	UNIVAR USA INC	4,798 GALS SODIUM HYPOCHLORITE	$2,119.04	$4,334.81
	10/27/2016	777210		5,017 GALS SODIUM HYPOCHLORITE	$2,215.77	
162609	10/20/2016	130898	TOTAL WASTE SYSTEMS INC	SEPTEMBER 2016 GRIT DISPOSAL	$4,266.49	$4,266.49
162631	10/27/2016	666724	BRENNTAG PACIFIC, INC.	2564 LBS SODIUM HYDROXIDE	$1,332.54	$3,997.61
	10/27/2016	666723		5128 LBS SODIUM HYDROXIDE	$2,665.07	
162716	11/3/2016	20161019	FLIR COMMERCIAL SYSTEMS, INC	ITC TRAINING: M. MOSLEY #97126 & Y. LU #97121	$3,990.00	$3,990.00
162600	10/20/2016	1079694	POLYDYNE INC	41,660 LBS CLARIFLOC WE-539	$3,941.04	$3,941.04
162700	11/3/2016	20160827	AMAZON.COM LLC	09/16 - ASTD OFFICE SUPPLIES	$3,731.21	$3,731.21
162649	10/27/2016	236377	FRANK A OLSEN COMPANY	2 8" DEZURIK PLUG VALVE FOR STOCK	$3,702.99	$3,702.99

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162632	10/27/2016	29797	CALIFORNIA WATER TECHNOLOGIES	41,820 LBS FERROUS CHLORIDE	$3,623.63	$3,623.63
162601	10/20/2016	160928	PROSAFE	32 HRS INSPECTIONS & 4 HRS SPCC INSPECTIONS	$3,600.00	$3,600.00
162571	10/20/2016	29745	CALIFORNIA WATER TECHNOLOGIES	42,640 LBS FERROUS CHLORIDE	$3,596.28	$3,596.28
162579	10/20/2016	88050	DACO CORPORATION	FMC SHOP - METAL STOCK HALF RACK	$3,532.11	$3,532.11
162730	11/3/2016	85469183	MCMASTER SUPPLY INC	ASTD PARTS & MATERIALS	$102.00	$3,525.17
	11/3/2016	86387228		1 STEEL SHELF CABINET W LOCK & 2 KEYS	$317.18	
	11/3/2016	86427294		BEARING HEATER	$3,020.96	
	11/3/2016	85764162		10 PACKS SCREWS	$85.03	
162552	10/20/2016	40934	ABACUS PRODUCTS INC	3000 PLACEMATS	$3,415.65	$3,415.65
162748	11/3/2016	1747568002	SAN LEANDRO ELECTRIC SUPPLY	ASTD PARTS & MATERIALS	$713.30	$3,395.13
	11/3/2016	1747568001		ASTD PARTS & MATERIALS	$248.56	
	11/3/2016	1750679005		20 CONDULET 3/4 INCH OCAL	$964.00	
	11/3/2016	1747568003		100 BLACK CABLE TIES	$135.70	
	11/3/2016	1745679004		ASTD PARTS & MATERIALS	$97.66	
	11/3/2016	1750679004		ASTD PARTS & MATERIALS	$1,235.91	
162756	11/3/2016	20161101	VISION SERVICE PLAN - CA	NOVEMBER 2016 VISION STMT	$3,317.76	$3,317.76
162639	10/27/2016	20161025	DEVCON CONSTRUCTION, INC.	REFUND # 19335	$3,300.00	$3,300.00
162731	11/3/2016	7892	MISSION SHOPPING CENTER	REFUND # 19351	$3,300.00	$3,300.00

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162633	10/27/2016	9421	CDW GOVERNMENT LLC	RSA AUTHENTICATION MANAGER SUPPORT	$1,852.80	$3,257.02
	10/27/2016	9687		ADDITIONAL CISCO PHONES SUPPORT CONTRACT	$1,356.59	
	10/27/2016	9702		DELL WYSE THIN CLIENT EVALUATION	$47.63	
162742	11/3/2016	8001	ROBSON HOMES LLC	REFUND # 19353	$2,150.00	$3,200.00
	11/3/2016	7407		REFUND # 19354	$1,050.00	
162608	10/20/2016	20160930	STATE BOARD OF EQUALIZATION	SALES & USE TAX 7/16-9/16	$3,175.00	$3,175.00
162572	10/20/2016	16506843	CANON SOLUTIONS AMERICA INC	MONTHLY LEASE 6 CANON COLOR COPIERS	$3,161.33	$3,161.33
162627	10/27/2016	5677	BAY AREA COATING CONSULTANT	COATING INSPECTION SERVICES - PLANT FACILITIES IMPROVEMENTS	$3,131.70	$3,131.70
162659	10/27/2016	15554	ICE SAFETY SOLUTIONS INC	CPR/FIRST AID TRAINING FOR 36 EMPLOYEES	$2,700.00	$2,700.00
162707	11/3/2016	669128	BRENNTAG PACIFIC, INC.	3846 LBS SODIUM HYDROXIDE	$1,998.80	$2,665.06
	11/3/2016	669127		1282 LBS SODIUM HYDROXIDE	$666.26	

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162721	11/3/2016	9233623991	GRAINGER INC	2 Y STRAINERS	$20.39	$2,544.45
	11/3/2016	9232095365		1 WIRE TWIST PLIERS	$38.18	
	11/3/2016	9236518271		1 STRAIGHT LADDER	$271.37	
	11/3/2016	9242339381		CREDIT FOR 1 STRAIGHT LADDER	$-271.37	
	11/3/2016	9235713204		1 PRESSURE TRANSDUCER	$674.19	
	11/3/2016	9236020955		1 QT HYDRAULIC OIL	$30.65	
	11/3/2016	9236316510		1 STARTER KIT W/PUMP	$601.42	
	11/3/2016	9233624007		1 WIRE TWIST PLIERS	$73.09	
	11/3/2016	9236316528		ASTD PARTS & MATERIALS	$516.03	
	11/3/2016	9236518263		4 ANCHOR SHACKLES	$307.10	
	11/3/2016	9232095357		ASTD PARTS & MATERIALS	$215.29	
	11/3/2016	9232360876		1 FLANGE KIT	$68.11	
162683	10/27/2016	5029	SOURCEGEAR LLC	SCADA UPGRADE (CTRL BLDG IMPROV/ALARM NOTIFICATION)	$2,444.20	$2,444.20
162563	10/20/2016	5671	BAY AREA COATING CONSULTANT	COATING INSPECTION SERVICES	$2,400.97	$2,400.97
162711	11/3/2016	18392	CLI-METRICS SERVICE COMPANY	MAINTENANCE - COIL CLEANING	$450.00	$2,354.14
	11/3/2016	18392.1		MAINTENANCE - COIL CLEANING	$1,597.50	
	11/3/2016	18391		SERVICE REQUEST: BLDG 81	$306.64	
162666	10/27/2016	13386	LOOKINGPOINT INC	MONTHLY PREMIER SERVICE - OCT 2016	$500.00	$2,351.75
	10/27/2016	13363		SIP MIGRATION	$1,851.75	

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162674	10/27/2016	XCTZO1L	PACHECO BROTHERS GARDENING INC	WEED ABATEMENT WORK OCTOBER 2016	$915.00	$2,280.00
	10/27/2016	XCTZO1K		LANDSCAPE MAINTENANCE SERVICES OCTOBER 2016	$1,365.00	
162663	10/27/2016	96680	JACK DOHENY SUPPLIES, INC.	PACP RECERTIFICATION TRNG FOR 5 CS EMPLOYEES	$2,250.00	$2,250.00
162568	10/20/2016	90028	BRUCE BARTON PUMP SERVICE INC	2 SUMP PUMPS	$2,234.11	$2,234.11
162559	10/20/2016	6092690	ALPHA ANALYTICAL LABORATORIES	121 LAB SAMPLE ANALYSIS	$1,480.00	$2,035.00
	10/20/2016	6093257		47 LAB SAMPLE ANALYSIS	$555.00	
162612	10/27/2016	66307	3T EQUIPMENT COMPANY INC	4 PIPEPATCH KIT - WINTER	$2,006.40	$2,006.40
162564	10/20/2016	107596	BIGGE CRANE & RIGGING CO	OFFLOAD OF CO-GEN #1	$1,980.00	$1,980.00
162733	11/3/2016	113780	MUNICIPAL MAINT EQUIPMENT INC	1 CHAIN FOR NOZZLE	$45.55	$1,766.66
	11/3/2016	113828		1 CHAIN FOR NOZZLE	$136.56	
	11/3/2016	114258		CREDIT FOR INV 113780, 1 CHAIN FOR NOZZLE	$-45.55	
	11/3/2016	113980		9 EA NOZZLE CHAINS	$1,630.10	
162569	10/20/2016	242255500	BUCKLES SMITH ELECTRIC	NPS VFD #3 PRE-CHARGE CONTROLLER BOARD	$1,700.33	$1,700.33
162665	10/27/2016	1428751	LIEBERT CASSIDY WHITMORE	LEGAL SERVICES - CALPERS AUDIT - UNIFORMS	$1,650.00	$1,650.00

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162732	11/3/2016	24872078	MOTION INDUSTRIES INC	10 WASHERS	$68.33	$1,619.88
	11/3/2016	24872364		3 EA FLOW METERS	$282.63	
	11/3/2016	24872590		10 AUTO LUBERS	$667.38	
	11/3/2016	24872311		1 BUSHING	$5.90	
	11/3/2016	24872432		15 GASKETS	$229.32	
	11/3/2016	24871701		ELECTRICAL SUPPLIES, GREASE	$197.02	
	11/3/2016	24872213		ELECTRICAL SUPPLIES, GREASE	$169.30	
162655	10/27/2016	9227821692	GRAINGER INC	ASTD PARTS & MATERIALS	$304.68	$1,612.70
	10/27/2016	9225135855		ASTD PARTS & MATERIALS	$921.43	
	10/27/2016	9229332110		72 PR GLASSES SAFETY ZTEC BROWN	$167.12	
	10/27/2016	9230087448		ASTD PARTS & MATERIALS	$33.67	
	10/27/2016	9228404704		2 WIRE MARKER BOOKS	$56.86	
	10/27/2016	9073391550		2 EA PLUGS AND CONNECTORS	$128.94	
162586	10/20/2016	18990	FUTURE INDUSTRIAL TECHNOLOGIES	BACKSAFE TRAINING	$1,607.40	$1,607.40
162695	10/27/2016	26639	WILEY PRICE & RADULOVICH LLP	LABOR & EMPLOYMENT LAW FEES	$1,560.00	$1,560.00

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162630	10/27/2016	11523930	BLAISDELL'S	ASTD OFFICE SUPPLIES	$21.44	$1,546.52
	10/27/2016	11515060		ASTD OFFICE SUPPLIES	$9.43	
	10/27/2016	11518970		ASTD OFFICE SUPPLIES	$23.32	
	10/27/2016	11521760		3 COLOR PRINTER CARTRIDGES	$1,174.77	
	10/27/2016	11522230		ASTD OFFICE SUPPLIES	$175.98	
	10/27/2016	11519810		ASTD OFFICE SUPPLIES	$82.49	
	10/27/2016	11526150		ASTD OFFICE SUPPLIES	$37.65	
	10/27/2016	11523931		ASTD OFFICE SUPPLIES	$21.44	
162583	10/20/2016	64150	ENVIRONMENTAL LOGISTICS INC	HAZARDOUS MATERIAL DISPOSAL	$1,523.75	$1,523.75
162580	10/20/2016	20160925.25	DALE HARDWARE INC	09/16 - ASTD PARTS & MATERIALS	$1,515.23	$1,515.23
162625	10/27/2016	3WQ52	BAY AREA AIR QUALITY MGMT DIST	PERMIT RENEWAL: NEWARK PS 12/2016-12/2018	$1,443.00	$1,443.00
162704	11/3/2016	3014	BAY POWER LLC	STANDBY GENERATOR 7 AND 8 ANNUAL PM	$1,440.77	$1,440.77
162692	10/27/2016	6240	VON EUW TRUCKING	3 DUMP FEE & 8 END DUMP HOURLY	$1,416.00	$1,416.00
162662	10/27/2016	NAA3041	IRON MOUNTAIN	OFF-SITE STORAGE AND SERVICE - SEPT 2016	$313.14	$1,376.77
	10/27/2016	NAE8423		OFF-SITE STORAGE AND SERVICE - SEPT 2016	$1,063.63	

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162671	10/27/2016	84855917	MCMASTER SUPPLY INC	2 PACKS PINCH CLAMPS	$24.70	$1,339.49
	10/27/2016	84884108		ASTD PARTS & MATERIALS	$936.25	
	10/27/2016	85314493		1 WORKBENCH CABINET & DRAWER	$294.66	
	10/27/2016	84558224		1 LOCKOUT ORGANIZING STATION	$46.12	
	10/27/2016	85314273		2 SPOOLS ETHERNET CORD	$37.76	
162667	10/27/2016	13383	LOOKINGPOINT INC	ANNUAL SUPPORT FOR PHONE AND NETWORK -OCT 2016	$1,225.00	$1,225.00
162620	10/27/2016	8789373300	AT&T	SERV: 10/10/16 - 11/09/16	$1,203.20	$1,203.20
162709	11/3/2016	3520052485	CHARTWELL STAFFING SVCS INC	TEMP LABOR-ALVARADO MURCIA, S., WEEK ENDING 10/02/16	$1,149.52	$1,149.52
162593	10/20/2016	83507049	MCMASTER SUPPLY INC	1 ABRASION-RESISTANT POLYURETHANE TUBE FOR AIR	$14.52	$1,051.76
	10/20/2016	81655320		2 CANS INSECTICIDE SPRAY	$24.44	
	10/20/2016	83656708		1 PK O-RINGS	$12.13	
	10/20/2016	83957142		1 EA VALVE & NIPPLE	$502.23	
	10/20/2016	83414298		ASTD PARTS & MATERIALS	$55.69	
	10/20/2016	83920589		3 HIGH-PRESSURE EASY-STORE DISCHARGE WATER HOSE	$442.75	
162664	10/27/2016	20161026	CONGNA LI	EXP REIMB: LODGING/MEALS/TRANS FOR WEFTEC - NEW ORLEANS	$1,036.71	$1,036.71
162622	10/27/2016	144432	BABBITT BEARING CO INC	GBT STEERING CYLINDER HARD CHROME	$1,020.00	$1,020.00
162660	10/27/2016	1039732	INDUSTRIAL SAFETY SUPPLY	CALIBRATION GAS FOR ELECTRICIANS	$1,010.50	$1,010.50
162577	10/20/2016	20160928	COMMUNICATION & CONTROL INC	UTILITY FEE/ANTENNA RENTAL	$975.20	$975.20
162588	10/20/2016	9218346998	GRAINGER INC	ASTD PARTS & MATERIALS	$967.89	$967.89

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162685	10/27/2016	832918670	TELEPACIFIC COMMUNICATIONS	WIRELESS INTERNET BACKUP - OCTOBER	$960.00	$960.00
162635	10/27/2016	3520051231	CHARTWELL STAFFING SVCS INC	TEMP LABOR-ALVARADO MURCIA, S., WEEK ENDING 9/25/16	$949.60	$949.60
162714	11/3/2016	8756	EAST BAY MUNI UTILITY DISTRICT	15 LAB SAMPLE ANALYSIS	$943.00	$943.00
162696	11/3/2016	66334	3T EQUIPMENT COMPANY INC	1 CLEANING NOZZLE	$939.80	$939.80
162614	10/27/2016	9939727945	AIRGAS NCN	CYLINDER RENTAL	$928.27	$928.27
162701	11/3/2016	14241004	APPLEONE EMPLOYMENT SVCS	TEMP LABOR-YOLLAND, L., WK END 10/08/16	$918.59	$918.59
162605	10/20/2016	4440	SIGNET TESTING LABS INC	PINE STREET EASEMENT	$911.90	$911.90
162749	11/3/2016	4502	SIGNET TESTING LABS INC	PINE STREET EASEMENT	$911.90	$911.90
162603	10/20/2016	20161011	JOHN SEO	EXP REIMB: REG/LODGING/MEALS/AIRFARE/PARKING TRI-STATE SEMI	$898.34	$898.34
162562	10/20/2016	2521975106	BANK OF NEW YORK	JUL 2016 SERVICE FEE	$866.00	$866.00
162677	10/27/2016	14156748	QUIKRETE NORTHERN CALIFORNIA	112 BGS 60# BLACKTOP PATCH	$862.84	$862.84
162590	10/20/2016	15433	ICE SAFETY SOLUTIONS INC	CPR/FIRST AID/AED TRAINING FOR 11 EMPLOYEES	$825.00	$825.00
162653	10/27/2016	1083833005	G&K SERVICES CO	ASTD DUST MOPS, WET MOPS & TERRY TOWELS	$15.70	$820.69
	10/27/2016	1083833003		UNIFORM LAUNDERING & RUGS	$444.54	
	10/27/2016	1083833004		UNIFORM LAUNDERING SERVICE	$360.45	
162553	10/20/2016	9055892426	AIRGAS NCN	2 CYL ARGON	$808.26	$808.26
162604	10/20/2016	4868173100616	SIERRA SPRING WATER COMPANY	WATER SERVICE 09/10/16 - 10/06/16	$565.52	$806.62
	10/20/2016	8122768100616		BOTTLESS COOLERS RENTAL	$241.10	
162658	10/27/2016	81	HYDRO INTERNATIONAL WASTEWATER	EUTEK LINER	$801.01	$801.01

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Check No.	Date	Invoice No.	Vendor	Description	Invoice Amt	Check Amt
162576	10/20/2016	8306	COMM/NET SYSTEMS	REFUND # 19319	$800.00	$800.00
162650	10/27/2016	9876	FREMONT EXPRESS COURIER SVC	COURIER SERVICES: SEP 2016 DAILY MAIL/2 BOARDMEMBER DELIVER	$795.00	$795.00
162615	10/27/2016	161004154	AIRTECH MECHANICAL INC	SERVICE: BLDG 76 PAINT SHOP	$773.50	$773.50
162623	10/27/2016	2521975810	BANK OF NEW YORK	AUG 2016 SERVICE FEE	$772.59	$772.59
162736	11/3/2016	30227100	OLDCASTLE ENCLOSURE SYSTEMS	2 EA TRAFFIC GATES AND FRAMES	$766.50	$766.50
162644	10/27/2016	2017101	EDA - ECONOMIC DEVELOPMENT	ANNUAL MEMBERSHIP DUES	$750.00	$750.00
162618	10/27/2016	6101351	ALPHA ANALYTICAL LABORATORIES	49 LAB SAMPLE ANALYSIS	$747.00	$747.00
162697	11/3/2016	9056268038	AIRGAS NCN	ASTD PARTS & MATERIALS	$54.02	$745.35
	11/3/2016	9056362175		4 CYL WELDING GAS	$691.33	
162720	11/3/2016	1841076872	GOODYEAR COMM TIRE & SERV CTRS	1 TIRE	$718.07	$718.07
162686	10/27/2016	20162285546	THYSSENKRUPP ELEVATOR CORP	GROUP III TESTING PRELIMINARY ORDER	$714.00	$714.00
162679	10/27/2016	1294214	ROCHESTER MIDLAND CORPORATION	HOT WATER LOOP SERVICE	$689.03	$689.03
162690	10/27/2016	357691	VALLEY OIL COMPANY	1 DRUM ALLIANCE XLD OIL & 30 TUBES ULTRA DUTY GREASE	$683.19	$683.19
162757	11/3/2016	8046449211	VWR INTERNATIONAL LLC	1 PHENYLARSINE OXIDE TITRA 32OZ	$63.53	$677.51
	11/3/2016	8046430295		1 PROBE THRMO 0-90C & 3 PKS INDICATOR BIO B/T SURE STR	$411.28	
	11/3/2016	8046426900		1 PK CHEM DPD TOT CL PP 25ML	$202.70	
162637	10/27/2016	38462	CLAREMONT BEHAVIORAL SERVICES	NOV 2016 EAP PREMIUM	$662.40	$662.40
162554	10/20/2016	60904142	AIRTECH MECHANICAL INC	BUILDING 90 COOLING UNITS	$657.50	$657.50
162668	10/27/2016	20161024	SCOTT MARTIN	EXP REIMB: MEALS/PARKING/MILEAGE - SMRP CONF - JACKSONVILLE	$622.13	$622.13

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Check No.	Date	Invoice No.	Vendor	Description	Invoice Amt	Check Amt
162672	10/27/2016	161052	METROMOBILE COMMUNICATIONS INC	ANNUAL RADIO SERVICE - OCT 2016	$582.75	$582.75
162573	10/20/2016	4020245743	CANON SOLUTIONS AMERICA INC	MTHLY MAINTENANCE BASED ON USE	$550.91	$550.91
162594	10/20/2016	1114784	MOBILE MODULAR MANAGEMENT CORP	FMC TRAILER RENTAL - SEPT 2016	$542.30	$542.30
162602	10/20/2016	7639060203	RS HUGHES CO INC	ASTD PPE & SAFETY SUPPLIES	$92.13	$539.09
	10/20/2016	7639060202		ASTD PPE & SAFETY SUPPLIES	$52.80	
	10/20/2016	7637004201		ASTD PPE & SAFETY SUPPLIES	$30.76	
	10/20/2016	7639060200		ASTD PPE & SAFETY SUPPLIES	$363.40	
162599	10/20/2016	20161018	PETTY CASH	PETTY CASH REPLENISHMENT	$536.35	$536.35
162723	11/3/2016	3K1065	HARRINGTON INDUSTRIAL PLASTICS	1 6" VALVE BUTTERFLY	$522.15	$522.15
162719	11/3/2016	1083834919	G&K SERVICES CO	UNIFORM LAUNDERING & RUGS	$232.22	$519.69
	11/3/2016	1083834920		UNIFORM LAUNDERING SERVICE	$273.45	
	11/3/2016	1083834921		ASTD DUST MOPS, WET MOPS & TERRY TOWELS	$14.02	
162755	11/3/2016	20161102	AUDREY VILLANUEVA	EXP REIMB: UBER/BART/LODGING/BAGGAGE FEES IPACS CONF NEW .	$511.31	$511.31
162581	10/20/2016	8439	SASA DENG	REFUND # 19322	$500.00	$500.00
162613	10/27/2016	8658	ABILITY ACCESS PLUMBING ROOTER	REFUND # 19336	$500.00	$500.00
162724	11/3/2016	7944	MARK HIRSCH	REFUND # 19352	$500.00	$500.00
162738	11/3/2016	8538	ERNESTO PEREZALONSO	REFUND # 19362	$500.00	$500.00
162745	11/3/2016	8617	ALFONSO ROSAS	REFUND # 19356	$500.00	$500.00

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Check No.	Date	Invoice No.	Vendor	Description	Invoice Amt	Check Amt
162587	10/20/2016	1083831054	G&K SERVICES CO	UNIFORM LAUNDERING SERVICE	$245.96	$492.16
	10/20/2016	1083831055		ASTD DUST MOPS, WET MOPS & TERRY TOWELS	$15.70	
	10/20/2016	1083831053		UNIFORM LAUNDERING & RUGS	$230.50	
162565	10/20/2016	11504930	BLAISDELL'S	1 TONER	$192.49	$491.68
	10/20/2016	11510180		1 MOUSE PAD	$7.69	
	10/20/2016	11513800		ASTD OFFICE SUPPLIES	$190.03	
	10/20/2016	11512320		ASTD OFFICE SUPPLIES	$21.98	
	10/20/2016	11512410		ASTD OFFICE SUPPLIES	$44.41	
	10/20/2016	11503700		ASTD OFFICE SUPPLIES	$35.08	
162626	10/27/2016	340746	BAY AREA BARRICADE SERVICE INC	8 MARKING PAINT & 3 SHOVELS	$455.12	$455.12
162606	10/20/2016	4704	SKIL-PAINTING INC	SANDBLAST STEEL RING PARTS	$450.00	$450.00
162687	10/27/2016	86572	TRI-SIGNAL INTEGRATION INC	FIRE ALARM SYSTEM SERVICE	$444.00	$444.00
162718	11/3/2016	116525567	FREMONT URGENT CARE CENTER	1 NEW HIRE PHYSICAL	$421.00	$421.00
162636	10/27/2016	56533	CITYLEAF INC	PLANT MAINTENANCE - OCT 2016	$420.23	$420.23
162629	10/27/2016	19438000	BECK'S SHOES	SAFETY SHOES: R. PIPKIN/M. LUBINA	$404.75	$404.75
162678	10/27/2016	8200000010057	RED WING SHOE STORE	SAFETY SHOES - HUGHES & COOPER	$400.20	$400.20
162734	11/3/2016	20161031	PAMELA NI	SEWER SERVICE CHARGE REFUND	$380.05	$380.05
162651	10/27/2016	69262272720	FREMONT URGENT CARE CENTER	TESTING - 1 EMPLOYEE	$122.00	$378.63
	10/27/2016	69262272982		TESTING - 1 EMPLOYEE	$256.63	

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162561	10/20/2016	20161019	PAMELA ARENDS-KING	EXP REIMB: CSMFO CONFERENCE REGISTRATION	$370.00	$370.00
162717	11/3/2016	15003	FREMONT CHAMBER OF COMMERCE	MEMBERSHIP DUES	$350.00	$350.00
162589	10/20/2016	602249381	HILLYARD/SAN FRANCISCO	ASTD JANITORIAL SUPPLIES	$348.42	$348.42
162567	10/20/2016	20161019	LAURIE BRENNER	EXP REIMB: RETIREMENT RECOGNITION GIFT D. KULL	$345.00	$345.00
162699	11/3/2016	6101974	ALPHA ANALYTICAL LABORATORIES	27 LAB SAMPLE ANALYSIS	$345.00	$345.00
162750	11/3/2016	20161031	SWRCB - CERTIFICATIONS	GRADE V CERT RENEW - COGGINS	$340.00	$340.00
162675	10/27/2016	123911	PREFERRED ALLIANCE INC	SEPTEMBER 2016 SERVICE FEE	$327.20	$327.20
162661	10/27/2016	144124	INTERNATIONAL PAINT LLC	ASTD PAINT SUPPLIES	$321.26	$321.26
162705	11/3/2016	11536200	BLAISDELL'S	ASTD OFFICE SUPPLIES	$44.48	$307.41
	11/3/2016	11536950		ASTD OFFICE SUPPLIES	$13.19	
	11/3/2016	11535880		ASTD OFFICE SUPPLIES	$72.63	
	11/3/2016	11535150		ASTD OFFICE SUPPLIES	$112.95	
	11/3/2016	11535940		ASTD OFFICE SUPPLIES	$46.19	
	11/3/2016	11535151		ASTD OFFICE SUPPLIES	$17.97	
162617	10/27/2016	5148576	ALL INDUSTRIAL ELECTRIC SUPPLY	ASTD PARTS & MATERIALS	$303.84	$303.84
162722	11/3/2016	5017880	GROENIGER AND COMPANY	ASTD PARTS & MATERIALS	$276.34	$281.17
	11/3/2016	5018020		ASTD PARTS & MATERIALS	$4.83	
162712	11/3/2016	201610.10	DALE HARDWARE INC	10/16 - ASTD PARTS & MATERIALS	$273.42	$273.42
162681	10/27/2016	20161025	RANDY SCHWARTZ	EXP REIMB: MEALS/MILEAGE/BAGGAGE/GAS SMRP CONF JACKSONVII	$251.87	$251.87

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Check No.	Date	Invoice No.	Vendor	Description	Invoice Amt	Check Amt
162648	10/27/2016	10484	CITY OF FOSTER CITY	1 JOB POSTINGS	$250.00	$250.00
162703	11/3/2016	1304	AUTOMATED NETWORK CONTROLS	HIGH SPEED AERATION BLOWER	$250.00	$250.00
162758	11/3/2016	20161101	JANINNE WARD	EXP REIMB: SOCIAL COMMITTEE 2016 HALLOWEEN PARTY	$243.88	$243.88
162607	10/20/2016	20161001	SPOK INC	OCTOBER 2016 PAGER SERVICE	$239.69	$239.69
162570	10/20/2016	20161020	MARIA BUCKLEY	EXP REIMB: RETIREMENT DINNER	$227.34	$227.34
162743	11/3/2016	20161027	JOSE RODRIGUES JR	EXP REIMB: WORK GROUP SAFETY BREAKFAST	$223.35	$223.35
162747	11/3/2016	85340220161021	SAN FRANCISCO WATER DEPT	SERVICE 09/22/16 TO 10/20/16	$217.90	$217.90
162754	11/3/2016	35699	VALLEY OIL COMPANY	1 DRUM DEF FLUID	$214.78	$214.78
162726	11/3/2016	531485	HULBERT LUMBER SUPPLY	ASTD LUMBER SUPPLIES	$22.84	$187.85
	11/3/2016	531444		ASTD LUMBER SUPPLIES	$7.12	
	11/3/2016	531297		ASTD LUMBER SUPPLIES	$157.89	
162759	11/3/2016	2146495001	WHCI PLUMBING SUPPLY CO	2 FOOT PEDAL METERING CARTRIDGE	$180.24	$180.24
162729	11/3/2016	14197974	MATHESON TRI-GAS INC	ARGON GAS FOR THE LAB	$173.45	$173.45
162735	11/3/2016	20161020	DAVID M O'HARA ATTY AT LAW	LEGAL SERVICES - FINAL BILLING	$168.00	$168.00
162684	10/27/2016	20161025	MOSA TATAKAMOTONGA	EXP REIMB: MEALS/BAGGAGE SMRP CONF JACKSONVILLE FL	$160.74	$160.74
162727	11/3/2016	3008037522	IDEXX DISTRIBUTION INC	1 CS WV120ST-200 120ML VESSEL W/STA 200-PACK	$158.93	$158.93
162657	10/27/2016	20161021	DEHUA HUANG	THIRD PARTY CLAIM REIMBURSEMENT	$150.00	$150.00
162739	11/3/2016	20161102	RIC PIPKIN	EXP REIMB: RETIREMENT RECOGNITION PARTY	$150.00	$150.00
162706	11/3/2016	20161027	LAURIE BRENNER	TRAVEL REIMB: MEALS/PARKING	$130.24	$130.24

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Check No.	Date	Invoice No.	Vendor	Description	Invoice Amt	Check Amt
162698	11/3/2016	5148396	ALL INDUSTRIAL ELECTRIC SUPPLY	1 CUTTING REEL	$126.76	$126.76
162654	10/27/2016	81847	GORILLA METALS	ASTD METAL, STEEL, STAINLESS & ALUMINUM	$126.11	$126.11
162752	11/3/2016	16100705	TELOG INSTRUMENTS INC	1 BATTERY PACK, ALKALINE, 6V, 80AH, ASSY	$122.04	$122.04
162744	11/3/2016	20161101	JAMIE ROJO	EXP REIMB: MEALS/TIPS/MILEAGE CALPERS ED FORUM RIVERSIDE	$120.29	$120.29
162656	10/27/2016	23659	HAYWARD PIPE AND SUPPLY	42 FEET OF 1 1-2" PIPE	$112.03	$112.03
162670	10/27/2016	101063	MCINERNEY & DILLON, P.C.	LEGAL SERVICES AUDIT RESPONSE LETTER	$108.00	$108.00
162746	11/3/2016	7639060205	RS HUGHES CO INC	1 PR HIP WADER STEEL TOE BLACK	$106.27	$106.27
162634	10/27/2016	20161020	PETE CHAPARRO	EXP REIMB: MILEAGE/BRIDGE TOLL CWEA SAFETY DAY	$102.98	$102.98
162740	11/3/2016	84036	REMOTE SATELLITE SYSTEMS INT'L	IRIDIUM SVC FEE NOVEMBER 2016	$97.90	$97.90
162682	10/27/2016	20161025	PAUL SIMMONS	EXP REIMB: MILEAGE NORTHERN SAFETY DAY WOODLAND CA	$93.10	$93.10
162616	10/27/2016	5375552832017	ALAMEDA COUNTY TREASURER	PROPERTY TAXES 37159 HICKORY ST	$90.58	$90.58
162621	10/27/2016	635800120160930	AT&T	SERV: 09/01/16 - 09/30/16	$82.87	$82.87
162619	10/27/2016	7008933289	APPLIED INDUSTRIAL TECHNOLOGIE	ASTD PARTS & MATERIALS	$64.71	$64.71
162652	10/27/2016	20161021	ROSLYN FULLER	EXP REIMB: DPBAG MEETING LUNCH/MILEAGE	$56.20	$56.20
162624	10/27/2016	20161027	JEFFREY BARTON	EXP REIMB: UBER FEES FOR WEFTEC IN NEW ORLEANS	$54.08	$54.08
162669	10/27/2016	77828068	MATHESON TRI-GAS INC	MONTHLY CYLINDER RENTAL - SEPT 2016	$53.78	$53.78
162640	10/27/2016	615320161018	DISH NETWORK	NOV 2016 - SERVICE FEE	$50.92	$50.92
162702	11/3/2016	7008982312	APPLIED INDUSTRIAL TECHNOLOGIE	ASTD PARTS & MATERIALS	$50.52	$50.52
162556	10/20/2016	20161011	ALCO-EMA	MEMBERSHIP RENEWAL	$50.00	$50.00

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Check No.	Date	Invoice No.	Vendor	Description	Invoice Amt	Check Amt
162555	10/20/2016	4047286120161004	ALAMEDA COUNTY WATER DISTRICT	SERV TO: 10/04/16 - PASEO PADRE	$48.29	$48.29
162680	10/27/2016	7639060204	RS HUGHES CO INC	ASTD PPE & SAFETY SUPPLIES	$46.07	$46.07
162596	10/20/2016	24871430	MOTION INDUSTRIES INC	3 ASTD SPIDER CPLGS	$42.68	$42.68
162710	11/3/2016	425929	CHEMETRICS INC	1 TEST KIT	$42.06	$42.06
162737	11/3/2016	224720161021	PACIFIC GAS AND ELECTRIC	SERV TO 10/20/16 CS TRAINING TRAILER	$42.05	$42.05
162611	10/20/2016	9772832083	VERIZON WIRELESS	WIRELESS SERV 09/02/16-10/01/16	$26.74	$26.74
162560	10/20/2016	1750564	ANALYSTS, INC.	1 LAB SAMPLE ANALYSIS	$24.15	$24.15
162595	10/20/2016	20160908	ROBERT MOORMAN	THIRD PARTY CLAIM	$24.08	$24.08
162725	11/3/2016	5644309	HOSE & FITTINGS ETC	3 4-6 C5OX-S	$22.40	$22.40
162647	10/27/2016	1115282	FASTENAL	ASTD PARTS & MATERIALS	$17.91	$17.91
162557	10/20/2016	5148230	ALL INDUSTRIAL ELECTRIC SUPPLY	FREIGHT	$15.00	$15.00
162676	10/27/2016	743716	PUBLIC SURPLUS AUCTION	SURPLUS SALE FEE: PERKIN ELMER ICP-OEM UNIT	$14.00	$14.00
162715	11/3/2016	1115395	FASTENAL	20 O-RINGS	$1.21	$1.21

Invoices:

Credit Memos :	3	-347.61
$0 - $1,000 :	213	66,691.31
$1,000 - $10,000 :	86	244,300.37
$10,000 - $100,000 :	19	603,764.82
Over $100,000 :	5	1,149,609.57
Total:	326	2,064,018.46

Checks:

$0 - $1,000 :	120	48,737.81
$1,000 - $10,000 :	66	197,918.06
$10,000 - $100,000 :	19	667,753.02
Over $100,000 :	4	1,149,609.57
Total:	209	2,064,018.46

Directors
Manny Fernandez
Tom Handley
Pat Kite
Anjali Lathi
Jennifer Toy

Officers
Paul R. Eldredge
General Manager/
District Engineer

Karen W. Murphy
Attorney

DATE: November 14, 2016

MEMO TO: Board of Directors - Union Sanitary District

FROM: Paul R. Eldredge, General Manager/District Engineer
Pamela Arends-King, CFO/Business Services Manager
Laurie Brenner, Finance and Acquisition Services Coach

SUBJECT: Agenda Item No. 15 - Meeting of November 14, 2016
Information Item: **Annual Reporting of Expense Reimbursements Over $100**

Recommendation

Information Only.

Background

Section 53065.5 of the California Government Code requires each special district to annually disclose any reimbursement paid by the District within the immediately preceding fiscal year of at least one hundred dollars ($100) for each individual charge for services or products received. "Individual charge" includes, but is not limited to, one meal, lodging for one day, transportation, or a registration fee paid to any employee or member of the governing body of the district." The Government Code Section also states that this document must be made available for public inspection.

The District complies with this requirement by annually providing the Board with the report listing these expenses for the prior fiscal year period. This document is maintained in Human Resources.

Attached is the report of expense reimbursements containing individual charges of at least $100 for the period July 1, 2015 through June 30, 2016.

Union Sanitary District

EXPENSE REIMBURSEMENTS OVER $100; FY2016

Employee	Invoice Date	Invoice Description	Amount	Check Date	Check#
GILL, MICHAEL	6/26/2015	EXP REIMB: LODGING/MEALS/PARKING/TAXI - ROCKWEL TECH ED TRNG	1440.51	7/2/2015	158139
DESTAFNEY, KATHRYN	6/29/2015	EXP REIMB: APPETIZERS FOR RETIREMENT PARTY	132.48	7/2/2015	158136
NESGIS, SHAWN	6/29/2015	EXP REIMB: SAFETY RECOGNITION - APRIL, MAY, & JUNE 2015	175.00	7/2/2015	158145
ARBOLANTE, ROLLIE	7/1/2015	TRAVEL REIMB: OCT 2014 WEFTEC MEALS/LODGING/AIRFARE/SHUTTLE	1547.36	7/2/2015	158130
ARBOLANTE, ROLLIE	7/1/2015	EXP RIEMB: CUST SERVICE ANNUAL TEAM RECOGNITION	221.00	7/2/2015	158130
GRILLO, TIMOTHY	7/2/2015	EXP REIMB: LODGING/MEALS/SHUTTLE - JUNE WEF BIOSOLIDS CONF	1175.00	7/2/2015	158140
GILL, MICHAEL	7/7/2015	EXP REIMB: MAIL SERVER EXTERNAL MONITORING ANNUAL RENEWAL	360.00	7/9/2015	158184
BOSICK, CURTIS	7/9/2015	TUITION REIMBURSEMENT SPRING SEMESTER 2015	358.57	7/16/2015	158223
BRENNER, LAURIE	7/9/2015	TRAVEL REIMB: WEF LEADERSHIP INSTITUTE MEALS/TAXI	122.52	7/9/2015	158170
LEATH, DAVID	7/15/2015	EXP REIMB: CASH FOR DAVE PORT'S RETIREMENT GIFT	180.00	7/16/2015	158239
RODRIGUEZ, THERESA	7/15/2015	EXP REIMB: RETIREMENT PARTY - DAVE PORT	180.00	7/16/2015	158248
SEO, JOHN	7/15/2015	EXP REIMB: FILAMENT ID & ADV FILAMENT WORKSHOP REGISTRATION	2090.00	7/16/2015	158249
NESGIS, SHAWN	7/16/2015	EXP REIMB: MSA WORKSHOP FEES - 8 CS EMPLOYEES	160.00	8/6/2015	158442
WARD, JANINNE	7/16/2015	EXP REIMB: SOCIAL COMMITTEE FAIR TICKETS	400.00	7/23/2015	158330
LOPEZ, ARMANDO	7/20/2015	EXP REIMB: AIRFARE & REGIS FEE - WEFTEC 2015 (SEPT)	1007.99	7/23/2015	158301
JACOB, TODD	7/21/2015	EXP REIMB: IT TEAM FY15 SAFETY INCENTIVE GIFT CARDS	441.10	7/23/2015	158297
RODRIGUEZ, THERESA	7/22/2015	EXP REIMB: MANAGEMENT MEETING LUNCH	136.97	7/23/2015	158315
GHOURY, MOHAMMAD	7/24/2015	EXP REIMB: ESRI USER CONF LODGING & MEALS	1362.89	8/6/2015	158424
GRILLO, TIMOTHY	7/27/2015	EXP REIMB: WEF NUTRIENT SPECIALTY CONF - SAN JOSE	783.00	12/10/2015	159612
CHAU, RAYMOND	11/5/2015	EXP RIEMB: CIP TEAM QTLY SAFETY STRATEGY RECOGNITION	210.00	11/12/2015	159341
CHAU, RAYMOND	7/28/2015	EXP RIEMB: CIP TEAM QTLY SAFETY STRATEGY RECOGNITION	151.68	7/30/2015	158348
TAI, RUFUS	7/28/2015	EXP REIMB: PMI MEMBERSHIP RENEWAL	164.00	7/30/2015	158390
GHOSSAIN, SAMI	7/30/2015	EXP REIMB: ANNUAL TS WORKGROUP RECOGNITION BBQ	648.26	8/6/2015	158423
GILL, MICHAEL	7/30/2015	EXP REIMB: RENEW "WHATS UP GOLD" UPDATES & SUPPORT FOR 1 YR	2336.00	8/6/2015	158425
ARBOLANTE, ROLLIE	8/4/2015	REIMB EXPS: CA PROF. ENGINEER LICENSE	116.00	8/6/2015	158406
SOTO, JOSE	8/4/2015	COMPUTER NOTE	2837.39	8/6/2015	158456
SCHOFIELD, JAMES	8/5/2015	EXP REIMB: 180 DAY SAFETY RECOGNITION BREAKFAST	164.42	8/6/2015	158455
RODRIGUEZ, THERESA	8/10/2015	EXP REIMB: DAVID LEATH'S RETIREMENT GIFT	240.00	8/13/2015	158504
SIO-KWOK, JENNIFER	8/11/2015	EXP REIMB: LUNCH BS MANAGER QAI PANEL	136.00	8/13/2015	158507
RODRIGUEZ, THERESA	8/14/2015	EXP REIMB: RETIREMENT PARTY - DAVID LEATH	139.02	8/20/2015	158565
LI, CONGNA	8/21/2015	EXP REIMB: REGIS FEE FOR BIOWIN WASTEWATER MODELING TRNG	1550.00	8/27/2015	158621
PIPKIN, RIC	8/24/2015	EXP REIMB: FY15 4TH QUARTER SAFETY RECOGNITION	152.40	8/27/2015	158631
SCHOFIELD, JAMES	8/24/2015	EXP REIMB: 2015 NRTC EARLY BIRD MEMBER WEDNESDAY ONLY FEE	160.00	8/27/2015	158637
LI, CONGNA	7/27/2015	EXP REIMB: WEF NUTRIENT SYMPOSIUM - SAN JOSE	745.00	8/6/2015	158438
SCOBEE, RICHARD	8/26/2015	EXP REIMB: ESRI USER CONFERENCE	1665.88	9/3/2015	158708
GHOSSAIN, SAMI	8/27/2015	REIMB EXPS: CASA CONF - AIRFARE/LODGING/MEALS/PRKING/TAXI	1211.75	9/3/2015	158680

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PACHMAYER, CHRIS	8/27/2015	EXP REIMB: NFPA 705 SAFETY TRAINING, MILEAGE/PARKING	144.52	9/3/2015	158699
SEO, JOHN	8/31/2015	EXP REIMB: FILAMENT ID CLASS - LODGING/MEALS/AIRFARE	1083.10	9/3/2015	158709
TRUONG, KIM	8/31/2015	COMPUTER NOTE	1300.73	9/3/2015	158714
ELDREDGE, PAUL	9/1/2015	TRAVEL REIMB: CASA MEAL/AIR FARE/PARKING	747.31	9/3/2015	158674
WONG, WILSON	9/3/2015	EXP REIMB: SAFETY SHOES	189.95	9/10/2015	158786
BOSICK, CURTIS	9/8/2015	EXP REIMB: PE LICENSE RENEWAL	115.00	9/10/2015	158731
HUGHES, TIM	9/8/2015	COMPUTER NOTE - HUGHES	1122.63	9/10/2015	158756
ARBOLANTE, ROLLIE	9/10/2015	EXP REIMB: CUSTOMER SERVICE TEAM 1ST Q SAFETY RECOGNITION	225.00	9/17/2015	158792
CZAPKAY, RICHARD	9/10/2015	TRAVEL REIMB: CWEA NORTHERN REGIONAL TRAINING CONF	295.64	9/17/2015	158803
CZAPKAY, RICHARD	9/11/2015	EXP REIMB: FOOD FOR CUES EQUIPMENT USER GROUP	205.80	9/17/2015	158803
RODRIGUES JR, JOSE	9/15/2015	EXP REIMB: HANSEN INFOR CONF - REGISTRATION & AIRFARE	852.00	9/17/2015	158824
ELDREDGE, PAUL	9/16/2015	EXP REIMB: J. BERZON ET RETIREMENT DINNER	358.31	9/17/2015	158807
WARD, JANINNE	9/16/2015	EXP REIMB: MANAGEMENT MEETING LUNCH	170.52	9/17/2015	158837
BORBECK, PERRY	9/17/2015	PC LOAN	1122.44	9/24/2015	158852
JACOBS-ROBERSON, PAULETTE	9/17/2015	EXP REIMB: LUNCH FOR CASSE CONFERENCE	236.38	9/24/2015	158880
TEIXEIRA, ARIEL	9/24/2015	EXP REIMB: IAC LUNCH MEETING	143.48	9/24/2015	158908
ROBLES, AARON	9/28/2015	EXP REIMB: MEALS TRI-STATE SEMINAR LAS VEGAS	210.65	10/1/2015	158958
NGUYEN, TRIEU	9/29/2015	EXP REIMB: GIFT CARDS FOR EMP RECOG BBQ	1239.91	10/1/2015	158954
DRAKE, DAVID	10/1/2015	RECOGNITION FOR 30 YEARS OF SERVICE	300.00	10/1/2015	158943
SHENK, ROBERT	10/1/2015	RECOGNITION FOR 25 YEARS OF SERVICE	250.00	10/1/2015	158964
MOY, BRODERICK	10/5/2015	EXP REIMB: REGIS,LODGING,AIRFARE,MEALS & MILEAGE	722.09	10/8/2015	159019
PIPKIN, RIC	10/5/2015	EXP REIMB: REGIS,LODGING,MEALS & AIRFARE WEFTEC 2015	2108.50	10/8/2015	159026
CORTES, RICHARD	10/6/2015	EXP REIMB: SEMINAR REGISTRATION	200.00	10/8/2015	158992
NESGIS, SHAWN	10/6/2015	TRAVEL REIMB: MSA CONFERENCE AIRFARE/MEALS/TAXI/LODGING	657.41	10/8/2015	159022
LOPEZ, ARMANDO	10/7/2015	EXP REIMB: MEALS, LODGING, TAXI, PARKING - WEFTEC 2015	1104.13	10/8/2015	159014
MOSLEY, MICHAEL	10/7/2015	RECOGNITION FOR 25 YEARS OF SERVICE	250.00	10/8/2015	159017
NGUYEN, TRIEU	10/7/2015	EXP REIMB: LONGEVITY GIFTS & GIFT CARDS FOR EMP RECOG BBQ	675.00	10/8/2015	159023
VERRELLI, DANNY	10/8/2015	RECOGNITION FOR 25 YEARS OF SERVICE	250.00	10/8/2015	159044
VILLANUEVA, AUDREY	10/15/2015	EXP REIMB: 2015 EMPLOYEE RECOGNITION BBQ	177.57	10/22/2015	159163
DESTAFNEY, KATHRYN	10/16/2015	EXP REIMB: J. BERZON RETIREMENT GIFT	420.00	10/22/2015	159124
LI, CONGNA	10/16/2015	EXP REIMB - PE LICENSE RENEWAL FEE	115.00	10/22/2015	159137
MOY, BRODERICK	10/17/2015	EXP REIMB: HAND TOOLS FOR THE LAB	144.35	10/22/2015	159142
POWELL, MICHELLE	3/22/2016	EXP REIMB: LODGING/MEAL/PARKING/MILEAGE/BAGGAGE CASA CONF PALM SPRINGS	649.30	3/24/2016	160550
RODRIGUES JR, JOSE	10/22/2015	EXP REIMB: LODGING,PARKING,MEALS HANSEN CONFERENCE	610.18	10/29/2015	159239
SILVA, KRISTINA	10/22/2015	EXP REIMB: LODGING,PARKING,MILEAGE,MEALS CSDA CONFERENCE	506.85	10/29/2015	159244
COOPER, SOL	10/26/2015	TRAVEL REIMB: SMRP CONFERENCE PARKING/MEALS	146.63	10/29/2015	159189
COSTELLO, MITCHELL	10/26/2015	EXP REIMB: MILEAGE NORTHERN SAFETY DAY	111.15	10/29/2015	159190
JACOB, TODD	10/26/2015	EXP REIMB: MISAC CONFERENCE, LODGING/MEALS/MILEAGE	598.78	10/29/2015	159219
LU, DUNG	10/26/2015	EXP REIMB: MILEAGE TO CWEA NORTHERN SAFETY DAY	110.87	10/29/2015	159224
SCHWARTZ, RANDY	10/26/2015	EXP REIMB: MILEAGE TO NORTHERN SAFETY DAYS 2015	103.85	10/29/2015	159241
SEPULVEDA, ELOY	10/26/2015	EXP REIMB: MEALS,MILEAGE, NTT TRAINING	190.46	10/29/2015	159242

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STRASBURG, DUSTIN	10/26/2015	EXP REIMB: MEALS,MILEAGE,TIPS NTT TRAINING SACRAMENTO	204.94	10/29/2015	159249
KULL, DEBORAH	10/27/2015	EXP REIMB: VDT GLASSES	110.00	10/29/2015	159222
NOEGEL, STEVEN	10/27/2015	EXP REIMB: MILEAGE FOR MECHANICAL DRIVE TRNG (3 DAYS)	261.16	10/29/2015	159228
SOTO, JOSE	10/28/2015	EXP REIMB: LODGING,MEALS,MILEAGE CASQA CONF MONTEREY	338.90	10/29/2015	159247
GILL, MICHAEL	10/30/2015	EXP REIMB: SOFTWARE AND SUPPORT CONTRACT	3200.00	11/5/2015	159288
BRENNER, LAURIE	11/2/2015	TRAVEL RIEMB: WEFTEC LODGING/TRANSPORTATION/AIRFARE/MEALS	1893.10	11/12/2015	159337
SCHOFIELD, JAMES	11/2/2015	EXP REIMB: ANNUAL WORK GROUP RECOGNITION	328.92	11/5/2015	159312
BUCKLEY, MARIA	11/3/2015	EXP REIMB: PARKING,MILEAGE CALPERS EDUCATION FORUM SJ	137.65	11/5/2015	159313
DESTAFNEY, KATHRYN	11/3/2015	EXP REIMB: R. CORTES RETIREMENT PARTY SUPPLIES	292.07	11/5/2015	159279
DESTAFNEY, KATHRYN	11/3/2015	EXP REIMB: R. CORTES RETIREMENT GIFT	450.00	11/5/2015	159279
LI, CONGNA	11/4/2015	EXP REIMB: BIOWIN TRNG-AIRFARE/LODGING/MEALS/SHUTTLE/FEES	1700.03	11/12/2015	159350
PIPKIN, RIC	11/4/2015	EXP REIMB: FY16 1ST QUARTER SAFETY	179.50	11/5/2015	159304
FULLER, ROSLYN	10/22/2015	TRAVEL REIMB: NPI CONFERENCE MEALS/LODGING/TRANS/PARKING	506.20	10/29/2015	159202
NESGIS, SHAWN	11/5/2015	EXP REIMB: REFRIGERATOR FOR CS BREAK ROOM	1319.99	11/5/2015	159301
ARENDS-KING, PAMELA	11/9/2015	TRAVEL REIMB: FLIGHT/CAR RECNTAL, BS MGR/CFO CANDIDATE	512.27	11/12/2015	159331
RIVERA III, LOUIS	11/10/2015	COMPUTER NOTE	1723.92	11/12/2015	159361
TEIXEIRA, ARIEL	11/11/2015	PROJ 444 BREAKFAST & LUNCH MEETING	179.40	11/12/2015	159368
TEIXEIRA, ARIEL	11/11/2015	EXP REIMB: LUNCH MANAGEMENT MEETING	184.57	11/12/2015	159368
GILL, MICHAEL	11/13/2015	EXP REIMB: REGIS FEE - IPSWITCH ON-LINE TRNG	1795.50	11/19/2015	159406
CHAU, RAYMOND	11/18/2015	EXP REIMB: PE LICENSE RENEWAL	115.00	11/19/2015	159393
RODRIGUEZ, THERESA	11/19/2015	EXP REIMB: FRAMED BRANNON'S WORK SHIRT FMC BREAK ROOM	380.63	11/25/2015	159507
ELDREDGE, PAUL	11/20/2015	EXP REIMB: EMPLOYEE APPRECIATION LUNCH	573.00	11/25/2015	159468
RODRIGUES JR, JOSE	11/20/2015	EXP REIMB: MICROWAVE CENTERVILLE CONFERENCE ROOM	179.30	11/25/2015	159506
ARBOLANTE, ROLLIE	11/23/2015	EXP REIMB: CUSTOMER SERVICE TEAM 2ND Q SAFETY RECOGNITION	250.00	11/25/2015	159450
NOEGEL, STEVEN	11/23/2015	EXP REIMB: MEALS & MILEAGE FOR TRNG CLASS & CALL OUT MILEAGE	204.55	11/25/2015	159497
SEPULVEDA, ELOY	11/25/2015	EXP REIMB: MEALS,MILEAGE, NTT TRAINING	205.14	12/3/2015	159575
SOLARI, THOMAS	11/25/2015	EXP REIMB: MILEAGE ROCKWELL ANIMATION PLC TRAINING SAN RAMON	124.66	12/3/2015	159579
TATOLA, EDWARD	11/25/2015	EXP REIMB: MEALS,MILEAGE, NTT TRAINING	222.20	12/3/2015	159581
SIO-KWOK, JENNIFER	11/30/2015	EXP REIMB: 2015 HOLIDAY POTLUCK	117.45	12/3/2015	159577
WARD, JANINNE	11/30/2015	EXP REIMB: PIZZA LUNCH SOCIAL COMMITTEE HALLOWEEN PARTY	164.18	12/3/2015	159585
BARTON, JEFFREY	12/2/2015	EXP REIMB: MEAL FOR TPO NIGHT SHIFT TEAM MEETING	170.78	12/3/2015	159529
GRILLO, TIMOTHY	12/2/2015	EXP REIMB: 1ST QTR SAFETY RECOG GIFT	120.00	12/3/2015	159549
NESGIS, SHAWN	12/2/2015	EXP REIMB: FOOD WORKGROUP SAFETY RECOG 270 DAYS	185.90	12/3/2015	159562
POWELL, MICHELLE	12/3/2015	EXP REIMB:CASA CONFERENCE HOTEL DEPOSIT	199.70	12/10/2015	159633
SILVA, KRISTINA	12/14/2015	PROJ 467 PROGRESS MEETING LUNCH	116.96	12/17/2015	159695
BUCKLEY, MARIA	12/16/2015	TUITION REIMB - FALL QTR 2015	3000.00	12/17/2015	159692
CZAPKAY, RICHARD	12/16/2015	EXP REIMB: ROCOGNITION MEAL - NIGHT CREW	107.88	12/17/2015	159665
PIPKIN, RIC	12/16/2015	EXP REIMB: GIFT CARDS FOR TD STAFF	575.00	12/17/2015	159688
CHAU, RAYMOND	12/17/2015	EXP REIMB: CIP TEAM 2015 RECOGNITON	232.90	12/23/2015	159723
LOPEZ, MARCO	12/17/2015	EXP REIMB: CWEA RENEWAL	165.00	12/17/2015	159678
DESTAFNEY, KATHRYN	12/21/2015	EXP REIMB: BS WORK GROUP RECOGNITION	483.00	12/23/2015	159729

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TEIXEIRA, ARIEL	12/21/2015	EXP REIMB: IAC LUNCH MEETING	199.00	12/23/2015	159760
BUNYI, AL	12/22/2015	REIMB: ASCE ANNUAL DUES	265.00	12/23/2015	159720
SCHOFIELD, JAMES	1/5/2016	CLOSED SOCIAL COMMITTEE BANK ACCT BALANCE	479.82	1/7/2016	159884
RODRIGUEZ, THERESA	1/6/2016	EXP REIMB: MANAGEMENT MEETING LUNCH	144.63	1/7/2016	159879
ANDERSON, BRIAN	1/7/2016	EXP REIMB: CERTIFICATION RENEWAL	230.00	1/7/2016	159837
DESTAFNEY, KATHRYN	1/7/2016	EXP REIMB: MMT SAFETY RECOGNITION GIFT CARDS	237.50	1/21/2016	159972
SEO, JOHN	1/7/2016	EXP REIMB: CWEA MEMBERSHIP/CERTIFICATION RENEWAL FEE	255.00	1/14/2016	159935
BASTIAN, IRMA REGINA	1/11/2016	TUITION REIMBURSEMENT FALL SEMESTER 2015	587.52	1/14/2016	159902
SILVA, KRISTINA	1/14/2016	PROJ 464 OVERALL APPROACH MEETING LUNCH	127.73	1/21/2016	159988
BRENNER, LAURIE	1/15/2016	TRAVEL REIMB: CASA CONFERENCE AIRFARE/LODGINIG DEPOSIT	583.90	1/21/2016	159961
CZAPKAY, RICHARD	1/20/2016	EXP REIMB: SAFETY RECOGNITION MEAL 10 EMPLOYEES	144.57	1/21/2016	159970
DUNNING, MICHAEL	1/25/2016	EXP REIMB: TEAM SAFETY RECOGNITION	516.45	1/28/2016	160017
LI, CONGNA	1/25/2016	EXP REIMB: WEF & CWEA MEMBERSHIPS - C LI	297.00	1/28/2016	160033
PADILLA, VICTOR	1/25/2016	EXP REIMB: MEALS/TRAVEL SWP TRAINING SAN DIEGO	377.05	1/28/2016	160040
POWELL, MICHELLE	1/27/2016	EXP REIMB: CAPIO CONFERENCE HOTEL DEPOSIT	155.00	1/28/2016	160042
GHOSSAIN, SAMI	1/28/2016	EXP REIMB: CASA WINTER CONF: AIRFARE/LODGING/MEALS/MISC TRVL EXP	1022.75	2/4/2016	160093
RODRIGUES JR, JOSE	2/1/2016	COMPUTER NOTE	3000.00	2/4/2016	160112
CLENNON, KEVIN	2/4/2016	EXP REIMB: SEMINAR REG K. CLENNON & R. SHENK-2 EVENTS	320.00	2/11/2016	160140
WARD, JANINNE	2/4/2016	EXP REIMB: MANAGEMENT MEETING LUNCH	197.28	2/11/2016	160173
FULLER, ROSLYN	2/5/2016	TREAVEL REIMB: CAPPO CONFERENCE MEALS/LODGING/MILEAGE/SHUTTLE	1110.58	2/11/2016	160145
KING, KATHLEEN	2/17/2016	EXP REMIB: COMPUTER (VDT) GLASSES	173.97	2/18/2016	160204
NGUYEN, TRIEU	3/1/2016	EXP REIMB: RETIREMENT GIFT FOR K. DESTAFNEY	135.00	3/3/2016	160337
GONZALEZ, MARIAN	3/3/2016	EXP REIMB: CWEA P3S CONF - LODGING/MEALS/TRANSPORTATION	409.05	3/10/2016	160389
LU, DUNG	3/3/2016	EXP REIMB: CCST TRNG - MEALS/MILEAGE/PARKING/FUEL	274.08	3/10/2016	160399
KING, KATHLEEN	3/9/2016	EXP REIMB: NCCIPMA CONF - NAPA, LODGING/MEALS/TRANS	203.66	3/10/2016	160397
MARZANO, MICHAEL	3/10/2016	EXP REMIB: PARMA CONF LODGING/AIRFARE/BAGGAGE	774.84	3/17/2016	160457
ARENDS-KING, PAMELA	3/11/2016	TRAVEL REIMB: CSMFO CONF AIRFARE/MEALS/PARKING	360.85	3/17/2016	160427
WONG, WILSON	3/15/2016	EXP REIMB: MEALS/MILEAGE/TIPS/GAS ISA TECH TRAINING ARIZONA	168.64	3/17/2016	160487
LUBINA, MATTHEW	3/16/2016	COMPUTER NOTE	2177.99	3/17/2016	160456
STRASBURG, DUSTIN	3/16/2016	COMPUTER NOTE	3300.00	3/17/2016	160478
MARTIN, SCOTT	3/18/2016	EXP REIMB: LUNCH - MECHANIC I/II PHYS ABILITY TESTING	138.45	3/24/2016	160539
MARTIN, SCOTT	3/18/2016	EXP REIMB: SEMI-ANNUAL FMC RECOGNITION LUNCH	231.10	3/24/2016	160539
POWELL, MICHELLE	3/22/2016	EXP REIMB: LODGING/MEAL/PARKING/MILEAGE/TIPS CASA CONF SAN DIEGO	907.38	3/24/2016	160550
TEIXEIRA, ARIEL	3/22/2016	EXP REIMB: IAC LUNCH MEETING	199.00	3/24/2016	160554
NESGIS, SHAWN	3/24/2016	EXP REIMB: CS CONSTRUCTION TEAM SAFETY RECOGNITION	299.53	3/24/2016	160545
PACHMAYER, CHRIS	3/24/2016	EXP REIMB: CCTC ELECTRICAL CLASS REGISTRATION HAYWARD	500.00	3/31/2016	160606
KULL, DEBORAH	3/28/2016	EXP REIMB: EDEN CONF REGIS FEE & AIRFARE	1085.96	3/31/2016	160600
TRUONG, KIM	3/28/2016	EXP REIMB: REGISTRATION/AIRFARE TYLER CONNECT PHOENIX	1085.96	3/31/2016	160620
SILVA, KRISTINA	3/30/2016	EXP REIMB: MANAGEMENT MEETING LUNCH	138.86	3/31/2016	160614
SIMONICH, ROBERT	4/4/2016	EXP REIMB: LUNCH WET WELL CLEANING CREW	138.33	4/7/2016	160680
MARTIN, SCOTT	4/7/2016	EXP REIMB: LUNCH FOR CREW CLEANING WET WELLS AT IPS	141.63	4/14/2016	160724

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BARTON, JEFFREY	4/13/2016	EXP REIMB: MEALS FMC/TPO ONSITE MEETING	362.77	4/14/2016	160703
BARTON, JEFFREY	4/13/2016	EXP REIMB: GRADE V WASTEWATER TPO CERTIFICATION	340.00	4/14/2016	160703
PORTEOUS, TODD	4/19/2016	COMPUTER NOTE	3300.00	4/21/2016	160791
ELDREDGE, PAUL	4/20/2016	EXP REIMB: MILEAGE/PARKING/LUNCH WITH BOARD MEMBER TOY	137.03	4/21/2016	160770
BRENNER, LAURIE	4/21/2016	TRAVEL REIMB: CASA CONF LODGING/PARKING/SHUTTLE/MEALS	404.37	5/5/2016	160904
COSTELLO, MITCHELL	4/25/2016	EXP REIMB: SEMINAR REG - FIRST TIME MANAGER/SUPERVISOR	149.00	4/28/2016	160828
COSTELLO, MITCHELL	4/25/2016	TRAVEL REIMB: WEFTEC CONFERENCE AIRFARE	364.08	4/28/2016	160828
COSTELLO, MITCHELL	4/26/2016	EXP REIMB: TEAM SAFETY INCENTIVE PROGRAM	136.10	4/28/2016	160828
GILL, MICHAEL	4/27/2016	EXP REIMB: SOLARWINDS KIWI CAT TOOL SOFTWARE SUPPORT	206.00	4/28/2016	160844
COOPER, SOL	5/2/2016	EXP REIMB: MILEAGE - BACK FLOW PREVENTION TRAINING	153.90	5/5/2016	160911
LI, CONGNA	5/2/2016	EXP REIMB: SEPT 2016 WEFTEC CONFERENCE REGIS FEE	924.00	5/5/2016	160929
ARENDS-KING, PAMELA	5/3/2016	TRAVEL REIMB: MILEAGE FOR CMTA CONFERENCE	228.29	5/5/2016	160899
CHAU, RAYMOND	5/3/2016	EXP RIEMB: CIP TEAM QTLY SAFETY STRATEGY	240.00	5/5/2016	160907
ELDREDGE, PAUL	5/5/2016	EXP REIMB: PE LICENSE RENEWAL	115.00	5/19/2016	161046
TRUONG, KIM	5/5/2016	EXP REIMB: TYLER CONFERENCE MEALS/LODGING/MILEAGE/SHUTTLE/TIPS	801.67	5/12/2016	161017
KULL, DEBORAH	5/9/2016	EXP REIMB: LODGING, MEALS, AND TRAVEL - EDEN CONF	688.98	5/12/2016	160992
BERZON, JUDI	8/25/2015	EXP REIMB: LODGING FOR CFO RECRUITMENT PANEL MEMBER	141.00	8/27/2015	158587
AGBUYA, RICA	5/12/2016	COMPUTER NOTE	1178.48	5/19/2016	161025
MENDOZA, JOSEPH	5/12/2016	ALT COMP SPEC REC AWARD, 3RD QTR FY16	150.00	5/19/2016	161058
LATHI, ANJALI	5/16/2016	EXP REIMB: CWEA CONF-SANTA CLARA-LODGING & MEALS	305.76	5/19/2016	161056
CHUN, KEVIN	5/18/2016	EXP REIMB: PE LICENSE RENEWAL	115.00	5/19/2016	161040
LATHI, ANJALI	5/18/2016	EXP REIMB: IPAD - 25% OF COST PER POLICY 2165	249.43	5/19/2016	161056
GRILLO, TIMOTHY	5/19/2016	EXP REIMB: REGIS FEE & AIRFARE TO NEW ORLEANS - WEFTEC SEPT 2016	978.98	5/19/2016	161051
GHOSSAIN, SAMI	5/23/2016	EXP REIMB: NUTRIENT REMOVAL COURSE - UNIV OF WISCONSIN	1127.02	5/26/2016	161111
SCHOFIELD, JAMES	5/23/2016	EXP REIMB: CS SAFETY RECOGNITION	163.96	5/26/2016	161144
TEIXEIRA, ARIEL	5/26/2016	EXP REIMB: CERTS OF MERIT SNACKS, DRINKS & DECORATION	198.96	6/2/2016	161231
HANDLEY, TOM	6/1/2016	EXP REIMB: LODGING/MEALS/MILEAGE FOR CASA 1/19-1/21/16	546.45	6/2/2016	161198
GRILLO, TIMOTHY	6/2/2016	EXP REIMB: 2ND QTR FY16 SAFETY INCENTIVE PRGM GIFT CARDS	120.00	6/2/2016	161195
GRILLO, TIMOTHY	6/2/2016	EXP REIMB: 3RD QTR FY16 SAFETY INCENTIVE PRGM GIFT CARDS	120.00	6/2/2016	161195
LI, CONGNA	6/2/2016	EXP REIMB: AIRFARE TO NEW ORLEANS FOR WEFTEC IN SEPT 2016	405.96	6/2/2016	161207
PAREDES, ALEXANDER	6/6/2016	EXP REIMB: MEALS/PARKING/SHUTTLE NACWA CONF LONG BEACH	348.67	6/9/2016	161282
NELSON, PAUL	6/7/2016	EXP REIMB: WELDING CLASS @ LINCOLN ELECTRIC - CLEVELAND OH	682.02	6/16/2016	161355
POWELL, MICHELLE	6/9/2016	EXP REIMB: LODGING/MEALS/TIPS/GAS CAPIO CONF LAKE TAHOE	460.38	6/16/2016	161360
RODRIGUES JR, JOSE	6/9/2016	EXP REIMB: SINKMOD RECOGNITION BBQ	100.61	6/16/2016	161364
MARTIN, SCOTT	6/10/2016	EXP REIMB: SAFETY SHOES - S. MARTIN	208.00	6/16/2016	161349
NESGIS, SHAWN	6/10/2016	EXP REIMB: SAFETY RECOG GIFT CARDS - APRIL AND MAY 2016	100.00	6/16/2016	161356
CHAPARRO, PETE	6/14/2016	TRAVEL REIMB: MEALS/MILEAGE/BRIDGE TOLL	327.75	6/16/2016	161321
FANG, YIN	6/14/2016	EXP REIMB: CWEA MEMBERSHIP	255.00	6/16/2016	161331
MOY, BRODERICK	6/14/2016	EXP REIMB: CWEA CERT RENEWAL/MEMBERSHIP - LAB ANAL & EC INSP	341.00	6/16/2016	161353
BASTIAN, IRMA REGINA	6/15/2016	TUITION REIMBURSEMENT SPRING SEMESTER 2016	289.57	6/23/2016	161386
DUNNING, MICHAEL	6/15/2016	EXP REIMB: SAFETY RECOGNITION GIFT CARDS	516.45	6/16/2016	161328

Employee	Invoice Date	Invoice Description	Amount	Check Date	Check#
ELDREDGE, PAUL	6/15/2016	EXP REIMB: MILEAGE/TOLL/MEALS FOR ET/BOARD/FIELD TRIP	360.68	6/16/2016	161330
PIPKIN, RIC	6/16/2016	EXP REIMB: TPO/FMC RECOGNITION BBQ	156.90	6/16/2016	161359
DUNNING, MICHAEL	6/20/2016	EXP REIMB: EC TEAM RECOGNITION	121.71	6/23/2016	161407
GHOURY, MOHAMMAD	6/20/2016	EXP REIMB: AIRFARE FOR ESRI USER CONF - SAN DIEGO	221.96	6/23/2016	161417
FULLER, ROSLYN	6/21/2016	TRAVEL REIMB: PRIMA CONF - MEALS/LODGING/CAR/MILEAGE/PARKING	990.93	6/23/2016	161415
POWELL, JOHN	6/21/2016	EXP REIMB: 2 CWEA GRADE II TEST FEES	335.00	6/23/2016	161447
MARTIN, SCOTT	6/24/2016	EXP REIMB: TEAM SAFETY RECOGNITION EVENT	470.00	6/30/2016	161524
ARBOLANTE, ROLLIE	6/28/2016	EXP REIMB: PARTY SUPPLIES & GIFT - A. BUNYI RETIREMENT EVENT	280.00	6/30/2016	161474
ARBOLANTE, ROLLIE	6/28/2016	EXP REIMB: CUSTOMER SERVICE TEAM 3RD Q SAFETY RECOGNITION	250.00	6/30/2016	161474
ARBOLANTE, ROLLIE	6/28/2016	EXP REIMB: CUSTOMER SERVICE TEAM 4TH Q SAFETY RECOGNITION	200.00	6/30/2016	161474
ARENDS-KING, PAMELA	6/28/2016	EXP REIMB: SAFETY STRATEGY & 4TH QUARTER EMP REC GIFT CARDS	2305.83	6/30/2016	161475
DUPLER, ANDREW	6/28/2016	EXP REIMB: FOOD - A. BUNYI RETIREMENT EVENT	170.00	6/30/2016	161494
LU, DUNG	6/28/2016	EXP REIMB: MEALS, FUEL, TIPS - THERMOGRAPHIC TRNG - ORE	174.55	6/30/2016	161523
MOSLEY, MICHAEL	6/28/2016	EXP REIMB: MEALS, FUEL, TIPS - THERMOGRAPHIC TRNG - ORE	137.72	6/30/2016	161531
BRENNER, LAURIE	6/29/2016	EXP REIMB: AIRFARE TO NEW ORLEANS - WEFTEC SEPT 2016	461.97	6/30/2016	161481
VILLANUEVA, AUDREY	6/29/2016	EXP REIMB: IAC LUNCH MEETING	249.23	6/30/2016	161574
Grand Total			**116242.21**		

Directors
Manny Fernandez
Tom Handley
Pat Kite
Anjali Lathi
Jennifer Toy

Officers
Paul R. Eldredge
General Manager/
District Engineer

Karen W. Murphy
Attorney

DATE: November 7, 2016

MEMO TO: Board of Directors - Union Sanitary District

FROM: Paul R. Eldredge, General Manager/District Engineer
Sami E. Ghossain, Manager of Technical Services

SUBJECT: Agenda Item No. 16 – Meeting of November 14, 2016
Information Only: **Status of Priority 1 Capital Improvement Program Projects**

Recommendation

Information Only.

Background

In June 2016, the Board approved the Capital Improvement Program (CIP) budget for FY17 in the amount of $14.67 million for the design and construction of 24 CIP projects.

These 24 projects are further ranked as Priority 1 and 2 projects based on a criteria prepared by staff and approved by the Executive Team. A copy of the criteria used to prioritize the projects is attached for your reference.

The status of the Priority 1 CIP projects is reviewed by the Executive Team at the end of each quarter and a copy of the status report is attached for the Board's review. For FY17, 16 projects are ranked as Priority 1 projects and the remaining eight (8) are ranked as Priority 2 projects.

Also attached is a tabular summary of the number and nature of the ongoing CIP projects at the District during FY17.

PRE/SEG:ks

Attachments: Priority 1 CIP Projects for FY 17 - Status Report
Summary of CIP Projects for FY 17
Priority 1 CIP Project Criteria
Priority 2 & 3 CIP Project Criteria

Priority 1 Projects for FY 17 – Status Report

	Project	Planned Milestones	Status after 1st Quarter	Status after 2nd Quarter	Status after 3rd Quarter	Status after 4th Quarter
1	Aeration System Rehab (High Speed Blower)	Substantial Completion of Project construction by December 2016.	Project was substan-tially completed on August 12, 2016.			
2	Alvarado-Niles Rd. Sewer Rehab	Substantial Completion of Project construction by December 2016.	CIPP work is complete except for one cast iron lining repair location. Contractor has removed all bypass piping and completed final paving of all intersections.			
3	Cogen Engine Rebuild	Install replacement Cogen No. 1 by September 2016.	Replacement engine block was installed on September 12, 2016.			
4	Diffuser Replacement	Substantial Completion of Project construction by October 2016.	Project was substan-tially completed on July 11, 2016.			
5	Digester No. 3 Insp and Rehab	a) 50% design by May 2017. b) Complete condition assessment by June 2017. c) 100% design by July 2017.	CIP met with TPO and FMC staff to discuss the project scope of work. CIP will estimate the construction cost for requested scope before deciding on final project elements.			
6	Equalization Storage at Alvarado	Pending final location of the storage basin, submit a wetlands and waters delineation permit application to the Army Corps of Engineers within 3 months of finalizing the final location of the storage basin.	Final location of the storage basin has not been determined yet.			

	Project	Planned Milestones	Status after 1st Quarter	Status after 2nd Quarter	Status after 3rd Quarter	Status after 4th Quarter
7	Force Main corrosion Repairs – West	a) Execute Agreement and task order by November 2016. b) 100% design by May 2017. c) Const. award by August 2017.	Selected West Yost as the design consultant for the project. Met with West Yost to review project scope and begin task order negotiations.			
8	Fremont & PP LS Internal Lift Pumps	a) Install new screw pumps at both lift stations and start up by November 2016. b) Substantial Completion construction by February 2017.	New screw pumps were installed at Fremont LS in September. Functional and operational tests of pumps at Fremont LS are scheduled in October 2016.			
9	Hypochlorite Tanks and PVC piping replacement	a) Issue NTP by Sept. 2016. b) Deliver new chemical tanks and metering pumps for the Odor Control Building by Apr. 2017. c) Replace at least two tanks at the Odor Control Building by July 2017. d) Substantial Completion by January 2018.	Issued NTP on August 18, 2016 and conducted the preconstruction conference with the contractor on August 23, 2016. Contractor began submittals process.			
10	MCC and PLC Replacement Phase 3	a) Complete PLC 8 (West Aeration Blower Building) commissioning by January 2017. b) Substantial Completion by March 2017.	Contractor completed conduit installation in advance of the PLC 8 equipment cutover scheduled on October 10, 2016.			
11	Newark Backyard Sewer Relocation	Phase 3 - Substantial Completion of Project construction by December 2016.	Completed new main installation, lateral installation, and final paving. Substantial completion should be in October 2016.			

	Project	Planned Milestones	Status after 1st Quarter	Status after 2nd Quarter	Status after 3rd Quarter	Status after 4th Quarter
12	Newark Pump Station Mod Valve and Boost Line Mods	a) 50% design by February 2017. b) 100% design by April 2017. c) Bid Opening and Award by July 2017.	Evaluating the addition of the Newark PS wet well fan replacement. Began design fee negotiations with Carollo.			
13	Pine St. Easement	Substantial Completion of Project construction by December 2016.	Completed all field work and punch list items. Project substantial completion should be issued in October 2016.			
14	Plant Facilities Improvements	a) Complete the 60-inch diameter primary effluent pipeline lining repair by January 2017. b) Project Substantial Completion by April 2017.	Due to changed site condition, the repair of the 60" primary effluent pipeline lining will be modified. Repair is scheduled to begin on October 4, 2016.			
15	Thickener Control Bldg. Modifications Project	a) Construction of new Thickener Control Area Structure by November 2016. b) Startup and Testing of New Pumps and Grinders by January 2017. c) Substantial Completion of Project construction by April 2017.	New splitter box was placed in service on September 19, 2016. Completed construction of the new Thickener Control Area Structure with 95% of the steel coating completed in September 2016.			
16	Wet Weather Flow Management	Complete environmental review within 3 months of accepted conditional offer for any viable property.	Awaiting for opportunity to make an offer on viable property.			

SUMMARY OF CIP PROJECTS FOR FY 17

Type of Project	Number of Projects	Names of Projects
Collection System	**Three**	1. Alvarado-Niles Blvd. Sewer Rehab 2. Newark Backyard Sewer Relocation, Phase III 3. Pine Street Easement Repair
Transport System	**Five**	1. Equalization Storage at Alvarado 2. Forcemain Corrosion Repairs – West 3. Fremont & PP LS Internal Lift Pumps 4. Newark PS Mod Valve & Boost Line Mods 5. Wet Weather Flow Management
Treatment System	**Sixteen**	1. 3rd Degritter System 2. Aeration System Rehab 3. Cogeneration Project, Phase II 4. Cogen Engine Rebuild 5. Diffuser Replacement 6. Digesters 1 – 3 Gas Isolation Valves 7. Digester No. 3 Inspection and Rehab 8. Digester No. 7 9. Emergency Outfall Improvements 10. Headworks Valve Box Gate Valves 1 – 3 11. Hypochlorite Tanks and PVC piping replacement at OCB and NPS. 12. MCC Replacement Project, Phase III 13. Plant Facilities Improvements Project 14. Sludge Drying (BACWA) 15. Standby Power Generation System Upgrade 16. Thickener Control Bldg. Improvements Project

Total: **24**

PRIORITY 1 CIP PROJECT CRITERIA

Priority 1 Projects:

1. Project to repair or prevent an imminent critical infrastructure failure that could result in a threat to the public, or result in permit non-compliance.

2. A project designed to address public health and safety or employee health and safety.

3. Project to provide additional capacity in order to allow connection to the District system or to prevent a potential wet weather overflow from occurring.

4. Projects that have a deadline tied to receiving a loan or grant funding.

5. Projects where we have made a timeline commitment to a customer or other outside stakeholder.

6. A project in which the District may suffer financial losses or claims should the project be delayed.

7. A project which is part of a sequence of projects whose delay could result in delays to other projects at USD or other agencies.

8. A project in which an internal commitment has been made to provide a facility that significantly impacts another group from efficiently and effectively carrying out their core work. (Not a “nice to have” type project)

These criteria can apply to a study, design, or construction project.

PRIORITY 2 & 3 CIP PROJECT CRITERIA

Priority 2 Projects

1. These are planned projects related to the replacement of electrical and mechanical equipment identified by the Plant Master Plan – this equipment is not in imminent danger of failure but needs to be replaced at a future date.
2. These are planned pipeline rehab/replacement projects that are identified either by the Master Plan or by the Maintenance staff and need to be completed to improve the condition of existing sewers to safeguard against potential maintenance problems – these pipelines are not in imminent danger of failure.
3. These projects do not have any immediate negative impacts on either other agencies or other projects.
4. Examples: Blacow Road Sewer Replacement, Cast Iron Pipe Replacement, Thickener Mechanism 3&4 Replacement, Rehab of Clarifiers 5&6.

Priority 3 Projects

1. These are capacity projects identified by the master plans that will address future capacity needs of the District.
2. These projects are place holders and need to be defined at a future date
3. The District will not suffer any financial loss or claim, if these projects are delayed.
4. Examples: Cedar Relief Sewer, Hetch Hetchy Relief Sewer, Digester No. 7, Secondary Clarifiers 7 & 8.

Directors
Manny Fernandez
Tom Handley
Pat Kite
Anjali Lathi
Jennifer Toy

Officers
Paul R. Eldredge
General Manager/
District Engineer

Karen W. Murphy
Attorney

DATE: November 7, 2016

MEMO TO: Board of Directors - Union Sanitary District

FROM: Paul R. Eldredge, General Manager/District Engineer
Sami E. Ghossain, Manager of Technical Services

SUBJECT: Agenda Item No. 17 – Meeting of November 14, 2016
Information Only: **First Quarterly Report on the Capital Improvement Program for FY17**

Recommendation:

Information only

Background:

In June 2016, the Board approved the Capital Improvement Program (CIP) budget for FY17 in the amount of $14.67 million for the design and construction of 24 CIP projects. The first quarter expenditures for FY17 are shown on the attached budget projection graphs. These graphs depict actual expenditures versus approved budget for the Capacity Fund 900, the Renewal and Replacement Fund 800 as well as for both funds, combined.

The total CIP expenditure up to September 30, 2016, was above the projections for the first quarter by approximately $965,000. The main projects that incurred more than the projected expenditures are the Alvarado–Niles Rd. Sewer Rehabilitation and the Thickener Control Building projects.

These primary variances are tabulated as follows:

Project	Variance at the end of 1st Quarter (x $1000)	Comments
Thickener Control Bldg.	486	Large progress payments anticipated in the 2nd quarter were made in the 1st quarter. The payments are associated with the completion of the Thickener building structure and elevated piping.
Alvarado–Niles Rd. Sewer Rehab.	479	Large progress payments anticipated in the 2nd quarter, were made in the 1st quarter. The payments are associated with the completion of the CIPP pipe lining installation.
Total Variance for the 1st Qtr.	**965**	

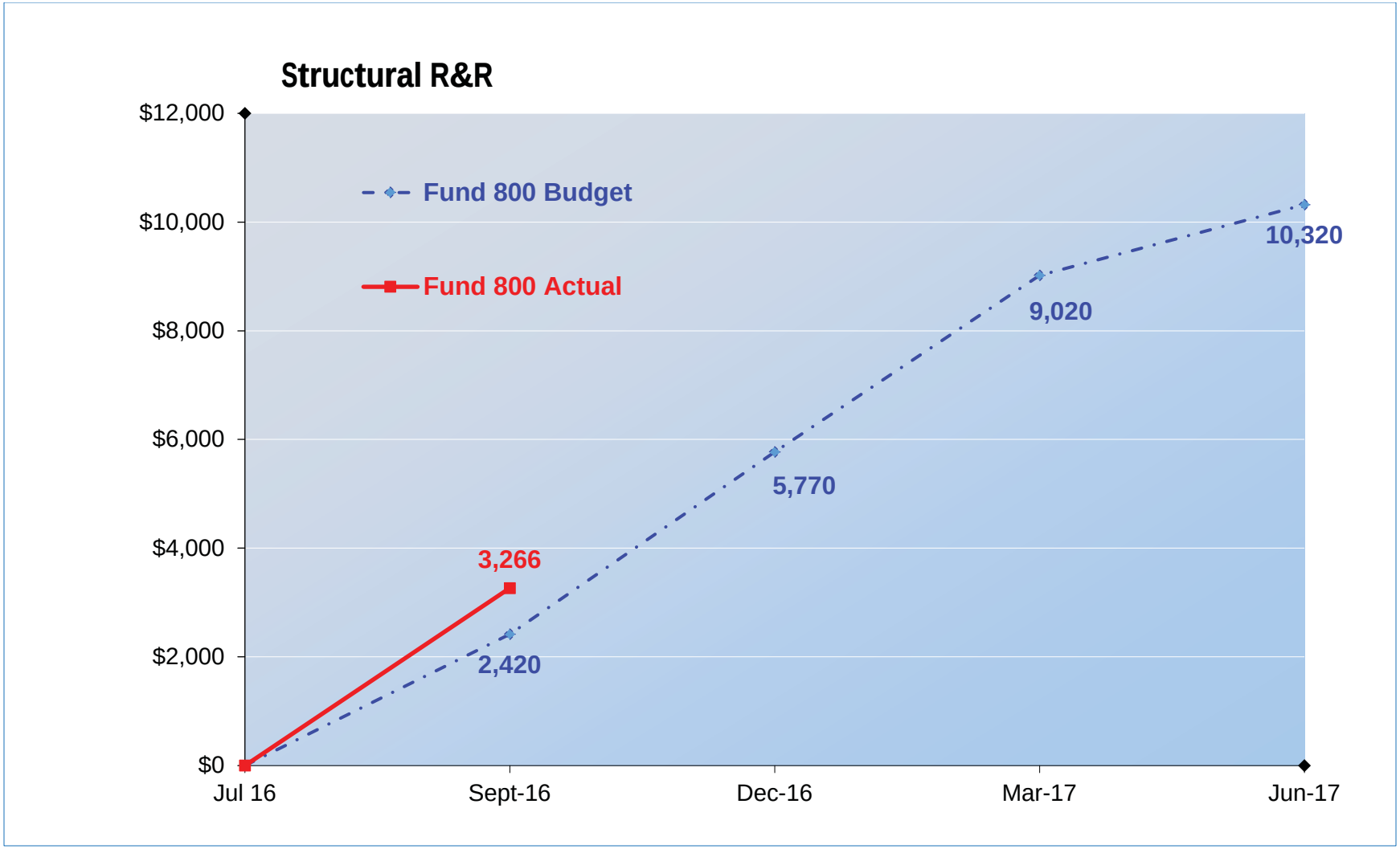
In addition to the two (2) projects listed above, the following projects will be either in design or in construction during FY 17:

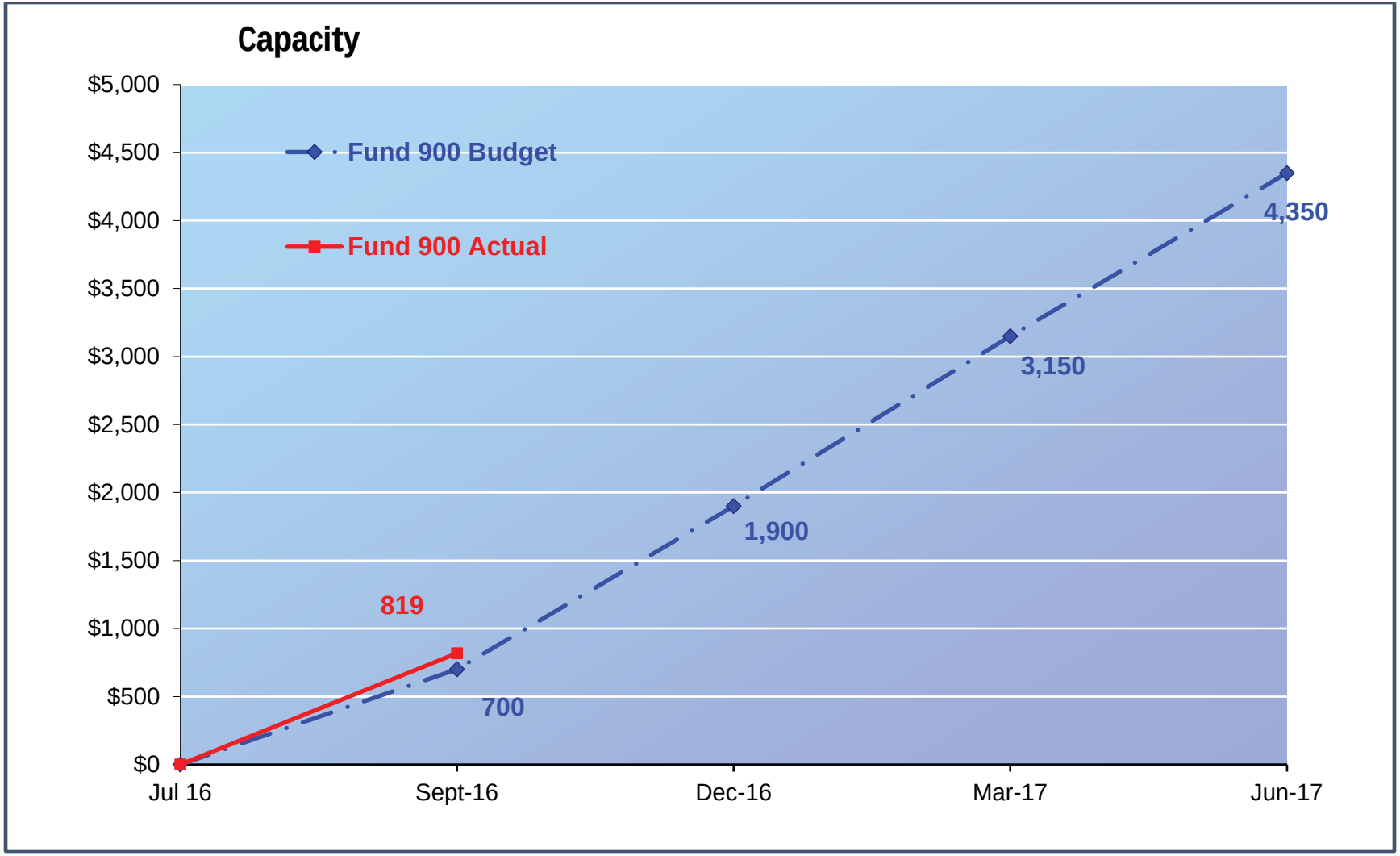
1. Aeration System Rehab (High Speed Blower)
2. Cogen Engine Rebuild
3. Diffuser Replacement
4. Digester No. 3 Insp and Rehab
5. Equalization Storage at Alvarado
6. Force Main corrosion Repairs – West
7. Fremont & PP LS Internal Lift Pumps
8. Hypochlorite Tanks and PVC piping replacement
9. MCC and PLC Replacement Phase 3
10. Newark Backyard Sewer Relocation Phase 3
11. Newark Pump Station Modulating Valve and Boost Line Modifications
12. Pine St. Easement Improvements
13. Plant Facilities Improvements
14. Wet Weather Flow Management

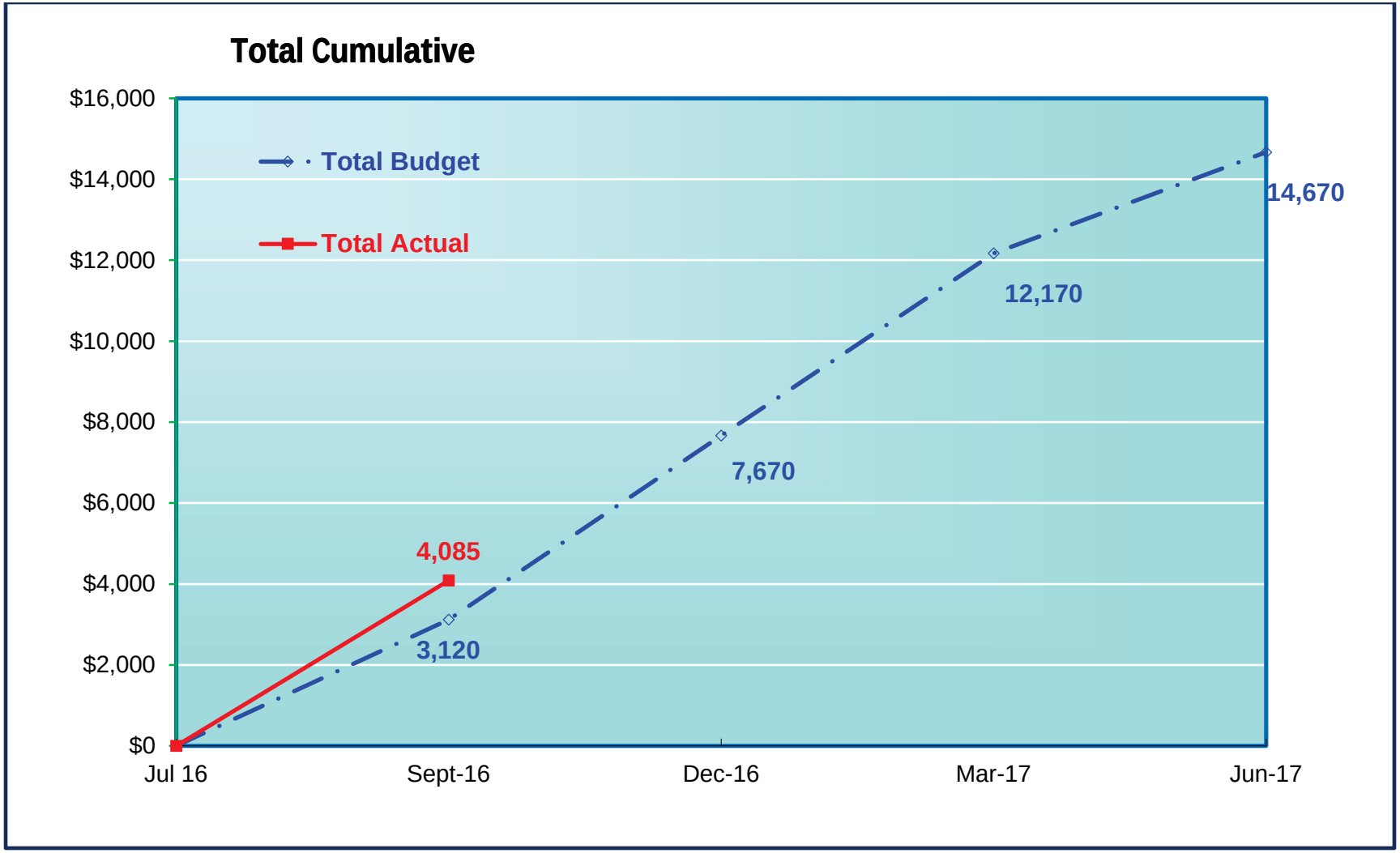
In addition, eight (8) other smaller projects will be either in design or in construction during FY17.

PRE/SEG:ks

Attachments: Budget Graphs


Structural R&R
$12,000
$10,000
$8,000
$6,000
$4,000
$2,000
$0
Fund 800 Budget
Fund 800 Actual
3,266
2,420
5,770
9,020
10,320
Jul 16
Sept-16
Dec-16
Mar-17
Jun-17


Capacity
$5,000
$4,500
$4,000
$3,500
$3,000
$2,500
$2,000
$1,500
$1,000
$500
$0
Fund 900 Budget
Fund 900 Actual
819
700
1,900
3,150
4,350
Jul 16
Sept-16
Dec-16
Mar-17
Jun-17


Total Cumulative
$16,000
$14,000
$12,000
$10,000
$8,000
$6,000
$4,000
$2,000
$0
Total Budget
Total Actual
4,085
3,120
7,670
12,170
14,670
Jul 16
Sept-16
Dec-16
Mar-17
Jun-17

Summary of the EBDA Commission Meeting
Thursday, October 20, 2016, at 9:30 a.m.
Prepared by: P. Eldredge

- Commissioners Becker, Peixoto, Johnson, Prola, and Toy were present.

- The Consent Calendar was approved unanimously and included the Commission Meeting Minutes, List of Disbursements, and Treasurer's Report.

- The Commission unanimously approved the reports from the General Manager, Managers Advisory, Financial Management, Regulatory Affairs, Operations & Maintenance, and Ad Hoc committees. The following items were discussed:

- **General Managers Report -** The General Manager advised the Commission that the Personnel Committee will develop a succession plan for EBDA's Operations and Maintenance Manager position. The Personnel Committee will draft a posting for the open position for review in November. The Committee will meet in November and December.

- **Managers Advisory Committee (MAC)** met with the General Manager on October 19, 2016. EBDA's strategic planning consultant Michele Tamayo of Tamayo Group, Inc. was introduced to the MAC. Ms. Tamayo reviewed the project and approach that will be taken with the MAC.

- **Financial Management Committee** approved the September list of disbursements and Treasurer's Report at the meeting of October 18, 2016. The Committee reviewed the final adjusted treasurer's reports for June, July, and August. Lastly, the Finance Committee reviewed member agency final O&M costs for fiscal year 2015/16. Reimbursements due to the member agencies were issued as credit memos which are applied to the FY 2016/17 second quarter invoices.

- **Regulatory Affairs Committee** met on October 18, 2016 and discussed permit compliance. The Committee reviewed BACWA's 2nd annual nutrient discharge permit report. Commissioner Prola asked Shahed Abbasi of the City of San Leandro to explain the high BOD at San Leandro Effluent Pump Station. Mr. Abbasi advised that San Leandro Staff have made adjustments in operations and are working with Carollo Engineers to assess the issue.

- **Operations and Maintenance (O&M) Committee** met with the General Manager on October 17, 2016 and discussed the status of the EBDA facilities. The Committee and MAC support a

like for like replacement of the No. 1 effluent pump at Alvarado Effluent Pump Station. California Generator Service was advised that the crankshaft for the OLEPS engine is ready delivery. SLEPS pump will be ready to proceed when there is an open window of clear weather.

- **Ad Hoc Committee** met with the General Manager on October 19, 2016. The Ad Hoc Committee was joined by EBDA's strategic planning consultant, Michele Tamayo. The Committee discussed the strategic planning project and the Consultants approach.

  Michele Tamayo advised the Commission that interviews were held on October 19 and 20 and that all of the Commissioners and Managers would be interviewed. Additional interviews to be held in November 2016 would possibly include City of San Leandro Public Works Director Debbie Pollart and General Manager Dean Wilson; Castro Valley's legal counsel Anthony Varni; and San Francisco Bay Water Resources Control Board Executive Officer Bruce Wolfe. The proposed schedule is to complete interviews in November 2016 and hold a workshop in January 2017.

- **Items from the Commission and Staff** - Commissioner Becker stated that he enjoyed the conversation he had with Michele Tamayo and looks forward to continuing to work with her on EBDA's strategic planning project.

‘What Not To Flush’ Messaging Hits the Streets of California

October 6, 2016

Dublin (Calif.) San Ramon Services District customers can learn which items they should not flush down toilets just by looking at the panel truck. Photo courtesy of Joyce Chang, Dublin San Ramon Services District.

The Dublin (Calif.) San Ramon Services District’s public education messaging has gone mobile. To spread its messages about items not to be flushed down toilets and the value of water, the district has equipped their vehicles with educational signs.

The district’s “What Not To Flush” program asks customers to never flush wipes, diapers, or feminine hygiene products, even those labeled “flushable;” to dispose of fats, oil, and grease as well as medications and sharp medical implements safely in the trash; and to recycle or dispose of hazardous household chemicals at designated locations in the community.

“We want our customers to understand how they can prevent sewer backups,” said Sue Stephenson, the district’s community affairs supervisor.

The importance of water and using it wisely has been relayed to district customers since June 2011. Photo courtesy of Chang, Dublin San Ramon Services District.

When deciding how to educate customers, the district, which provides potable and recycled water services in addition to wastewater treatment, wanted to reduce costs and focus on its target audience — customers. The district spent a total of $18,010 to create 64 magnetic truck signs and to cover a panel truck in a wrap with three separate messages.

“It’s a lot cheaper to put small magnetic signs on our pickup trucks, which we change quarterly with different messages, and a wrap on our panel truck than to purchase bus signs, billboards, or other local community ads,” Stephenson said. “The beauty of the vehicle signs is that they only travel in our service area.”

Now, 15 of the district’s vehicles feature 279 mm (11 in.) by 508 mm (20 in.) magnetic signs with messages that change with the seasons. The signs ask customers to turn off sprinklers in the winter, to consider smart water landscaping in the spring, to save water in the summer, and to fix leaks in the fall. The total cost for this portion of the project equals that of one month of similar signs for buses, according to the project’s “Summary Activity Report.”

The district promotes the benefits of working in the water and wastewater sector through a truck wrap. Photo courtesy of Chang, Dublin San Ramon Services District.

Larger signs on the panel truck communicate how to start working in the water and wastewater sectors, how to conserve water, and that the toilet is not a trashcan. The truck wrap lasts a minimum of 5 years and costs the equivalent of one month of a billboard in a high-demand area, the report says.

“The district is communicating 600% more messages with our magnetic truck signs and the truck wrap than if we used the more traditional billboards or bus signs,” the report says.

CALIFORNIA ENERGY COMMISSION

NEWS RELEASE

For Immediate Release: October 19, 2016
Media Contact: Edward Ortiz - 916-654-4989

Tweet

Energy Commission Funds New Wastewater Treatment Process and Solar Power Collector

SACRAMENTO - The California Energy Commission approved a $1.96 million grant today to Silicon Valley Clean Water for a unique wastewater treatment process that saves energy by eliminating the need for aeration, and recovers water for reuse.

The grant will fund a demonstration project in Redwood City to evaluate the effectiveness of this innovative wastewater treatment technology called a Staged Anaerobic Fluidized Bed Membrane Bioreactor (SAF-BMR).

The project will test SAF-BMR's technology with the goal of producing reusable water at the end of a pipe. The system saves energy by eliminating aeration – an energy-intensive process typically used in conventional secondary wastewater treatment.

The SAF-BMR process is expected to save 10 percent on operational and maintenance costs on conventional processes used to treat wastewater. The technology will also recover biogas that can be used for energy production.

The Energy Commission also approved a $750,000 grant to Hyperlight Energy to further develop Hyperlight's low-cost Concentrated Solar Power collector technology and make it ready for commercial application. The project is expected to eliminate the problem of high solar collector costs by paving the way for a low-cost and deployment-ready solar collector.

The grant leverages federal money by providing cost-share funding to a U.S. Department of Energy $1.5 million grant to Hyperlight. The pilot project will install and demonstrate a one-acre system in Brawley, which is an economically disadvantaged community.

Hyperlight's low-cost collector will benefit ratepayers by increasing electricity reliability while lowering costs from additional renewable power generation at power plants that operate around the clock.

Funds for both grants come from the Energy Commission's Research and Development Division.

For details on all actions taken today, see the business meeting agenda.

# # #

About the California Energy Commission
The California Energy Commission is the state's primary energy policy and planning agency. The agency was established by the California Legislature through the Warren-Alquist Act in 1974. It has seven core responsibilities: advancing state energy policy, encouraging energy efficiency, certifying thermal power plants, investing in energy innovation, developing renewable energy, transforming transportation and preparing for energy emergencies.

News | October 20, 2016

Water Research Foundation Releases Results From Ongoing Study On Direct Potable Reuse

With over a dozen ongoing projects and over 40 years of research, the Water Research Foundation is positioned to be the leader in potable reuse research

The Water Research Foundation (WRF), a leading sponsor of potable reuse research, has released interim results from the project "Blending Requirements for Water from Direct Potable Reuse Treatment Facilities" (#4536). The objective of this project is to provide guidance for the appropriate use of blending as part of a direct potable reuse (DPR) project. The study is examining the impact of four blending variables: source water type, blending location, recycled water ratio, and type of advanced treatment train. The video, Exploring Potable Reuse to Diversify Water Supplies, provides a preview of the project.

Four utilities are participating in the bench-scale treatment/distribution system study: Santa Clara Valley Water District (SCVWD), City of Ventura, Clark County Water Reclamation District, and Los Angeles Department of Water & Power. The bench-scale simulations were based on the participating utilities' full-scale processes. The parameters tested include pathogens, emerging contaminants, regulated contaminants, corrosion-related issues, and general parameters such as pH and turbidity. Preliminary findings are as follows:

- Blending with DPR waters may help lower trihalomethanes (THMs).
- Blended water quality and bacterial activity appear to be predominant factors for corrosion products in premise plumbing testing.
- Antibiotic resistance gene (ARG) composition in DPR blends appears similar or better than in potable water tests.

Bench testing using water from SCVWD, Ventura, and Clark County Water Reclamation District is complete and the data is being analyzed. Bench testing using water from LADWP is in progress. The research team will be issuing a survey to roughly 20 participating utilities to understand their perspective on blending, and gather some water quality data. The final project results should be published in early 2018.

WRF has been conducting innovative research on potable and non-potable reuse for over 40 years.Additionally, WRF has over a dozen ongoing projects on reuse, including:

- "Assessment of Technologies for Evaluating and Demonstrating Safety of Water from Direct Potable Reuse Treatment Facilities" (project #4508) will evaluate the safety of existing or future DPR scenarios and help facilitate a proactive DPR

monitoring process that is protective of public health. Fifteen utilities from California, Georgia, Colorado, Arizona, Virginia, and Singapore are participating in the project. The Literature Review for this project was published in May 2016. In addition to project #4536, the video, Exploring Potable Reuse to Diversify Water Supplies, previews this project.

- "Building-Scale Treatment for Direct Potable Water Reuse & Intelligent Control for Real Time Performance Monitoring" is a Tailored Collaboration with San Francisco Public Utilities Commission (project #4691). This project will use innovative building-scale treatment, proven purification processes, real time online monitoring, and advanced analytical tools to demonstrate water quality and public health protection in real time.
- Los Angeles Department of Water & Power is leading a Tailored Collaboration project, "Soil Aquifer Treatment Characterization with Soil Columns for Groundwater Recharge in the San Fernando Valley" (project #4600). This project is examining the soil aquifer treatment (SAT) process and how it may impact potable reuse in the coming years. Soil columns will be operated to mimic a potential full-scale groundwater recharge practice to characterize the effectiveness of SAT.
- WRF has funded a new Tailored Collaboration project with Orange County Water District (CA), "Kinetics Modeling and Experimental Investigation of Chloramine Photolysis in Ultraviolet-Driven Advanced Water Treatment" (project #4699). This work will elucidate the ultraviolet-driven advanced oxidation process (AOP) of trace organic contaminants in wastewater effluent on the basis of one oxidant, i.e., chloramine. The project will identify pathways for applying the new knowledge in partnership with the Orange County Water District (OCWD), which operates the world's largest advanced water treatment system for potable reuse.

"Freshwater supplies are dwindling in many regions within the U.S. and around the world due to climate change, competing demands, and expanding and shifting populations," said Rob Renner, CEO of the Water Research Foundation. "With dozens of completed and ongoing projects, the Water Research Foundation will continue to be a leader in ensuring that these regions can adopt potable reuse as a practical option to provide safe drinking water to their communities."

For more information, you can also check out our 2014 *Advances in Water Research* feature on potable reuse and contact Katie Henderson, WRF Research Manager (khenderson@waterrf.org, 303.347.6108).

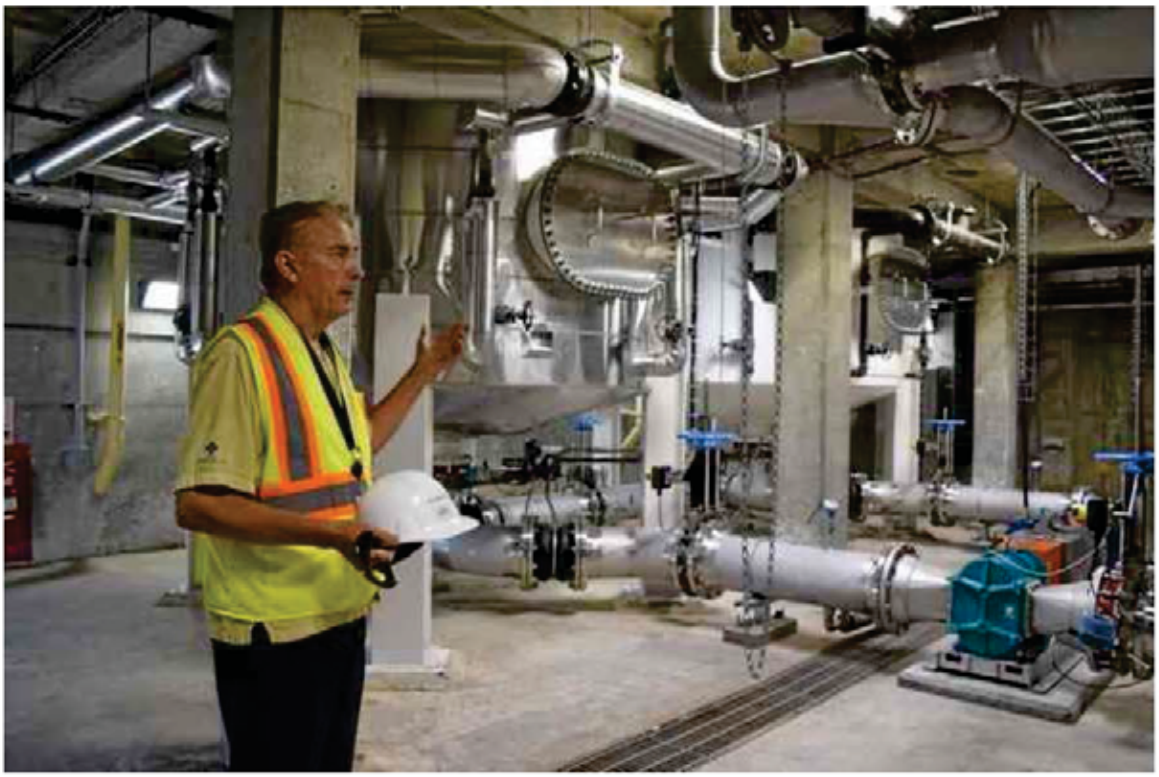
About The Water Research Foundation

The Water Research Foundation is the leading not-for-profit research cooperative that advances the science of water to protect public health and the environment. Governed by utilities, WRF plans, manages, and delivers scientifically sound research solutions on the most critical challenges facing the water community in the areas of drinking water, wastewater, stormwater, and reuse. Over the last 50 years, WRF has sponsored nearly 1,500 research projects valued at $500M, and serves more than 1,000 subscribing organizations. For more information, visit www.WaterRF.org.

SOURCE: The Water Research Foundation

Times-Herald

New center recycles Fairfield-Suisun wastewater byproduct



Jim Dunbar, general manager at the Lystek Organic Material Recovery Center, explains how the reactor behind him processes biosolids, the byproduct produced by wastewater treatment plants like that of the Fairfield-Suisun Sewer District. Lystek can turn that waste into fertilizer or an alternative carbon source for biological nutrient removal systems. Jessica Rogness — The Reporter

By Jessica Rogness, **jrogness@TheReporter.com**, **@JessicaRogness** *on Twitter*

POSTED: 10/22/16, 7:25 PM PDT | UPDATED: 1 DAY AGO 0 COMMENTS

A Canadian company that turns non-hazardous organic waste into fertilizer and other products has opened its first United States facility in Fairfield.

The Fairfield-Suisun Sewer District has entered into a 20-year public-private partnership with Lystek International Inc., which started in Ontario, Canada.

Friday was the grand opening of Lystek's first Organic Material Recovery Center in the United States, located at the sewer district's Chadbourne Road location.

In this repurposed building, Lystek will treat the sewer district's biosolids, the byproduct of wastewater treatment, turning that waste into its fertilizer products.

The center has the capacity to treat 150,000 tons of waste a year. It will process 14,000 tons a year from the Fairfield-Suisun Sewer District, and Lystek has signed contracts with the City of Santa Rosa and the Central Marin Sanitation Agency to process their waste as well.

This facility is still partially under construction. One of two reactors are up and running.

Inside that reactor, high speed spearing, alkali addition and low pressure steam are applied simultaneously to biosolids.

The end product can be sold as a fertilizer, which they call LysteGro, or recycled to reduce output from the system.

LysteGro meets California Environmental Protection Agency requirements, Kevin Litwiller, Lystek director of business development, explained.

The product also can be used in biological nutrient removal systems as an alternative carbon source, a product the company calls LysteCarb.

The sewer district also could potentially use the reactor technology to power its plant.

"This is a game changer for us," Greg Baatrup, the sewer district's general manager, said Friday.

Regulations regarding the management of this type of waste are changing. Whereas 30 years ago, this material would be hauled out to the landfill, today that practice is close to being banned in California.

A solution was needed not only for Fairfield, but the Bay Area as well, Baatrup said.

Fairfield Mayor Harry Price said Lystek is changing how waste is treated and changing day-to-day life.

"You are at the utility of the future," he said.

He also pointed to local industry, noting that Telstar Instruments, one of the vendors on this project, added jobs.

Lystek's products will make agriculture, the top industry in Solano County, more profitable for farmers, Price said.

All of the material that goes into the recovery center will be recycled.

“Nothing we produce goes back into landfills,” said Jim Dunbar, the center’s general manager.

Discussion between the company and the district started roughly three years ago, said Dunbar, who used to work at Potrero Hills Landfill.

“This is not something that’s been built before,” he said.

Lystek was looking to expand into the United States, and saw a market in California where there are strong regulations and an interest in higher forms of recycling, Dunbar said.

Through the agreement with the sewer district, Lystek has exclusive rights to the material it produces, with the district keeping a small amount for research and development.

The partnership gives Lystek a “toe hold in California,” Dunbar said, and gives the sewer district an opportunity to turn a waste product into a useful product.

San Diego Approves $3 Billion Plan to Recycle Wastewater for Drinking

POSTED BY TONI MCALLISTER ON OCTOBER 25, 2016

Mayor Kevin Faulconer at the Advanced Water Purification Facility. Photo by Chris Jennewein

The San Diego City Council voted unanimously Tuesday to certify an environmental impact report for the city's ambitious $3 billion plan to recycle wastewater into drinking water, and approved the plan itself.

Supporters of the "Pure Water San Diego" program say it will provide residents and businesses with a stable, local supply of potable water that won't be affected by drought or the uncertainties of future water imports.

The product will be purified and mixed with water from traditional sources before it's delivered to customers.

A city staff report said city officials aim to begin delivering 30 million gallons of recycled water a day within five years.

By the time Pure Water is fully implemented in about two decades, it will create 83 million gallons of drinking water per day. That's 33 million gallons more than the output of the desalination plant that opened last year in Carlsbad.

Councilman David Alvarez, who heads the panel's Environment Committee, said "sustainability, an ability to control our own destiny a little bit better, to be less harmful and impactful on the environment through discharge — for many reasons — this program makes sense."

The project will require the construction of water reclamation facilities, the creation of pipelines to deliver the water to area reservoirs and a way to divert runoff to those new plants, according to a staff report.

Diverting the runoff into recycling plants will have the side benefit of reducing discharges from the aging Point Loma Water Treatment Plant, staff said.

Staffers found 31 potential environmental impacts but said all could be mitigated.

Separately, the council approved two deals related to the Pure Water Program.

One added $16.4 million to a contract with Montgomery Watson Harza Americas Inc. for engineering services on the Pure Water program, bringing the total authorization to $46.4 million. The other was a five-year, $17.2 million deal with CH2M Hill Engineers Inc. to perform design and construction support services for the North City Water Reclamation Plant Expansion and the "Influent Conveyance project" for the program.

–*City News Service*

SIERRA MADRE WEEKLY

Statewide Water Conservation Drops Below 18 Percent in August

October 27th, 2016

The cumulative average savings from June 2015 through August was 23.3 percent. – Courtesy photo

The State Water Resources Control Board today announced that urban Californians' monthly water conservation declined to 17.7 percent in August, down from 27 percent savings in August 2015, raising concerns that some water suppliers are abandoning their focus on conservation as California heads into a possible sixth drought year.

Californians continue to conserve water in significant amounts even in the absence of state-mandated conservation targets. The cumulative average savings from June 2015 through August was 23.3 percent, compared with the same months in 2013. Since June 2015, two million acre-feet of water has been saved — enough water to supply 10 million people, more than one-quarter the state's 38 million population, for a year.

However, water conservation has dropped steeply among some local water suppliers. These declines highlight the need for continued education and dialogue with customers on the importance of conserving and using water as efficiently as possible. As the State Water Board continues to monitor conservation levels, a return to state-mandated conservation may be necessary beginning next year.

“The statewide August conservation results raise questions, and we are examining the data to understand why some areas slipped more than others,” said State Water Board Chair Felicia Marcus. “Are we seeing relaxation of conservation messaging and programs, or are we seeing abandonment of programs? One may be appropriate, the other is not. It’s a mixed picture. Many communities who certified that they didn’t ‘need’ to conserve are still conserving up a storm, while others have slipped more than seems prudent.”

Marcus added: “While last year’s rain and snow brought a respite for urban California, we are still in drought, and we can’t know what this winter will bring. What we do know is that climate change will continue to make our water years even more unpredictable, so we need to retain our conservation habits for the long term, rain or shine, drought or no drought.”

Conservation Data

Statewide water savings for August was 17.7 percent (124,094 acre-feet or 40.4 billion gallons), a decrease from July’s 20 percent savings, and also a decrease from August 2015’s 27 percent statewide savings (63.5 billion gallons). August 2016 water savings are 36 percent lower than August 2015.

Cumulative statewide percent reduction for June 2015 – August (fifteen months) is 23.3 percent, which equates to 2,024,599 acre-feet (659.7 billion gallons).

Statewide average R-GPCD for August was 114.1 gallons; slightly up from 113.5 R-GPCD in July and also above 102.2 R-GPCD reported for August 2015.

Conservation levels have remained significant for many communities that had certified that they did not need top down mandates to keep conserving.

Under the board’s revised emergency water conservation regulations, urban water agencies have the ability to set their own conservation standards based on a “stress test” of supply reliability. Water suppliers had to document that they have sufficient supplies to withstand three years of continuous drought or take additional measures that include state-imposed mandatory conservation targets. The regulation is in effect through January 2017. Those stress test results are here.

Of more than 400 local water agencies in California, 343 suppliers passed their stress test. Of those, 114 suppliers – or about a third – saved more than 20 percent in August, compared with the same month in 2013. These suppliers serve more than seven million people and include Sacramento, Alameda County Water District, San Gabriel Valley Water Company, San Gabriel Valley Fontana Water Company, Los Angeles County Public Works Waterworks District 40 (Antelope Valley), California-American Water Company Sacramento District, Contra Costa Water District, San Bernardino, Oceanside, Hayward, and Pomona.

While some local water suppliers may have relaxed water use restrictions from those that were in place last summer, most agencies have kept up locally mandated restrictions and targets, which is appropriate and which the state strongly encourages.

Regardless of a supplier's individual conservation requirement, the statewide prohibitions on specific wasteful practices such as fountains without recirculating pumps, or irrigation of turf in street medians, remain in place.

Santa Cruz Sentinel

California drought: Is October rain making a difference?

By Paul Rogers, Bay Area News Group

10/29/16

As California enters the sixth year of its historic drought, something unusual is happening: It's raining.

And raining.

Rainfall is expected across much of the Bay Area again Sunday, with another storm coming Monday evening. Marin, Sonoma and other North Bay counties should get the biggest soaking.

Meteorologists stress that's it's still only the very beginning of California's rainy season, so there are no guarantees that a wet October will bring a wet November, December, January or February. So far, though, October has been surprisingly wet across the northern part of the state, raising the hopes of drought-weary Californians.

Most Bay Area cities have seen double their historic monthly rainfall average this October. Sacramento has quadrupled its average. Eureka is at five times the norm and still climbing. Redding airport already has broken its all-time October rainfall record.

RAIN FILLS RESERVOIRS

More important, storms barreling in from the Pacific Ocean have been drenching key areas in rural Northern California, where California's largest reservoirs are located. Through Saturday, this month is already the third wettest October of any back to 1921 over a series of eight Northern Sierra locations stretching from Lake Tahoe to Mount Shasta, all sitting in the watersheds that fill massive reservoirs like Shasta, Oroville and Folsom that provide water to tens of millions of Californians and millions of acres of farmland.

"This is a very good start of the water year," said Doug Carlson, a spokesman for the California Department of Water Resources in Sacramento. "We have no assurance it is going to be this good a month from now, but it's a good start and we have to rejoice."

Through Saturday, an average of 10 inches of rain had fallen over the eight Northern Sierra stations since Oct. 1. That's more than triple the historic average for October of 3.05 inches and just shy of the second wettest year — 1950, which had 11.06 inches. But it's still short of the wettest year — 1963 — when 17.1 inches fell in October.

Perhaps counter-intuitively, the heavy rains near big reservoirs haven't increased water levels in a major way yet. Much of the rain has soaked into very dry soils, Carlson noted. And typically in

October, water levels in Northern California's big reservoirs drop because water has to be slowly let out into rivers for salmon and other fish, as well as for farmers and cities to consume.

This year, however, the reservoir levels are dropping more slowly than normal. The 46 major reservoirs that the state Department of Water Resources track have a combined 100,000 acre feet more water in them right now — roughly a year's supply for 500,000 people — than they do in an average year. They are 78 percent full, the same level as they were Oct. 1. In a normal year, they'd be lower.

A POSITIVE SIGN

Perhaps most encouraging: Since 1921, there have been 14 particularly wet Octobers in which 6 inches or more fell on average over the eight-station Northern Sierra area. And in 10 of those years, the year ended wet, with more rainfall than the 50-inch historic average.

What is California's drought status right now?

The state remains in a drought emergency that Gov. Jerry Brown declared on Jan. 17, 2014. Last winter was the wettest in five years, but brought only average rainfall in Northern California, leaving Southern California with another parched year.

As a result, 61 percent of California remains in severe drought, according to the U.S. Drought Monitor, a weekly map of drought conditions put out by the National Oceanic and Atmospheric Administration, the U.S. Department of Agriculture and the University of Nebraska at Lincoln.

Nearly all of those dry areas are south of San Francisco.

A year ago, however, 92 percent of the state was in severe drought.

In the far north, Humboldt, Del Norte, Siskiyou and parts of Mendocino and Trinity counties are no longer in drought at all, according to the Drought Monitor.

MONITOR DOWNGRADE

Even in the greater Bay Area, Sonoma, Marin, San Francisco, San Mateo and Santa Cruz counties, along with western Napa and western Santa Clara counties, have been downgraded to "abnormally dry." But eastern Santa Clara County as well as Contra Costa, Alameda, Solano, San Benito and Monterey counties remain in drought.

Most water experts say it would take a very wet winter all across the state — or perhaps two wet years — to end the drought statewide.

Recently, the Pacific Ocean has shifted to a mild La Niña, the condition in which ocean temperatures near the equator are cooler than average. Historically, during mild La Niña winters rainfall totals across California are slightly lower than the historic average.

In mild La Niña years back to 1950, in the far northern part of the state rainfall has been 95 percent of the average, according to meteorologist Jan Null of Golden Gate Weather Services in Saratoga. In the central part of the state, mild La Niña years have brought 85 percent of average rainfall, compared with 75 percent in Southern California, Null said.

The wet October is good news because it dramatically reduces fire danger, he said. And it is saturating soils early so that if more rain comes in November and December, it will run off in greater amounts into reservoirs.

NO CORRELATION

But Null analyzed every year in San Francisco back to 1849 and found that in the 23 years in which rainfall in October was double the historic average, in 12 of those years the full year turned out to be wetter than normal and in 11 years drier.

“I’ve never found a correlation between what a wet or a dry fall means for the rest of the year,” he said.

The Bay Area is expected to get up to 1.5 inches of rain Sunday into Monday morning, with roughly another half inch Monday night into Tuesday morning, with more in the north than the south, said Steve Anderson, a meteorologist with the National Weather Service in Monterey.

“If I were to make the call now for Halloween night,” he said, “I’d say it will be wet north of Palo Alto for trick or treating and dry south of there. Bring an umbrella if you are in the north or have a costume that can’t get wet. I guess you could go as a rain gauge.”

After last winter’s decent rain totals in the north, the governor gave into pleas from some local water agencies and dropped mandatory statewide conservation targets, which has led to California residents conserving less. His administration is expecting to revisit that issue in January.

At the East Bay Municipal Utility District, which serves 1.3 million people in Alameda and Contra Costa counties, the reservoirs are 79 percent full.

“It’s looking like a really good start to the season, but you know how this goes, we aren’t allowed to count chickens yet,” said EBMUD spokeswoman Andrea Pook. “It’s raining, so let nature water your grass. Turn the sprinklers off and let Mother Nature do her job.”

KQED Science

Desalination: Why Tapping Seawater Has Slowed to a Trickle in California

Poseidon Water employee Peter MacLaggan is dwarfed by the extensive plumbing at Poseidon's Carlsbad, Calif. desalination plant, the world's largest. (David Gorn/KQED)

By **David Gorn** October 31, 2016

Once thought to be the wave of the future, turning seawater into drinking water is proving to be a tough sell in California.

Desalination of ocean water has long held promise, but the dream of sticking a straw in the ocean and getting unlimited clean water by simply opening the spigot of technology — that's looking less and less likely here.

Scarcely a decade ago, when "desal" was relatively new to the state and optimism was high, there were 22 different proposals for plants up and down the California coast. Since then, plans have been scrapped in Marin, Santa Cruz and other coastal cities. A tiny desal plant has been constructed in Sand City, north of Monterey, but only one significant project has been completed.

It's in Carlsbad, 30 miles north of San Diego, and it's the largest desal plant in the nation, built and operated by Boston-based Poseidon Water. Peter MacLaggan looks up at the giant building like it's a monument to common sense.

"If you don't plan for the future and ensure you have an adequate supply," says MacLaggan, a senior vice president with Poseidon, "you're going to find yourself in a crisis that costs a lot more than if you plan ahead and do it right."

He says one of the reasons the San Diego area managed to get a desal plant built is because of its location at the tail end of the state's water pipe.

"When you look at San Diego and where it's located in the water supply system in California, it's at the end of a very long plumbing system, 500 miles from its nearest source," MacLaggan says.

That intensified the need for another water supply, he says. This plant supplies about 10% of the San Diego area's water needs.

The sprawling Carlsbad desalination plant is the nation's largest. It's been online for less than a year but has been cited several times for environmental violations. (Adam Keigwin/Poseidon Water)

Environmental Costs

MacLaggan and other proponents hold up Carlsbad as proof-positive that desal works. But just 60 miles up the coast from Carlsbad, you get a different view on a white expanse of sand at Huntington Beach, where another one of these gigantic plants is proposed to go.

Ray Hiemstra says this spot is the poster child for why desal *doesn't* work.

“It’s going to kill marine life, pollute your water, increase your rates and most importantly we don’t need it,” he says.

Hiemstra works for Orange County Coastkeeper, a South Coast environmental watchdog. He starts to run out of fingers as he enumerates all the other reasons to reject the proposed plant at Huntington Beach: there’s an active earthquake fault here. Plus it’s in a tsunami zone. And its elevation is so low that rising seawater levels might inundate the proposed site.

One of the big problems with taking salt out of seawater, says Hiemstra, is what to do with the salt after it’s removed; that highly concentrated brine typically goes back into the ocean. At Huntington Beach, you can see the outflow pipe just a thousand feet offshore.

“Its right there,” he says, squinting and pointing at the surf line. “There’s a couple of surfers out there, right by it.”

The proposed Huntington Beach desal plant would use the outflow pipe from the AES power plant (background) to deposit salt residue (known as brine) back into the ocean.

When you increase the level of salt in the water, he says, even diluted to low levels, it disrupts marine life all around that spot.

“Anything that comes through here and realizes that brine plume and higher salinity, even a little bit higher salinity, it’s just going to move away.”

That area of less sea life and the water at the outfall can drift south, he says, affecting the food supply of the California least tern, a threatened bird living nearby.

And there's another problem with putting water from a desal plant back in the ocean: it may have residue from the chemicals used to treat the water, such as chlorine.

The Carlsbad plant isn't even a year old but state officials have cited it a dozen times for environmental violations. That includes what they call "chronic toxicity," from an unknown chemical used in water treatment that has been piped into the ocean. The company is still trying to identify, isolate and clean it up.

Expensive Water

But the environmental concerns aren't the main barrier.

"In general, one of the big challenges has really been the cost," says Heather Cooley, an analyst with the Pacific Institute in Oakland. The nonpartisan research group recently issued a lengthy report on the state of desal in California.

Beyond the environmental cost is the actual price tag: the plant in Carlsbad cost $1 billion to build, with a rough estimate of $50 million a year for the power to run it. The estimated cost of the water to San Diego is about $2,300 dollars an acre-foot — more than double the cost that most Southern California cities pay for water. (An acre-foot is enough water to supply one-to-two California households per year.) And ratepayers need to pony up for that water even during rainy seasons when the price of water from more traditional sources plummets.

Cooley says the expense is the main reason communities have turned away from desalination.

"As many of these projects sort of went through the process and started looking more seriously at the cost," she says. "There started to be concern that that was too high, that there very likely were other options."

Those options include treating wastewater and putting it back into the water table, catching stormwater runoff, or simple conservation efforts. That's the future most agencies are pursuing in California.

Cooley says desal used to be high on the list of possible water sources, but now it's closer to the last choice on the list.

"There are some people who still hold onto it as the Holy Grail," she says, "that thing you're seeking that's going to solve our problem."

Now, six years into the drought and counting, the demand for water sources is only liable to intensify. That could set the stage next year for yet another fight over approval for the Huntington Beach desal plant.

ScienceDaily
Your source for the latest research news

Fuel from sewage is the future -- and it's closer than you think

Technology converts human waste into bio-based fuel

Date: November 2, 2016

Source: Pacific Northwest National Laboratory

Summary: It may sound like science fiction, but wastewater treatment plants across the United States may one day turn ordinary sewage into biocrude oil, thanks to new research. The technology, hydrothermal liquefaction, mimics the geological conditions Earth uses to create crude oil, using high pressure and temperature to achieve in minutes something that takes Mother Nature millions of years.

Biocrude oil, produced from wastewater treatment plant sludge, looks and performs virtually like fossil petroleum.
Credit: Courtesy of WE&RF

It may sound like science fiction, but wastewater treatment plants across the United States may one day turn ordinary sewage into biocrude oil, thanks to new research at the Department of Energy's Pacific Northwest National Laboratory.

The technology, hydrothermal liquefaction, mimics the geological conditions Earth uses to create crude oil, using high pressure and temperature to achieve in minutes something that takes Mother Nature millions of years. The resulting material is similar to petroleum pumped out of the ground,

with a small amount of water and oxygen mixed in. This biocrude can then be refined using conventional petroleum refining operations.

Wastewater treatment plants across the U.S. treat approximately 34 billion gallons of sewage every day. That amount could produce the equivalent of up to approximately 30 million barrels of oil per year. PNNL estimates that a single person could generate two to three gallons of biocrude per year.

Sewage, or more specifically sewage sludge, has long been viewed as a poor ingredient for producing biofuel because it's too wet. The approach being studied by PNNL eliminates the need for drying required in a majority of current thermal technologies which historically has made wastewater to fuel conversion too energy intensive and expensive. HTL may also be used to make fuel from other types of wet organic feedstock, such as agricultural waste.

Using hydrothermal liquefaction, organic matter such as human waste can be broken down to simpler chemical compounds. The material is pressurized to 3,000 pounds per square inch -- nearly one hundred times that of a car tire. Pressurized sludge then goes into a reactor system operating at about 660 degrees Fahrenheit. The heat and pressure cause the cells of the waste material to break down into different fractions -- biocrude and an aqueous liquid phase.

"There is plenty of carbon in municipal waste water sludge and interestingly, there are also fats," said Corinne Drennan, who is responsible for bioenergy technologies research at PNNL. "The fats or lipids appear to facilitate the conversion of other materials in the wastewater such as toilet paper, keep the sludge moving through the reactor, and produce a very high quality biocrude that, when refined, yields fuels such as gasoline, diesel and jet fuels."

In addition to producing useful fuel, HTL could give local governments significant cost savings by virtually eliminating the need for sewage residuals processing, transport and disposal.

"The best thing about this process is how simple it is," said Drennan. "The reactor is literally a hot, pressurized tube. We've really accelerated hydrothermal conversion technology over the last six years to create a continuous, and scalable process which allows the use of wet wastes like sewage sludge."

An independent assessment for the Water Environment & Reuse Foundation calls HTL a highly disruptive technology that has potential for treating wastewater solids. WE&RF investigators noted the process has high carbon conversion efficiency with nearly 60 percent of available carbon in primary sludge becoming bio-crude. The report calls for further demonstration, which may soon be in the works.

PNNL has licensed its HTL technology to Utah-based Genifuel Corporation, which is now working with Metro Vancouver, a partnership of 23 local authorities in British Columbia, Canada, to build a demonstration plant.

"Metro Vancouver hopes to be the first wastewater treatment utility in North America to host hydrothermal liquefaction at one of its treatment plants," said Darrell Mussatto, chair of Metro Vancouver's Utilities Committee. "The pilot project will cost between $8 to $9 million (Canadian) with Metro Vancouver providing nearly one-half of the cost directly and the remaining balance subject to external funding."

Once funding is in place, Metro Vancouver plans to move to the design phase in 2017, followed by equipment fabrication, with start-up occurring in 2018.

"If this emerging technology is a success, a future production facility could lead the way for Metro Vancouver's wastewater operation to meet its sustainability objectives of zero net energy, zero odours and zero residuals," Mussatto added.

In addition to the biocrude, the liquid phase can be treated with a catalyst to create other fuels and chemical products. A small amount of solid material is also generated, which contains important

nutrients. For example, early efforts have demonstrated the ability to recover phosphorus, which can replace phosphorus ore used in fertilizer production.

Story Source:

Materials provided by **Pacific Northwest National Laboratory**. *Note: Content may be edited for style and length.*