BOARD MEETING AGENDA
Monday, March 26, 2018
Regular Meeting - 7:00 P.M.

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

Directors
Manny Fernandez
Tom Handley
Pat Kite
Anjali Lathi
Jennifer Toy

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 February 27, 2018.
Motion	5.	Approve Minutes of the Special Meeting of March 1, 2018.
Motion	6.	Approve Minutes of the Regular Meeting of March 12, 2018.
Information	7.	February 2018 Monthly Operations Report *(to be reviewed by the Budget & Finance and Legal/Community Affairs Committees).*
	8.	Written Communications.
	9.	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	10.	Award the Construction Contract for the Force Main Corrosion Repairs Project, Phase 2, to Cratus, Inc. *(to be reviewed by the Engineering and Information Technology Committee).*
Motion	11.	Review and Consider Staff Recommendations for the 2018 Hydraulic Analysis Conducted by the East Bay Dischargers Authority and Provide Direction on the JPA Negotiations *(to be reviewed by the Legal/Community Affairs Committee).*
Motion	12.	Review and Consider Proposed Edits to District Ordinance #44 and Policy No. 3040, Boardmember Compensation *(to be reviewed by the Legal/Community Affairs Committee).*
Information	13.	Report on the East Bay Dischargers Authority (EBDA) Meeting of March 15, 2018.

Information 14. Check Register.

Information 15. Committee Meeting Reports. *(No Board action is taken at Committee meetings):*

a. Engineering and Information Technology Committee – Thursday, March 22, 2018, at 9:15 a.m.
   - Director Fernandez and Director Kite

b. Legal/Community Affairs Committee – Thursday, March 22, 2018, at 10:00 a.m.
   - Director Handley and Director Lathi

c. Budget & Finance Committee – Friday, March 23, 2018, at 11:00 a.m.
   - Director Handley and Director Toy

d. Audit Committee – will not meet.

e. Legislative Committee – will not meet.

f. Personnel Committee – will not meet.

Information 16. General Manager's Report. *(Information on recent issues of interest to the Board).*

17. 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.

18. Adjournment – The Board will adjourn to the next Regular Meeting in the Boardroom on Monday, April 9, 2018, at 7:00 p.m.

19. Adjournment – The Board will then adjourn to a Special Meeting Closed Session in the Alvarado Conference Room on Tuesday, April 10, 2018, at 5:30 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

ENGINEERING & INFORMATION TECHNOLOGY COMMITTEE MEETING

Committee Members: Director Fernandez and Director Kite

AGENDA

Thursday, March 22, 2018
9:15 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.

1. Call to Order

2. Roll Call

3. Public Comment

4. Items to be reviewed for the Regular Board meeting of March 26, 2018:
   - Award the Construction Contract for the Force Main Corrosion Repairs Project, Phase 2, to Cratus, Inc.

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

REVISED

UNION SANITARY DISTRICT

LEGAL/COMMUNITY AFFAIRS COMMITTEE MEETING

Committee Members: Director Handley and Director Lathi

AGENDA

Thursday, March 22, 2018

~~1:30 p.m.~~10:00 a.m.

~~Alvarado~~ Mission Conference Room

5072 Benson Road

Union City, CA 94587

Directors
Manny Fernandez
Tom Handley
Pat Kite
Anjali Lathi
Jennifer Toy

Officers
Paul R. Eldredge
General Manager/ District Engineer

Karen W. Murphy
Attorney

THIS MEETING WILL BE TELECONFERENCED WITH DIRECTOR HANDLEY AND DIRECTOR LATHI FROM 43225 MISSION BOULEVARD, FREMONT, CALIFORNIA

1. Call to Order

2. Roll Call

3. Public Comment

4. Items to be reviewed for the Regular Board meeting of March 26, 2018:
   - February 2018 Monthly Operations Report – Odor and Work Group Reports
   - Review and Consider Staff Recommendations for the 2018 Hydraulic Analysis Conducted by the East Bay Dischargers Authority and Provide Direction on the JPA Negotiations
   - Review and Consider Proposed Edits to District Ordinance #44 and Policy No. 3040, Boardmember Compensation

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

BUDGET & FINANCE COMMITTEE MEETING

Committee Members: Director Handley and Director Toy

AGENDA

Friday, March 23, 2018
11:00 a.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 Regular Board meeting of March 26, 2018:
   - February 2018 Monthly Operations Report – Financial Reports

5. Adjournment

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

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

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

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THE PUBLIC IS INVITED TO ATTEND

MINUTES OF THE SPECIAL MEETING OF THE
BOARD OF DIRECTORS OF
UNION SANITARY DISTRICT
February 27, 2018

CALL TO ORDER

Vice President Lathi called the special meeting to order at 6:00 p.m.

ROLL CALL

PRESENT: Anjali Lathi, Vice President
Jennifer Toy, Director
Tom Handley, Director

ABSENT: Pat Kite, President
Manny Fernandez, Secretary

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:

CONFERENCE WITH LEGAL COUNSEL – ANTICIPATED LITIGATION
Significant exposure to litigation pursuant to paragraph (2) of subdivision (d) of Section 54956.9: One potential case

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

ADJOURNMENT:

The special meeting was adjourned at approximately 7:30 p.m. to the next Special Board Meeting in the Boardroom on Thursday, March 1, 2018, at 5:30 p.m.

SUBMITTED:

_____
REGINA McEVOY
BOARD CLERK

ATTEST:

_____
MANNY FERNANDEZ
SECRETARY

APPROVED:

_____
PAT KITE
PRESIDENT

Adopted this 26th day of March, 2018

MINUTES OF THE SPECIAL MEETING OF THE
BOARD OF DIRECTORS OF
UNION SANITARY DISTRICT
March 1, 2018

CALL TO ORDER

Vice President Lathi called the special meeting to order at 5:30 p.m.

ROLL CALL

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

ABSENT: Pat Kite, President

STAFF: Paul Eldredge, General Manager/District Engineer
James Schofield, Collection Services Manager
Robert Simonich, Fabrication, Maintenance, and Construction Manager
Armando Lopez, Treatment and Disposal Services Manager
Sami Ghossain, Technical Services Manager
Laurie Brenner, Business Services Coach

PUBLIC COMMENT

There was no public comment.

BOARD WORKSHOP

General Manager Eldredge and Business Services Coach Brenner presented the Mid-Year Budget.

ADJOURNMENT:

The special meeting was adjourned at approximately 7:30 p.m. to the next Regular Board Meeting in the Boardroom on Monday, March 12, 2018, at 7:00 p.m.

SUBMITTED:

_____
REGINA McEVOY
BOARD CLERK

ATTEST:

_____
MANNY FERNANDEZ
SECRETARY

APPROVED:

_____
PAT KITE
PRESIDENT

Adopted this 26th day of March, 2017

MINUTES OF THE MEETING OF THE
BOARD OF DIRECTORS OF
UNION SANITARY DISTRICT
March 12, 2018

CALL TO ORDER

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

PLEDGE OF ALLEGIANCE

ROLL CALL

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

STAFF: Paul Eldredge, General Manager
Karen Murphy, District Counsel
James Schofield, Collection Services Manager
Sami Ghossain, Technical Services Manager
Armando Lopez, Treatment and Disposal Services Manager
Robert Simonich, Fabrication, Maintenance, and Construction Manager
Laurie Brenner, Business Services Team Coach
Gene Boucher, Human Resources Manager
Regina McEvoy, Executive Assistant to the General Manager/Board Clerk

VISITORS: Jacqueline Zipkin, EBDA General Manager
Roelle Balan, Tri-City Voice Newspaper

INTRODUCE EAST BAY DISCHARGERS AUTHORITY GENERAL MANAGER ZIPKIN

General Manager Eldredge introduced East Bay Dischargers Authority (EBDA) General Manager Zipkin. EBDA General Manager Zipkin stated she was looking forward to working with EBDA's member agencies.

APPROVAL OF THE MINUTES OF THE REGULAR MEETING OF FEBRUARY 26, 2018

It was moved by Secretary Fernandez, seconded by Director Handley, to approve the Minutes of the Regular Meeting of February 26, 2018. Motion carried unanimously.

JANUARY 2018 MONTHLY OPERATIONS REPORT

General Manager Eldredge provided details regarding one odor report received by the Collection System, and an overview of the January 2018 Monthly Operations Report included

in the Board meeting packet. Business Services Coach Brenner provided an overview of the January 2018 financial reports.

WRITTEN COMMUNICATIONS

There were no written communications.

ORAL COMMUNICATIONS

There were no oral communications.

REVIEW AND APPROVE PUBLICLY AVAILABLE PAY SCHEDULE CHANGES EFFECTIVE MARCH 1, 2018

This item was reviewed by the Personnel Committee. Human Resources Manager Boucher stated the updated pay schedule incorporates cost of living adjustments for Classified Employees which were effective March 1, 2018. Staff recommended the Board approve the Publicly Available Pay Schedule changes effective March 1, 2018.

It was moved by Vice President Lathi, seconded by Director Handley, to approve the Publicly Available Pay Schedule Changes Effective March 1, 2018. Motion carried unanimously.

REVIEW AND CONSIDER APPROVAL OF BUDGET POLICY #2015

This item was reviewed by the Budget & Finance Committee. Business Services Coach Brenner provided an overview of proposed edits to Budget Policy #2015 included in the Board meeting packet. Staff recommended the Board approve proposed edits to Budget Policy #2015.

It was moved by Director Handley, seconded by Director Toy, to approve Budget Policy #2015. Motion carried unanimously.

INFORMATION ITEMS:

Report on the East Bay Dischargers Authority (EBDA) Meeting of February 15, 2018
Director Toy provided an overview of the EBDA meeting of February 15, 2018.

Check Register
All questions were answered to the Board's satisfaction.

COMMITTEE MEETING REPORTS:

The Personnel, Legal/Community Affairs, and Budget & Finance Committees met.

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

- The Board received a Board Handbook provided as a resource by the California Special Districts Association (CSDA)
- Fair Political Practices Commission Form 700 Statement of Economic Interests are due to staff by March 28, 2018
- Interviews have been scheduled for the District's Business Services Manager/Chief Financial Officer

OTHER BUSINESS:
There was no other business.

ADJOURNMENT:

The meeting was adjourned at 7:20 p.m. to a Special Meeting Plant Master Plan #2 Board Workshop in the Boardroom on Monday, March 19, 2018, at 5:30 p.m.

The Board will then adjourn to the next Board Meeting in the Boardroom on Monday, March 26, 2018, at 7:00 p.m.

SUBMITTED:

_____
REGINA McEVOY
BOARD CLERK

ATTEST:

_____
MANNY FERNANDEZ
SECRETARY

APPROVED:

_____
PAT KITE
PRESIDENT

Adopted this 26th day of March 2018

Directors
Manny Fernandez
Tom Handley
Pat Kite
Anjali Lathi
Jennifer Toy

Officers
Paul R. Eldredge
General Manager/ District Engineer

Karen W. Murphy
Attorney

DATE: March 14, 2018

MEMO TO: Board of Directors - Union Sanitary District

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

SUBJECT: Agenda Item No. 7 - Meeting of March 26, 2018
Information Item: **Monthly Operations Report for February 2018**

Background

Attached are Monthly Operations Reports for February 2018. Staff is available to answer questions regarding information contained in the report.

Work Group Managers

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

ODOR COMPLAINTS:

During the month of February 2018, there was one odor complaint received by the Collection System and one odor complaint received by the Treatment Plant. Details regarding the odor complaints were included in the February 2018 Odor Report.

SAFETY:

- We had one lost time injury. The employee tripped on some debris and fell landing on his shoulder. He had a damaged rotator cuff that required surgery. The employee is off work recovering.
- We also had a recordable injury. The employee was cutting pipe with a grinder. He cut his leg and received 6 stiches. Employed has been released to full duty.

- The Emergency Preparedness Committee had an open house of our Emergency Operations Center (EOC) to remind or introduce employees to some of our disaster process.

STAFFING & PERSONNEL:

Continuing Recruitments:

- Business Services Work Group Manager/Chief Financial Officer
- Engineering Technician I/II
- Purchasing Agent

Other Accomplishments:

- Contract negotiations on-going
- Drug and Alcohol Reasonable Suspicion Training held for Coaches and Executive Team
- Conducted Leadership School Performance Management Session
- ICMA-RC Employee Education Seminar on ROTH-IRA's was offered
- Emergency Operations Center Open House

G.M. ACTIVITIES: For the month of February, the General Manager was involved in the following:

- Attended the East Bay Dischargers Authority (EBDA) Managers Advisory Committee meeting
- Attended the East Bay Dischargers Authority meeting
- Attended the Emergency Operations Center Open House
- Attended the Board Special Meeting Closed Session

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

ODOR REPORT
February 2018

During the recording period from February 01, 2018 through February 28, 2018, there were two odor related service requests received by the District.

City: Fremont

1. ***Complaint Details:***

Date: 2/13/2018 *Time:* 5:00 pm
Location: WARM SPRINGS BL *Reported By:* Margaret
Wind (from): North West *Wind Speed:* 7 mph
Temperature: 57 Degrees F *Weather:* Fair

Response and Follow-up:
Upon arrival I inspected our sewer mains, adjacent storm drain inlets and the general surrounding area. I was unable to detect any odors coming from our sanitary sewer We did detect a faint odor inside the business. We relayed our findings and provided an informational pamphlet to the reporting party and encouraged them to call us back if the odor returns.

City: Union City

2. ***Complaint Details:***

Date: 2/26/2018 *Time:* 4:20 pm
Location: MACKINAW ST *Reported By:* Sam Dua
Wind (from): East *Wind Speed:* 8 mph
Temperature: 51 Degrees F *Weather:* Cloudy

Response and Follow-up:

- *USD Staff dispatched to complaint location?* Yes
- *Was any odor detected at the complaint location?* No
  - *If yes, was odor attributed to USD?* N/A
- *Were any odors detected at the Plant?* No
  - *If yes, what odors were found?* N/A
- *Additional Information:* N/A

Legend

Odor Complaints: February 2018

- ★ Odor found, USD resolved (0)
- ● Odor found, not related to USD (1)
- ▲ No odor found (1)

Odor Complaints: Mar. 2017 to Jan. 2018

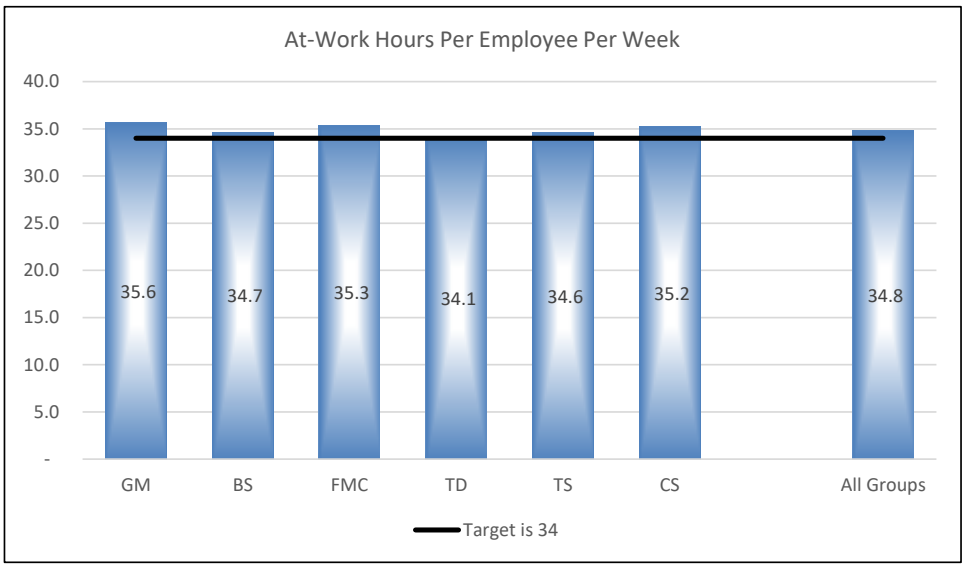
- ★ Odor found, USD resolved (5)
- ● Odor found, not related to USD (5)
- ▲ No odor found (12)

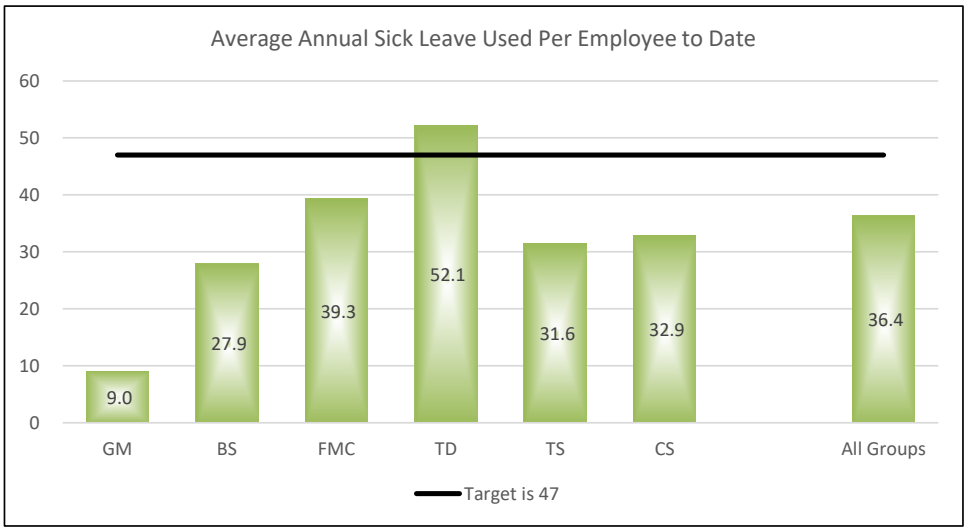
Location of Odor Reports
March 2017 to February 2018

0 0.5 1 2 3 4 5 Miles

N W E S

HOURS WORKED AND LEAVE TIME BY WORK GROUP
June 29, 2017 through February 16, 2018
Weeks to Date: 34 out of 52 (65.38%)





NOTES

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

(2) Overtime hours includes call outs.

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

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

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

HOURS WORKED AND LEAVE TIME BY WORK GROUP

June 29, 2017 through February 16, 2018

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

Group	Average Number of Employees	AT-WORK HOURS		At-Work Hours Per Employee Per Week	LEAVE HOURS				Average Annual Sick Leave Used Per Employee To Date	FY17		
		Regular (1)	Overtime (2)		Discretionary (3)	Short Term Disability	Workers Comp	Sick (4)		Average Number of Employees	At-Work Hours Per Week Per Employee	Annual Sick Leave Used
GM	2	2,369.00	42.75	35.6	333.00	-	-	18.00	9.0	2	35.7	34.6
BS	20	23,404.50	62.49	34.7	3,535.18	-	-	558.25	27.9	21	34.2	33.5
FMC	22	25,787.75	522.92	35.3	3,677.08	251.53	53.00	865.22	39.3	23	34.2	48.4
TD	26	28,956.16	1,077.10	34.1	4,208.32	909.20	12.00	1,355.32	52.1	27	34.7	39.1
TS	31	36,136.61	179.07	34.6	5,196.89	168.25	-	978.25	31.6	32	34.9	47.3
CS	30	34,242.75	1,537.75	35.2	5,941.27	5.93	-	987.53	32.9	31	34.1	77.6
All Groups	**131**	**150,896.77**	**3,422.08**	**34.8**	**22,891.74**	**1,334.91**	**65.00**	**4,762.57**	**36.4**	**136**	**35.1**	**44.5**

SICK LEAVE INCENTIVE PROGRAM TARGETS **≥34** **≤47**

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

NOTES

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

(2) Overtime hours includes call outs.

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

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

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

with 20 vacation days, **34.2** hours per week.

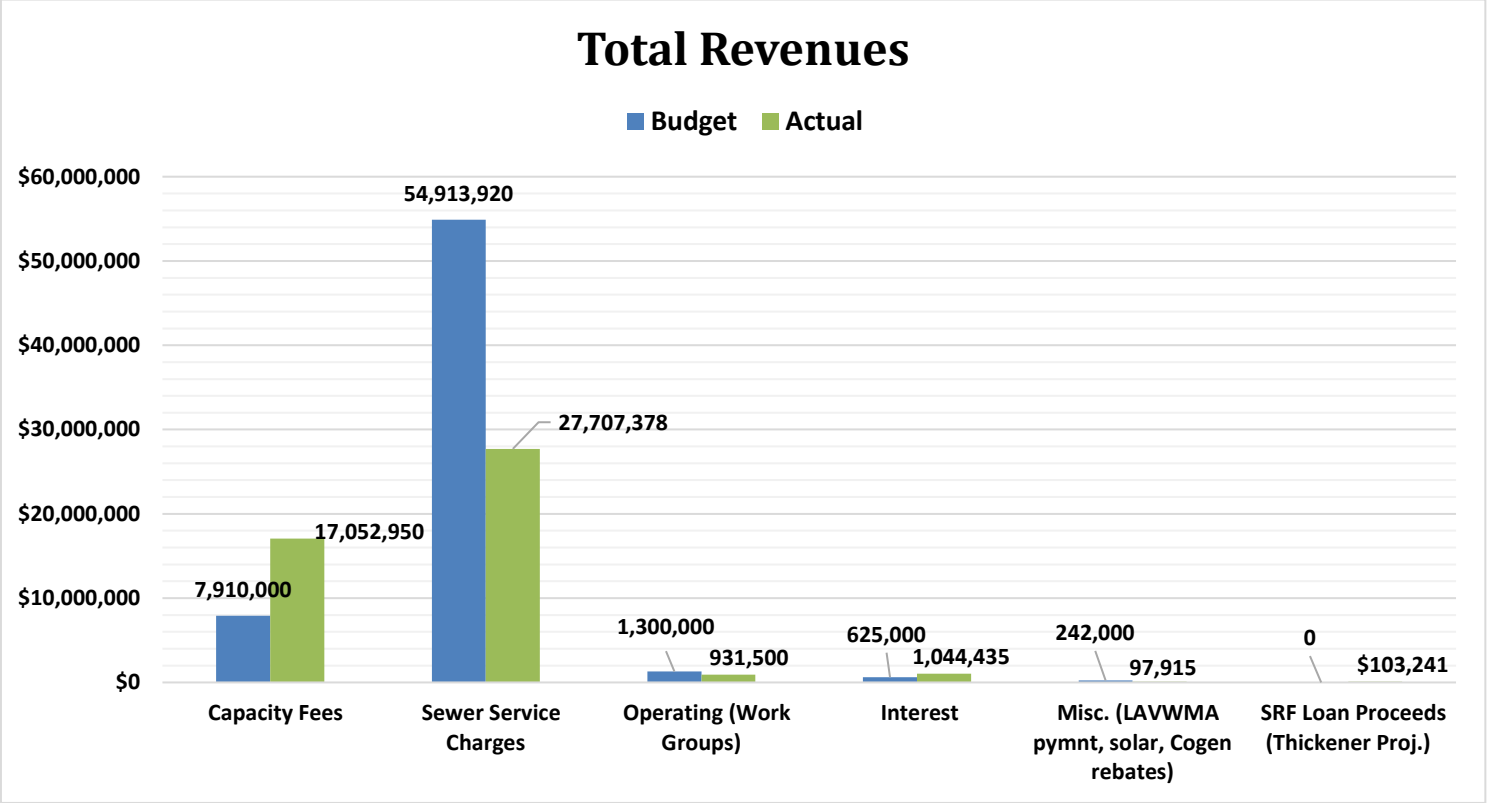
BUDGET AND FINANCE REPORT

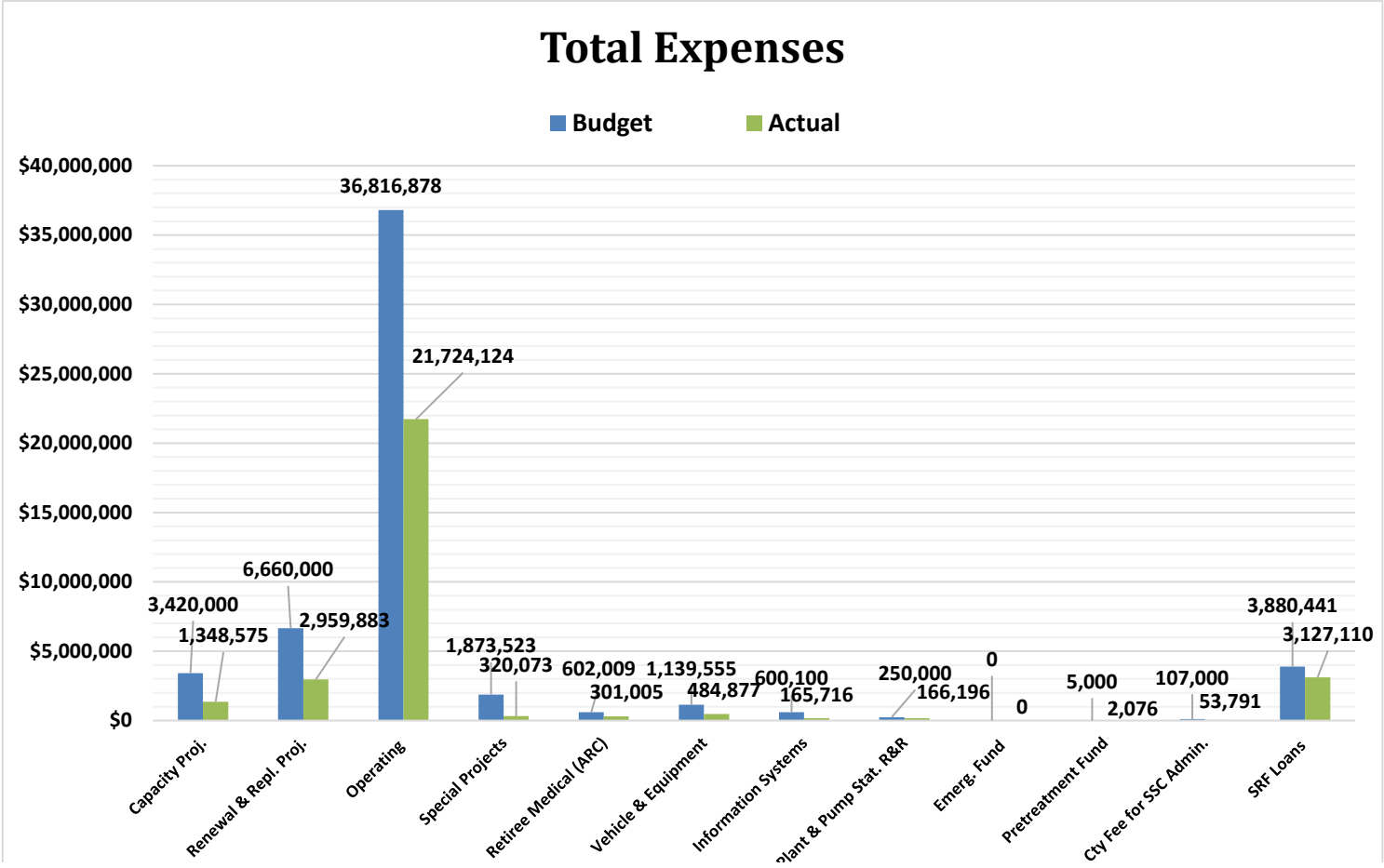
FY 2018	Year-to-date as of 2/28/18		67% of year elapsed	
Revenues	**Budget**	**Actual**	**% of Budget Rec'd**	**Audited Last Year Actuals 6/30/17**
Capacity Fees	$7,910,000	$17,052,950	216%	$12,595,637
Sewer Service Charges	54,913,920	27,707,378	50%	52,384,710
Operating (Work Groups)	1,300,000	931,500	72%	1,575,480
Interest	625,000	1,044,435	167%	482,342
Misc. (LAVWMA pymnt, solar, Cogen rebates)	242,000	97,915	40%	561,734
Subtotal Revenues	$64,990,920	$46,834,178	72%	$67,599,903
SRF Loan Proceeds (Thickener Proj.)	0	$103,241	#DIV/0!	3,433,448
Total Revenues + SRF Proceeds	**$64,990,920**	**$46,937,419**	**72%**	**$71,033,351**
Expenses	**Budget**	**Actual**	**% of Budget Used**	**Last Year Actuals**
Capital Improvement Program:				
Capacity Proj.	$3,420,000	$1,348,575	39%	$3,608,815
Renewal & Repl. Proj.	6,660,000	2,959,883	44%	10,185,023
Operating	36,816,878	21,724,124	59%	33,866,972
Special Projects	1,873,523	320,073	17%	945,496
Retiree Medical (ARC)	602,009	301,005	50%	585,832
Vehicle & Equipment	1,139,555	484,877	43%	116,986
Information Systems	600,100	165,716	28%	492,639
Plant & Pump Stat. R&R	250,000	166,196	66%	247,329
Emerg. Fund	0	0	0%	286
Pretreatment Fund	5,000	2,076	42%	11,611
Cty Fee for SSC Admin.	107,000	53,791	50%	106,643
Debt Servicing:				
SRF Loans	3,880,441	3,127,110	81%	3,127,110
Total Expenses	**$55,354,506**	**$30,653,426**	**55%**	**$53,294,740**
Total Revenue & Proceeds less Expenses	***$9,636,414***	***$16,283,993***		***$17,738,611***

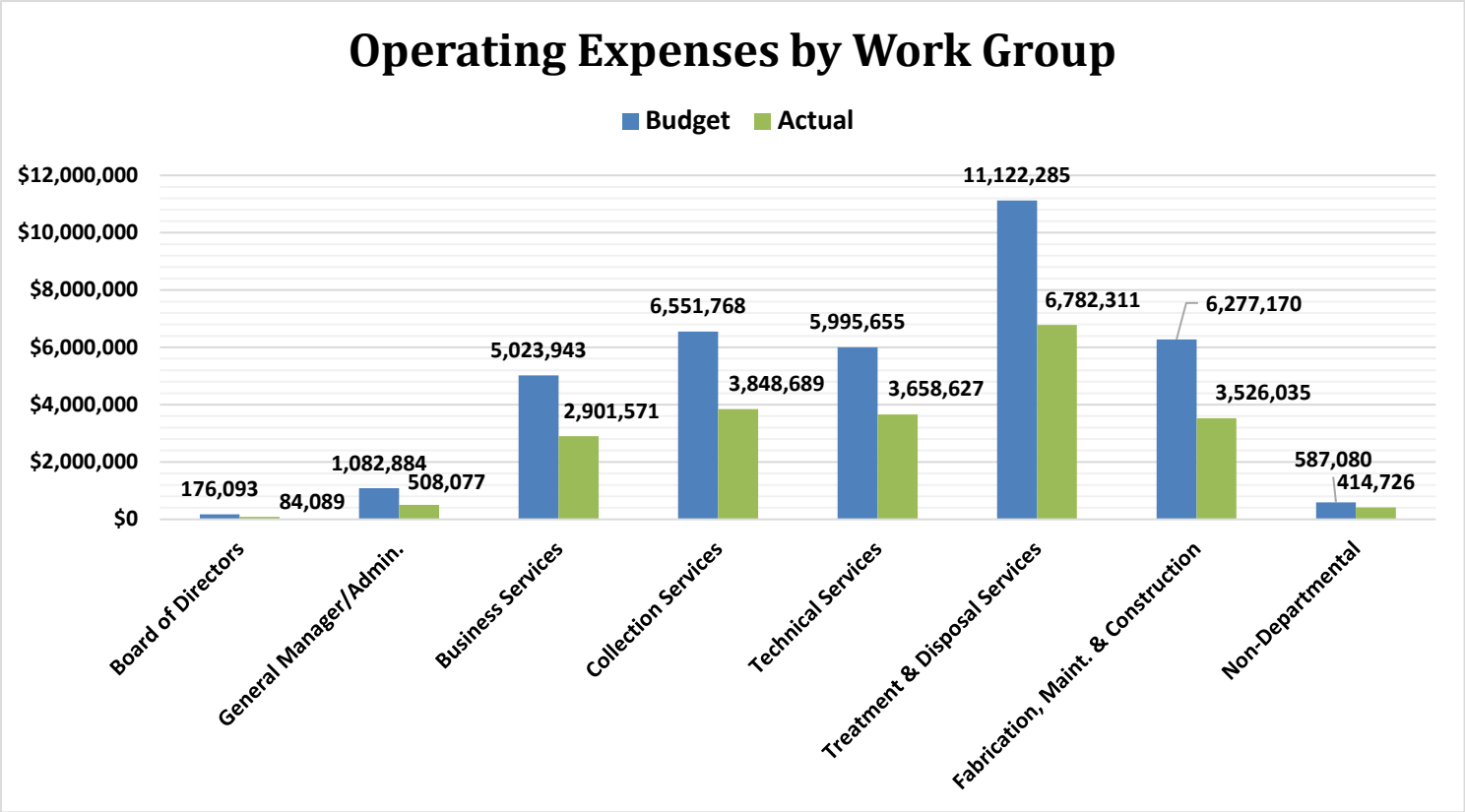
Operating (Work Group) Expenses	**Budget**	**Actual**	**% of Budget Used**	**Last Year Actuals**
Board of Directors	$176,093	$84,089	48%	$139,285
General Manager/Admin.	1,082,884	508,077	47%	786,134
Business Services	5,023,943	2,901,571	58%	5,091,870
Collection Services	6,551,768	3,848,689	59%	6,290,826
Technical Services	5,995,655	3,658,627	61%	5,840,942
Treatment & Disposal Services	11,122,285	6,782,311	61%	9,888,969
Fabrication, Maint. & Construction	6,277,170	3,526,035	56%	5,828,946
Non-Departmental	587,080	414,726	71%	
Total	$36,816,878	$21,724,124	59%	**$33,866,972**

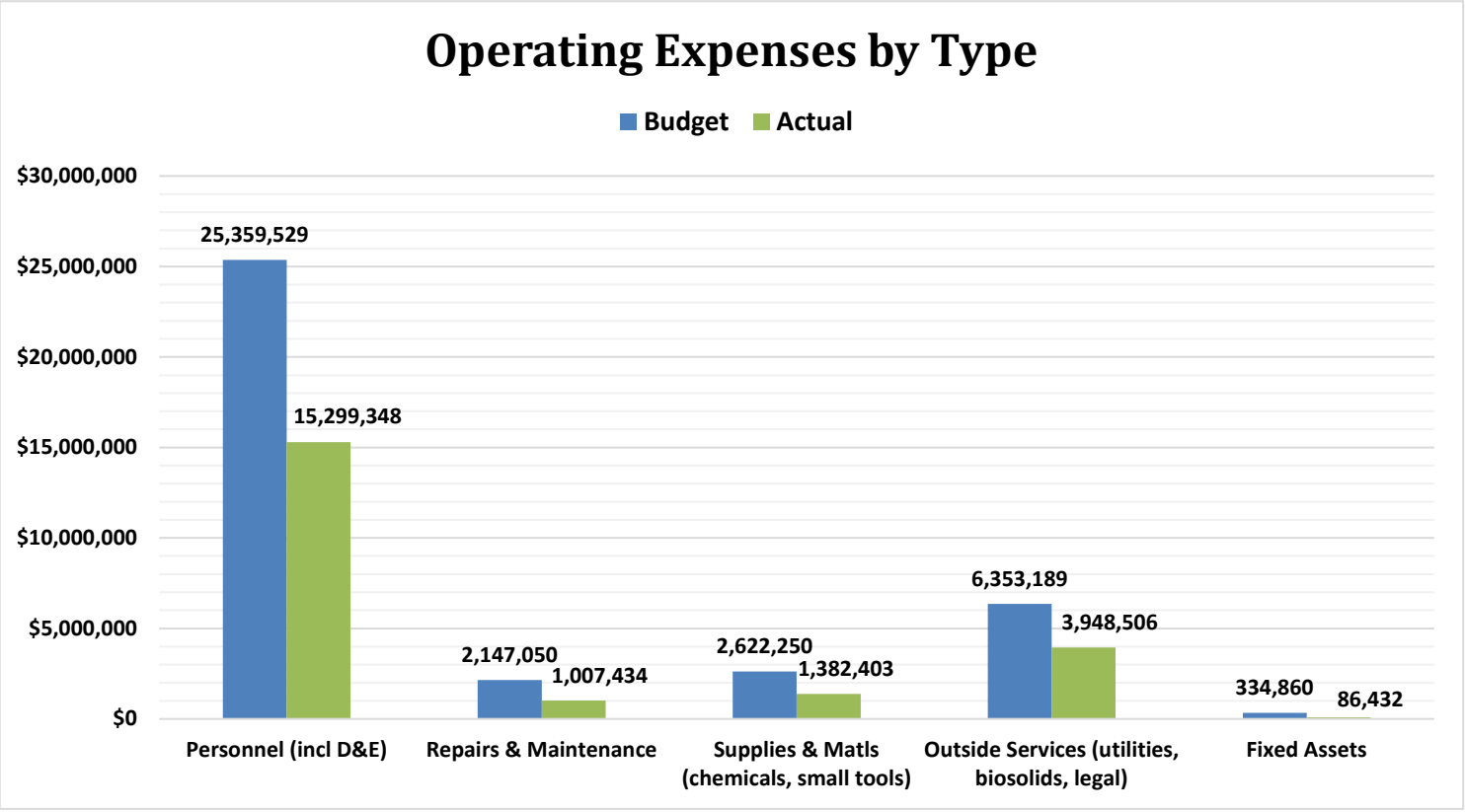
Operating (Work Group) Expenses by Type	**Budget**	**Actual**	**% of Budget Used**	**Last Year Actuals**
Personnel (incl D&E)	$25,359,529	$15,299,348	60%	$24,278,885
Repairs & Maintenance	2,147,050	1,007,434	47%	1,998,086
Supplies & Matls (chemicals, small tools)	2,622,250	1,382,403	53%	2,093,989
Outside Services (utilities, biosolids, legal)	6,353,189	3,948,506	62%	5,417,173
Fixed Assets	334,860	86,432	26%	78,839
Total	$36,816,878	$21,724,124	59%	**$33,866,972**

REVENUES AND EXPENSES REPORT
as of 2/28/18



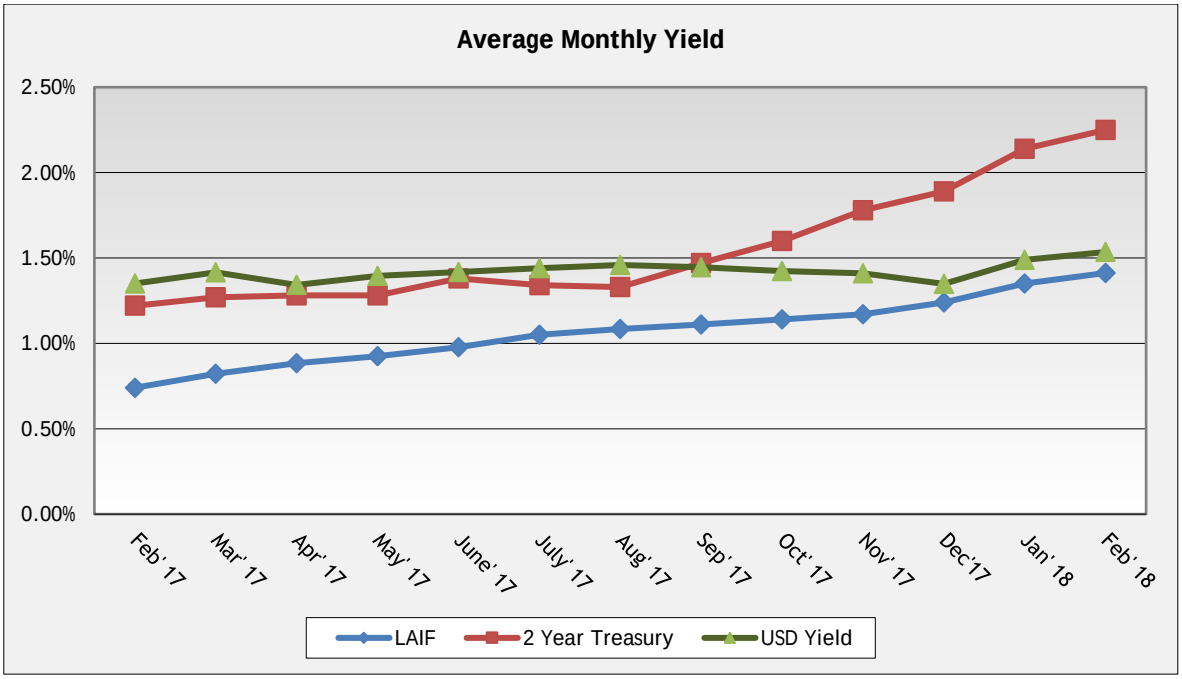


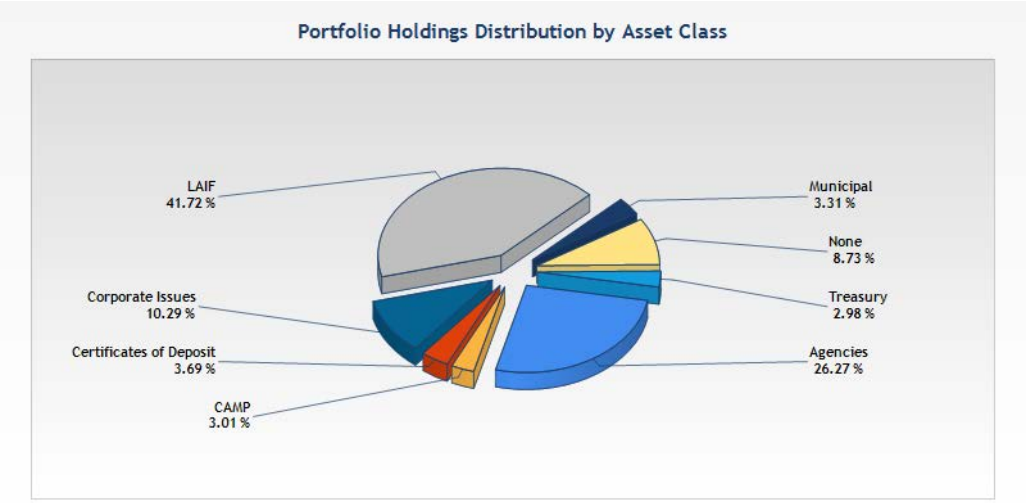

Operating Expenses by Work Group
Budget
Actual
$12,000,000
$10,000,000
$8,000,000
$6,000,000
$4,000,000
$2,000,000
$0
176,093
84,089
1,082,884
508,077
5,023,943
2,901,571
6,551,768
3,848,689
5,995,655
3,658,627
11,122,285
6,782,311
6,277,170
3,526,035
587,080
414,726
Board of Directors
General Manager/Admin.
Business Services
Collection Services
Technical Services
Treatment & Disposal Services
Fabrication, Maint. & Construction
Non-Departmental

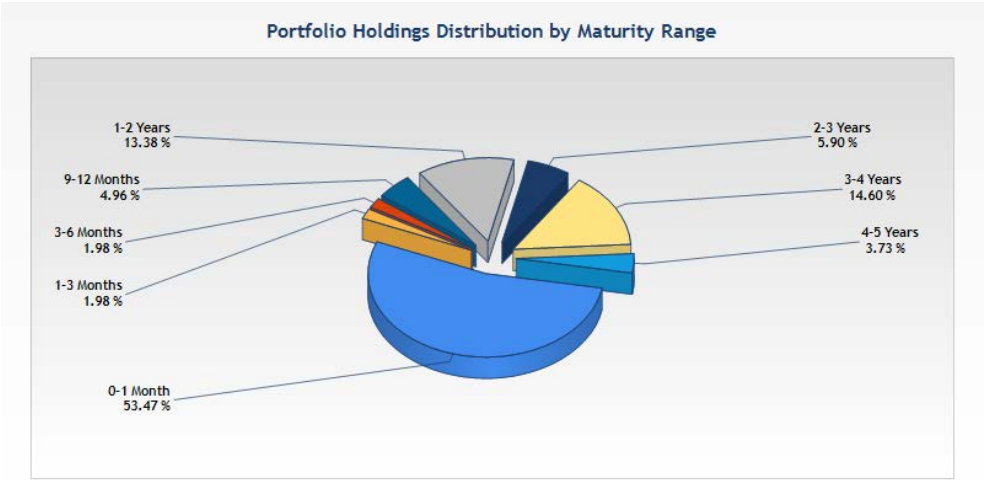

Operating Expenses by Type
Budget
Actual
$30,000,000
$25,000,000
$20,000,000
$15,000,000
$10,000,000
$5,000,000
$0
25,359,529
15,299,348
2,147,050
1,007,434
2,622,250
1,382,403
6,353,189
3,948,506
334,860
86,432
Personnel (incl D&E)
Repairs & Maintenance
Supplies & Matls (chemicals, small tools)
Outside Services (utilities, biosolids, legal)
Fixed Assets

- Cloud offsite backups
- Replaced SIEM (Security Information and Event Management)
- SCADA Upgrade

Performance Measures for the USD Investment Portfolio







Maturity Range	Face Amount/Shares	YTM @ Cost	Cost Value	Days To Maturity	% of Portfolio	Market Value	Book Value	Duration To Maturity
0-1 Month	53,933,386.71	1.348	53,933,386.71	1	53.47	53,933,386.71	53,933,386.71	0.00
1-3 Months	2,000,000.00	1.255	1,999,070.00	37	1.98	1,998,540.00	1,999,888.76	0.11
3-6 Months	2,000,000.00	1.264	2,001,190.00	151	1.98	1,994,020.00	2,000,006.64	0.42
9-12 Months	5,000,000.00	1.294	5,004,540.00	330	4.96	4,966,020.00	5,002,134.39	0.90
1-2 Years	13,484,000.00	1.412	13,497,446.57	525	13.38	13,326,047.87	13,490,734.02	1.42
2-3 Years	5,746,000.00	2.013	5,947,787.56	912	5.90	5,753,422.88	5,867,898.64	2.42
3-4 Years	14,738,000.00	2.067	14,722,150.00	1,240	14.60	14,388,410.58	14,726,643.04	3.29
4-5 Years	3,742,000.00	2.432	3,765,279.67	1,490	3.73	3,682,376.45	3,761,384.82	3.87
TOTAL / AVERAGE	**100,643,386.71**	**1.535**	**100,870,850.51**	**381**	**100**	**100,042,224.49**	**100,782,077.02**	**1.01**

Union Sanitary District
Portfolio Holdings
Board Report - Holdings
Report Format: By Transaction
Group By: Asset Class
Average By: Cost Value
Portfolio / Report Group: All Portfolios
As of 2/28/2018

Description	CUSIP/Ticker	Credit Rating 1	Settlement Date	Face Amount/Shares	Cost Value	Coupon Rate	Market Value	YTM @ Cost	Next Call Date	Maturity Date	% of Portfolio
Agencies											
FFCB 1.17 5/16/2019-17	3133EF7L5	Moodys-Aaa	5/16/2016	1,000,000.00	1,000,000.00	1.170	988,820.00	1.170		5/16/2019	0.99
FFCB 1.3 11/25/2019-16	3133EGBK0	Moodys-Aaa	5/25/2016	1,000,000.00	997,950.00	1.300	982,650.00	1.360		11/25/2019	0.99
FFCB 1.35 6/24/2019	3133EEZ60	Moodys-Aaa	5/24/2017	1,000,000.00	1,003,480.00	1.350	991,370.00	1.180		6/24/2019	0.99
FFCB 1.37 12/27/2018-17	3133EGZ24	None	12/27/2016	1,000,000.00	1,000,000.00	1.370	994,850.00	1.370	3/1/2018	12/27/2018	0.99
FFCB 1.59 3/23/2020-17	3133EFR25	Moodys-Aaa	3/23/2016	1,000,000.00	1,000,000.00	1.590	982,830.00	1.590		3/23/2020	0.99
FFCB 1.7 5/3/2021-17	3133EF5T0	Moodys-Aaa	5/3/2016	1,000,000.00	1,000,000.00	1.700	970,560.00	1.700		5/3/2021	0.99
FHLB 1.24 1/23/2019-18	3130AAN20	Moodys-Aaa	2/2/2017	1,000,000.00	999,100.00	1.240	992,000.00	1.286		1/23/2019	0.99
FHLB 1.375 2/28/2019-17	3130ABEH5	Moodys-Aaa	5/30/2017	1,000,000.00	1,000,000.00	1.375	992,520.00	1.375		2/28/2019	0.99
FHLB 1.93 12/21/2020-17	3130AADQ8	None	12/21/2016	1,000,000.00	1,000,000.00	1.930	980,630.00	1.930		12/21/2020	0.99
FHLB 2 10/26/2021-19	3130AB3D6	None	4/26/2017	1,000,000.00	1,000,000.00	2.000	974,460.00	2.000	4/26/2019	10/26/2021	0.99
FHLB 2.05 12/29/2021-17	3130AAET1	Moodys-Aaa	12/29/2016	1,000,000.00	1,000,000.00	2.050	975,040.00	2.050	3/29/2018	12/29/2021	0.99
FHLB 2.4 12/22/2021-17	3130AAHC5	None	12/22/2016	1,000,000.00	1,000,000.00	2.400	983,210.00	2.400		12/22/2021	0.99
FHLB Step 4/28/2021-16	3130A7PR0	Moodys-Aaa	4/28/2016	1,000,000.00	1,000,000.00	1.250	986,550.00	2.114	4/28/2018	4/28/2021	0.99
FHLB Step 4/28/2021-16	3130A7QX6	Moodys-Aaa	4/28/2016	1,000,000.00	1,000,000.00	1.250	981,220.00	2.021		4/28/2021	0.99
FHLMC 1 8/15/2018-17	3134GABQ6	Moodys-Aaa	1/31/2017	1,000,000.00	998,700.00	1.000	995,970.00	1.087		8/15/2018	0.99
FHLMC 1.2 12/14/2018-17	3134GAZU1	None	12/14/2016	1,000,000.00	1,000,000.00	1.200	992,550.00	1.200	3/14/2018	12/14/2018	0.99

Description	CUSIP/Ticker	Credit Rating 1	Settlement Date	Face Amount/Shares	Cost Value	Coupon Rate	Market Value	YTM @ Cost	Next Call Date	Maturity Date	% of Portfolio
FHLMC 1.25 10/28/2019-17	3134G8XQ7	Moodys-Aaa	4/28/2016	1,000,000.00	1,000,000.00	1.250	983,800.00	1.250		10/28/2019	0.99
FHLMC 1.4 6/14/2019-17	3134GBRH7	Moodys-Aaa	6/14/2017	1,000,000.00	1,000,000.00	1.400	990,160.00	1.400		6/14/2019	0.99
FHLMC 1.41 4/26/2019-18	3134GBEG3	None	4/26/2017	1,000,000.00	1,000,000.00	1.410	990,730.00	1.410	4/26/2018	4/26/2019	0.99
FHLMC 1.5 12/30/2019-17	3134GAYY4	S&P-AA+	12/30/2016	1,000,000.00	1,000,000.00	1.500	984,750.00	1.500	3/30/2018	12/30/2019	0.99
FHLMC 1.5 9/9/2019-18	3134GA7A6	Moodys-Aaa	5/10/2017	1,000,000.00	1,000,000.00	1.500	988,340.00	1.500	3/19/2018	9/9/2019	0.99
FHLMC 2 12/30/2021-17	3134GAYV0	None	12/30/2016	1,000,000.00	1,000,000.00	2.000	971,650.00	2.000	3/30/2018	12/30/2021	0.99
FHLMC Step 4/28/2021-16	3134G8VZ9	Moodys-Aaa	4/28/2016	2,500,000.00	2,500,000.00	1.375	2,439,875.00	2.116		4/28/2021	2.48
FHLMC Step 4/28/2021-16	3134G8Z28	Moodys-Aaa	5/10/2016	1,000,000.00	999,500.00	1.125	979,430.00	2.044	4/28/2018	4/28/2021	0.99
FNMA 1.5 6/16/2021-16	3136G3QX6	Moodys-Aaa	6/16/2016	1,000,000.00	995,000.00	1.500	961,850.00	1.604	3/16/2018	6/16/2021	0.99
Sub Total / Average				**26,500,000.00**	**26,493,730.00**	**1.483**	**26,055,815.00**	**1.654**			**26.27**
CAMP											
CAMP LGIP	LGIP4000	None	5/31/2011	3,040,954.54	3,040,954.54	1.500	3,040,954.54	1.500	N/A	N/A	3.01
Sub Total / Average				**3,040,954.54**	**3,040,954.54**	**1.500**	**3,040,954.54**	**1.500**			**3.01**
Certificates of Deposit											
Ally Bank 1.35 10/28/2019	02006LQ48	None	10/27/2016	248,000.00	248,000.00	1.350	243,358.93	1.350		10/28/2019	0.25
American Expr Centurion 2.45 4/5/2022	02587DN38	None	4/5/2017	247,000.00	247,000.00	2.450	244,797.72	2.450		4/5/2022	0.24
Belmont Savings Bank 2.15 3/22/2022	080515BV0	None	3/20/2017	248,000.00	248,000.00	2.150	242,955.61	2.150		3/22/2022	0.25
BMW Bank 2.15 3/10/2022	05580AGR9	None	3/10/2017	247,000.00	247,000.00	2.150	242,013.12	2.150		3/10/2022	0.24
Capital One Bank 1.5 10/26/2020	140420L99	None	10/26/2016	248,000.00	248,000.00	1.500	241,113.86	1.500		10/26/2020	0.25
Comenity Capital 1.25 4/11/2019	20033ASR8	None	10/25/2016	248,000.00	248,000.00	1.250	244,610.93	1.250		4/11/2019	0.25
Discover Bank 2.25 12/29/2021	254672Y36	None	12/29/2016	247,000.00	247,000.00	2.250	243,187.38	2.250		12/29/2021	0.24
JP Morgan Chase Bank 1.1 7/15/2019	48125Y5L4	None	7/15/2016	249,000.00	249,000.00	1.100	244,298.21	1.100		7/15/2019	0.25

Description	CUSIP/Ticker	Credit Rating 1	Settlement Date	Face Amount/Shares	Cost Value	Coupon Rate	Market Value	YTM @ Cost	Next Call Date	Maturity Date	% of Portfolio
Lakeside Bank 1.75 5/29/2020	51210SMU8	None	5/30/2017	249,000.00	249,000.00	1.750	244,695.76	1.750		5/29/2020	0.25
Landmark Bank 2.1 3/29/2021-17	51506VCA9	None	3/29/2017	248,000.00	248,000.00	2.100	244,141.49	2.100	3/27/2018	3/29/2021	0.25
Ponce De Leon Federal Bank 1.85 5/28/2021	732333AJ8	None	5/31/2017	249,000.00	249,000.00	1.850	242,872.38	1.850		5/28/2021	0.25
State Bank of India 2.25 1/26/2022	8562846A7	None	1/26/2017	247,000.00	247,000.00	2.250	243,118.57	2.250		1/26/2022	0.24
Summit Community Bank 1.65 5/29/2020	86604XLT1	None	5/31/2017	249,000.00	249,000.00	1.650	244,143.26	1.650		5/29/2020	0.25
Synchrony Bank 2.3 2/24/2022	87165ELT2	None	2/28/2017	247,000.00	247,000.00	2.300	243,520.76	2.300		2/24/2022	0.24
Wells Fargo Bank 1.15 7/22/2019	9497486R3	None	7/20/2016	249,000.00	249,000.00	1.150	244,399.40	1.150		7/22/2019	0.25
Sub Total / Average				**3,720,000.00**	**3,720,000.00**	**1.816**	**3,653,227.38**	**1.816**			**3.69**
Corporate Issues											
American Express Credit 2.7 3/3/2022	0258M0EG0	Moodys-A2	5/15/2017	1,000,000.00	1,013,279.67	2.700	980,570.00	2.406		3/3/2022	1.00
Barclays Bank PLC Step 4/26/2022-17	06741VR95	Moodys-A1	4/26/2017	1,000,000.00	1,000,000.00	2.250	985,850.00	3.093	4/26/2018	4/26/2022	0.99
Chevron Corp 2.1 5/16/2021	166764BG4	Moodys-Aa2	5/10/2017	1,000,000.00	999,500.00	2.100	976,740.00	2.113		5/16/2021	0.99
Chevron Corp 2.193 11/15/2019	166764AN0	Moodys-Aa2	2/26/2016	1,160,000.00	1,167,806.57	2.193	1,153,434.40	2.004		11/15/2019	1.16
GE Capital International 2.04 11/15/2020	36164QMS4	S&P-AA	3/10/2017	1,000,000.00	1,010,642.28	2.040	978,310.00	1.738		11/15/2020	1.00
HSBC 4.875 8/24/2020	4042Q1AE7	Moodys-A1	5/17/2016	2,000,000.00	2,191,145.28	4.875	2,081,700.00	2.500		8/24/2020	2.17
Toyota Motor Credit 1.55 7/13/2018	89236TCP8	Moodys-Aa3	3/16/2016	1,000,000.00	1,002,490.00	1.550	998,050.00	1.440		7/13/2018	0.99
Toyota Motor Credit Corp 1.2 4/6/2018	89236TCX1	Moodys-Aa3	5/24/2016	1,000,000.00	1,000,360.00	1.200	999,270.00	1.180		4/6/2018	0.99
Toyota Motor Credit Corp 1.2 4/6/2018	89236TCX1	Moodys-Aa3	4/6/2017	1,000,000.00	998,710.00	1.200	999,270.00	1.330		4/6/2018	0.99
Sub Total / Average				**10,160,000.00**	**10,383,933.80**	**2.537**	**10,153,194.40**	**2.039**			**10.29**
LAIF											
LAIF LGIP	LGIP1002	None	4/30/2011	42,088,201.29	42,088,201.29	1.412	42,088,201.29	1.412	N/A	N/A	41.72
Sub Total / Average				**42,088,201.29**	**42,088,201.29**	**1.412**	**42,088,201.29**	**1.412**			**41.72**
Municipal											

Description	CUSIP/Ticker	Credit Rating 1	Settlement Date	Face Amount/Shares	Cost Value	Coupon Rate	Market Value	YTM @ Cost	Next Call Date	Maturity Date	% of Portfolio
City of Riverside CA 2.125 6/1/2021	769036BA1	S&P-AA-	6/1/2017	500,000.00	500,000.00	2.125	485,875.00	2.125		6/1/2021	0.50
La Qunita Redev Agency 2.034 9/1/2019	50420BCH3	S&P-AA-	12/22/2016	1,330,000.00	1,336,650.00	2.034	1,316,966.00	1.843		9/1/2019	1.33
State of California 2.152 4/1/2022	13063DAD0	Moodys-Aa3	4/27/2017	1,000,000.00	1,010,000.00	2.152	986,190.00	1.938		4/1/2022	1.00
Victor Valley College General Obligation Bond 2.35	92603PER9	Moodys-Aa2	12/28/2016	500,000.00	490,150.00	2.350	485,110.00	2.811		8/1/2021	0.49
Sub Total / Average				**3,330,000.00**	**3,336,800.00**	**2.130**	**3,274,141.00**	**2.056**			**3.31**
None											
Union Bank Cash	LGIPUNIONBANK	None	12/31/2016	8,804,230.88	8,804,230.88	0.990	8,804,230.88	0.990	N/A	N/A	8.73
Sub Total / Average				**8,804,230.88**	**8,804,230.88**	**0.990**	**8,804,230.88**	**0.990**			**8.73**
Treasury											
T-Note 0.875 5/15/2019	912828R44	None	4/26/2017	1,000,000.00	993,080.00	0.875	984,960.00	1.217		5/15/2019	0.98
T-Note 1.283 3/31/2019	912828SN1	None	2/22/2017	1,000,000.00	1,004,480.00	1.283	993,400.00	1.067		3/31/2019	1.00
T-Note 1.5 2/28/2019	912828C24	None	1/9/2017	1,000,000.00	1,005,440.00	1.500	994,100.00	1.241		2/28/2019	1.00
Sub Total / Average				**3,000,000.00**	**3,003,000.00**	**1.221**	**2,972,460.00**	**1.175**			**2.98**
Total / Average				**100,643,386.71**	**100,870,850.51**	**1.545**	**100,042,224.49**	**1.535**			**100**

All investment actions executed since the last report have been made in full compliance with the District's Investment Policy. The District will meet its expenditure obligations for the next six months. Market value sources are the LAIF, CAMP, and BNY Mellon monthly statements. Broker/Dealers: BOSC, Inc.; Cantella & Co.; First Empire Securities; Ladenburg, Thalman & Co, Inc.; UBS Financial Services; Wells Fargo Securities.

Reviewer:

Approver:

Union Sanitary District
Transactions Summary
Board Report - Activity
Group By: Action
Portfolio / Report Group: All Portfolios
Begin Date: 01/31/2018, End Date: 02/28/2018

Description	CUSIP/Ticker	Face Amount/Shares	Principal	Interest/Dividends	Coupon Rate	YTM @ Cost	Settlement Date	Total
Deposit								
CAMP LGIP	LGIP4000	3,500.63	3,500.63	0.00	N/A	0.000	2/28/2018	3,500.63
Union Bank Cash	LGIPUNIONBANK	8,804,230.88	8,804,230.88	0.00	N/A	0.000	2/28/2018	8,804,230.88
Sub Total / Average		**8,807,731.51**	**8,807,731.51**	**0.00**				**8,807,731.51**
Interest								
CAMP LGIP	LGIP4000	0.00	0.00	3,500.63	N/A	0.000	2/28/2018	3,500.63
Comenity Capital 1.25 4/11/2019	20033ASR8	0.00	0.00	263.29	1.250	0.000	2/12/2018	263.29
FHLMC 1 8/15/2018-17	3134GABQ6	0.00	0.00	5,000.00	1.000	0.000	2/15/2018	5,000.00
HSBC 4.875 8/24/2020	4042Q1AE7	0.00	0.00	48,750.00	4.875	0.000	2/26/2018	48,750.00
Lakeside Bank 1.75 5/29/2020	51210SMU8	0.00	0.00	346.21	1.750	0.000	2/28/2018	346.21
Ponce De Leon Federal Bank 1.85 5/28/2021	732333AJ8	0.00	0.00	353.38	1.850	0.000	2/28/2018	353.38
Summit Community Bank 1.65 5/29/2020	86604XLT1	0.00	0.00	315.17	1.650	0.000	2/28/2018	315.17
Synchrony Bank 2.3 2/24/2022	87165ELT2	0.00	0.00	2,863.85	2.300	0.000	2/26/2018	2,863.85
T-Note 1.5 2/28/2019	912828C24	0.00	0.00	7,500.00	1.500	0.000	2/28/2018	7,500.00
Victor Valley College General Obligation Bond 2.35	92603PER9	0.00	0.00	4,740.00	2.350	0.000	2/1/2018	4,740.00
Wells Fargo Bank 1.15 7/22/2019	9497486R3	0.00	0.00	243.20	1.150	0.000	2/20/2018	243.20
Sub Total / Average		**0.00**	**0.00**	**73,875.73**				**73,875.73**
Withdraw								
Union Bank Cash	LGIPUNIONBANK	10,372,527.70	10,372,527.70	0.00	N/A	0.000	2/27/2018	10,372,527.70
Sub Total / Average		**10,372,527.70**	**10,372,527.70**	**0.00**				**10,372,527.70**

MONTHLY OPERATIONS REPORT FOR THE MONTH OF FEBRUARY 2018
TECHNICAL SUPPORT WORK GROUP SUMMARY

Capital Improvement Program

Thickener Control Building Improvements Project – Retention was released to the contractor on February 23rd. Project closeout is complete.

Fremont and Paseo Padre Lift Stations Improvements Project – Project closeout and punchlist work are in progress.

Chemical Tanks and Piping Replacement Project – The contractor continued to work on the Corrective Work and Punch List items.

Sludge Degritter System Project – Degritter performance test results received and review of the results is in progress.

Newark Pump Station Wet Well Improvements – Installation of the new exhaust fan's support on the pump station building roof is in progress.

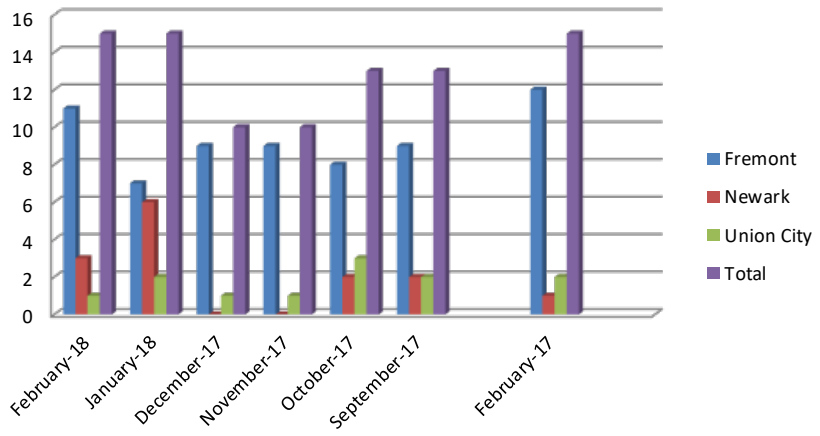
Cast Iron/Piping Lining Phase 6 – Project closeout and punchlist work are in progress.

Primary Digester No. 3 Rehabilitation Project – Contractor continued with concrete work activities around and inside Primary Digester No. 3 and Heating and Mixing Building No. 2.

Customer Service

Trouble Calls dispatched from the Front Desk during business hours:

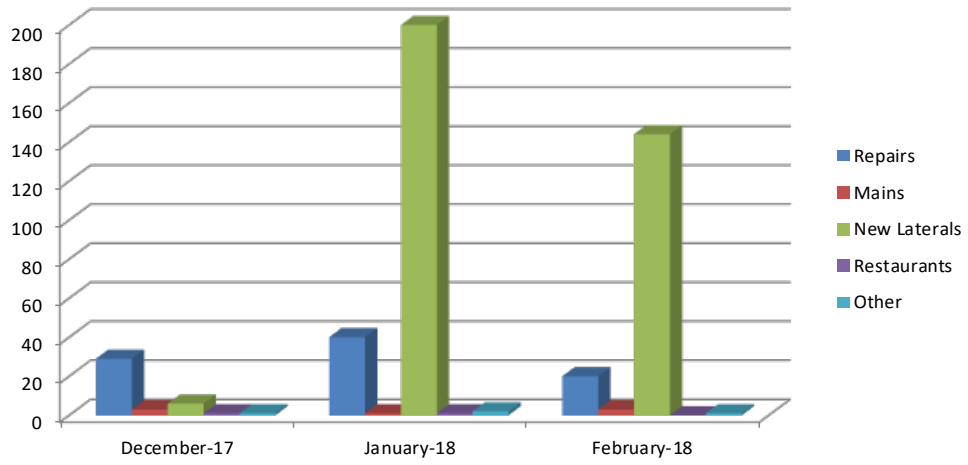
Month	Fremont	Newark	Union City	Total
February-18	11	3	1	**15**
January-18	7	6	2	**15**
December-17	9	0	1	**10**
November-17	9	0	1	**10**
October-17	8	2	3	**13**
September-17	9	2	2	**13**
February-17	*12*	*1*	*2*	*15*
			6-Month Total	**76**



Sewer Permits Issued

Month	Repairs	Mains	New Laterals	Restaurants	Other
February-18	20	3	144	0	1
January-18	40	1	200	1	2
December-17	29	3	6	1	1

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



Communication

- Submitted articles to CSDA and CWEA magazines re: USD Centennial
- Submitted "USD Centennial Stories" article to Tri-City Voice for Feb 6, 2018 issue
- Social Media posts: HR recruitment, new EBDA General Manager
- Scheduled Branding initiative kickoff meeting with vendor
- Participated in Chamber of Commerce Board activities as Director and Past-President

Environmental Compliance

Pollution Prevention/Stormwater Programs

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

During the past month, the EC team conducted 86 Stormwater (Urban Runoff), and 34 FOG (restaurant) inspections. During this reporting period, Inspectors identified 25 Stormwater and 10 FOG enforcement actions. Eight (8) of the Stormwater enforcements resulted in administrative fines ranging from $100 to $500. Two (2) of the Stormwater enforcements resulted in legal action and were referred to the District Attorney.

Urban Runoff Inspections and Enforcements

February 2018	No. of UR Inspections	VW	WL	NOV	AF	LA	Total Enforcements	No. of Illicit Discharge/s	2
	86	6	0	9	8	2	25	% enforcement	29%

FOG Inspections and Enforcements

February 2018	No. of FOG Inspections	VW	WL	NOV	AF	LA	Total Enforcements	% Enforcement	29%
	34	3	6	1	0	0	10		

Enforcements:

VW –Verbal Warning *WL – Warning Letter* *NOV – Notices of Violation*
AF – Administrative Fine *LA – Legal Action* *NOD – Notice of Deficiency*
AO – Administrative Order *C&D – Cease & Desist Order* *SNC – Significant Non-Compliance*

Dental Inspections, School Outreach, and Plant Tours

# of Dental Inspections	# of School Outreach Events including Sewer Science	# of Plant Tours
1	15	2

Industrial Pretreatment

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

Pending Permits

New Industrial/Groundwater Permits	Groundwater/Temporary
None	None

Permits Issued

Company Name	Date Permit Issued
None	

Industrial Closures

Company Name	Date of Closure
None	

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

Report Name	Date Report Completed and Submitted
2017 Annual Pretreatment Report	February 28, 2018

Enforcement Action

IU Name & Nature of Business	Comments	City	Parameters Violated	Discharge concen-tration (mg/L)	USD/Fed Limit Violated (mg/L)	Enforce-ment *(1)*
Caliber Collision (Auto Body Shop)	Unpermitted/Illicit connection to sanitary sewer system	F	N/A	N/A	N/A	WL
Performance Auto Care (Automotive Repair Shop)	Unpermitted connection to sanitary sewer system	F	N/A	N/A	N/A	WL

(1) WL – Warning Letter *NOV – Notices of Violation* *AO – Administrative Order*
C&D – Cease and Desist Order *SNC – Significant Non-Compliance* *EM – Enforcement Meeting*

<u>Other</u> - Training, Special Meetings, Conferences, IAC (topics)

Activity	Date of Event	Attendees
BAPPG Steering and Committee Meeting	2/7/2018	Doug Dattawalker

<u>Engineering/Construction</u>

No. of projects under construction: **<u>7</u>**

	Construction Projects	Capital ($1000)	Scheduled Completion	Completed Scope	Completed Time	Comments for Feb. 2018 Activities
1.	Thickener Control Building Improvements Project – Curtis	$9,990	03/17	100%	100%	Retention was released to the contractor on February 23rd.
2.	Fremont and Paseo Padre LS Improvement – Derek	$2,801	10/16	100%	100%	Project closeout and punchlist work are in progress.
3.	Chemical Tanks and Piping Replacement Project – Thomas	$2,102	10/17	99%	100%	Corrective work and punch list item work are in progress.
4.	Sludge Degritter System Project – Kevin	$1,436	11/17	95%	100%	Review of Degritter performance test results are in progress.

	Construction Projects	Capital ($1000)	Scheduled Completion	Completed Scope	Completed Time	Comments for Feb. 2018 Activities
5.	Newark Pump Station Wet Well Improvements – Thomas	$674	03/18	63%	96%	Installation of the new exhaust fan's support on the pump station building roof is in progress.
6.	Cast Iron/Piping Lining Phase VI – Andrew	$243	11/17	95%	100%	Project closeout and punchlist work are in progress.
7.	Primary Digester No. 3 Rehabilitation – Derek	$1,956	08/18	7%	25%	Contractor continued with concrete work activities.

Design/Study

No. of projects in design/study phase: **15**

	Design/Study Projects	Capital ($1000)	Scheduled Completion	Completed Scope	Completed Time	Comments for Feb. 2018 Activities
1.	Plant Solids System / Capacity Assessment Phase 2 – Curtis	$329	02/18	95%	100%	Study in progress. Final report will be submitted in March.
2.	Local Limits Study – Chris	$77	06/18	75%	71%	Assistance with local limits implementation in progress.
3.	Force Main Corrosion Repairs Phase 2 – Chris	$62	02/18	100%	100%	Project advertised and bid period in progress. Bid opening on March 6th.
4.	Cathodic Protection System Project – Chris	$79	08/18	25%	34%	Cathodic protection survey work in progress.
5.	Newark Basin Masterplan – Chris	$70	08/18	5%	24%	Data request work in progress.
6.	Standby Power Generation System Upgrade Project (Predesign) – Raymond/Kevin	$1,976	12/18	0%	5%	Board authorized design task order at the March 12th meeting. NTP issued for design phase.
7.	Force Main Condition Assessment – Andrew	$121	10/20	28%	30%	Assessment on hold until the next segment of force main can be taken out of service.
8.	Emergency Outfall Improvements Project – Andrew	$226	10/18	15%	40%	50% design submittal received February 26th. Review workshop scheduled for March 14th.
9.	Primary Digester No. 7 Project – Curtis	$1,476	09/18	15%	26%	Final design in progress. 50% design submittal will be due in March.
10.	Plant Master Plan – Raymond	$304	03/18	80%	95%	Conducted Workshop No. 5. Began preparation for Board Workshop on March 19th.
11.	Effluent Management Study – Curtis	$155	03/18	75%	94%	Effluent management options analysis in progress.
12.	Odor Control Alternatives Study - Kevin	$190	7/18	20%	0%	Board authorized task order at the February 26th meeting for source control odor study.
13.	Plant Condition Assessment Study – Kevin	$118	06/18	30%	30%	Reviewed asset scoring protocol and reviewed problem assets with FMC and TPO.

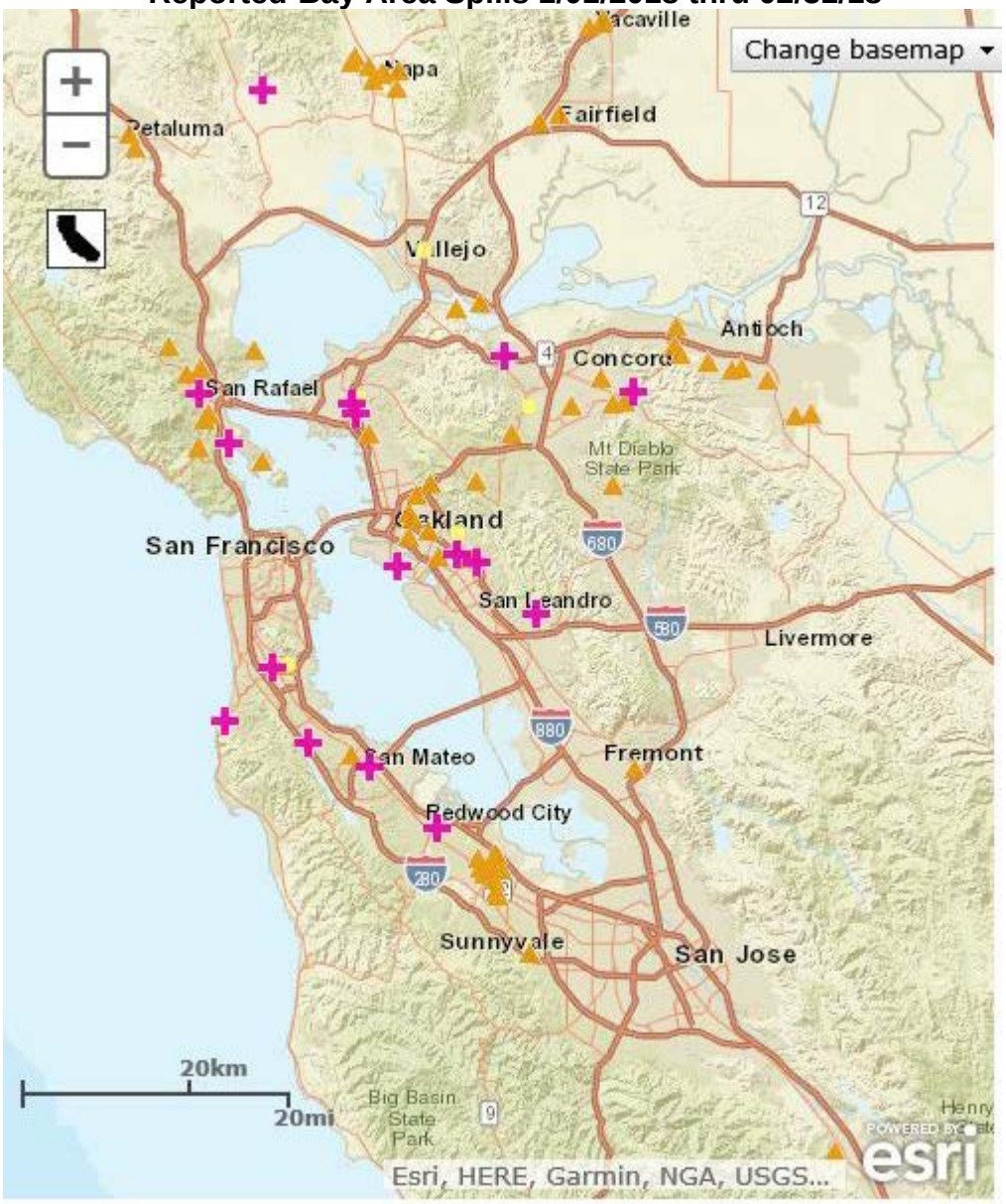
	Design/Study Projects	Capital ($1000)	Scheduled Completion	Completed Scope	Completed Time	Comments for Feb. 2018 Activities
14.	Headworks Screen No. 3 Project – Thomas	$50	01/18	90%	100%	Draft predesign report was submitted. Conducted Workshop No. 2 on February 22nd.
15.	Alvarado Influent Pump Station Improvements Project – Thomas	$54	01/18	50%	100%	Evaluation of the pump type and configuration is in progress.

COLLECTION SERVICES
ACTIVITIES REPORT
February 2018

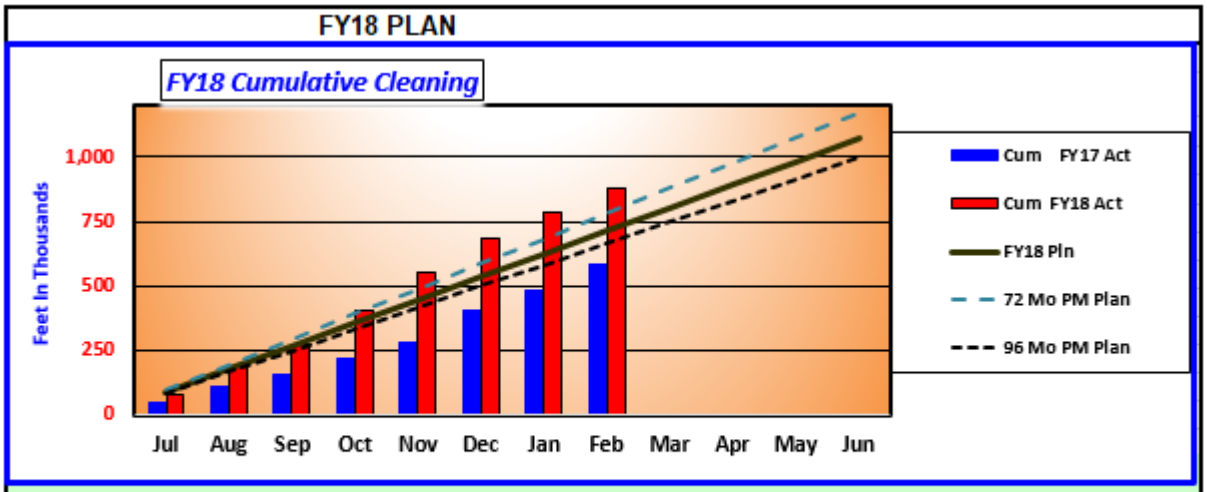
Progress/Accomplishments

- No sills in February
- Completed 17.3 miles of sewer main cleaning.
- Completed 10.2 miles of sewer main inspection.
- Responded to 15 service request calls.
- Completed a total of 9 sewer main repairs.
- Trainings
  - Vac Con (new equipment)
  - Heavy Equipment Awarness

Reported Bay Area Spills 1/01/2018 thru 02/31/18

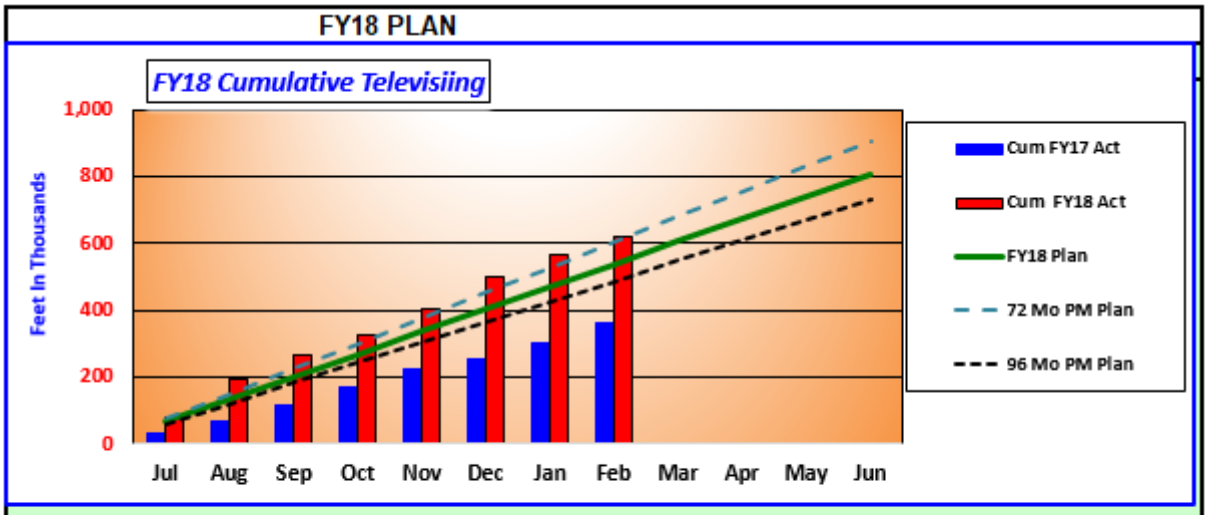


Performance Measures



Cleaning Actual Footages/Costs Jan-18 Clean Cost/Ft = $1.03

Description	FY18 Q1 Footage	FY18 Q2 Footage	Jan-18 Footage	Feb-18 Footage	FY18 Q3 Footage	FY18 YTD Footage	FY18 YE Goal	% Cmpl to Plan	FY17 'Y/E Footage
Totals	274,005	410,676	100,508	91,330	191,838	876,519	1,072,685	81.7%	1,032,049

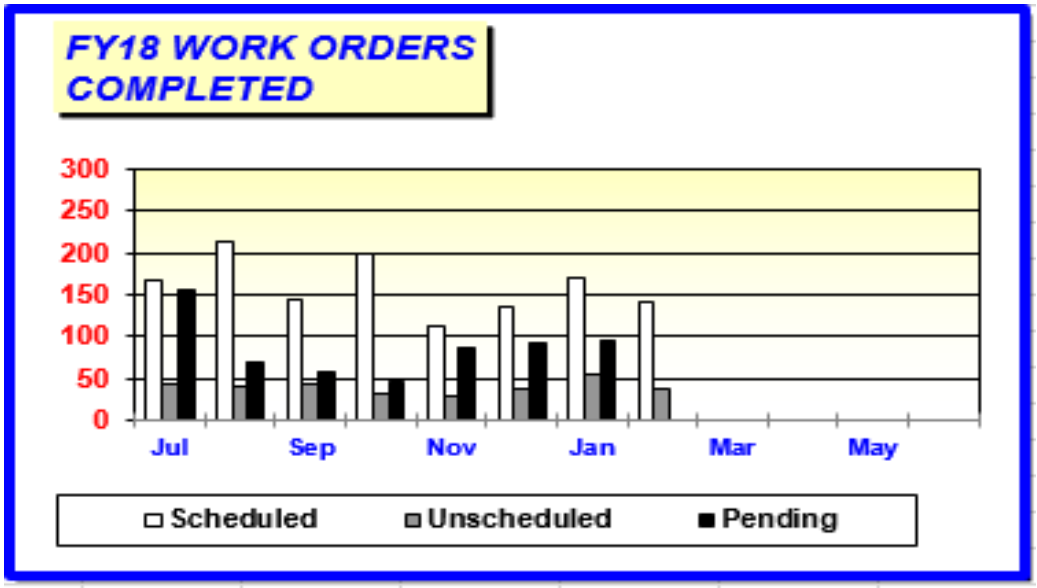


Televising Actual Footages/Costs Jan-18 TV Cost/Ft = $1.44

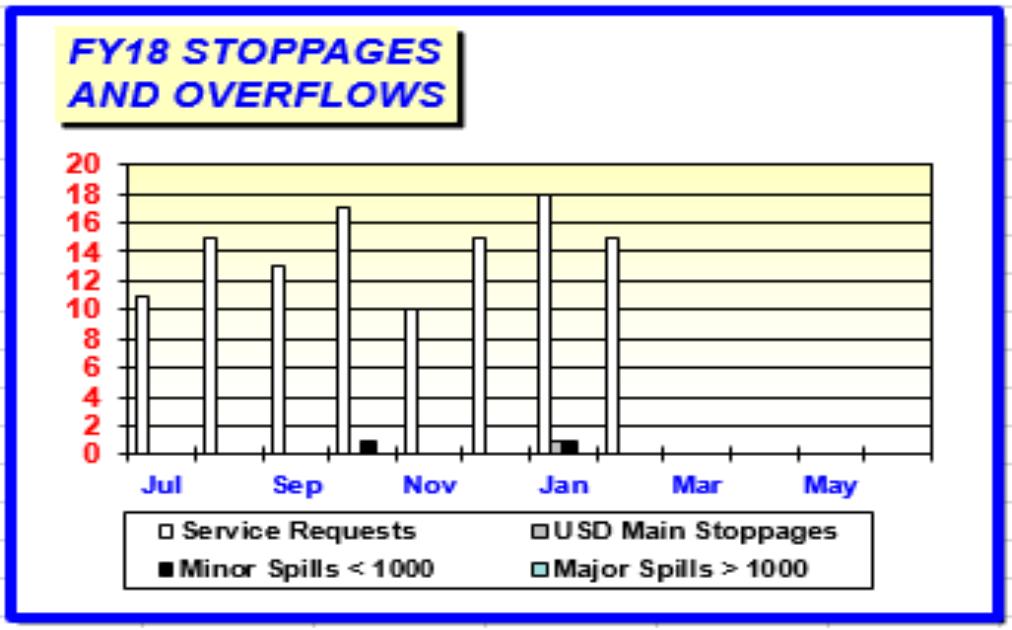
Description	FY18 Q1 Footage	FY18 Q2 Footage	Jan-18 Footage	Feb-18 Footage	FY18 Q3 Footage	FY18 YTD Footage	FY18 YE Goal	% Cmpl to Plan	FY17 'Y/E Footage
Totals	265,843	235,294	68,020	53,633	121,653	622,790	807,595	77.1%	619,030

Other Collection Services Status Data:

Support Team Work Order Status:



C/S Maintenance Status:



Fabrication, Maintenance and Construction
Activities Report
February 2018

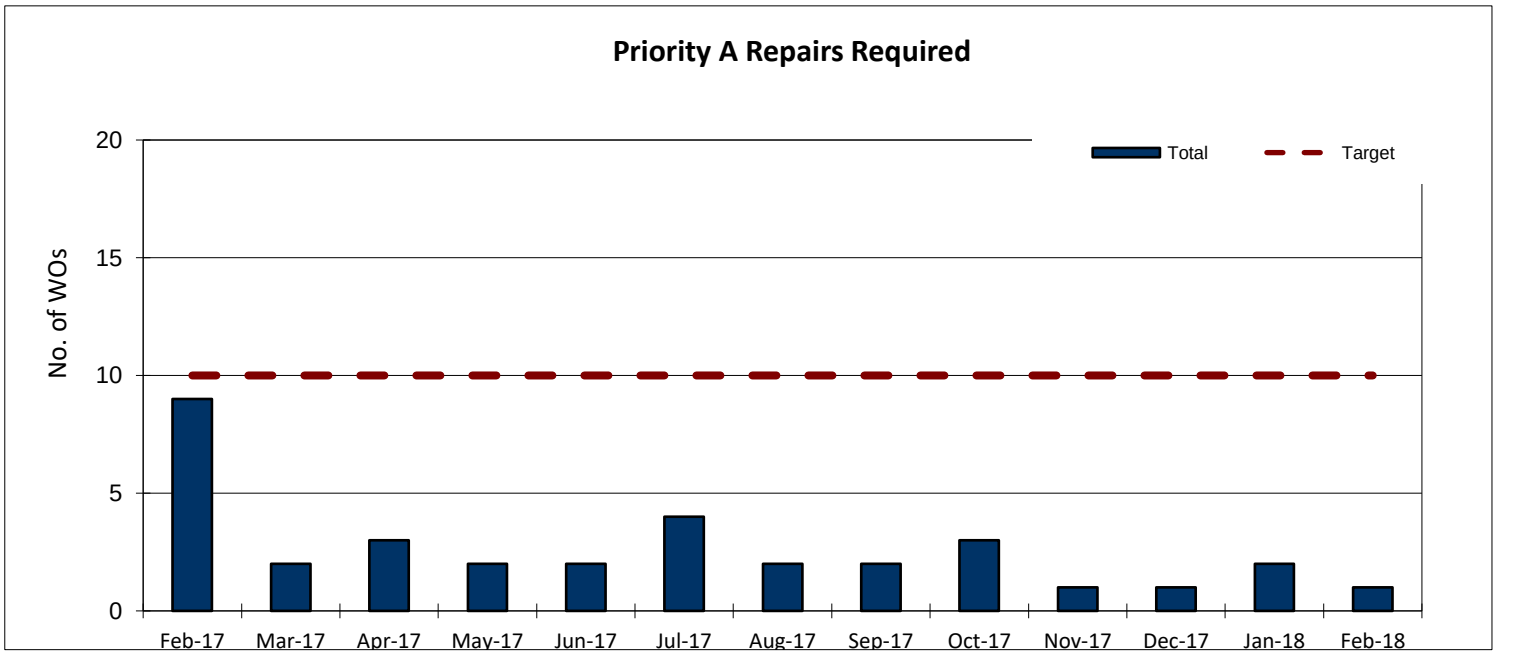
Progress/Accomplishments

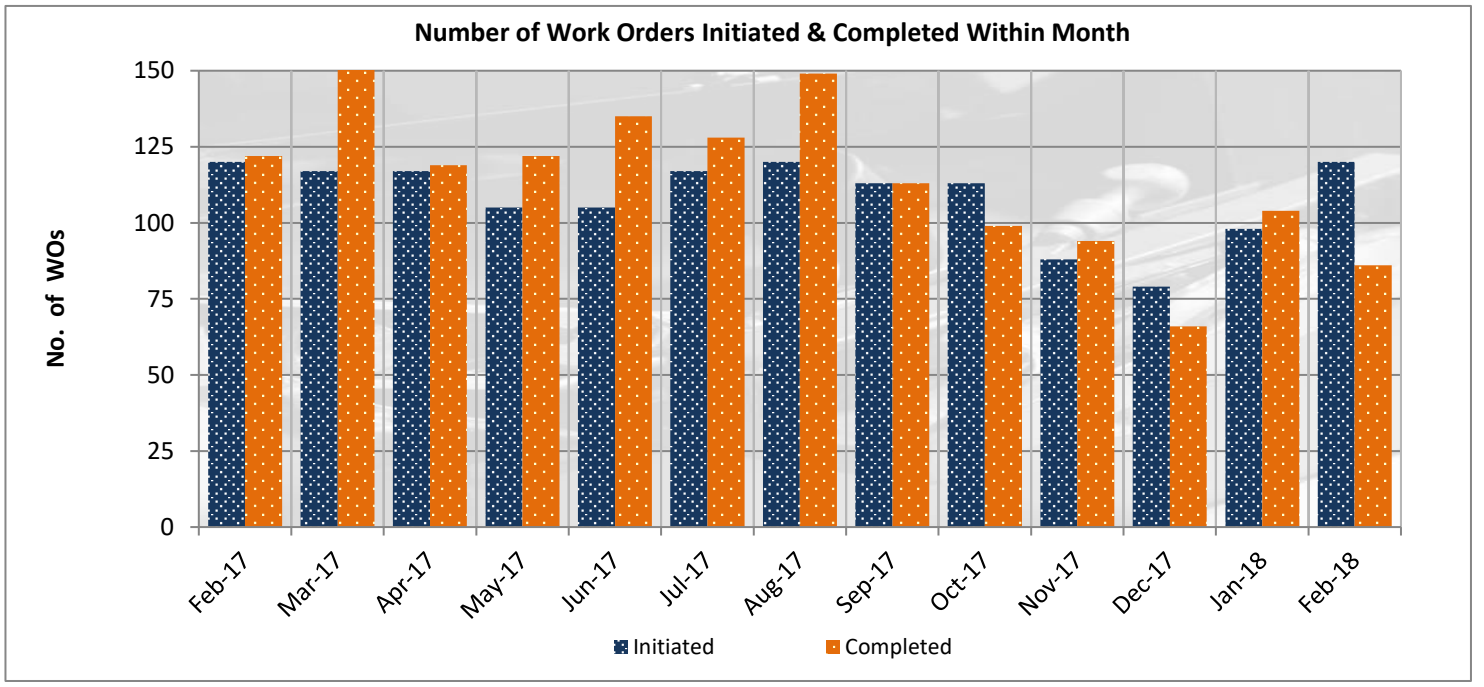
- Completed 81.25% of preventive maintenance activities for the month of February
- Completed 104 corrective maintenance work orders for the month of February
- Primary 5 Annual
- Centrifuge #1 2K service
- Poly piping from GBT building to east side of Aeration Basin 5-7
- Demo of old co-gen equipment in building 69
- Shutdown of NPS for testing of new Rexa valve

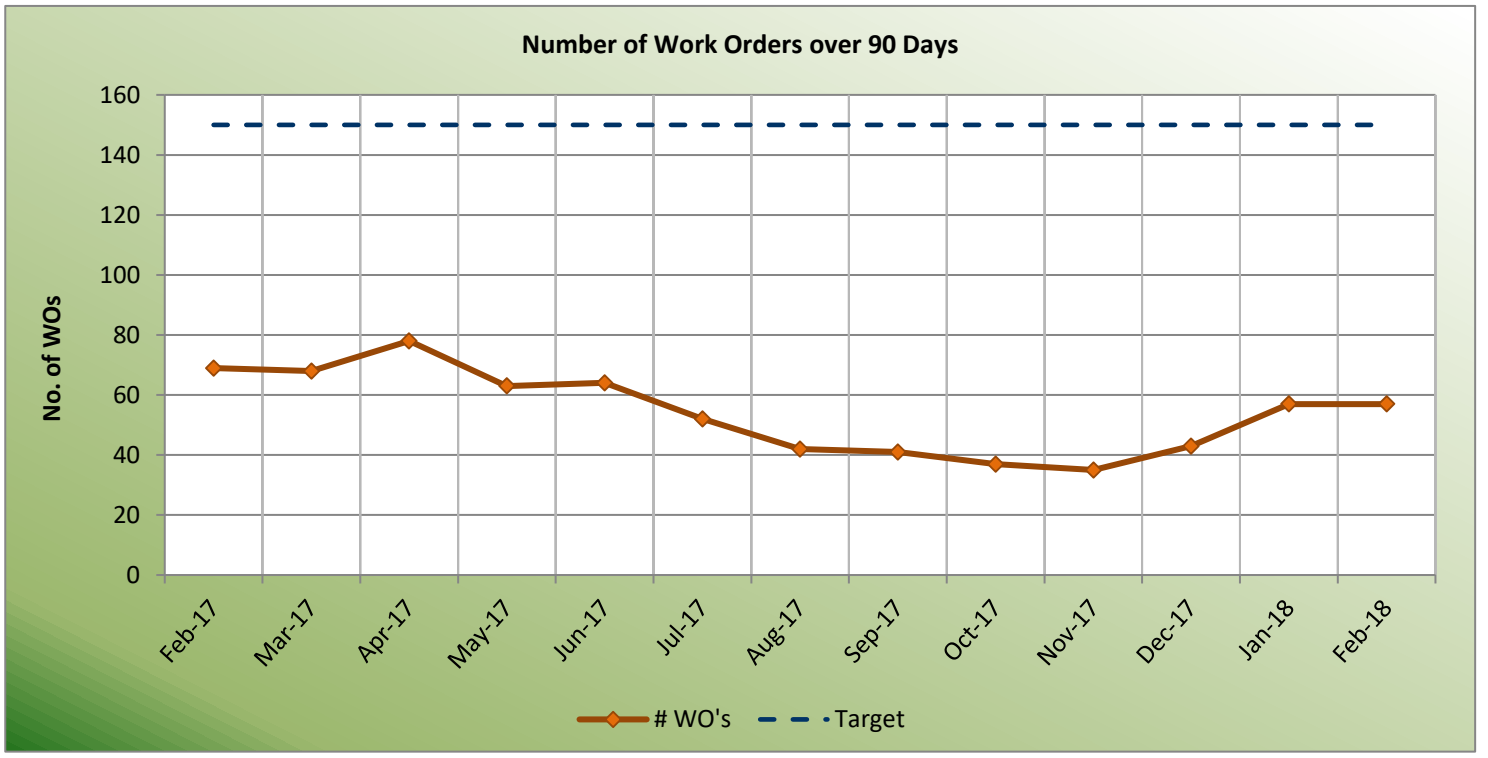
Future Planning

- Install Site Waste Pump #4
- Overhaul and Install IPS Sewage Pump #2
- Replace and Coat Thickener 2 Top Plate
- Begin LED Upgrade at IPS
- East Aeration Basis 1&4 Purge Valve Replacement
-

Performance Measurements




Number of Work Orders Initiated & Completed Within Month
No. of WOs
150
125
100
75
50
25
0
Feb-17
Mar-17
Apr-17
May-17
Jun-17
Jul-17
Aug-17
Sep-17
Oct-17
Nov-17
Dec-17
Jan-18
Feb-18
Initiated
Completed


Number of Work Orders over 90 Days
No. of WOs
160
140
120
100
80
60
40
20
0
Feb-17
Mar-17
Apr-17
May-17
Jun-17
Jul-17
Aug-17
Sep-17
Oct-17
Nov-17
Dec-17
Jan-18
Feb-18
WO's
Target

Treatment & Disposal
Activities Report
February 2018

Progress/Accomplishments

- Maintained 100% compliance with NPDES permits.
- Completed 96% preventive maintenance activities for the month of January.
- Continued initial training of two new Plant Operator III Trainees.
- Conducted chemical testing of treatment plant influent RAS, WAS and digested sludge in support of the Digester No. 7 design project.
- Continued investigating Bio Mag as an interim treatment plant option.
- Exercised the Old Alameda Creek emergency wet weather outfall valve if weather permits.
- Conducted bench scale testing to determine whether Bio Mag is an alternative to constructing secondary clarifiers.
- Met with East Bay Community Energy regarding community aggregation for electrical service.
- Attended CWEA nutrient removal seminar in February.
- Attended NELAC (TNI) Implementation Seminar Session No. 2.

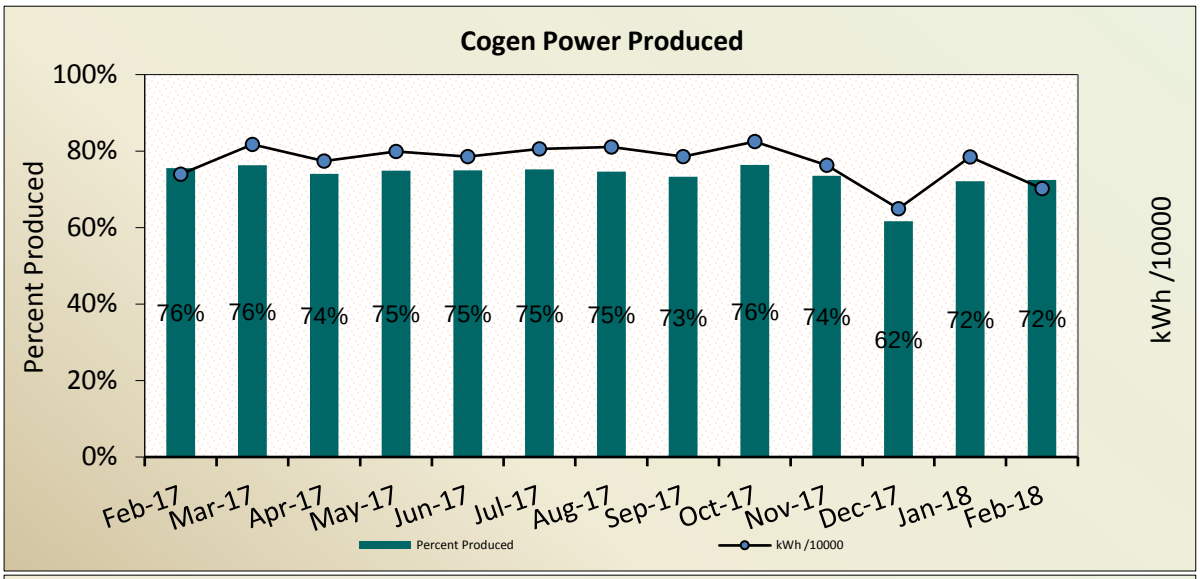
Future Planning

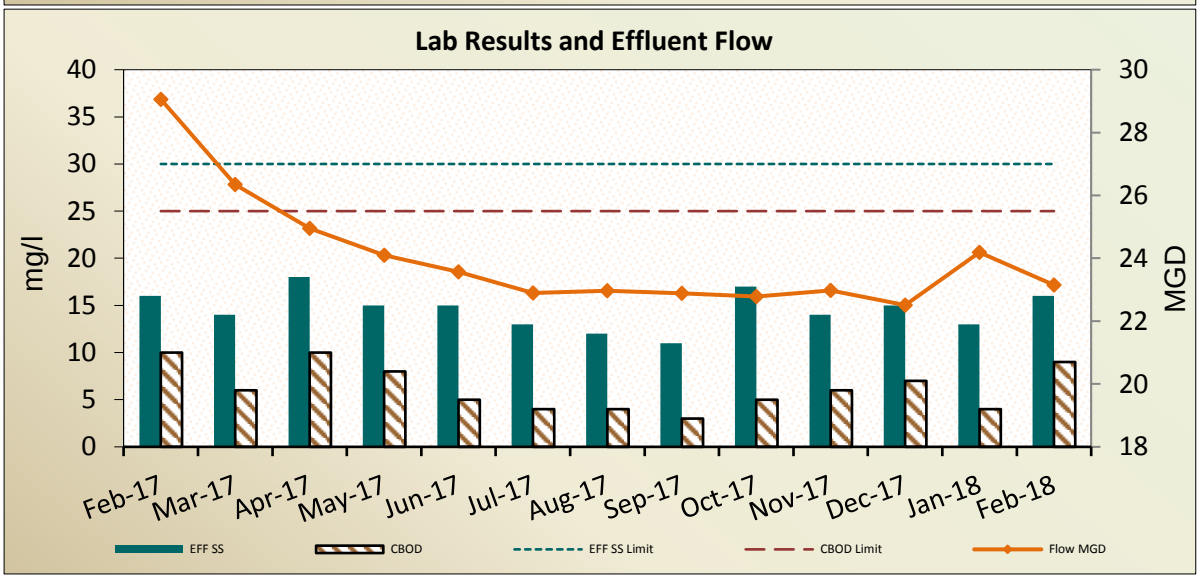
- Conduct operational testing of Degritter No. 3 and associated equipment for the 3rd Degritter Project.
- Translate data into the new Operations Data Management System format.
- Conduct jar testing to determine siting for a ferrous chloride tank as part of the digester seven design project.
- Meet with PG&E and our consultant DMJ to discuss implementation requirements to access a more favorable tariff for purchasing natural gas.
- Review nutrient optimization and upgrade project report for USD as required under the Nutriet Watershed Permit.
- Finalize internal report for Aeration Membrane Phase II Project.
- Conduct the laboratory performance testing needed for continued certification under the environmental laboratory accreditation program.
- Attend a kickoff meeting and begin working on the T&D workgroup ODMS project.

Other

- Cogen system produced 72% of power consumed for the month of February.

Performance Measurements





USD's Final Effluent Monthly Monitoring Results				
Parameter	**EBDA Limit**	**Dec-17**	**Jan-18**	**Feb-18**
Copper, µg/l	78	3.7	4.6	5.0
Mercury, µg/l	0.066	0.00239	0.00233	0.00267
Cyanide, µg/l	42	< 2.5	< 2.5	< 2.5
Ammonia- N, mg/L (Range)	130	34.8 - 43.1	28.7 - 39.4	36.4 - 40.9
Fecal Coliform, MPN/100ml (Range)				
• Monthly Geometric Mean	500	23 - 58	11 - 35	46
• 11-Sample 90th Percentile	1100	67 - 84	59 - 64	59 - 82
Enterococci				
• Monthly Geometric Mean	240	13 - 17	12 - 26	27 - 45
E = Estimated value, concentration outside calibration range. For SIP, E = DNQ, estimated concentration.				

Directors
Manny Fernandez
Tom Handley
Pat Kite
Anjali Lathi
Jennifer Toy

Officers
Paul R. Eldredge
General Manager/
District Engineer

Karen W. Murphy
Attorney

DATE: March 19, 2018

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 Baile, Assistant Engineer

SUBJECT: Agenda Item No. 10 – Meeting of March 26, 2018
Award the Construction Contract for the Force Main Corrosion Repairs Project, Phase 2 to Cratus, Inc.

Recommendation

Staff recommends the Board award the construction contract for the Force Main Corrosion Repairs Project, Phase 2 to Cratus, Inc., in the amount of $931,800 and authorize staff to issue the Notice of Award for the Project. Funds for the project have been budgeted in the Renewal and Replacement Fund.

Background

The District operates and maintains the transport system that consists of three pump stations and three lift stations and approximately 12½ miles of twin force main pipelines. The transport system conveys wastewater from the Irvington and Newark drainage basins to the Alvarado Wastewater Treatment Plant.

Force main facilities include 78 manholes along the pipeline alignment; please see attached Figures 1 and 2. Of the 78 manholes, 46 of them provide access into the force main pipelines via a manway inside the manholes, and each manway is sealed with a blind flange. At the other 32 manholes, appurtenances such as air release valves or blow off valves are connected to the blind flanges.

The air release valves are located at the higher elevations of the force main pipelines to allow air from the pipelines to vent in order to maintain the full hydraulic capacity of the pipelines. The blow off valves are located at the lower elevations of the force main pipelines to allow staff to drain the wastewater from the pipelines when there is a need to remove as much wastewater as possible, typically for a long-term outage for maintenance or construction activities. This doesn't happen very often but if there is a need to do so, staff will need to set up pumps and hoses to connect the blow off valves to the closest sanitary sewer manhole.

These facilities were installed almost 40 years ago, as part of the original force main construction. Over time, the presence of groundwater, moisture, and the buildup of hydrogen sulfide gas in these force main manholes have caused many of the manways, blind flanges, and appurtenances to become corroded. This corrosion is of primary concern, as failure of any single element could precipitate a leak from the force main pipeline.

In 2011, the District conducted a condition assessment of the force main equipment located in the Irvington Valve Box, Newark Influent and Effluent Valve Boxes, and Alvarado Influent Valve Box. These valve boxes are part of the transport system that delivers wastewater to the Plant and primarily house large diameter cement mortar coated steel piping, knife gate valves, and flanged coupling adaptors (FCAs). The assessment found the existing FCAs were experiencing corrosion and recommended them for replacement. The assessment also recommened refurbishment or replacement of the valves. In 2012, the District completed two phases of the Force Main Improvements Project to replace corroded FCAs, and to rehabilitate and replace knife gate valves on the force main pipelines located within the valves boxes.

In 2004, the District's Force Main Study included a condition assessment of the interior and exterior of the buried force main piping that was constructed of reinforced concrete pipe. The study found the piping to be in good condition and recommended an internal inspection every 10 years and an external inspection every 20 years. In 2016, the District hired Woodard & Curran (formerly RMC Water and Environment) to conduct the internal inspection of the force main piping as it is taken out of service for the District's Force Main Corrosion Repairs Project and the developer's ongoing Force Main Relocation Project.

Force Main Corrosion Repairs Projects

During the summer of 2015, staff performed visual inspection inside all 78 force main manholes, and conducted non-destructive testing on elements with the worst corrosion conditions. In the fall of 2015 through the spring of 2016, staff hired Carollo Engineers to review and evaluate the data collected during the inspections and testing; as a result they recommended that any and all corroded elements within the 78 manholes be rehabilitated or replaced. Please see Figures 3 through 7. Staff hired West Yost Associates to complete preliminary design services in the fall of 2016, and West Yost completed this work while outlining a plan to accomplish the repairs in several phases.

West Yost completed final design services for the Phase 1 Project in the winter of 2016 - 2017. This project addressed corrosion repairs for manholes on the eastern force main between Newark Pump Station and the Alvarado Wastewater Treatment Plant. On June 12, 2017, the Board awarded the Phase 1 construction contract to Cratus, Inc., and staff issued the Notice to Proceed on June 26, 2017. The 110-day project was substantially completed on October 6, 2017, at a final cost of $839,167.66.

West Yost completed final design services for the Phase 2 Project in the winter of 2017 - 2018. This project will address corrosion repairs for manholes on the western force main between Newark Pump Station and the Alvarado Wastewater Treatment Plant.

Phase 2 Bid Results

The Phase 2 project was advertised for bids on February 6, 2018, and bids were opened on March 6, 2018. Staff received two (2) bids. The results are as follows:

Contractor	Total Base Bid Amount
Cratus, Inc.	$931,800
Mitchell Engineering	$1,242,733

Cratus, Inc. is the lowest responsive and responsible bidder with a total base bid amount of $931,800, approximately 18.3% below the Engineer's Estimate of $1,140,000. No bid protests were received by the District. Cratus, Inc. has confirmed that they will construct the project as bid.

The bid also included prices for Bid Alternates A through D that were not included in the Total Base Bid Amount and did not factor in the determination of the lowest responsive and responsible bidder. The four bid alternates account for different repair details for the blow off and combo manholes as originally proposed in Bid Items 7 through 10 outlined in the attached bid tabulation sheet. Depending on the extent of the corrosion damage discovered during construction, staff can direct the contractor to change the repair detail per the bid alternate prices or to negotiate a different cost at staff's discretion.

Contractor's Background

Cratus, Inc. is a General Engineering Class A licensed contractor who has constructed numerous similar repair projects, including the San Joaquin Pipeline No. 1 Replacement for the San Francisco Public Utilities Commission, the 2014 Water System Improvement Project for the City of Pittsburg, the Ralston Ave./Pepper Ave. Hydraulic Sewer Capacity Improvements for the Town of Hillsborough, the East-West Transmission Pipeline Segment 5C for the City of Fairfield, and the Lincoln Ave. Sewer Improvement Project for San Rafael Sanitation District. Staff has checked references and received satisfactory responses. Cratus, Inc. also successfully constructed the District's Miscellaneous Spot Repairs Project Phase VI in 2015, and the Force Main Corrosion Repairs Project Phase 1 in 2017.

Notice to Proceed for construction of the project is anticipated to be issued in mid-April 2018, and construction completion is expected by the end of August 2018. Construction management of the project will be provided by staff and inspection services may be provided by a consultant.

Staff recommends the Board award the construction contract for the Force Main Corrosion Repairs Project, Phase 2 to Cratus, Inc. in the amount of $931,800 and authorize staff to issue the Notice of Award for the Project.

PRE/SEG/RC/AB:dl

Attachments: Figures 1-2 – Location Maps
Figures 3-7 – Photos
Bid Tabulation Sheet
Agreement

Last Saved: 12/8/2016 3:08:21 PM N:\Clients\256 USD\14-16-48 FM Corrosion Repairs\GIS\MXD\Figure1_ConditionRatings_SouthEast.mxd - mott

Legend

- Access Manhole
- Access/Blow Off Combination
- ARV
- Blow Off
- Rating 1
- Rating 2
- Rating 3
- Not Inspected
- LS Lift Station
- PS Pump Station
- Twin 33" Force Mains
- Twin 39" Force Mains

Notes:
1. Rating 1 requires immediate attention.
2. Rating 2 requires repair in 2-3 years.
3. Rating 3 requires repair after 3 years or place on PM schedule.

N

0 1,100 2,200
Scale in Feet

Figure 1

Irvington Pump Station to Newark Pump Station Manhole Condition Ratings

Union Sanitary District
Force Main Manhole Corrosion Repairs

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Notes:
1. Rating 1 requires immediate attention.
2. Rating 2 requires repair in 2-3 years.
3. Rating 3 requires repair after 3 years or place on PM schedule.

Legend

- Access Manhole
- Access/Blow Off Combination
- ARV
- Blow Off
- Rating 1
- Rating 2
- Rating 3
- Not Inspected
- LS Lift Station
- PS Pump Station
- WWTP Alvarado Treatment Plant
- Twin 33" Force Mains
- Twin 39" Force Mains

N

0 1,000 2,000
Scale in Feet

Figure 2

Newark Pump Station to Alvarado Treatment Plant Manhole Condition Ratings

Union Sanitary District
Force Main Manhole Corrosion Repairs

FIGURES 3-7 (PHOTOS)

Figure 3: Manway

Figure 4: Blind Flange

FIGURES 3-7 (PHOTOS)

Figure 5: Valve

Figure 6: ARV Piping

FIGURES 3-7 (PHOTOS)

Figure 7: Blowoff Tube

FORCE MAIN CORROSION REPAIRS PROJECT, PHASE 2 (PROJECT NO. 800-506)
Bid Tabulation Sheet - March 6, 2018

		Bid Schedule		EE		CRATUS INC.			MITCHELL ENGINEERING			Statistics of Unit Prices		
Item	**Description**	Quantity	UOM	Unit Price	Total	Unit Price	Total	Check Total	Unit Price	Total	Check Total	High	Low	Average
1	Mobilization/Demobilization	1	LS	$ 54,000.00	$ 54,000.00	**$ 35,000.00**	$ 35,000.00	$ 35,000.00	$ 55,500.00	$ 55,500.00	$ 55,500.00	$ 55,500.00	$ 35,000.00	$ 45,250.00
2	Cost for providing all shoring and bracing on all Bid Items above including but not limited to that as required by Sections 6700-6708 of the Labor Code	1	LS	$ 500.00	$ 500.00	$ 1,000.00	$ 1,000.00	$ 1,000.00	**$ 500.00**	$ 500.00	$ 500.00	$ 1,000.00	$ 500.00	$ 750.00
3	Repair Option A1 for Access Manways	6	EA	$ 32,000.00	$ 192,000.00	$ 35,000.00	$ 210,000.00	$ 210,000.00	**$ 31,381.00**	$ 188,286.00	$ 188,286.00	$ 35,000.00	$ 31,381.00	$ 33,190.50
4	Repair Option A2 for Access Manways	1	EA	$ 42,000.00	$ 42,000.00	$ 40,000.00	$ 40,000.00	$ 40,000.00	**$ 36,692.00**	$ 36,692.00	$ 36,692.00	$ 40,000.00	$ 36,692.00	$ 38,346.00
5	Repair Option B1 for ARV Manholes	4	EA	$ 42,000.00	$ 168,000.00	$ 41,000.00	$ 164,000.00	$ 164,000.00	**$ 37,944.00**	$ 151,776.00	$ 151,776.00	$ 41,000.00	$ 37,944.00	$ 39,472.00
6	Repair Option B2 for ARV Manholes	2	EA	$ 50,000.00	$ 100,000.00	$ 45,000.00	$ 90,000.00	$ 90,000.00	**$ 44,316.00**	$ 88,632.00	$ 88,632.00	$ 45,000.00	$ 44,316.00	$ 44,658.00
7	Repair Option C2 for Blow Off Manholes	2	EA	$ 32,000.00	$ 64,000.00	**$ 25,000.00**	$ 50,000.00	$ 50,000.00	$ 38,386.00	$ 76,772.00	$ 76,772.00	$ 38,386.00	$ 25,000.00	$ 31,693.00
8	Repair Option D2 for Blow Off Manholes	2	EA	$ 32,000.00	$ 64,000.00	**$ 25,000.00**	$ 50,000.00	$ 50,000.00	$ 38,505.00	$ 77,010.00	$ 77,010.00	$ 38,505.00	$ 25,000.00	$ 31,752.50
9	Repair Option E1 for Access Manways in Combo Manholes	2	EA	$ 32,000.00	$ 64,000.00	$ 40,000.00	$ 80,000.00	$ 80,000.00	**$ 30,417.00**	$ 60,834.00	$ 60,834.00	$ 40,000.00	$ 30,417.00	$ 35,208.50
10	Repair Option E2 for Blow Offs in Combo Manholes	2	EA	$ 32,000.00	$ 64,000.00	**$ 25,000.00**	$ 50,000.00	$ 50,000.00	$ 42,335.00	$ 84,670.00	$ 84,670.00	$ 42,335.00	$ 25,000.00	$ 33,667.50
11	Implement Biological Control Measures/BMPs and Site Restoration	1	LS	$ 22,000.00	$ 22,000.00	**$ 20,000.00**	$ 20,000.00	$ 20,000.00	$ 75,000.00	$ 75,000.00	$ 75,000.00	$ 75,000.00	$ 20,000.00	$ 47,500.00
12	Groundwater Dewatering for Manholes	50,000	GAL	$ 0.10	$ 5,000.00	**$ 0.03**	$ 1,500.00	$ 1,500.00	$ 0.20	$ 10,000.00	$ 10,000.00	$ 0.20	$ 0.03	$ 0.12
13	Force Main Dewatering	945,000	GAL	$ 0.10	$ 94,500.00	**$ 0.04**	$ 37,800.00	$ 37,800.00	$ 0.10	$ 94,500.00	$ 94,500.00	$ 0.10	$ 0.04	$ 0.07
14	Coyote Hills ARV Access Improvements	1	LS	$ 8,000.00	$ 8,000.00	**$ 10,000.00**	$ 10,000.00	$ 10,000.00	$ 25,000.00	$ 25,000.00	$ 25,000.00	$ 25,000.00	$ 10,000.00	$ 17,500.00
15	Highway 84 ARV Access Improvements	1	LS	$ 15,000.00	$ 15,000.00	**$ 22,500.00**	$ 22,500.00	$ 22,500.00	$ 85,000.00	$ 85,000.00	$ 85,000.00	$ 85,000.00	$ 22,500.00	$ 53,750.00
16	Boyce Rd. Lift Station AM Access Improvements	1	LS	$ 50,000.00	$ 50,000.00	**$ 27,500.00**	$ 27,500.00	$ 27,500.00	$ 75,000.00	$ 75,000.00	$ 75,000.00	$ 75,000.00	$ 27,500.00	$ 51,250.00
17	Place Class II AB As Directed by Construction Manager	70	TON	$ 100.00	$ 7,000.00	**$ 50.00**	$ 3,500.00	$ 3,500.00	$ 200.00	$ 14,000.00	$ 14,000.00	$ 200.00	$ 50.00	$ 125.00
18	Bollard Improvements and Other Miscellaneous Improvements	17	SITE	$ 3,500.00	$ 59,500.00	$ 2,000.00	$ 34,000.00	$ 34,000.00	**$ 1,375.00**	$ 23,375.00	$ 23,375.00	$ 2,000.00	$ 1,375.00	$ 1,687.50
19	Old Jarvis ARV Manhole Ladder Improvements	1	LS	$ 12,000.00	$ 12,000.00	**$ 5,000.00**	$ 5,000.00	$ 5,000.00	$ 20,186.00	$ 20,186.00	$ 20,186.00	$ 20,186.00	$ 5,000.00	$ 12,593.00
	5% Contingency				$ 54,275.00			$ -			$ -			
	Base Bid Adjustment - Add / Deduct							$ -			$ -			
	Excel Totals:				$ 1,139,775.00		$ 931,800.00	$ 931,800.00		$ 1,242,733.00	$ 1,242,733.00			
	Submitted Total:			(EE Rounded Up):	$ 1,140,000.00		$ 931,800.00	$ 931,800.00		$ 1,242,733.00	$ 1,242,733.00			

	Bid Alternates	**Quantity**				**Unit Price**	**Total**		**Unit Price**	**Total**
A	Repair Option C1 for Blow Off Manholes	2				$ 24,000.00	$ 48,000.00		$ 37,288.00	$ 74,576.00
B	Repair Option D1 for Blow Off Manholes	2				$ 24,000.00	$ 48,000.00		$ 37,288.00	$ 74,576.00
C	Repair Option E1 for Blow Offs in Combo Manholes	2				$ 24,000.00	$ 48,000.00		$ 35,308.00	$ 70,616.00
D	Repair Option E2 for Access Manways in Combo Manholes	2				$ 45,000.00	$ 90,000.00		$ 36,132.00	$ 72,264.00

BLUE = LOW UNIT PRICE

AGREEMENT FOR THE CONSTRUCTION OF

FORCE MAIN CORROSION REPAIRS PROJECT PHASE 2

PROJECT NO. 800-506

THIS AGREEMENT, made and concluded, in duplicate, this ____ day of March 2018, between the UNION SANITARY DISTRICT ("District"), Union City, California, and **Cratus, Inc.**, ("Contractor"), License No. 987888.

W I T N E S S E T H :

1. That for and in consideration of the payments and agreements hereinafter mentioned, to be made and performed by the District, and under the conditions expressed in the two bonds, bearing even date with these presents, and hereunto annexed, the Contractor agrees with the District, at his/her own proper cost and expense, to do all the work and furnish all the materials necessary to construct and complete in good workmanlike and substantial manner the project entitled: **Force Main Corrosion Repairs Project Phase 2 (Project No. 800-506)** in strict conformity with the plans and specifications prepared therefor, which said plans and specifications are hereby specially referred to and by said reference made a part hereof.

2. Now, therefore, in consideration of the mutual covenants and agreements of the parties herein contained and to be performed, the Contractor hereby agrees to complete the work in accordance with the terms and conditions stipulated in the Contract Documents for the sum of **Nine Hundred Thirty One Thousand Eight Hundred Dollars and Zero Cents** (**$931,800.00**) (the "Contract Price") computed in accordance with Contractor's accepted proposal dated March 6, 2018, which accepted proposal is incorporated herein by reference thereto as if herein fully set forth. Compensation shall be based upon the lump sum bid items plus the unit prices stated in the Bid Schedule times the actual quantities or units of work and materials performed or furnished. The further terms, conditions, and covenants of this Agreement are set forth in the Contract Documents, each of which is by this reference made a part hereof. Payments are to be made to the Contractor in accordance with the provisions of the Contract Documents and the Technical Specifications in legally executed and regularly issued warrants of the District, drawn on the appropriate fund or funds as required by law and order of the District thereof.

3. The District hereby promises and agrees with the said Contractor to employ, and does hereby employ, the said Contractor to provide the materials and to do the work according to the terms and conditions herein contained and referred to, for the Contract Price, and hereby contracts to pay the same at the time, in the manner and upon the conditions set forth in the Contract Documents; and the said parties for themselves, their heirs, executors, administrators, successors and assigns, do hereby agree to the full performance of the covenants herein contained.

4. The Contractor and any subcontractor performing or contracting any work shall comply with all applicable provisions of the California Labor Code for all workers, laborers and mechanics of all crafts, classifications or types, including, but necessarily limited to the following:

(a) The Contractor shall comply with all applicable provisions of Section 1810 to 1815, inclusive, of the California Labor Code relating to working hours. The Contractor shall, as a penalty to the District, forfeit the sum of twenty-five dollars ($25) for each worker employed in the execution of the Contract by the Contractor or by any subcontractor for each calendar day during which such worker is required or permitted to work more than eight (8) hours in any one calendar day and forty (40) hours in any one calendar week, unless such worker receives compensation for all hours worked in excess of eight (8) hours at not less than 1-1/2 times the basic rate of pay.

(b) Pursuant to the provision of California Labor Code, Sections 1770 et. seq., the Contractor and any subcontractor under him shall pay not less than the prevailing rate of per diem wages as determined by the Director of the California Department of Industrial Relations. Pursuant to the provisions of California Labor Code Section 1773.2, the Contractor is hereby advised that copies of the prevailing rate of per diem wages and a general prevailing rate for holidays, Saturdays and Sundays and overtime work in the locality in which the work is to be performed for each craft, classification, or type of worker required to execute the Contract, are on file in the office of the District, which copies shall be made available to any interested party on request. The Contractor shall post a copy of said prevailing rate of per diem wages at each job site.

(c) As required by Section 1773.1 of the California Labor Code, the Contractor shall pay travel and subsistence payments to each worker needed to execute the work, as such travel and subsistence payments are defined in the applicable collective bargaining agreements filed in accordance with this Section.

(d) To establish such travel and subsistence payments, the representative of any craft, classification, or type of workman needed to execute the contracts shall file with the Department of Industrial Relations fully executed copies of collective bargaining agreements for the particular craft, classification or type of work involved. Such agreements shall be filed within 10 days after their execution and thereafter shall establish such travel and subsistence payments whenever filed 30 days prior to the call for bids.

(e) The Contractor shall comply with the provisions of Section 1775 of the California Labor Code and shall, as a penalty to the District, forfeit not more than two hundred dollars ($200) for each calendar day, or portion thereof, for each worker paid less than the prevailing rate of per diem wages for each craft, classification, or type of worker needed to execute the contract. The Contractor shall pay each worker an amount equal to the difference between the prevailing wage rates and the amount paid worker for each calendar day or portion thereof for which a worker was paid less than the prevailing wage rate.

(f) As required under the provisions of Section 1776 of the California Labor Code, Contractor and each subcontractor shall keep an accurate payroll record, showing the name, address, social security number, work classification, and straight time and overtime hours worked each day and week, and the actual per diem wages paid to each journeyman, apprentice, worker, or other employee employed by him or her in connection with the public work. Said payroll shall be certified and shall be available for inspection at all reasonable hours at the principal office of the Contractor on the following basis:

(1) A certified copy of an employee's payroll record shall be made available for inspection or furnished to the employee or his or her authorized representative on request.

(2) A certified copy of all payroll records enumerated in Paragraph 4(f), herein, shall be made available for inspection or furnished upon request to the District, the Division of Labor Standards Enforcement, and the Division of Apprenticeship Standards of the Department of Industrial Relations.

(3) A certified copy of all payroll records enumerated in Paragraph 4(f), herein, shall be made available upon request by the public for inspection or for copies thereof; provided, however, that a request by the public shall be made through the District, the Division of Apprenticeship Standards, or the Division of Labor Standards Enforcement. If the requested payroll records have not been provided pursuant to subparagraph 4(e) herein, the requesting party shall, prior to being provided the records, reimburse the costs of preparation by the Contractor, subcontractors, and the entity through which the request was made. The public shall not be given access to the records at the principal offices of the Contractor.

The certified payroll records shall be on forms provided by the Division of Labor Standards Enforcement or shall contain the same information as the forms provided by the division.

Certified payroll records shall be submitted electronically as required under California Labor Code Section 1776 to the Labor Commissioner pursuant to California Code of Regulations Chapter 8, Section 16404.

Each Contractor shall file a certified copy of the records, enumerated in Paragraph 4(f) with the entity that requested the records within 10 days after receipt of a written request. Any copy of records made available for inspection as copies and furnished upon request to the public or any public agency by the District, the Division of Apprenticeship Standards, or the Division of Labor Standards Enforcement shall be marked or obliterated in such a manner as to prevent disclosure of an individual's name, address, and social security number. The name and address of the Contractor awarded the contract or performing the contract shall not be marked or obliterated. The Contractor shall inform the District of the location of the records enumerated under Paragraph 4(f) including the street address, city and county, and shall, within 5 working days, provide a notice of change of location and address. The Contractor shall have 10 days in which to comply subsequent to receipt of written notice specifying in what respects the Contractor must comply with this Paragraph 4(f). In the event that the Contractor fails to comply within the 10-day period, he or she shall, as a penalty to the state or the District, forfeit one hundred dollars ($100) for each calendar day, or portion thereof, for each worker, until strict compliance is effectuated. Upon the request of the Division of Apprenticeship Standards or the Division of Labor Standards Enforcement, these penalties shall be withheld from progress payments then due. Responsibility for compliance with Paragraph 4(f) lies with the Contractor.

(g) The Contractor and any subcontractors shall, when they employ any person in any apprenticeable craft or trade, apply to the joint apprenticeship committee administering the apprenticeship standards of the craft or trade in the area of the construction site for a certificate approving the Contractor or subcontractor under the apprenticeship standards for the employment and training of apprentices in the area or industry affected; and shall comply with all other requirements of Section 1777.5 of the California Labor Code. The responsibility of compliance with California Labor Code Section 1777.5 during the performance of this contract rests with the Contractor. Pursuant to California Labor Code Section 1777.7, in the event the Contractor willfully fails to comply with the provisions of California Labor Code Section 1777.5, the Contractor shall be denied the right to bid on any public works contract for up to three (3) years from the date noncompliance is determined and be assessed civil penalties.

(h) In accordance with the provisions of Article 5, Chapter 1, Part 7, Division 2 (commencing with Section 1860), and Chapter 4, Part 1, Division 4 (commencing with Section 3700) of the California Labor Code, the Contractor is required to secure the payment of compensation to its employees and for that purpose obtain and keep in effect adequate Workers' Compensation Insurance. If the Contractor, in the sole discretion of the District satisfies the District of the responsibility and capacity under the applicable Workers' Compensation Laws, if any, to act as self-insurer, the Contractor may so act, and in such case, the insurance required by this paragraph need not be provided.

The Contractor is advised of the provisions of Section 3700 of the California Labor Code, which requires every employer to be insured against liability for Workers' Compensation or to undertake self-insurance in accordance with the provisions of that Code and shall comply with such provisions and have Employer's Liability limits of $1,000,000 per accident before commencing the performance of the work of this Contract.

The Notice to Proceed with the Work under this Contract will not be issued, and the Contractor shall not commence work, until the Contractor submits written evidence that it has obtained full Workers' Compensation Insurance coverage for all persons whom it employs or may employ in carrying out the work under this Contract. This insurance shall be in accordance with the requirements of the most current and applicable state Workers' Compensation Insurance Laws. In accordance with the provisions of Section 1861 of the California Labor Code, the Contractor in signing this agreement certifies to the District as true the following statement: "I am aware of the provisions of Section 3700 of the Labor Code which requires every employer to be insured against liability for Workers' Compensation or to undertake self-insurance in accordance with the provisions of that Code, and I will comply with such provisions before commencing the performance of the work of this contract."

A subcontractor is not allowed to commence work on the project until verification of Workers' Compensation Insurance coverage has been obtained and verified by the Contractor and submitted to the Construction Manager for the District's review and records.

(i) In accordance with the provisions of Section 1727 of the California Labor Code, the District, before making payment to the Contractor of money due under a contract for public works, shall withhold and retain therefrom all wages and penalties which

have been forfeited pursuant to any stipulation in the contract, and the terms of Chapter 1, Part 7, Division 2 of the California Labor Code (commencing with Section 1720). But no sum shall be withheld, retained or forfeited, except from the final payment, without a full investigation by either the Division of Labor Standards Enforcement or by the District.

5. It is further expressly agreed by and between the parties hereto that should there be any conflict between the terms of this Agreement the instrument and the bid proposal of said Contractor, then this Agreement instrument shall control, and nothing herein contained shall be considered as an acceptance of the said terms of said proposal conflicting herewith.

6. The Contractor agrees to provide and maintain insurance coverage, and to indemnify and save harmless the parties named and in the manner set forth in Section 00800-2.0, **LIABILITY AND INSURANCE**, of the Supplementary General Conditions of the Specifications.

The duty of Contractor to indemnify and save harmless, as set forth herein, shall include a duty to defend as set forth in Section 2778 of the California Civil Code; provided, however, that nothing herein shall be construed to require Contractor to indemnify against any responsibility or liability in contravention of Section 2782 of the California Civil Code.

7. The Contractor shall diligently prosecute the work so that it shall be substantially completed within the time specified in Section 00800-1.1, **Time Allowed for Completion**.

8. Except as otherwise may be provided herein, Contractor hereby expressly guarantees for one (1) full year from the date of the substantial completion of the work under this agreement and acceptance thereof by the District, to repair or replace any part of the work performed hereunder which constitutes a defect resulting from the use of inferior or defective materials, equipment or workmanship. If, within said period, any repairs or replacements in connection with the work are, in the opinion of the District, rendered necessary as the result of the use of inferior or defective materials, equipment or workmanship, Contractor agrees, upon receipt of notice from District, and without expense to District, to promptly repair or replace such material or workmanship and/or correct any and all defects therein. If Contractor, after such notice, fails to proceed promptly to comply with the terms of this guarantee, District may perform the work necessary to effectuate such correction and recover the cost thereof from the Contractor and/or its sureties.

In special circumstances where a particular item of work or equipment is placed in continuous service before substantial completion of the Work, the correction period for that item may start to run from an earlier date. This date shall be agreed upon in writing by the Contractor and District on or before the item is placed in continuous service.

Any and all other special guarantees which may be applicable to definite parts of the work under this agreement shall be considered as an additional guarantee and shall not reduce or limit the guarantee as provided by Contractor pursuant to this paragraph during the first year of the life of such guarantee.

9. The Contractor shall provide, on the execution of this Agreement, a good and sufficient corporate surety bond in the penal sum of one hundred percent (100%) of the Contract Price, which bond shall be on the form provided by the District in Section 00610, **FORM OF PERFORMANCE BOND**, and be conditioned upon the faithful performance of all work required to be performed by the Contractor under this Agreement. Said bond shall be liable for any and all penalties and obligations which may be incurred by Contractor under this

Agreement. The corporate surety bond shall be issued by a corporate surety that possesses a minimum rating from A. M. Best Company of A:VII and that is approved by the District. The corporate surety shall be authorized to conduct business in California. At its discretion, the District may request that a certified copy of the certificate of authority of the insurer issued by the Insurance Commissioner of the State of California be submitted by the surety to the District. At its discretion, the District may also require the insurer to provide copies of its most recent annual statement and quarterly statement filed with the Department of Insurance pursuant to Article 10 (commencing with Section 900) of Chapter 1 of Part 2 of Division 1 of the Insurance Code.

In addition to the bond required under Paragraph 9, hereof, Contractor shall furnish a good and sufficient corporate surety bond in the penal sum of one hundred percent (100%) of the Contract Price, which bond shall be on the form provided by the District in Section 00620, **PAYMENT BOND**, and conform strictly with the provisions of Sections 9550 et seq. of the Civil Code, and all amendments thereto. The corporate surety bond shall be issued by a corporate surety that possesses a minimum rating from A. M. Best Company of A:VII and that is approved by the District. The corporate surety shall be authorized to conduct business in California. At its discretion, the District may request that a certified copy of the certificate of authority of the insurer issued by the Insurance Commissioner of the State of California be submitted by the surety to the District. At its discretion, the District may also require the insurer to provide copies of its most recent annual statement and quarterly statement filed with the Department of Insurance pursuant to Article 10 (commencing with Section 900) of Chapter 1 of Part 2 of Division 1 of the Insurance Code.

11. The Contractor may substitute securities for the amounts retained by the District to ensure performance of the work in accordance with the provisions of Section 22300 of the Public Contract Code.

12. The Contractor shall be provided the time period specified in Section 01340-2.0, **MATERIAL AND EQUIPMENT SUBSTITUTIONS**, for submission of data substantiating a request for a substitution of an “or equal" item.

13. As required by Section 6705 of the California Labor Code and in addition thereto, whenever work under the Contract involves the excavation of any trench or trenches five feet or more in depth, the Contractor shall submit in advance of excavations, a detailed plan showing the design of shoring, bracing, sloping, or other provisions to be made for worker protection from the hazard of caving ground during the excavation of such trench or trenches. If such plan varies from the shoring system standards established by the Construction Safety Orders of the Division of Industrial Safety in Title 8, Subchapter 4, Article 6, California Code of Regulations, the plan shall be prepared by a registered civil or structural engineer employed by the Contractor, and all costs therefore shall be included in the price named in the Contract for completion of the work as set forth in the Contract Documents. Nothing in this Section shall be deemed to allow the use of a shoring, sloping, or other protective system less effective than that required by the Construction Safety Orders. Nothing in this Section shall be construed to impose tort liability on the District, the Design Consultant, Construction Manager or any of their agents, consultants, or employees. The District’s review of the Contractor’s excavation plan is only for general conformance to the California Construction Safety Orders.

Prior to commencing any excavation, the Contractor shall designate in writing to the Construction Manager the “competent person(s)” with the authority and responsibilities designated in the Construction Safety Orders.

14. In accordance with Section 7104 of the Public Contract Code, whenever any work involves digging trenches or other excavations that extend deeper than four feet below the surface, the provisions of Section 00700-7.2, **Differing Site Conditions**, shall apply.

15. In accordance with Section 7103.5 of the Public Contract Code, the Contractor and subcontractors shall conform to the following requirements. In entering into a public works contract or a subcontract to supply goods, services, or materials pursuant to a public works contract, the Contractor or subcontractor offers and agrees to assign to the District all rights, title, and interest in and to all causes of action it may have under Section 4 of the Clayton Act (15 U.S.C. Section 15) or under the Cartwright Act [Chapter 2 (commencing with Section 16700) of Part 2 of Division 7 of the Business and Professions Code], arising from purchases of goods, materials or services pursuant to this Contract or the subcontract. Such assignment shall be made and become effective at the time the District tenders final payment to the Contractor, without further acknowledgment by the parties.

16. In accordance with Section 4552 of the Government Code, the Contractor shall conform to the following requirements. In submitting a bid to the District, the Contractor offers and agrees that if the bid is accepted, it will assign to the District all rights, title, and interest in and to all causes of action it may have under Section 4 of the Clayton Act (15 U.S.C. Section 15) or under the Cartwright Act [Chapter 2 (commencing with Section 16700) of Part 2 of Division 7 of the Business and Professions Code], arising from purchase of goods, materials, or services by the Contractor for sale to the District pursuant to the bid. Such assignment shall be made and become effective at the time the District tenders final payment to the Contractor.

17. Pursuant to Public Contract Code Section 7100, the acceptance by the Contractor of an undisputed payment made under the terms of the Contract shall operate as, and shall be, a release to the District, and their duly authorized agents, from all claim of and/or liability to the Contractor arising by virtue of the contract related to those amounts. Disputed contract claims in stated amounts may be specifically excluded by the Contractor from the operation of the release.

18. In accordance with California Business and Professions Code Section 7030, the Contractor is required by law to be licensed and regulated by the Contractors' State License Board which has jurisdiction to investigate complaints against contractors if a complaint regarding a patent act or omission is filed within four years of the date of the alleged violation. A complaint regarding a latent act or omission pertaining to structural defects must be filed within 10 years of the date of the alleged violation. Any questions concerning the Contractor may be referred to the Registrar, Contractors' State License Board, P.O. Box 26000, Sacramento, California 95826.

19. INDEMNIFICATION. To the fullest extent permitted by law, Contractor shall indemnify and hold harmless the District from any claims, choses in action or lawsuits, whereby any subcontractor, material or equipment supplier, laborer or any person who supplies work or materials to said work of improvement may claim damages, losses and expenses thereto arising out of or resulting from any claim for performance of work, including the legal defense of any stop notice action as well as attorney fees and costs. District may be required to engage separate legal counsel from that of the Contractor should District and Contractor be both named as defendants, cross-defendants or other parties to any such stop notice action in District's sole discretion. Contractor shall be fully liable for any judgment or damages resulting from any claim for stop notice relief or other liability regarding payment for materials, supplies, labor or equipment under this contract. In claims against any person or entity indemnified

under this paragraph by an employee of Contractor, a subcontractor, anyone directly or indirectly employed by them for whose acts they may be liable, the indemnification obligation under this paragraph shall not be limited in amount or type of damages, compensation or benefits payable by or for the Contractor or a subcontractor. In all cases, indemnification shall include attorney fees and court costs.

Unless arising solely out of the active negligence, gross negligence or willful misconduct of the District or the Design Consultant, the Contractor shall indemnity, defend and hold harmless: (1) the District and its Board of Directors, officers, employees, agents and representative; (ii) the Design Consultant and its consultants for the Work and their respective agents and employees; and (iii) if one is designated by the District for the work, the Construction Manager and its agents and employees (collectively "the Indemnified Parties"). The Contractor's obligations hereunder include indemnity, defense and hold harmless of the Indemnified Parties from and against any and all damages, losses, claims, demands or liabilities whether for damages, losses or other relief, including, without limitation attorney's fees and costs which arise, in whole or in part, from the Work, the Contract Documents or the acts, omissions or other conduct of the Contractor or any subcontractor or any person or entity engaged by them for the Work. The Contractor's obligations under the foregoing include without limitation: (i) injuries to or death of persons; (ii) damage to property; or (iii) theft or loss of property; (iv) stop notice claims asserted by any person or entity in connection with the Work; and (v) other losses, liabilities, damages or costs resulting from, in whole or part, any acts, omissions or other conduct of Contractor, any of Contractor's Subcontractors, of any tier, or any other person or entity employed directly or indirectly by Contractor in connection with the Work and their respective agents, officers or employees. If any action or proceeding, whether judicial, administrative, arbitration or otherwise, shall be commenced on account of any claim, demand or liability subject to Contractor's obligations hereunder, and such action or proceeding names any of the Indemnified Parties as a party thereto, the Contractor, at its sole cost and expense, shall defend the District and the Design Consultant in such action or proceeding with counsel reasonably satisfactory to the Indemnified Parties named in such action or proceeding. In the event that there shall be any judgment, award, ruling, settlement, or other relief arising out of any such action or proceeding to which any of the Indemnified Parties are bound by, Contractor shall pay, satisfy or otherwise discharge any such judgment, award, ruling, settlement or relief. Contractor shall indemnify and hold harmless the Indemnified Parties from any and all liability or responsibility arising out of any such judgment, award, ruling, settlement or relief. The Contractor's obligations hereunder are binding upon Contractor's Performance Bond Surety and these obligations shall survive notwithstanding Contractor's completion of the Work or the termination of the Contract.

IN WITNESS WHEREOF, the parties hereto have executed this agreement this ___ day of March 2018.

CRATUS, INC.

By:_____
Michael Kirwan
CFO / Treasurer
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DATE: March 16, 2018

MEMO TO: Board of Directors - Union Sanitary District

FROM: Paul R. Eldredge, General Manager/District Engineer
Karen W. Murphy, District General Counsel

SUBJECT: Agenda Item No. 11 - Meeting of March 26, 2018
Review and Consider the 2018 Hydraulic Analysis Conducted by the East Bay Dischargers Authority and Provide Direction on the JPA Negotiations

Recommendation

Staff recommends the Board review the findings of the hydraulic analysis prepared by the East Bay Dischargers Authority (EBDA), and provide direction on the JPA negotiations.

Background

The East Bay Dischargers Authority is a Joint Powers Authority (the "JPA") of which Union Sanitary District is currently a member. The JPA was formed in 1974 by a "Joint Exercise of Powers Agreement" (the "JPA Agreement") entered into by the City of Hayward, City of San Leandro, Oro Loma Sanitary District, Union Sanitary District, and Castro Valley Sanitary District. The JPA currently provides a transport system and outfall to collect effluent from six (6) wastewater treatment plants in the East Bay, including two non-member agencies (DSRSD and Livermore through agreements with LAVWMA). East Bay Dischargers Authority transports treated wastewater and removes chlorine prior to its discharge through a deep-water outfall to the San Francisco Bay.

The JPA Agreement has been amended three times since its creation in 1974. Amendments were approved in 1978, 1986, and 2007. As the current JPA is set to expire in January of 2020, discussions and negotiations have been taking place over the last few years to develop deal points and a framework for a renewed agreement.

JPA Concepts

During the JPA discussions the primary concepts, or deal points, currently being considered are as follows:

- Term
- Escape Clause
- Spending Cap (or Catastrophic Escape clause)
- Cost Allocation / System Capacity
- Penalty Clause

Of the deal points above, the cost allocation / system capacity is complicated due to its financial implications for the agencies and we are therefore seeking direction from the Board on this issue.

Forty years ago, when the JPA was first established, each agency selected its desired capacity in the system, which was memorialized in the JPA. The capacity an agency has in the system is directly proportional to the fixed costs an agency is responsible for annually. In other words, the more capacity the more fixed costs the agency is responsible for. Circumstances have changed, or previous assumptions that agencies used to select that capacity are no longer valid. Therefore, agencies are evaluating capacity needs in conjunction with the JPA negotiations. Agencies have proposed to select capacity rights that more closely align with what they think their current and future needs will be, referred to as a "Pick a Flow Option". The following chart indicates the most recent proposals during JPA discussions:

Agency	Existing Capacity	Proposed Capacity
City of San Leandro	22.30	17.03
Castro Valley	20.76*	10.00*
Oro Loma	46.13*	20.00*
City of Hayward	35.00	15.00
USD	42.90	55.00
Totals =	167.09	117.03

** - The flow distribution between Oro Loma and CV San is assumed*

USD evaluated this option and, as noted above, a sustained flow rate (peak hour) of 55 mgd was initially proposed by USD.

A hydraulic model was conducted by EBDA to study the maximum capacity, including the capacity for USD under certain scenarios and circumstances. USD had its own consultant peer review the hydraulic study and confirmed that the calibration and results were reasonable. A final draft of the hydraulic model is attached. The maximum flow rate for USD supported by the hydraulic model is between 46.5 and 50 mgd with the Hayward March offline (Hayward at 0 or 15 mgd and the OLEPS wet well at 7'). Thus, the results of the hydraulic model did not

support a flow of 55 mgd for USD. With respect to USD costs, however, it is likely that reduction of the other agencies flow rates, as proposed, would increase USD's annual fixed costs even if USD's capacity rights do not change significantly.

Next Steps

USD staff is requesting the Board review the following options, staff's recommendation, and provide direction on how to proceed moving forward with the capacity and flow discussions in the JPA negotiations.

Options:

1. Propose the maximum capacity supported by the hydraulic model.
2. Propose additional capacity ranging between the existing capacity (42.9 mgd) and the maximum capacity supported by the hydraulic model.
3. Propose a capacity in EBDA less than the existing 42.9 mgd.
4. No changes to USD's capacity

Staff is recommending option #4 above.

With respect to option #3, during wet weather events, USD fully utilizes its EBDA capacity, and USD's plant has challenges managing flows. The hydraulic limitations of the EBDA system are the primary limiting factor. Reducing the capacity in EBDA is not recommended as there is currently no other feasible option to replace this capacity.

With respect to options #1 and #2, purchasing additional capacity in EBDA would be attractive if the hydraulics supported a flow rate of 55 mgd. However, purchasing the maximum capacity supported by the hydraulic model, currently estimated by USD to be 48 mgd, would be expensive and does not resolve USD's wet weather issues. The benefits potentially received do not outweigh the costs at this time. While the purchase of additional capacity could address some of USD's wet weather issues, other options would still need to be considered.

Therefore, staff recommends option #4 above, that USD keep its current capacity right of 42.9 mgd in the EBDA system and request that any cost allocation / system capacity modifications in the revised JPA be cost neutral for USD.

Once the other four JPA concepts are further developed, staff will be bringing those deal points to the Board for future discussions and direction.

Attachment
Final Draft – EBDA Hydraulic Model

East Bay Dischargers Authority

2017 Hydraulic Study

HYDRAULIC MODEL RECALIBRATION AND CAPACITY ANALYSIS

DRAFT December 2017

East Bay Dischargers Authority
2017 Hydraulic Study

TECHNICAL MEMORANDUM 1

HYDRAULIC MODEL RECALIBRATION AND CAPACITY ANALYSIS

Timothy J. Loper,
December 19, 2017,
CA PE License# 70847

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Abbreviations

AEPS	Alvarado Effluent Pump Station
Carollo	Carollo Engineers, Inc.
CVSD	Castro Valley Sanitation District
DWF	dry weather flow
EBDA	East Bay Dischargers Authority
Hayward	City of Hayward
HEPS	Hayward Effluent Pump Station
I/I	infiltration and inflow
LAVWMA	Livermore-Amador Valley Water Management Authority
MDF	Marina Dechlorination Facility
OLEPS	Oro Loma Effluent Pump Station
OLSD	Oro Loma Sanitary District
RDII	Rainfall Derived Infiltration and Inflow
SWMM	Storm Water Management Model
USD	Union Sanitary District
WPCF	Water Pollution Control Facility

Technical Memorandum 1

HYDRAULIC MODEL RECALIBRATION AND CAPACITY ANALYSIS

1.1 Introduction

The purpose of this technical memorandum is to document the key findings of the 2017 Hydraulic Study (Project), which was conducted by Carollo Engineers, Inc. (Carollo) under the Professional Services Agreement between Carollo and the East Bay Dischargers Authority (EBDA), dated July 14, 2017.

1.2 Background

EBDA operates a system of effluent pump stations and associated force mains which collects flow from multiple wastewater agencies in the East San Francisco Bay area and discharges the treated effluent to the San Francisco Bay via a deep water diffuser. The southern portion of the transport system includes the collection of wastewater from Union Sanitary District (USD) and the City of Hayward (Hayward). USD treats its collected wastewater and discharges it to the EBDA system via the Alvarado Effluent Pump Station (AEPS) and the associated 60-inch diameter force main. The force main conveys flow from both AEPS and the Hayward Effluent Pump Station (HEPS) to the Oro Loma Effluent Pump Station (OLEPS). A portion of the flow from AEPS to OLEPS can be diverted from the force main to the Hayward Marsh. The EBDA transport system is dependent on a number of operational parameters, such as the discharge to the Hayward Marsh, operation of HEPS, and wet well levels at OLEPS. These varying operational scenarios of the system affect AEPS and HEPS conveyance capacity.

This Project's objective was to update and recalibrate EBDA's hydraulic model and to determine the capacity of certain components of the EBDA system under varying agency flow rates and operational conditions. As part of this task, available record drawings, reports, and studies were reviewed. Carollo also reviewed any recent changes to the transport system such as pump station modifications to HEPS, AEPS, or OLEPS; operational characteristics; and any other relevant modifications that have occurred since the hydraulic model of the EBDA transport system was developed as part of the 2011 System Flow Master Plan. The calibration of the model was updated to include the discharge by Hayward to the Hayward Ponds during peak wet weather events. No other significant changes to the physical or operational characteristics were noted since the completion of the 2011 System Flow Master Plan.

1.2.1 Existing System

The EBDA pipeline and outfall system discharges effluent from five agencies including USD, City of San Leandro (San Leandro), Hayward, Oro Loma Sanitary District (OLSD), and Castro Valley Sanitation District (CVSD). Livermore-Amador Valley Water Management Authority (LAVWMA) is not an EBDA

member but leases system capacity from EBDA. Disinfected secondary effluent is pumped north from AEPS, located at USD's Alvarado Wastewater Treatment Plant, through the Alvarado Valve Box to the Hayward Valve Box via a 6-mile, 60-inch diameter force main. The Hayward Effluent Pump Station adds disinfected secondary effluent from the Hayward Water Pollution Control Facility (WPCF) immediately downstream of the Hayward Valve Box. The combined effluent flows to OLEPS via a 2-mile, 60-inch diameter force main. OLEPS then pumps the combined effluent from USD, Hayward, and OLSD through a 2-mile, 96-inch diameter force main to the Marina Valve Box. LAVWMA effluent is added to the EBDA system in this 96-inch diameter reach. Final effluent from San Leandro is conveyed via a 48-inch diameter force main south to the Marina Valve Box where it combines with the flow from USD, Hayward, OLSD, and LAVWMA. The combined effluent is discharged through a 7.5 mile long, 96-inch diameter outfall on the bottom of San Francisco Bay. A schematic of the system is shown in Figure 1.

1.3 Hydraulic Model Recalibration

1.3.1 Hydraulic Model Development

The EBDA hydraulic model, originally built as part of the 2011 System Flow Master Plan project, combines information on the physical and operational characteristics of the EDBA system and performs calculations to solve a series of mathematical equations to simulate flows and pressures in pipes. The EBDA hydraulic model was constructed using Innovyze's H_2OMAP SWMM hydraulic modeling software. The Storm Water Management Model (SWMM) is a hydraulic engine that was developed by the United States Environmental Protection Agency (USEPA) in the 1970. The SWMM engine utilizes the fully dynamic 1-Dimensional Saint Venant equation to simultaneously solve for flow, pressure, and velocity in system conduits, pumps, and storage facilities. The SWMM engine has become the industry standard in urban wastewater and storm drainage collection system modeling applications and is utilized by thousands of municipal agencies around the world.

Carollo reviewed the H_2OMAP SWMM model and converted the model to the ESRI ArcMap based InfoSWMM model. The two modeling platforms have identical operations and usability, the only difference is the software platform for which they operate. After conversion to the InfoSWMM platform, Carollo updated the hydraulic model to include relevant changes that have been implemented since the 2011 System Flow Master Plan was completed. The update included the system model based on the operation of the Hayward Ponds as a wet weather diversion facility. Refer to the 2011 System Flow Master Plan for full details on how the EBDA hydraulic model was built.

1.3.2 Wet Weather Flow Development and Model Recalibration

EBDA provided measured flow, pressure, and surge tower level data in 15-minute intervals for all components of the EBDA system from July 1, 2016 through June 30, 2017. This section describes how this data was used to recalibrate the EBDA hydraulic model.

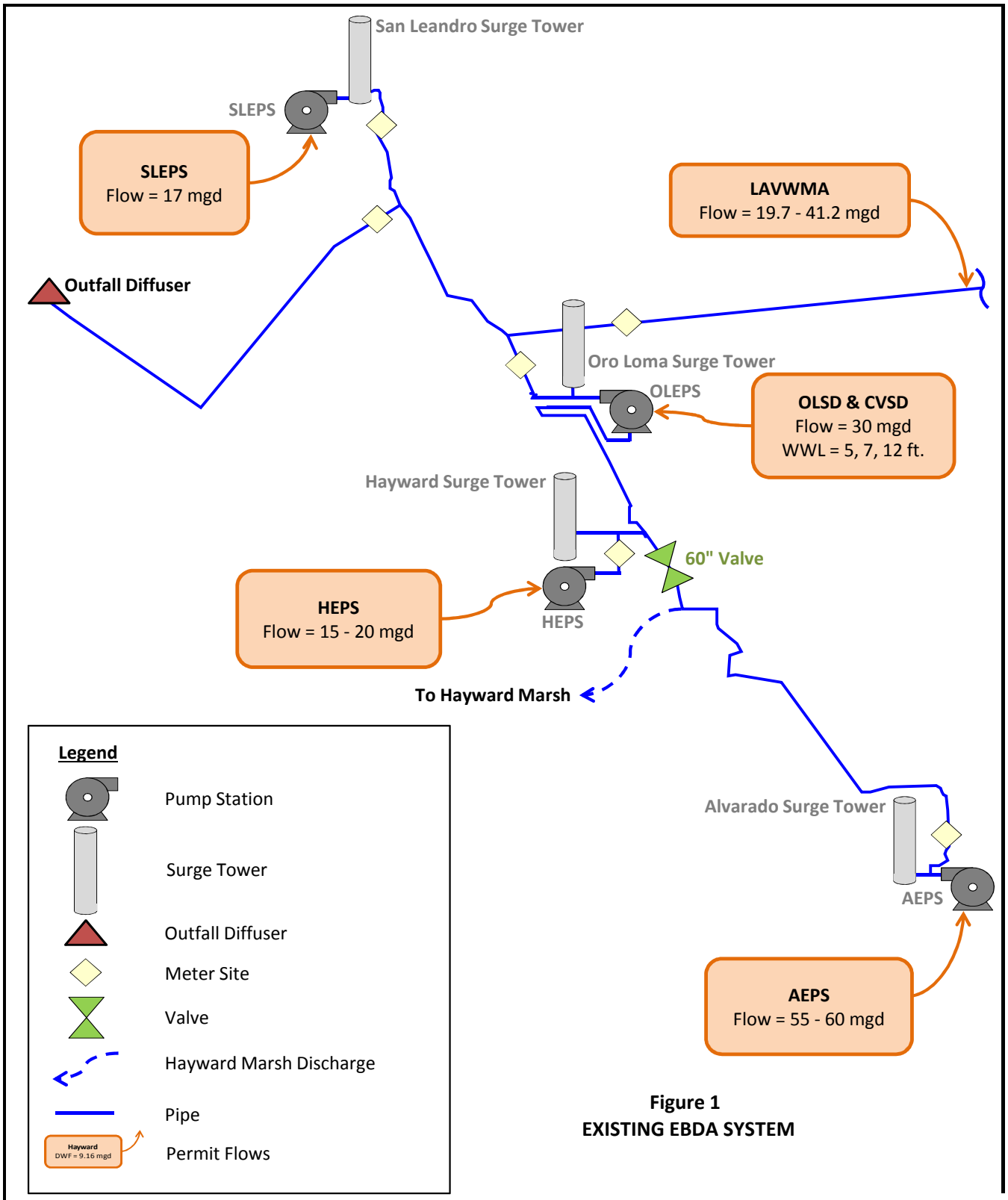

Figure 1
EXISTING EBDA SYSTEM

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1.3.2.1 Dry Weather Calibration

Model calibration consisted of two phases: dry weather calibration and wet weather calibration. Dry weather flow (DWF) calibration ensures an accurate depiction of base wastewater flow discharged into the EBDA system, and also ensures that the model accurately simulates the pressure conditions observed in the field. From the data received from EBDA, Carollo identified a 2-week period of dry weather to use for the DWF calibration (November 4-17, 2016). DWFs were allocated into the model based on the data provided by EBDA for this period. Diurnal patterns were also developed for each agency based on the DWF data.

The DWF calibration process consisted of comparing the field measured flows and pressures to the model predicted flows and pressures during the same time period. The primary varied parameters for the dry weather calibration include operational controls and pipe roughness coefficients. Carollo found that the original DWF calibration which was completed as part of the 2011 System Flow Master Plan predicted the new DWF data well, and only minor adjustments were necessary. The adjustments made to the model included updating the Hayward Marsh flow diversion curve and minor adjustments to Hazen-Williams roughness coefficients.

An example of the dry weather calibration for HEPS is shown in Figure 2. Comparisons of the model results to observed field conditions for the DWF calibration for all the member agencies is provided in Appendix A. Overall, the trends seen in the field data are predicted by the model. As shown in Table 1, the majority of modeled flows and pressures fell within industry standards (10 percent) of the field measured data. Two variables could not be calibrated within acceptable margins of error – Marina Dechlorination Facility (MDF) flow and OLEPS surge tower level. After further investigation and discussion with EBDA, it was determined that these variations are likely due to flow meter errors. EBDA plans to investigate these issues and the calibration will be updated in the future as necessary.

Table 1 DWF Calibration Summary

Calibration Site	Variable	Avg. % Diff.	Max. % Diff.
AEPS	Flow	1.1%	-4.0%
	Surge Level	-9.8%	-10.5%
Hayward Marsh	Flow	-7.6%	-1.1%
HEPS	Flow	0.3%	3.0%
	Surge Level	-2.1%	-16.4%
OLEPS	Flow	-6.5%	-16.8%
	Surge Level	-18.2%	-21.8%
SLEPS	Flow	0.1%	-16.6%
	Pressure	3.6%	5.8%
MDF	Flow	-14.9%	-21.5%
	Pressure	-1.3%	-9.3%

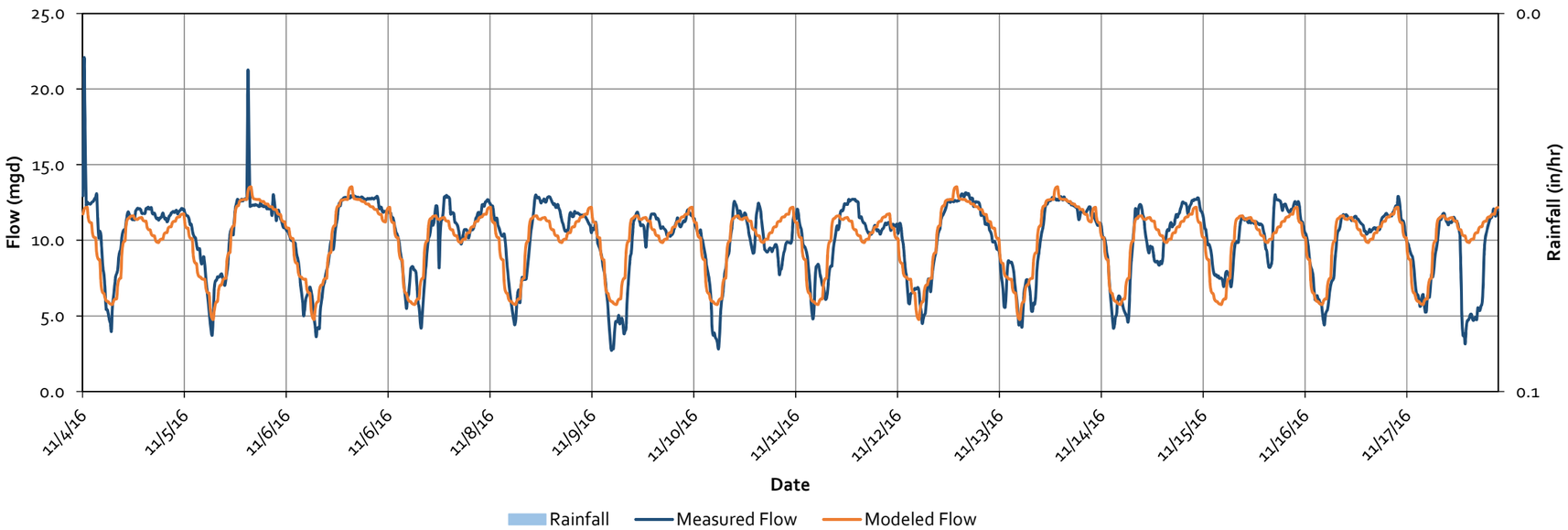
EBDA

DRY WEATHER HYDRAULIC MODEL CALIBRATION

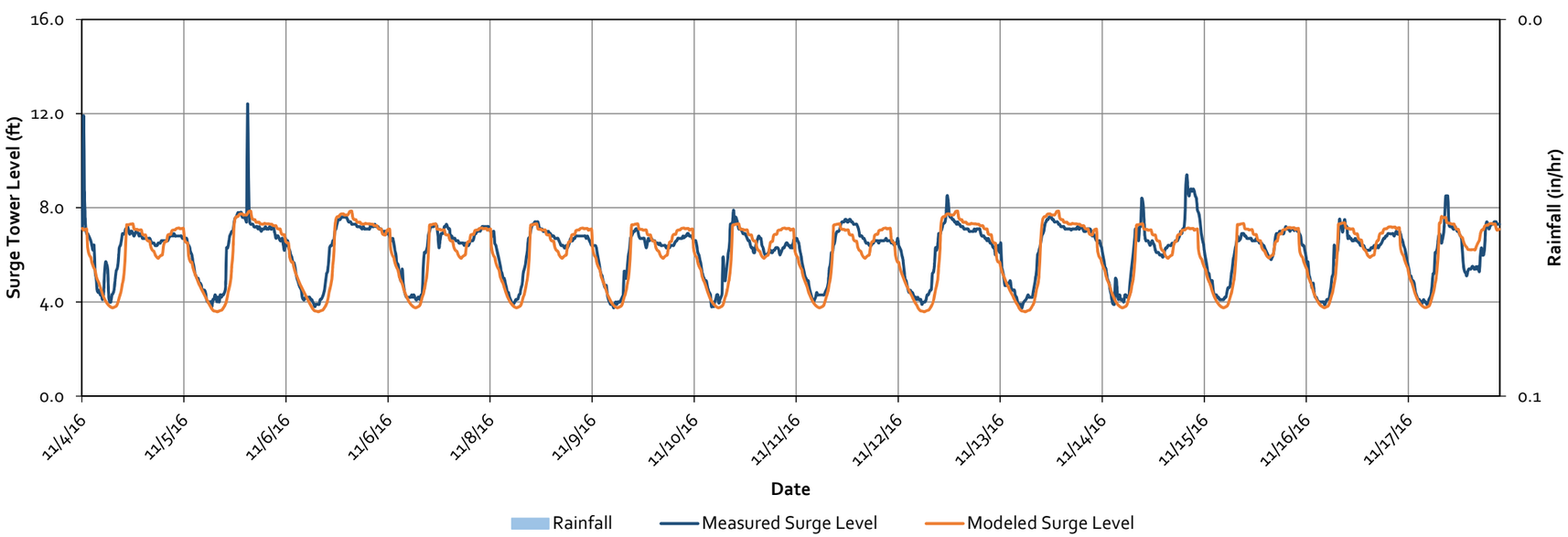
HAYWARD EFFLUENT PUMP STATION

FIGURE 2

Flow Calibration



Surge Level Calibration



DWF Calibration Summary

Variable	Measured[1] Avg. (mgd)	Measured[1] Max. (mgd)	Measured[1] Min. (mgd)	Modeled Avg. (mgd)	Modeled Max. (mgd)	Modeled Min. (mgd)	Percent Diff.[2] Avg.	Percent Diff.[2] Max.
Flow	10.0	13.1	2.7	10.0	13.5	4.8	0.3%	3.0%
Surge Level	6.1	9.4	3.7	6.0	7.9	3.6	-2.1%	-16.4%

Notes:

(1) Source: Data provided by EBDA staff and member agencies.

(2) % Difference = (Modeled - Measured) / Measured x 100

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1.3.2.2 Wet Weather Calibration

For many wastewater collection systems in the San Francisco Bay Area, there are significant increases in collection system flows following rainfall events. These peak flows are caused by storm water that enters the system through direct storm drain connections, offset joints in sewer pipes, and cracks in aging sewer pipelines. This extraneous flow, or Rainfall Derived Infiltration and Inflow (RDII), has the largest impact on system capacity.

Modeling RDII requires developing system parameters that simulate how the system responds to varying storm events and groundwater conditions. This section describes the development of the RDII parameters used in the model and the collection of precipitation data used to evaluate the system capacity.

Carollo used the data provided by EBDA from July 2016 to June 2017 (Winter 2016/2017) to recalibrate the InfoSWMM model to measured wet weather flow data. Carollo used the wet weather data from the large storm events in the winter of 2017 to calibrate the wet weather parameters in the model. Carollo also collected precipitation data from several rain gauges in the area. This precipitation data was input into the model to simulate the actual rain events experienced during the 2016-2017 winter season.

Carollo identified three storm events to represent the capacity of the transport system. These three storm events took place on January 7-16, 2017; February 3-13, 2017; and February 16 – March 4, 2017. While the model calibration was actually run from December 31, 2016 through March 17, 2017, only the data from the storm events was compared to the measured data.

For the wet weather calibration runs, the average flow for the dry weather days (November 4-17, 2016) were allocated into the model to represent the dry weather, or base flow experienced during each storm event. Rainfall derived infiltration and inflow (RDII) was then added on top of the base flows. An exception to this was for LAVWMA. LAVWMA flows were simply input into the model as point loads. The reason for this is that LAVWMA utilizes various discharges and diversions that are not practical to include in the hydraulic model, and LAVWMA's flow data displayed highly variable patterns that are difficult to simulate. Furthermore, because EBDA can limit the amount of flow that can be discharged by LAVWMA to 19.7 mgd, it is unnecessary to develop rainfall infiltration parameters for LAVWMA for the purposes of this study.

Carollo used industry-accepted calibration standards to compare the model simulated flows to the measured flows from EBDA's SCADA system. Model calibration was performed for all three storm events by developing RDII unit hydrographs for each member agency. RDII unit hydrographs are the main component of the model that simulates wet weather infiltration and inflow into the agency's collection system. Each unit hydrograph is a combination of three separate triangular hydrographs (short term, medium term, and long term), which are defined by the parameters R, T, and K. R represents the percentage of rainfall that is converted into infiltration and inflow (I/I), T represents the time from the onset of the rainfall to the peak of the triangular hydrograph in hours, and K represents the ratio of the time to recession of the triangular hydrograph to the time to peak. Since each RTK unit hydrograph combines three separate triangular hydrographs, the hydrographs for each discharger

include nine (9) separate variables. Many model runs were made while adjusting the RTK parameters for each agency until the calibration for all three storm events fell within an acceptable margin of error from the measured data.

A comparison of the model results to observed field conditions for HEPS is shown in Figure 3, and calibration plots for the other agencies are provided in Appendix A. Overall, the trends seen in the field data are well predicted by the model. As shown in Table 2, Table 3, and Table 4, the majority of modeled flows and pressures fell within industry standards (+15/-10 percent for average data and +25/-15 percent for peak hour flow data) of the field measured data. The only exceptions to this are the San Leandro flows and force main pressure. However, because of questions regarding San Leandro's flow meter that EBDA and San Leandro staff are evaluating, , the model was considered calibrated for the purposes of this study.

Table 2 WWF Calibration Summary - Storm 1 (1/7/17 - 1/16/17)

Calibration Site	Variable	Avg. % Diff.	Max. % Diff.
AEPS	Flow	6.3%	7.4%
	Surge Level	-0.7%	10.4%
Hayward Marsh	Flow	20.3%	-1.0%
HEPS	Flow	-7.8%	-11.3%
	Surge Level	-4.9%	-15.7%
OLEPS	Flow	2.4%	-15.0%
	Surge Level	-0.5%	-12.2%
SLEPS	Flow	9.6%	7.7%
	Pressure	29.5%	20.7%
MDF	Flow	2.9%	-15.7%
	Pressure	7.8%	-13.7%

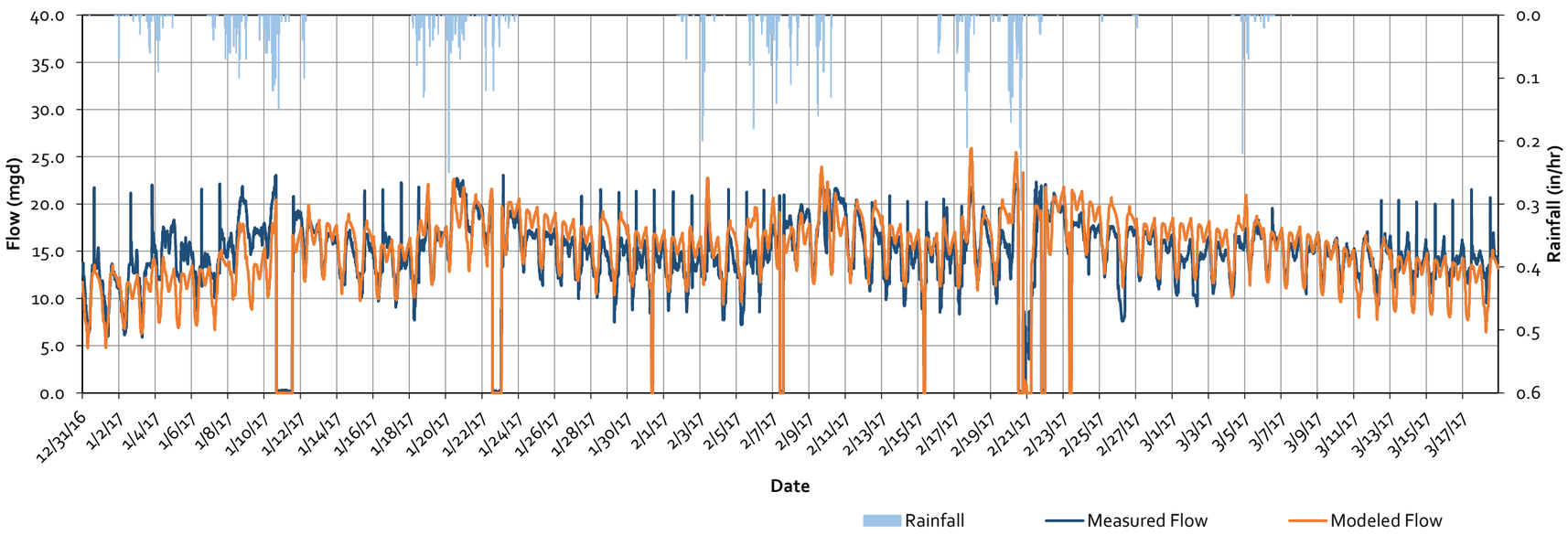
EBDA

HYDRAULIC MODEL CALIBRATION

HAYWARD EFFLUENT PUMP STATION

FIGURE 3

Flow Calibration



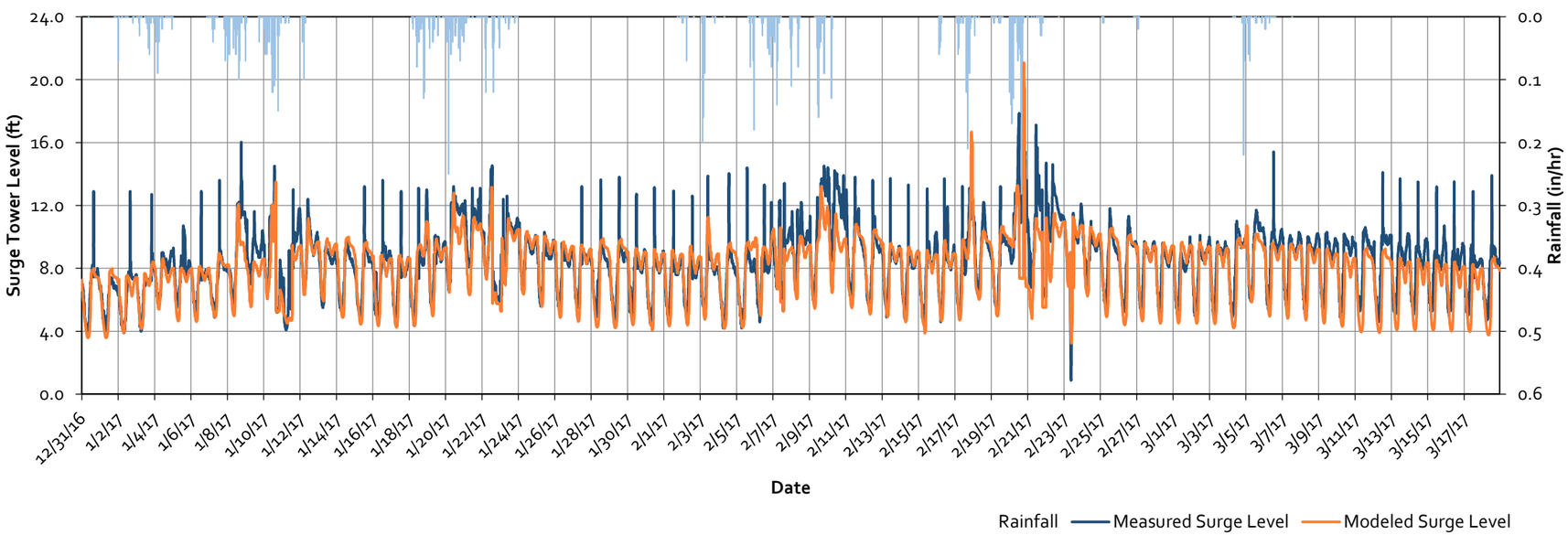
WWF Calibration Summary - Storm 1 - 1/7/17 - 1/16/17

Variable	Measured[1] Avg. (mgd)	Measured[1] Max. (mgd)	Measured[1] Min. (mgd)	Modeled Avg. (mgd)	Modeled Max. (mgd)	Modeled Min. (mgd)	Percent Diff.[2] Avg.	Percent Diff.[2] Max.
Flow	14.4	23.0	0.0	13.3	20.4	0.0	-7.8%	-11.3%
Surge Level	8.3	16.0	4.1	7.9	13.5	4.3	-4.9%	-15.7%

WWF Calibration Summary - Storm 2 - 2/3/17 - 2/13/17

Variable	Measured[1] Avg. (mgd)	Measured[1] Max. (mgd)	Measured[1] Min. (mgd)	Modeled Avg. (mgd)	Modeled Max. (mgd)	Modeled Min. (mgd)	Percent Diff.[2] Avg.	Percent Diff.[2] Max.
Flow	15.4	22.0	0.0	16.2	23.9	0.0	5.4%	9.0%
Surge Level	8.8	14.5	4.2	8.4	13.2	4.2	-4.2%	-8.8%

Surge Level Calibration



WWF Calibration Summary - Storm 3 - 2/16/17 - 3/4/17

Variable	Measured[1] Avg. (mgd)	Measured[1] Max. (mgd)	Measured[1] Min. (mgd)	Modeled Avg. (mgd)	Modeled Max. (mgd)	Modeled Min. (mgd)	Percent Diff.[2] Avg.	Percent Diff.[2] Max.
Flow	14.7	22.3	0.0	16.0	25.9	0.0	9.5%	16.2%
Surge Level	8.9	17.8	0.9	8.5	21.0	3.2	-5.1%	18.1%

Notes:

(1) Source: Data provided by EBDA staff and member agencies.

(2) % Difference = (Modeled - Measured) / Measured x 100

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Table 3 WWF Calibration Summary - Storm 2 (2/3/17 - 2/13/17)

Calibration Site	Variable	Avg. % Diff.	Max. % Diff.
AEPS	Flow	-1.3%	2.0%
	Surge Level	-5.9%	3.5%
Hayward Marsh	Flow	15.7%	12.7%
HEPS	Flow	5.4%	9.0%
	Surge Level	-4.2%	-8.8%
OLEPS	Flow	4.5%	-6.0%
	Surge Level	2.8%	-10.7%
SLEPS	Flow	5.2%	8.0%
	Pressure	33.4%	22.2%
MDF	Flow	5.1%	-14.9%
	Pressure	9.9%	-10.2%

Table 4 WWF Calibration Summary - Storm 3 (2/16/17 - 3/4/17)

Calibration Site	Variable	Avg. % Diff.	Max. % Diff.
AEPS	Flow	-8.7%	-7.1%
	Surge Level	-10.7%	11.2%
Hayward Marsh	Flow	10.8%	3.7%
HEPS	Flow	9.5%	16.2%
	Surge Level	-5.1%	18.1%
OLEPS	Flow	3.4%	6.2%
	Surge Level	6.4%	3.6%
SLEPS	Flow	6.7%	38.3%
	Pressure	37.0%	23.8%
MDF	Flow	3.2%	-13.8%
	Pressure	15.1%	0.5%

1.4 Capacity Analysis

1.4.1 Methodology

The intent of this Hydraulic Study is to determine the capacity of various elements of the EBDA system. With the model recalibrated to the data from the 2016-2017 winter season, the capacity analysis scenarios identified in the Scope of Work were conducted. EBDA requested that Carollo use the hydraulic model to evaluate the capacity of AEPS, HEPS, and the transport system between AEPS and OLEPS. The following flows and operational conditions were identified by EBDA for analysis in the Scope of Work:

- AEPS – 60/55 mgd
- HEPS – 20/15 mgd
- OLSD & CVSD – 30 mgd
- SLEPS – 17 mgd
- LAVWMA – 19.7/41.2 mgd
- With/without discharge to the Hayward Marsh
- OLEPS wet well level at 5'/7'/12'
- King tide/high tide

Based on the above parameters, Carollo evaluated the capacity of the transport system for the following model scenarios:

1. Using the flows and conditions above, determine the capacity of the transport system between AEPS and OLEPS as a function of the different AEPS and HEPS flows and OLEPS wet well levels.
2. Using the flows and conditions above, determine the capacity of AEPS.
3. Using the flows and conditions above, determine the capacity of HEPS.
4. Determine the impact of OLEPS flows and different tides on the MDF capacity.

After the model was calibrated for both DWF and WWF conditions, a steady state scenario was built to analyze each of the four scenarios identified in the Scope of Work. A steady state scenario means that the model is only analyzing a singular moment of time, rather than assessing the response of the model over the course of a storm event. Steady state scenarios were used for the capacity analysis so that inflows to each EBDA facility could be manually controlled to view the specific response of the EBDA system to specific hydraulic conditions. The evaluation scenarios were run by manually inputting flows at each facility, and running the steady state scenario to assess the hydraulic conditions throughout the system at that moment of time. With this approach, Carollo ran a multitude of flow scenarios to develop system flow relationships between AEPS, HEPS, and OLEPS. These results allowed us to determine the controlling factors, flow rates, and how each agency's flows affect the others for varying operating conditions.

As detailed above, EBDA asked Carollo to analyze the EBDA hydraulic model under AEPS flows of either 60 or 55 mgd; HEPS flows of either 20 or 15 mgd; and OLEPS wet well levels of 5, 7, and 12 feet. Carollo decided to expand the AEPS and HEPS flows which were used to provide a better picture of what the system response would be to a wide range of hydraulic conditions.

Each scenario and its results are detailed in the following sections.

1.4.2 Scenario 1

The purpose of this scenario was to determine the capacity of the EBDA transport system between AEPS and OLEPS. For this analysis, the transport system capacity was defined as the combined flow of AEPS and HEPS which can be pumped to OLEPS. Thus, flows discharged to Hayward Marsh were not included in the total transport system capacity.

The following variables were considered in this analysis: AEPS flows, HEPS flows, OLEPS wet well levels, and discharge to the Hayward Marsh. Because all effluent from AEPS and HEPS discharges into the OLEPS wet well, variables downstream of OLEPS such as tide levels and LAVWMA discharge do not affect the AEPS to OLEPS transport system capacity.

The results of the analysis of Scenario 1 are summarized in Table 5. The full results for this scenario are included in Appendix B.

Table 5 AEPS-OLEPS Transport System Capacity

Hayward Marsh Status	OLEPS Wet Well Level (ft.)	AEPS – OLEPS Transport System Capacity (mgd)
Without Hayward Marsh Discharge	5	84.8
	7	83.7
	12	80.1
With Hayward Marsh Discharge*	5	95.0
	7	93.5
	12	90.2

(1)* Note: Includes 19.5 mgd discharge to Hayward Marsh.

As shown in Table 5, the capacity of the AEPS to OLEPS transport system falls as the OLEPS wet well level rises. Capacity drops by approximately 1 mgd when the wet well level rises from 5 to 7 feet, and approximately 3 mgd when the wet well level rises from 7 to 12 feet. The capacity of the transport system is about 10 mgd higher with Hayward Marsh discharge included. Under these conditions, AEPS discharges 19.5 mgd to the Hayward Marsh.

1.4.3 Scenario 2

The purpose of this scenario was to determine the capacity of AEPS using the varying flow conditions at HEPS. As mentioned previously, tidal variations and LAVWMA discharge do not impact the AEPS capacity.

The results for Scenario 2 are shown in Figure 4, Figure 5, and Figure 6 for OLEPS wet well levels of 5-feet, 7-feet, and 12-feet respectively. Each figure includes results with and without Hayward Marsh discharge.

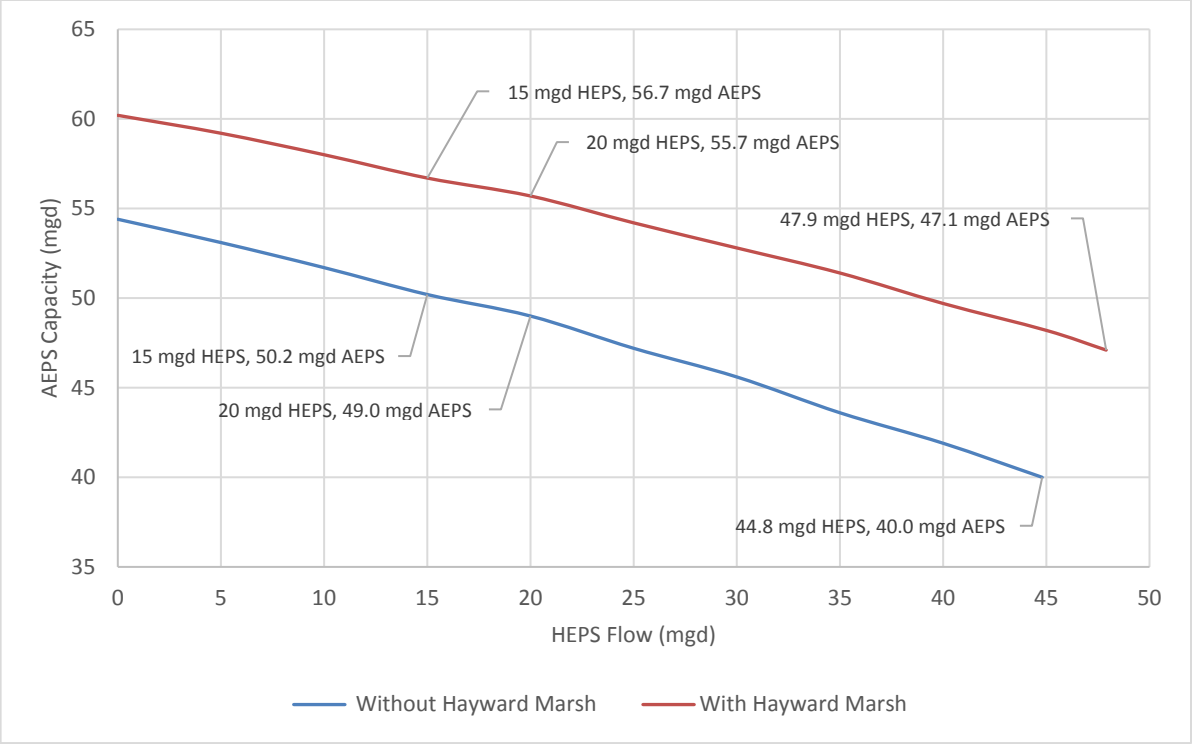


Figure 4 AEPS Capacity vs. HEPS Flow, OLEPS WWL = 5'

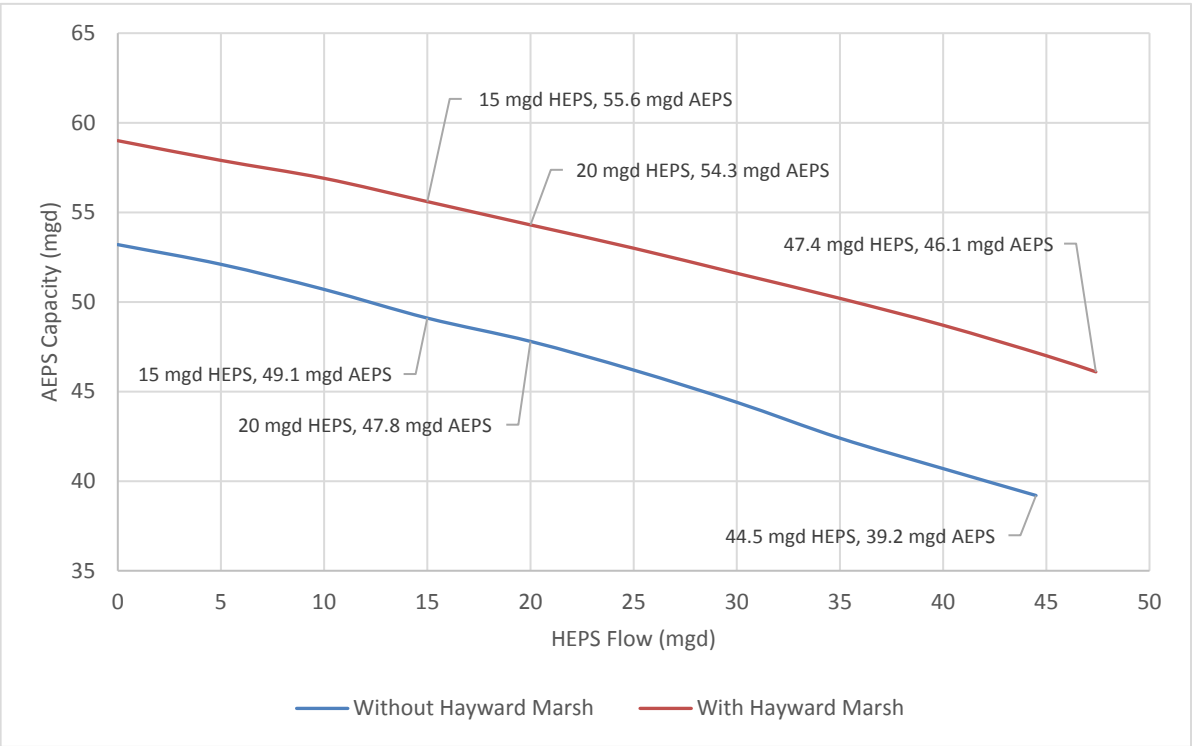


Figure 5 AEPS Capacity vs. HEPS Flow, OLEPS WWL = 7'

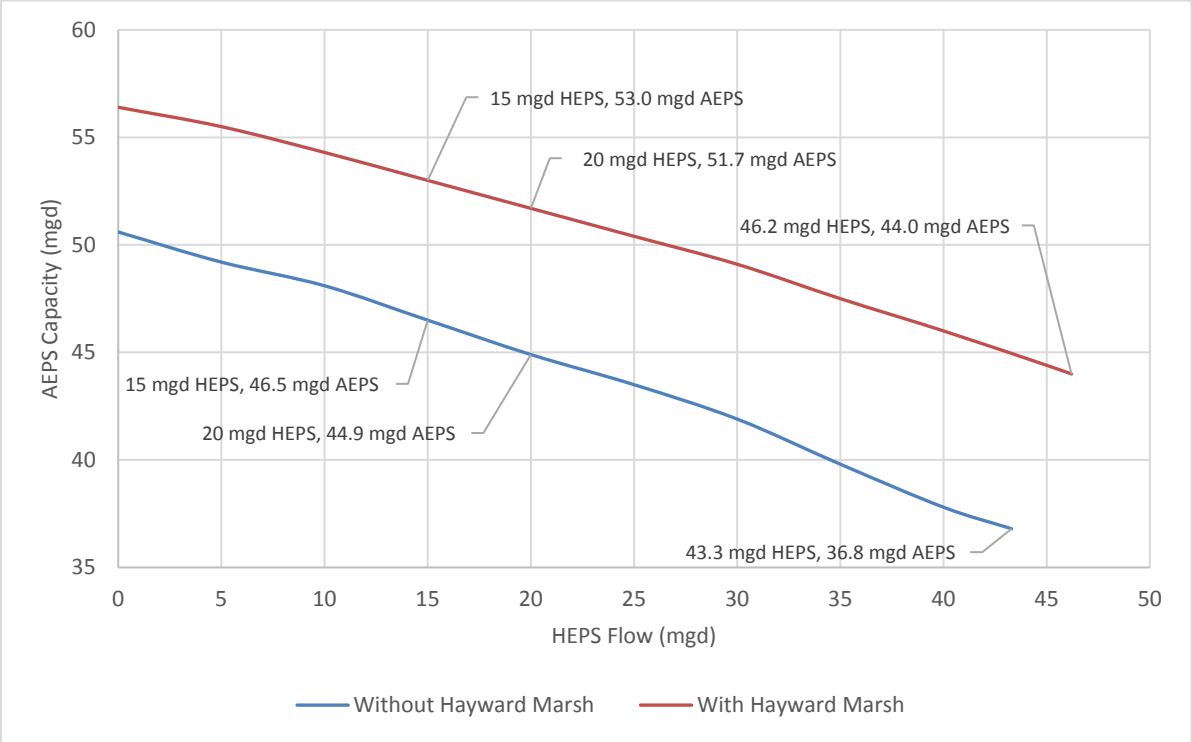


Figure 6 AEPS Capacity vs. HEPS Flow, OLEPS WWL = 12'

As shown, the capacity of AEPS with no discharge from HEPS ranges from approximately 61 mgd to 57 mgd with Hayward Marsh discharge included, depending on the OLEPS wet well level. Without Hayward Marsh discharge, the AEPS capacity ranges from approximately 54 mgd to 51 mgd. At a HEPS discharge of 15 mgd, AEPS capacity ranges from approximately 57 mgd to 53 mgd including Hayward Marsh discharge, and from approximately 50 mgd to 47 mgd without Hayward Marsh discharge. At a HEPS discharge of 20 mgd, AEPS capacity ranges from approximately 56 mgd to 52 mgd including Hayward Marsh discharge, and from approximately 49 mgd to 45 mgd without Hayward Marsh discharge.

The endpoints of these graphs represent the points at which the interaction of AEPS and HEPS flows reaches its equilibrium.

1.4.4 Scenario 3

The purpose of this scenario was to determine the capacity of HEPS using the varying flow conditions at AEPS. As mentioned previously, tidal variations and LAVWMA discharge do not impact the HEPS capacity.

The results for Scenario 3 are shown in Figure 7, Figure 8, and Figure 9 for OLEPS wet well levels of 5-feet, 7-feet, and 12-feet respectively. Each figure includes results with and without Hayward Marsh discharge.

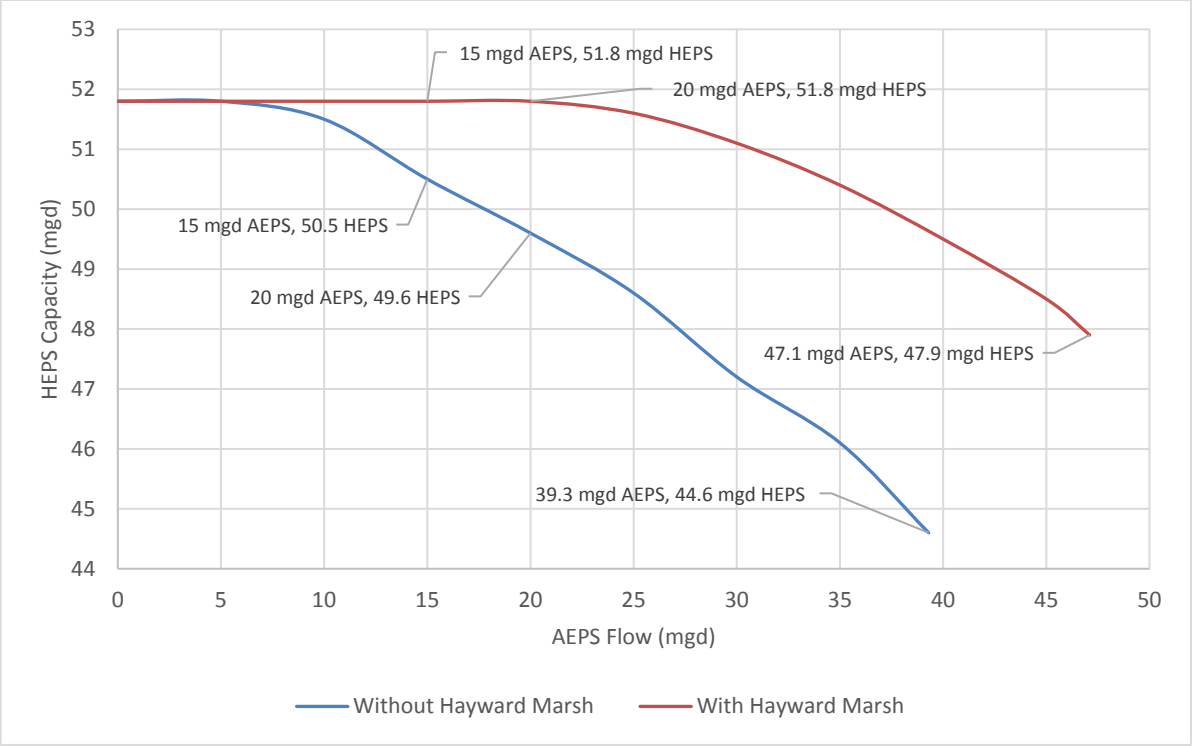


Figure 7 HEPS Capacity vs. AEPS Flow, OLEPS WWL = 5'

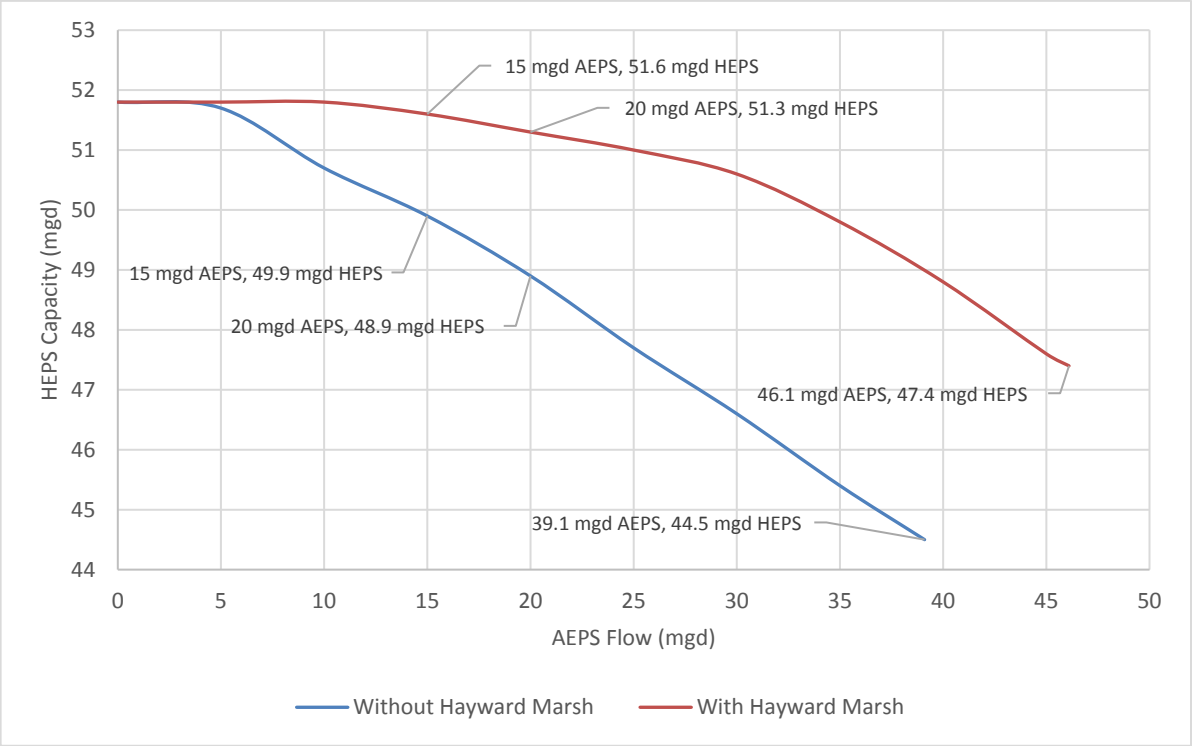


Figure 8 HEPS Capacity vs. AEPS Flow, OLEPS WWL = 7'

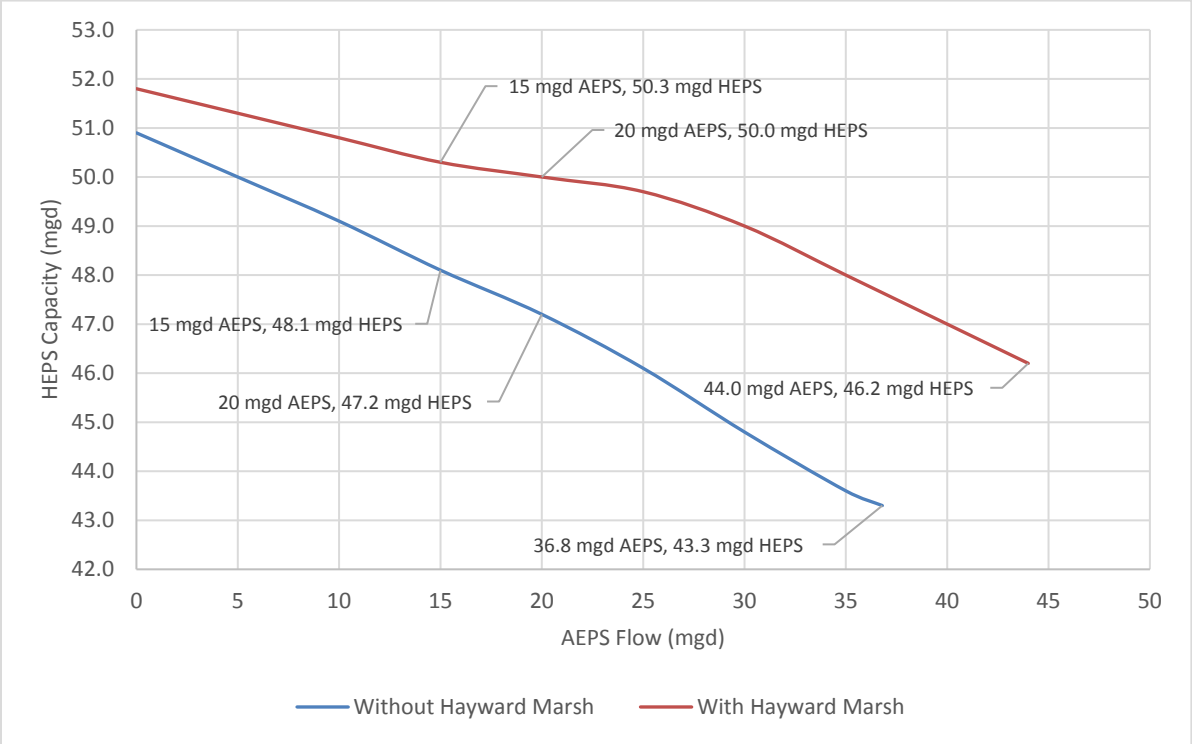


Figure 9 HEPS Capacity vs. AEPS Flow, OLEPS WWL = 12'

As shown, the capacity of HEPS with no discharge from AEPS is approximately 51.8 mgd for OLEPS wet well levels of 5-feet or 7-feet, regardless of whether Hayward Marsh discharge is included. At an OLEPS wet well level of 12-feet, HEPS capacity is approximately 51.8 mgd including Hayward Marsh discharge, and approximately 50.9 mgd without Hayward Marsh discharge. AEPS flows do not begin to impact HEPS capacity until they reach approximately 10 mgd at an OLEPS wet well level of 5-feet, or 5 mgd at an OLEPS wet well level of 7-feet.

The endpoints of these graphs represent the points at which the interaction of AEPS and HEPS flows reaches its equilibrium. These points correspond to the endpoints of the Scenario 2 figures.

1.4.5 Scenario 4

The purpose of this scenario is to determine the flows at MDF based on varying OLEPS flows and tidal levels. Three different tidal levels were modeled – low tide, high tide, and King tide. For reference, King tide represents a level of 4.95 ft. above average sea level (as measured on January 12, 2017), high tide was modeled as 3.5 feet above average sea level, and low tide was modeled as 5 feet below average sea level.

The EBDA variables upstream of OLEPS (AEPS flow, HEPS flow, Hayward Marsh discharge) do not affect OLEPS capacity. It was also determined by Carollo that the OLEPS wet well level being fixed at either 5 or 7 feet was negligible (less than 1 mgd difference) in the context of the capacity of OLEPS.

The variables considered in this scenario are the tidal levels and LAVWMA discharge of either 19.7 mgd or 41.2 mgd. The results of this scenario are shown below in Figure 10 and Figure 11 is a close-up view of the upper portion of Table 5. It should be noted that these figures are not meant to show MDF capacity, but rather OLEPS capacity and the corresponding flows seen at MDF with SLEPS discharge fixed at 17 mgd.

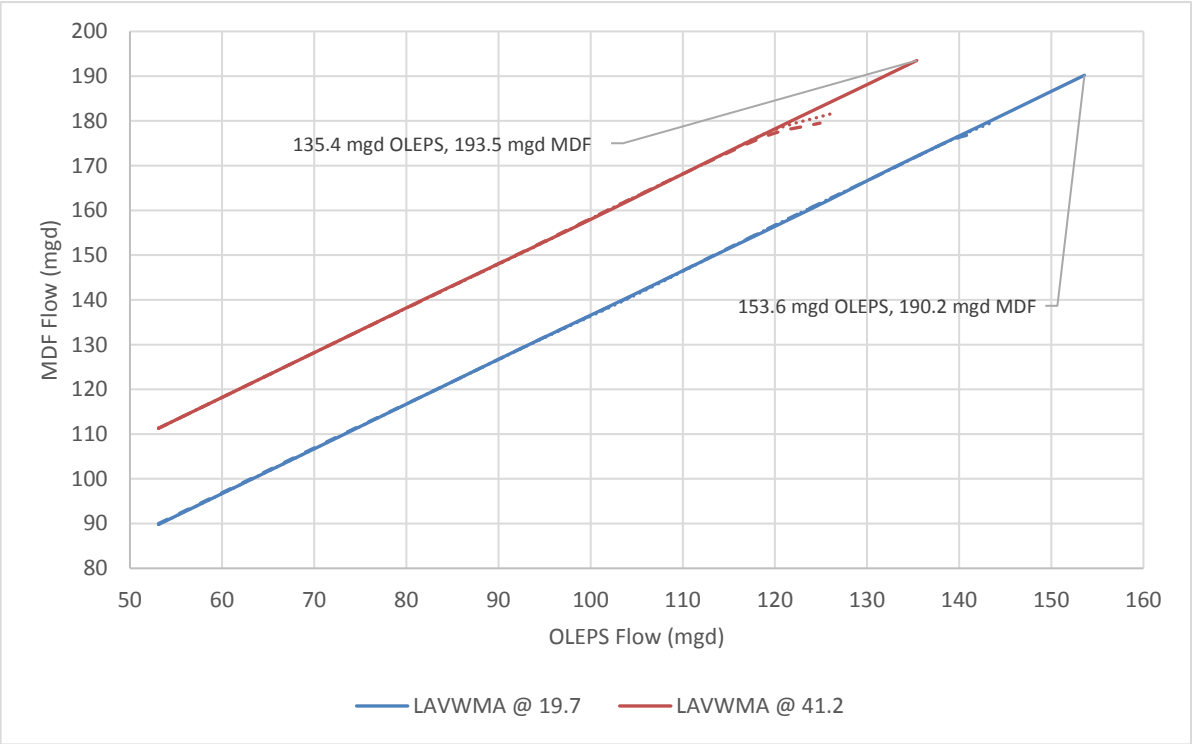


Figure 10 MDF Flow vs. OLEPS Flow

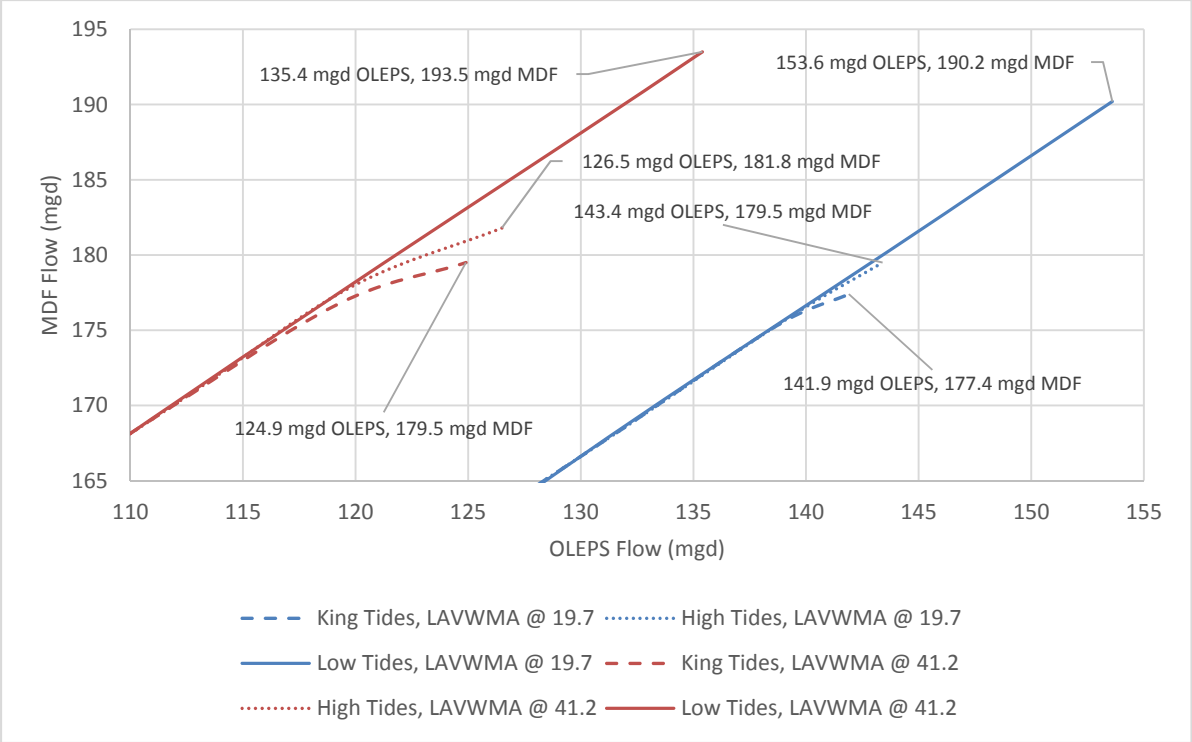


Figure 11 MDF Flow vs. OLEPS Flow (Detail)

The endpoints of each line in as shown in Figure 10 and Figure 11 represent the capacity of OLEPS under the corresponding flow conditions, and the resultant flow seen at OLEPS. As shown, the capacity of OLEPS and the corresponding flows seen at MDF increase substantially under low tide conditions when compared to high tide and King tide conditions. While high tide only provides approximately 2 mgd greater OLEPS capacity when compared to King tide, low tide provides approximately 13 mgd greater capacity over King tide conditions.

1.5 Summary

As part of this project, Carollo updated and recalibrated the EBDA hydraulic model, and performed a capacity analysis of various elements of the EBDA system under varying flow scenarios. The EBDA hydraulic model, originally built in 2011, was recalibrated using flow data from the winter of 2016-2017 for dry and wet weather conditions. Both the dry and wet weather calibrations fell within industry standards of the field measured data, and the trends seen in the field are well predicted by the model.

Following model recalibration, Carollo used the hydraulic model to evaluate the capacity of the transport system. The following flows and operational conditions were identified by EBDA for analysis:

- AEPS – 60/55 mgd
- HEPS – 20/15 mgd
- OLSD & CVSD – 30 mgd

- SLEPS – 17 mgd
- LAVWMA – 19.7/41.2 mgd
- With/without discharge to the Hayward Marsh
- OLEPS wet well level at 5′/7′/12′
- King tide/high tide

Based on the above parameters, Carollo evaluated the capacity of the transport system for the following model scenarios:

1. Using the flows and conditions above, determine the capacity of the transport system between AEPS and OLEPS as a function of the different AEPS and HEPS flows and OLEPS wet well levels.
2. Using the flows and conditions above, determine the capacity of AEPS.
3. Using the flows and conditions above, determine the capacity of HEPS.
4. Determine the impact of OLEPS flows and different tides on the MDF capacity.

The findings of each scenario are summarized below. Tabular results have been developed for Scenarios 1 through 3. Because the available capacity at AEPS is dependent upon the flow at HEPS, and vice-versa, the hydraulic model was run at 5 mgd intervals of HEPS and AEPS flow (depending on the scenario). The maximum capacity of AEPS and HEPS was then determined (depending on the scenario). In each table, there are some flow values that do not coincide with a 5 mgd flow interval. These values coincide with the maximum pumping capacity of either AEPS or HEPS at a given OLEPS wet well level. Values listed as "N/A" were not analyzed for that particular OLEPS wet well depth.

The purpose of Scenario 1 was to determine the capacity of the EBDA transport system between AEPS and OLEPS. The results of the capacity analysis for Scenario 1 are summarized in Table 6 and Table 7. As shown, the capacity of the transport system without discharge to the Hayward Marsh varies from 50.6 mgd to 84.8 mgd, depending on HEPS discharge and OLEPS wet well level. With discharge to the Hayward Marsh included, the transport system capacity from AEPS to OLEPS varies between 56.6 mgd and 95.0 mgd.

Table 6 Scenario 1 - AEPS-OLEPS Transport System Capacity Summary (Without Hayward Marsh)

		Transport System Capacity (mgd)		
		OLEPS Wet Well Level		
		5 feet	7 feet	12 feet
HEPS Flow (mgd)	**0**	54.4	53.2	50.6
	5	58.1	57.1	54.2
	10	61.7	60.7	58.1
	15	65.2	64.1	61.5
	20	69.0	67.8	64.9
	25	72.2	71.2	68.5
	30	75.6	74.4	71.9
	35	78.6	77.4	74.8
	40	81.9	80.7	77.8
	43.3	N/A	N/A	80.1
	44.5	N/A	83.7	N/A
	44.8	84.8	N/A	N/A

Table 7 Scenario 1 - AEPS-OLEPS Transport System Capacity Summary (With Hayward Marsh)

		Transport System Capacity (mgd)		
		OLEPS Wet Well Level		
		5 feet	7 feet	12 feet
HEPS Flow (mgd)	**0**	60.2	59.1	56.6
	5	64.2	62.8	60.3
	10	68.2	67.0	64.4
	15	71.5	70.7	68.3
	20	75.5	74.4	71.4
	25	79.5	78.0	75.4
	30	82.8	81.7	79.1
	35	86.9	85.0	82.5
	40	89.8	88.6	85.9
	45	93.2	92.0	89.4
	46.2	N/A	N/A	90.2
	47.4	N/A	93.5	N/A
	47.9	95.0	N/A	N/A

The purpose of Scenario 2 was to determine the capacity of AEPS using the varying flow conditions at HEPS. The results of the capacity analysis for Scenario 2 are summarized in Table 8 and Table 9. As shown, the capacity of AEPS without discharge to the Hayward Marsh varies from 36.8 mgd to 54.4 mgd, depending on HEPS discharge and OLEPS wet well level. With discharge to the Hayward Marsh included, the AEPS capacity ranges from 44.0 mgd to 60.2 mgd.

Table 8 Scenario 2 - AEPS Capacity Summary (Without Hayward Marsh)

		AEPS Capacity (mgd)		
		OLEPS Wet Well Level		
		5 feet	7 feet	12 feet
HEPS Flow (mgd)	**0**	54.4	53.2	50.6
	5	53.1	52.1	49.2
	10	51.7	50.7	48.1
	15	50.2	49.1	46.5
	20	49.0	47.8	44.9
	25	47.2	46.2	43.5
	30	45.6	44.4	41.9
	35	43.6	42.4	39.8
	40	41.9	40.7	37.8
	43.3	N/A	N/A	36.8
	44.5	N/A	39.2	N/A
	44.8	40.0	N/A	N/A

Table 9 Scenario 2 - AEPS Capacity Summary (With Hayward Marsh)

		AEPS Capacity (mgd)		
		OLEPS Wet Well Level		
		5 feet	7 feet	12 feet
HEPS Flow (mgd)	**0**	60.2	59.0	56.4
	5	59.2	57.9	55.5
	10	58.0	56.9	54.3
	15	56.7	55.6	53.0
	20	55.7	54.3	51.7
	25	54.2	53.0	50.4
	30	52.8	51.6	49.1
	35	51.4	50.2	47.5
	40	49.7	48.7	46.0
	45	48.2	47.0	44.4
	46.2	N/A	N/A	44.0
	47.4	N/A	46.1	N/A
	47.9	47.1	N/A	N/A

The purpose of Scenario 3 was to determine the capacity of HEPS using the varying flow conditions at AEPS. The results of the capacity analysis for Scenario 3 are summarized in Table 10 and Table 11. As shown, the capacity of HEPS without discharge to the Hayward Marsh varies from 43.3 mgd to 51.8 mgd, depending on AEPS discharge and OLEPS wet well level. With discharge to the Hayward Marsh included, the HEPS capacity ranges from 46.2 mgd to 51.8 mgd.

Table 10 Scenario 3 - HEPS Capacity Summary (Without Hayward Marsh)

		HEPS Capacity (mgd)		
		OLEPS Wet Well Level		
		5 feet	7 feet	12 feet
AEPS Flow (mgd)	**0**	51.8	51.8	50.9
	5	51.8	51.7	50.0
	10	51.5	50.7	49.1
	15	50.5	49.9	48.1
	20	49.6	48.9	47.2
	25	48.6	47.7	46.1
	30	47.2	46.6	44.8
	35	46.1	45.4	43.6
	36.8	N/A	N/A	43.3
	39.1	N/A	44.5	N/A
	39.3	44.6	N/A	N/A

Table 11 Scenario 3 - HEPS Capacity Summary (With Hayward Marsh)

		HEPS Capacity (mgd)		
		OLEPS Wet Well Level		
		5 feet	7 feet	12 feet
AEPS Flow (mgd)	**0**	51.8	51.8	51.8
	5	51.8	51.8	51.3
	10	51.8	51.8	50.8
	15	51.8	51.6	50.3
	20	51.8	51.3	50.0
	25	51.6	51.0	49.7
	30	51.1	50.6	49.0
	35	50.4	49.8	48.0
	40	49.5	48.8	47.0
	44	N/A	N/A	46.2
	45	48.5	47.6	N/A
	46.1	N/A	47.4	N/A
	47.1	47.9	N/A	N/A

The purpose of Scenario 4 was to determine the flows at MDF based on varying OLEPS flows and tidal levels. Three different tidal levels were modeled – low tide, high tide, and King tide. The following summarizes the results of the Scenario 4 evaluation:

- **LAVWMA flow = 19.7 mgd and SLEPS flow = 17 mgd.** The pumping capacity of OLPES ranges from 141.9 mgd to 153.6 mgd depending on the tide condition. This corresponds to a flow range of 177.4 mgd to 190.2 mgd at MDF.

- **LAVWMA flow = 41.2 mgd and SLEPS flow = 17 mgd.** The pumping capacity of OLPES ranges from 124.9 mgd to 135.4 mgd depending on the tide condition. This corresponds to a flow range of 179.5 mgd to 193.5 mgd at MDF.

Appendix A

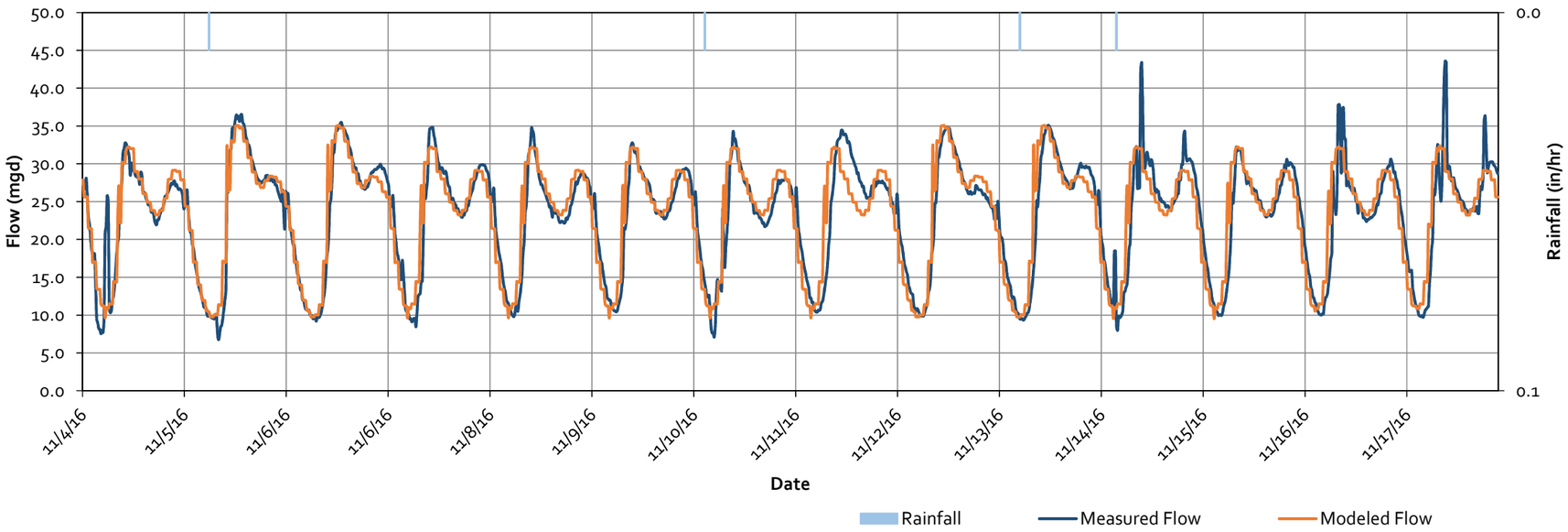
HYDRAULIC MODEL CALIBRATION SUMMARY

EBDA

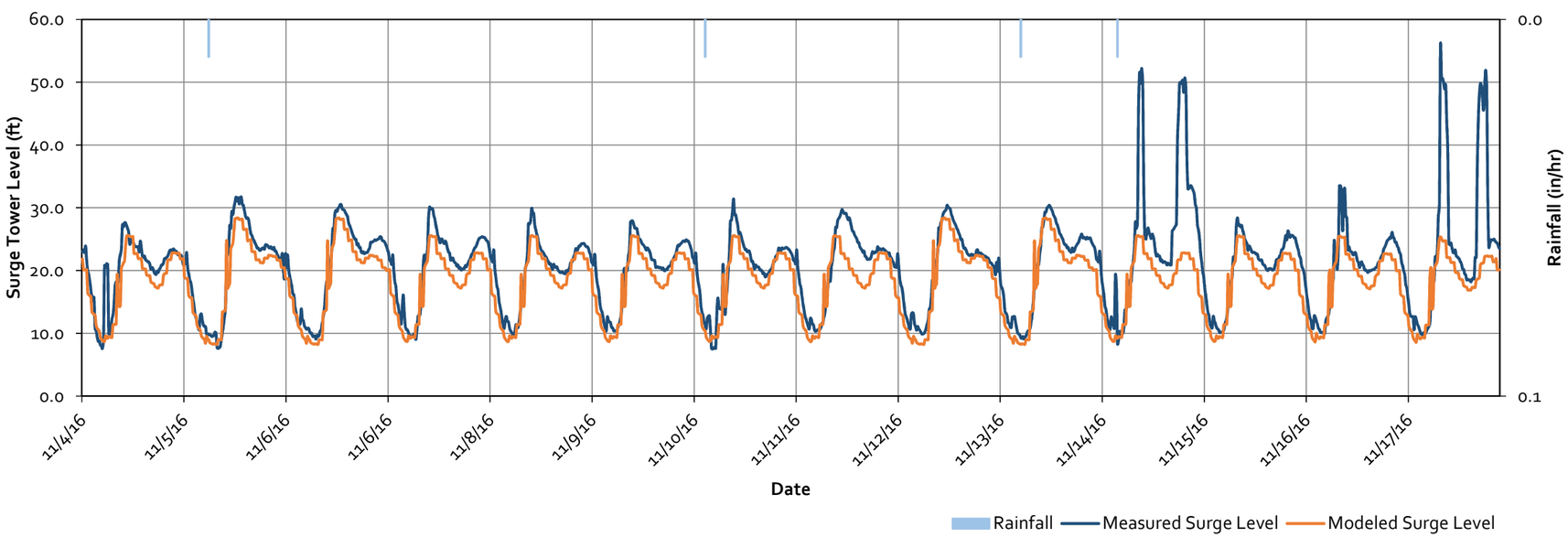
DRY WEATHER HYDRAULIC MODEL CALIBRATION

ALVARADO EFFLUENT PUMP STATION

Flow Calibration



Surge Level Calibration



DWF Calibration Summary (11/4/16 - 11/17/16)

Variable	Measured[1] Avg. (mgd)	Measured[1] Max. (mgd)	Measured[1] Min. (mgd)	Modeled Avg. (mgd)	Modeled Max. (mgd)	Modeled Min. (mgd)	Percent Diff.[2] Avg.	Percent Diff.[2] Max.
Flow	23.2	36.5	6.8	23.4	35.1	9.5	1.1%	-4.0%
Surge Level	20.1	31.7	7.5	18.1	28.4	8.2	-9.8%	-10.5%

Notes:

(1) Source: Data provided by EBDA staff and member agencies.

(2) % Difference = (Modeled - Measured) / Measured x 100

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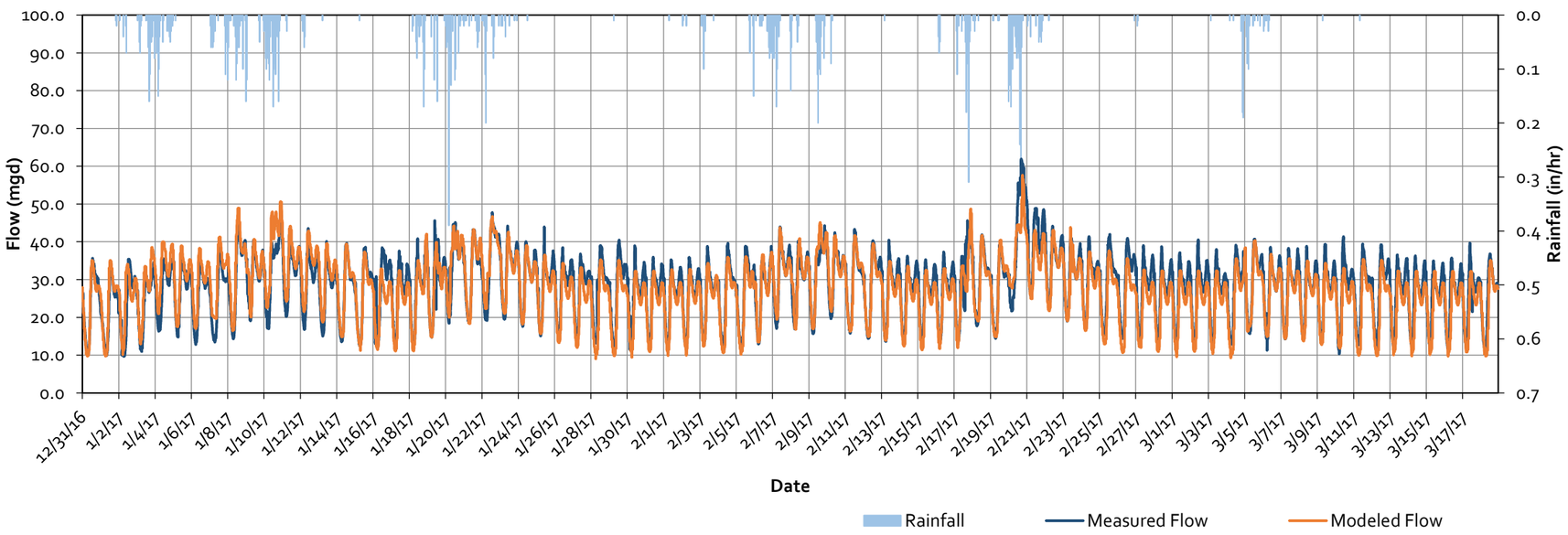
EBDA

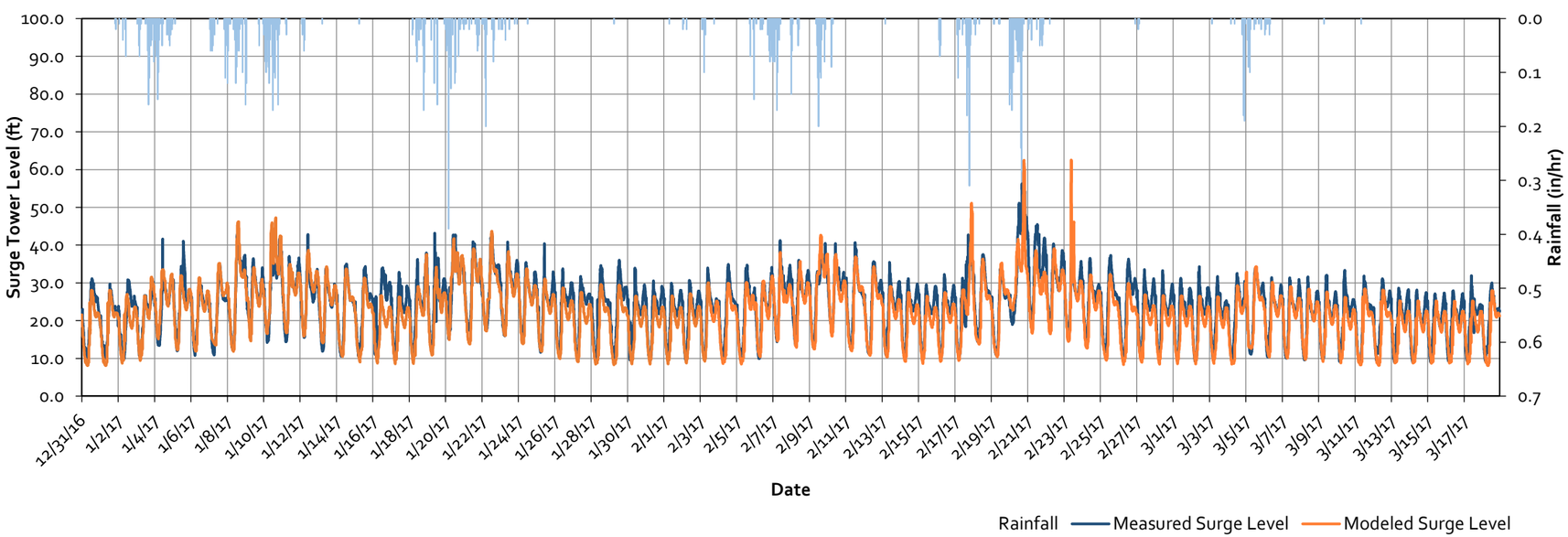
WET WEATHER HYDRAULIC MODEL CALIBRATION

ALVARADO EFFLUENT PUMP STATION

Flow Calibration



Surge Level Calibration



WWF Calibration Summary - Storm 1 - 1/7/17 - 1/16/17

Variable	Measured[1] Avg. (mgd)	Measured[1] Max. (mgd)	Measured[1] Min. (mgd)	Modeled Avg. (mgd)	Modeled Max. (mgd)	Modeled Min. (mgd)	Percent Diff.[2] Avg.	Percent Diff.[2] Max.
Flow	29.4	47.1	12.3	31.3	50.6	11.2	6.3%	7.4%
Surge Level	25.6	42.8	10.4	25.4	47.2	8.7	-0.7%	10.4%

WWF Calibration Summary - Storm 2 - 2/3/17 - 2/13/17

Variable	Measured[1] Avg. (mgd)	Measured[1] Max. (mgd)	Measured[1] Min. (mgd)	Modeled Avg. (mgd)	Modeled Max. (mgd)	Modeled Min. (mgd)	Percent Diff.[2] Avg.	Percent Diff.[2] Max.
Flow	29.0	44.2	11.6	28.6	45.1	10.2	-1.3%	2.0%
Surge Level	24.9	41.2	9.5	23.5	42.6	8.5	-5.9%	3.5%

WWF Calibration Summary - Storm 3 - 2/16/17 - 3/4/17

Variable	Measured[1] Avg. (mgd)	Measured[1] Max. (mgd)	Measured[1] Min. (mgd)	Modeled Avg. (mgd)	Modeled Max. (mgd)	Modeled Min. (mgd)	Percent Diff.[2] Avg.	Percent Diff.[2] Max.
Flow	30.4	61.9	12.9	27.7	57.5	9.3	-8.7%	-7.1%
Surge Level	25.6	56.2	9.0	22.8	62.5	8.4	-10.7%	11.2%

Notes:

(1) Source: Data provided by EBDA staff and member agencies.

(2) % Difference = (Modeled - Measured) / Measured x 100

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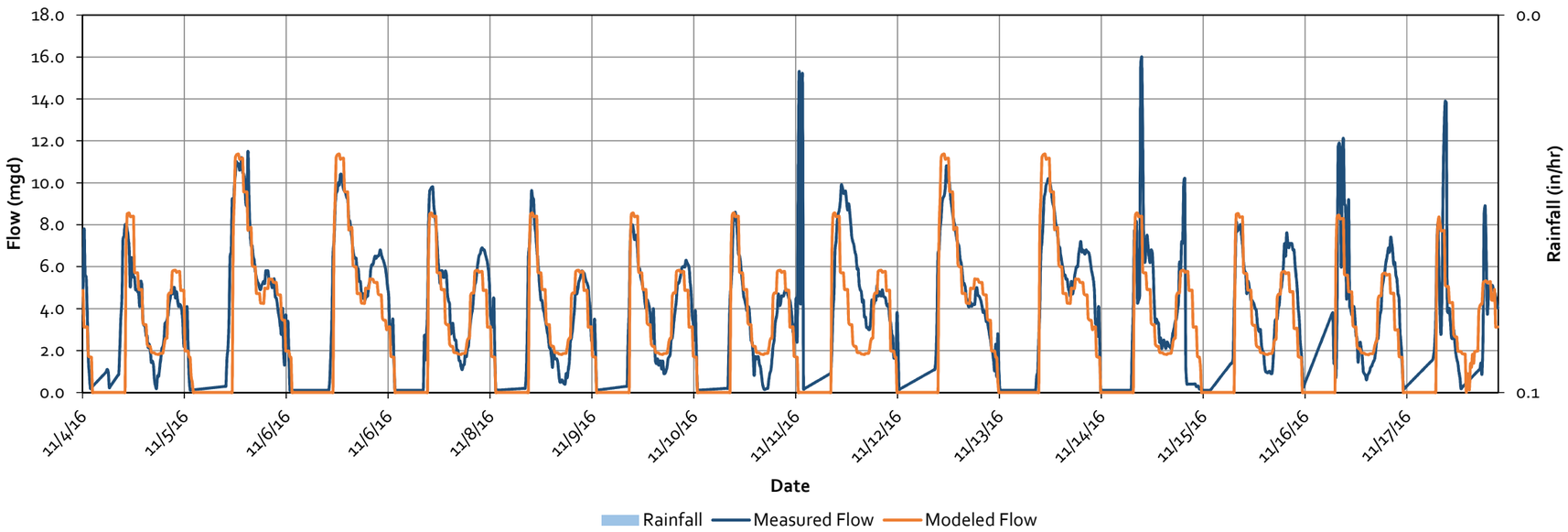
EBDA DRY WEATHER HYDRAULIC MODEL CALIBRATION
HAYWARD MARSH

Flow Calibration



DWF Calibration Summary

Variable	Measured[1] Avg. (mgd)	Measured[1] Max. (mgd)	Measured[1] Min. (mgd)	Modeled Avg. (mgd)	Modeled Max. (mgd)	Modeled Min. (mgd)	Percent Diff.[2] Avg.	Percent Diff.[2] Max.
Flow	3.2	11.5	0.1	3.0	11.4	0.0	-7.6%	-1.1%

Notes:

(1) Source: Data provided by EBDA staff and member agencies.

(2) % Difference = (Modeled - Measured) / Measured x 100

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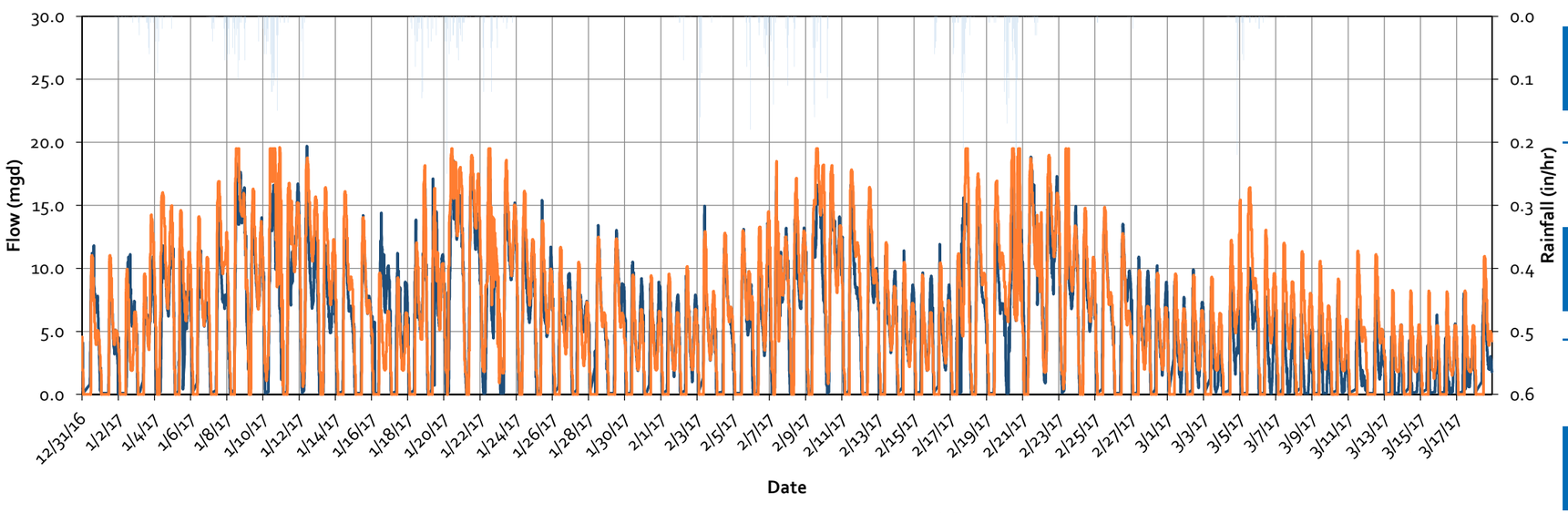
EBDA HYDRAULIC MODEL CALIBRATION
HAYWARD MARSH

Flow Calibration



WWF Calibration Summary - Storm 1 - 1/7/17 - 1/16/17

Variable	Measured[1] Avg. (mgd)	Measured[1] Max. (mgd)	Measured[1] Min. (mgd)	Modeled Avg. (mgd)	Modeled Max. (mgd)	Modeled Min. (mgd)	Percent Diff.[2] Avg.	Percent Diff.[2] Max.
Flow	7.0	19.7	0.1	8.4	19.5	0.0	20.3%	-1.0%

WWF Calibration Summary - Storm 2 - 2/3/17 - 2/13/17

Variable	Measured[1] Avg. (mgd)	Measured[1] Max. (mgd)	Measured[1] Min. (mgd)	Modeled Avg. (mgd)	Modeled Max. (mgd)	Modeled Min. (mgd)	Percent Diff.[2] Avg.	Percent Diff.[2] Max.
Flow	6.3	17.3	0.1	7.3	19.5	0.0	15.7%	12.7%

WWF Calibration Summary - Storm 3 - 2/16/17 - 3/4/17

Variable	Measured[1] Avg. (mgd)	Measured[1] Max. (mgd)	Measured[1] Min. (mgd)	Modeled Avg. (mgd)	Modeled Max. (mgd)	Modeled Min. (mgd)	Percent Diff.[2] Avg.	Percent Diff.[2] Max.
Flow	5.8	18.8	0.1	6.4	19.5	0.0	10.8%	3.7%

Notes:
(1) Source: Data provided by EBDA staff and member agencies.
(2) % Difference = (Modeled - Measured) / Measured x 100

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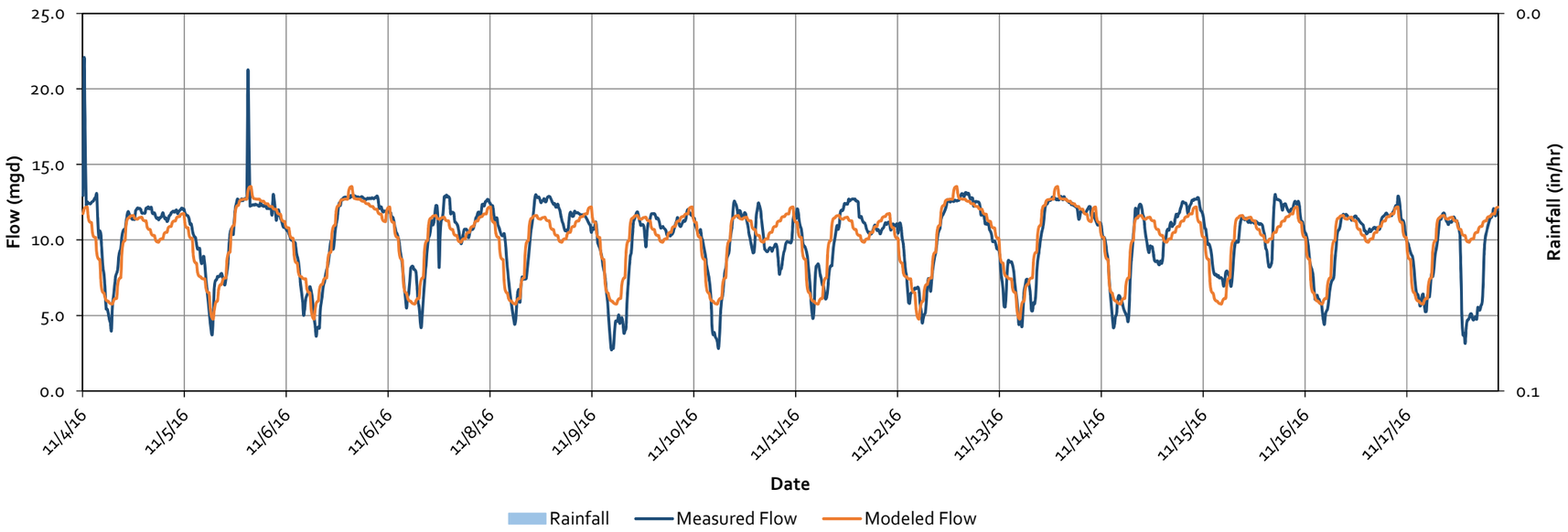
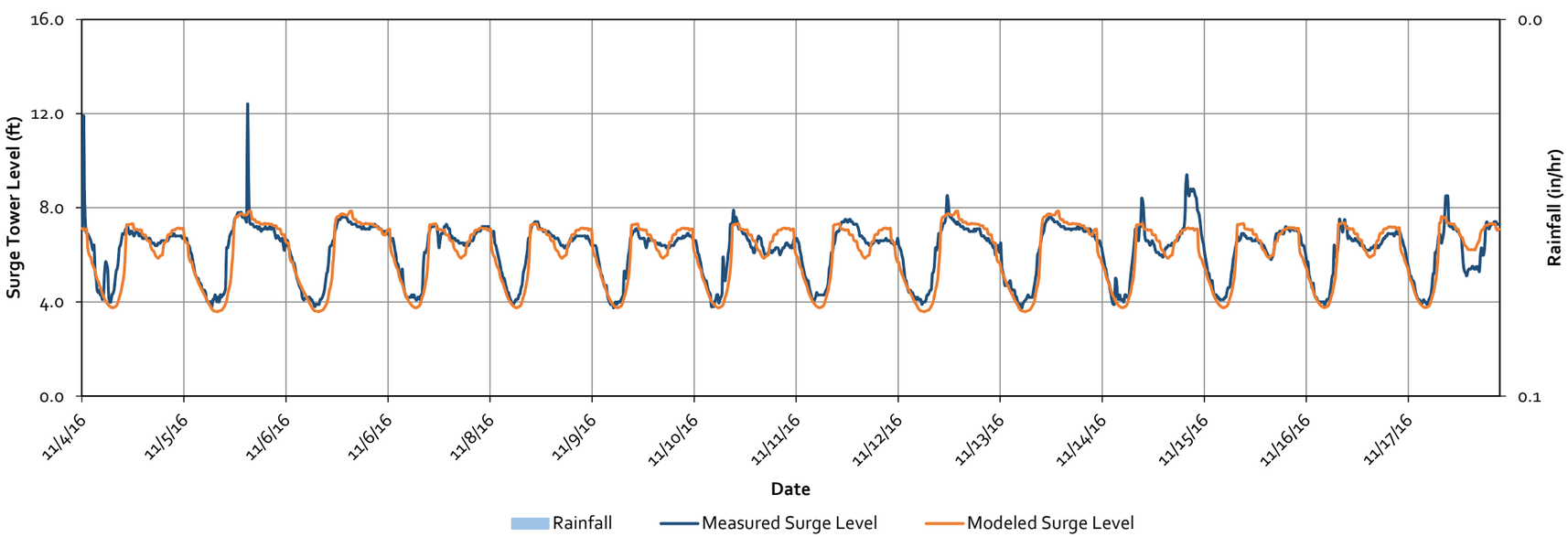
DRY WEATHER HYDRAULIC MODEL CALIBRATION

HAYWARD EFFLUENT PUMP STATION

Flow Calibration



Surge Level Calibration



DWF Calibration Summary

Variable	Measured[1] Avg. (mgd)	Measured[1] Max. (mgd)	Measured[1] Min. (mgd)	Modeled Avg. (mgd)	Modeled Max. (mgd)	Modeled Min. (mgd)	Percent Diff.[2] Avg.	Percent Diff.[2] Max.
Flow	10.0	13.1	2.7	10.0	13.5	4.8	0.3%	3.0%
Surge Level	6.1	9.4	3.7	6.0	7.9	3.6	-2.1%	-16.4%

Notes:

(1) Source: Data provided by EBDA staff and member agencies.

(2) % Difference = (Modeled - Measured) / Measured x 100

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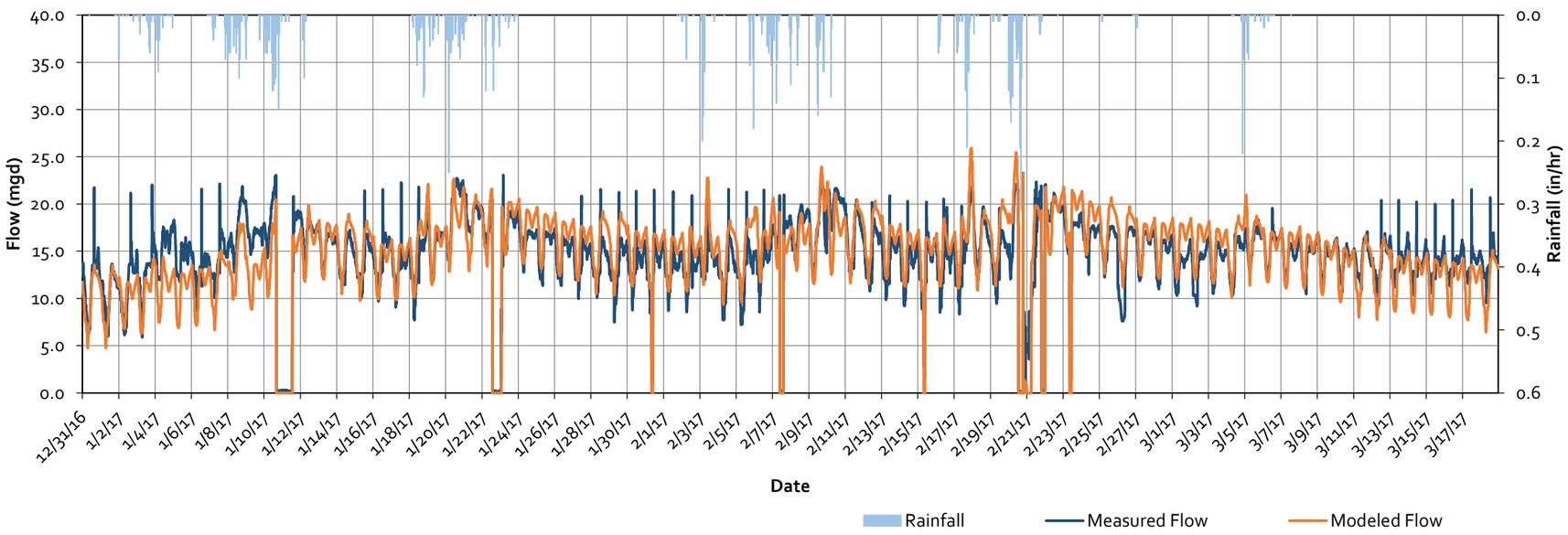
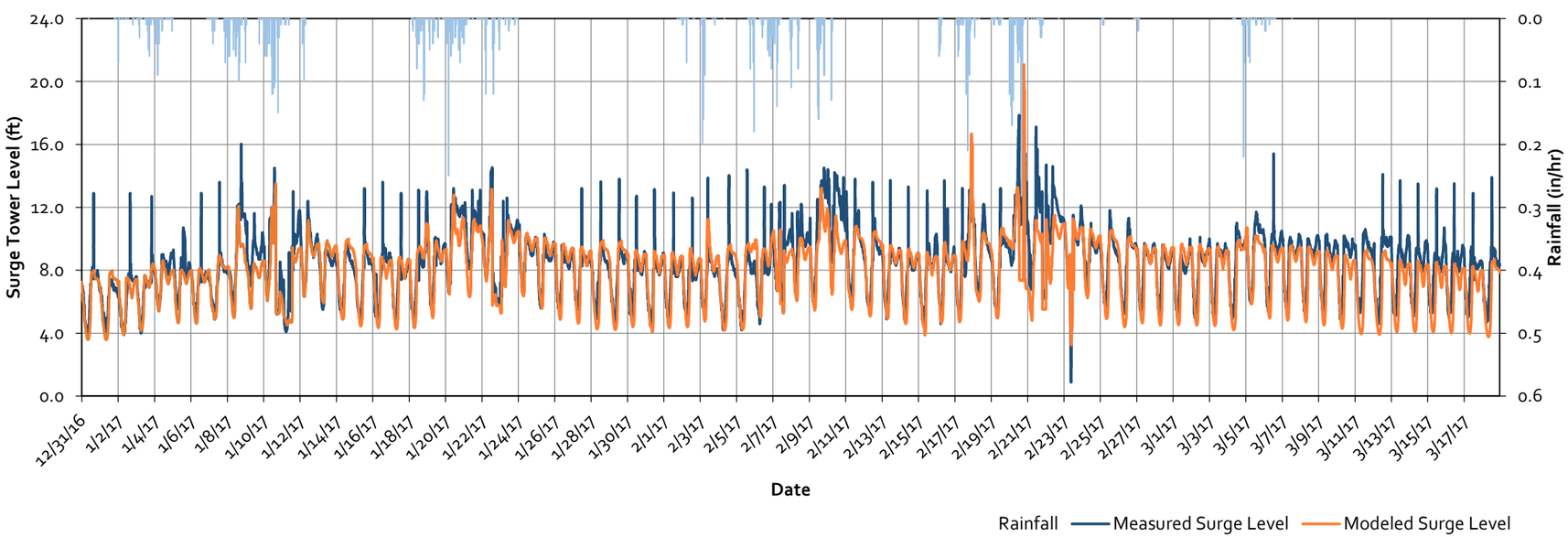
HYDRAULIC MODEL CALIBRATION

HAYWARD EFFLUENT PUMP STATION

Flow Calibration



Surge Level Calibration



WWF Calibration Summary - Storm 1 - 1/7/17 - 1/16/17

Variable	Measured[1] Avg. (mgd)	Measured[1] Max. (mgd)	Measured[1] Min. (mgd)	Modeled Avg. (mgd)	Modeled Max. (mgd)	Modeled Min. (mgd)	Percent Diff.[2] Avg.	Percent Diff.[2] Max.
Flow	14.4	23.0	0.0	13.3	20.4	0.0	-7.8%	-11.3%
Surge Level	8.3	16.0	4.1	7.9	13.5	4.3	-4.9%	-15.7%

WWF Calibration Summary - Storm 2 - 2/3/17 - 2/13/17

Variable	Measured[1] Avg. (mgd)	Measured[1] Max. (mgd)	Measured[1] Min. (mgd)	Modeled Avg. (mgd)	Modeled Max. (mgd)	Modeled Min. (mgd)	Percent Diff.[2] Avg.	Percent Diff.[2] Max.
Flow	15.4	22.0	0.0	16.2	23.9	0.0	5.4%	9.0%
Surge Level	8.8	14.5	4.2	8.4	13.2	4.2	-4.2%	-8.8%

WWF Calibration Summary - Storm 3 - 2/16/17 - 3/4/17

Variable	Measured[1] Avg. (mgd)	Measured[1] Max. (mgd)	Measured[1] Min. (mgd)	Modeled Avg. (mgd)	Modeled Max. (mgd)	Modeled Min. (mgd)	Percent Diff.[2] Avg.	Percent Diff.[2] Max.
Flow	14.7	22.3	0.0	16.0	25.9	0.0	9.5%	16.2%
Surge Level	8.9	17.8	0.9	8.5	21.0	3.2	-5.1%	18.1%

Notes:

(1) Source: Data provided by EBDA staff and member agencies.

(2) % Difference = (Modeled - Measured) / Measured x 100

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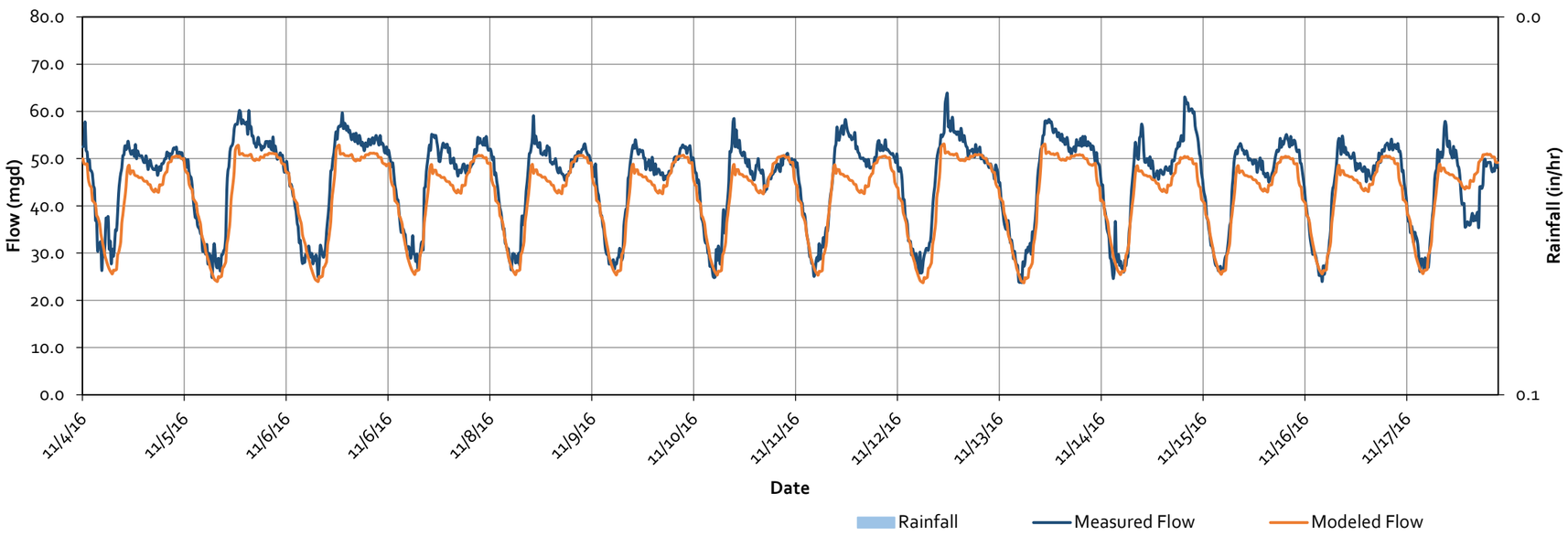
DRY WEATHER HYDRAULIC MODEL CALIBRATION

ORO LOMA EFFLUENT PUMP STATION

Flow Calibration



DWF Calibration Summary

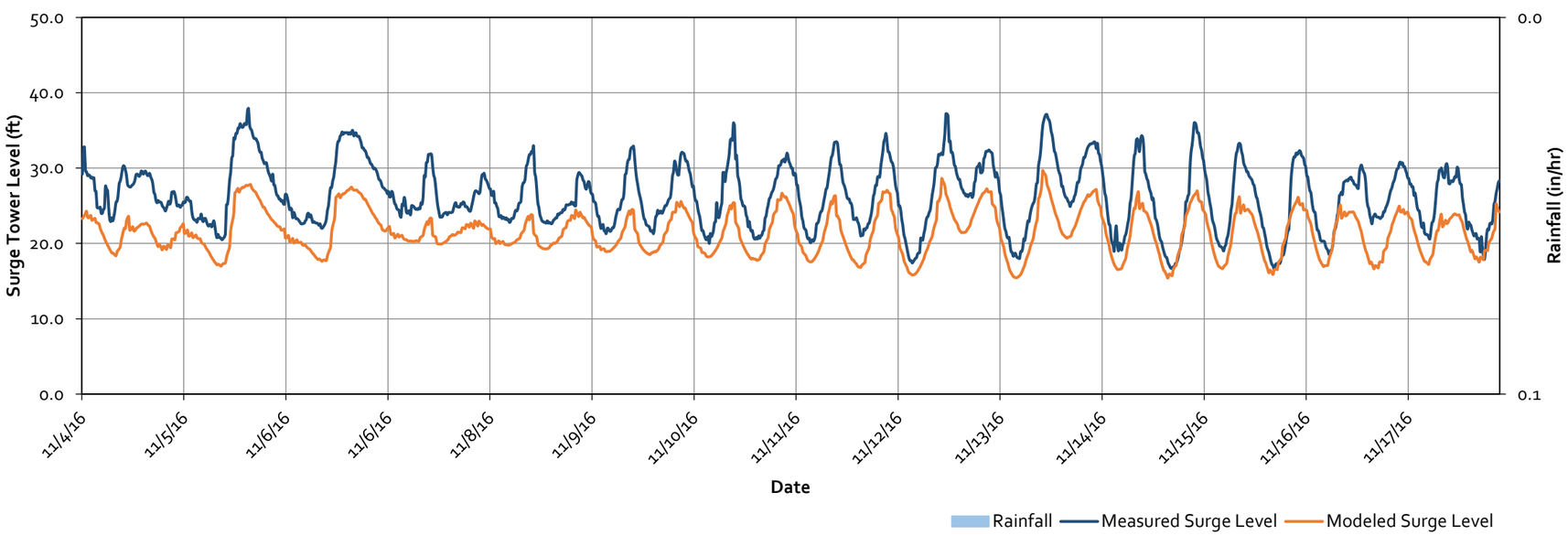
Variable	Measured[1] Avg. (mgd)	Measured[1] Max. (mgd)	Measured[1] Min. (mgd)	Modeled Avg. (mgd)	Modeled Max. (mgd)	Modeled Min. (mgd)	Percent Diff.[2] Avg.	Percent Diff.[2] Max.
Flow	45.1	63.8	23.8	42.2	53.1	23.7	-6.5%	-16.8%
Surge Level	26.3	37.9	16.6	21.5	29.7	15.4	-18.2%	-21.8%

Notes:

(1) Source: Data provided by EBDA staff and member agencies.

(2) % Difference = (Modeled - Measured) / Measured x 100

Surge Level Calibration



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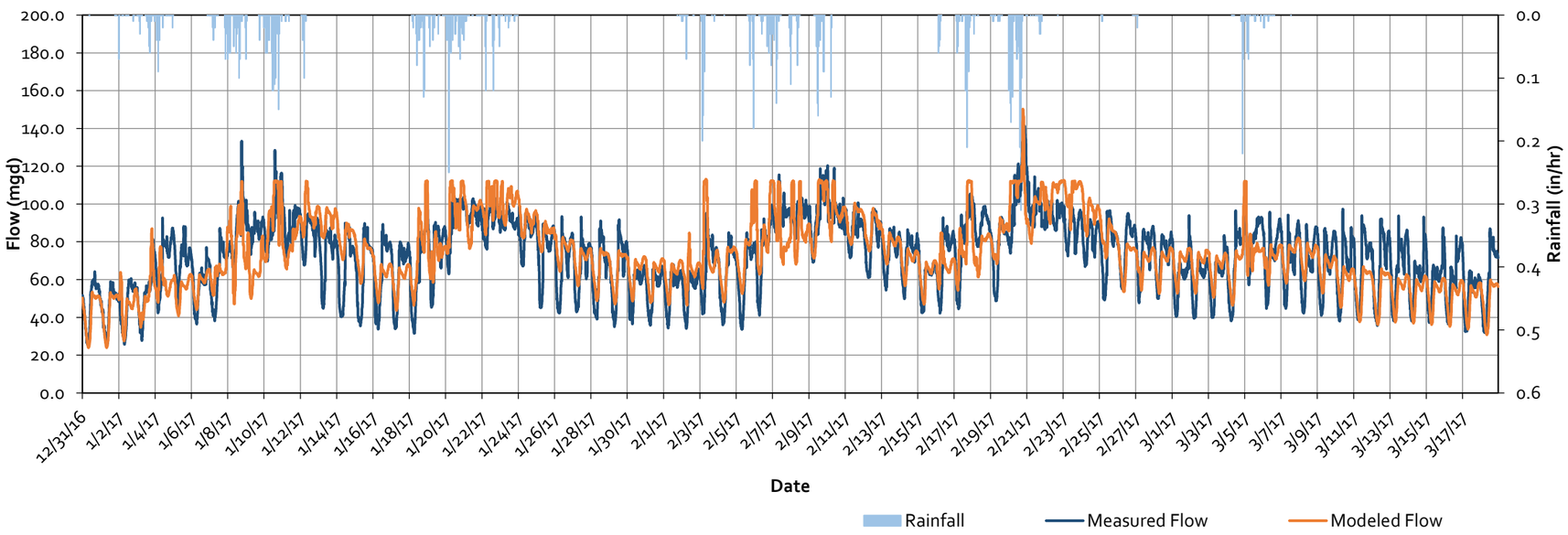
HYDRAULIC MODEL CALIBRATION

ORO LOMA EFFLUENT PUMP STATION

Flow Calibration



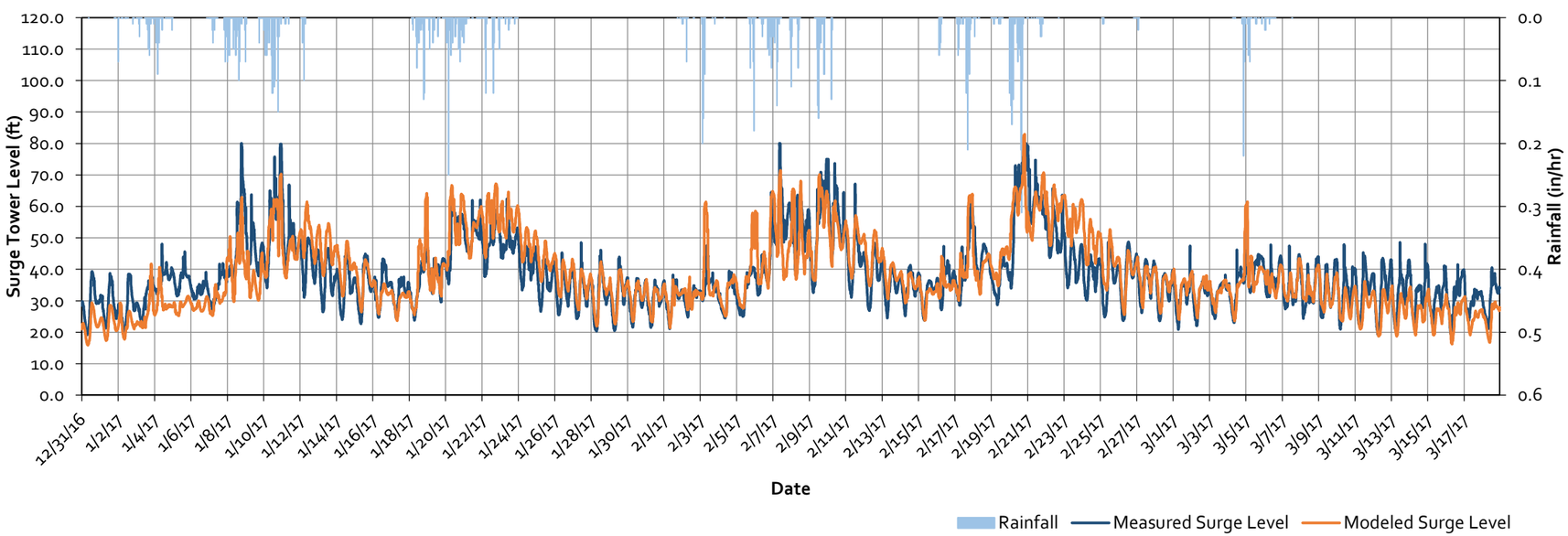
WWF Calibration Summary - Storm 1 - 1/7/17 - 1/16/17

Variable	Measured[1] Avg. (mgd)	Measured[1] Max. (mgd)	Measured[1] Min. (mgd)	Modeled Avg. (mgd)	Modeled Max. (mgd)	Modeled Min. (mgd)	Percent Diff.[2] Avg.	Percent Diff.[2] Max.
Flow	77.2	132.1	33.7	79.1	112.3	47.2	2.4%	-15.0%
Surge Level	42.0	80.0	22.7	41.8	70.3	25.3	-0.5%	-12.2%

WWF Calibration Summary - Storm 2 - 2/3/17 - 2/13/17

Variable	Measured[1] Avg. (mgd)	Measured[1] Max. (mgd)	Measured[1] Min. (mgd)	Modeled Avg. (mgd)	Modeled Max. (mgd)	Modeled Min. (mgd)	Percent Diff.[2] Avg.	Percent Diff.[2] Max.
Flow	81.0	120.3	33.7	84.6	113.1	48.0	4.5%	-6.0%
Surge Level	43.3	80.0	24.5	44.5	71.4	25.1	2.8%	-10.7%

Surge Level Calibration



WWF Calibration Summary - Storm 3 - 2/16/17 - 3/4/17

Variable	Measured[1] Avg. (mgd)	Measured[1] Max. (mgd)	Measured[1] Min. (mgd)	Modeled Avg. (mgd)	Modeled Max. (mgd)	Modeled Min. (mgd)	Percent Diff.[2] Avg.	Percent Diff.[2] Max.
Flow	78.9	141.4	38.2	81.6	150.2	46.4	3.4%	6.2%
Surge Level	40.6	80.0	20.9	43.2	82.9	23.6	6.4%	3.6%

Notes:

(1) Source: Data provided by EBDA staff and member agencies.

(2) % Difference = (Modeled - Measured) / Measured x 100

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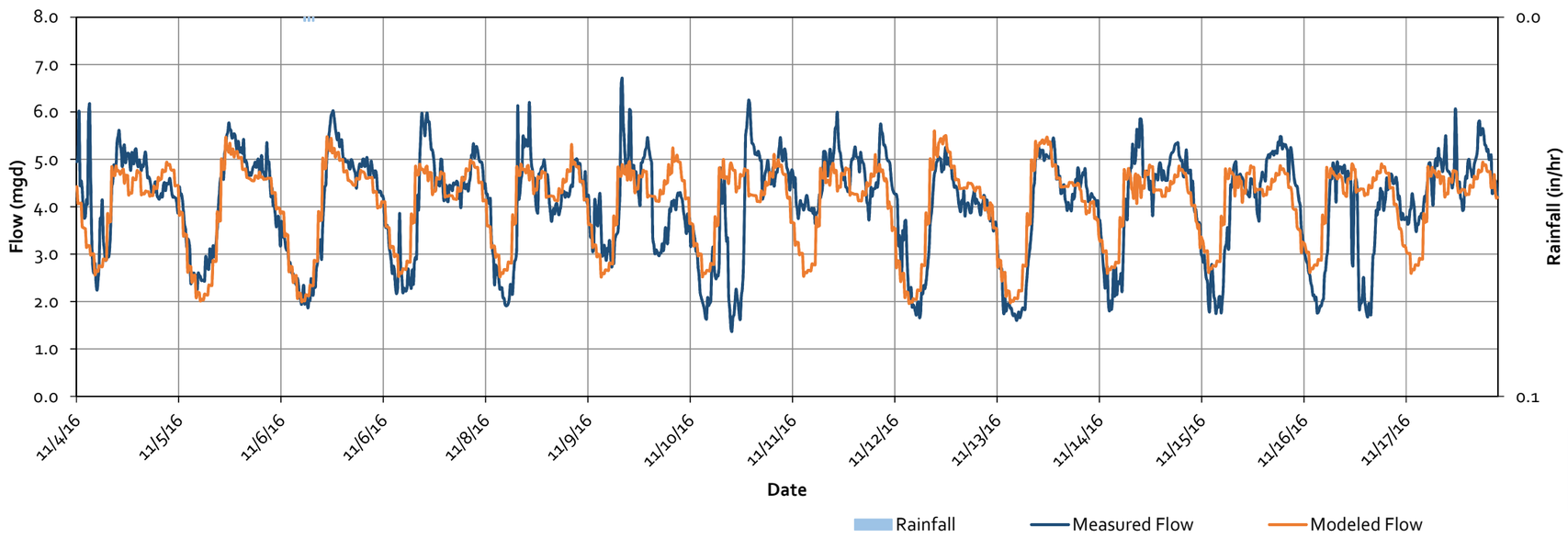
DRY WEATHER HYDRAULIC MODEL CALIBRATION

SAN LEANDRO EFFLUENT PUMP STATION

Flow Calibration



DWF Calibration Summary

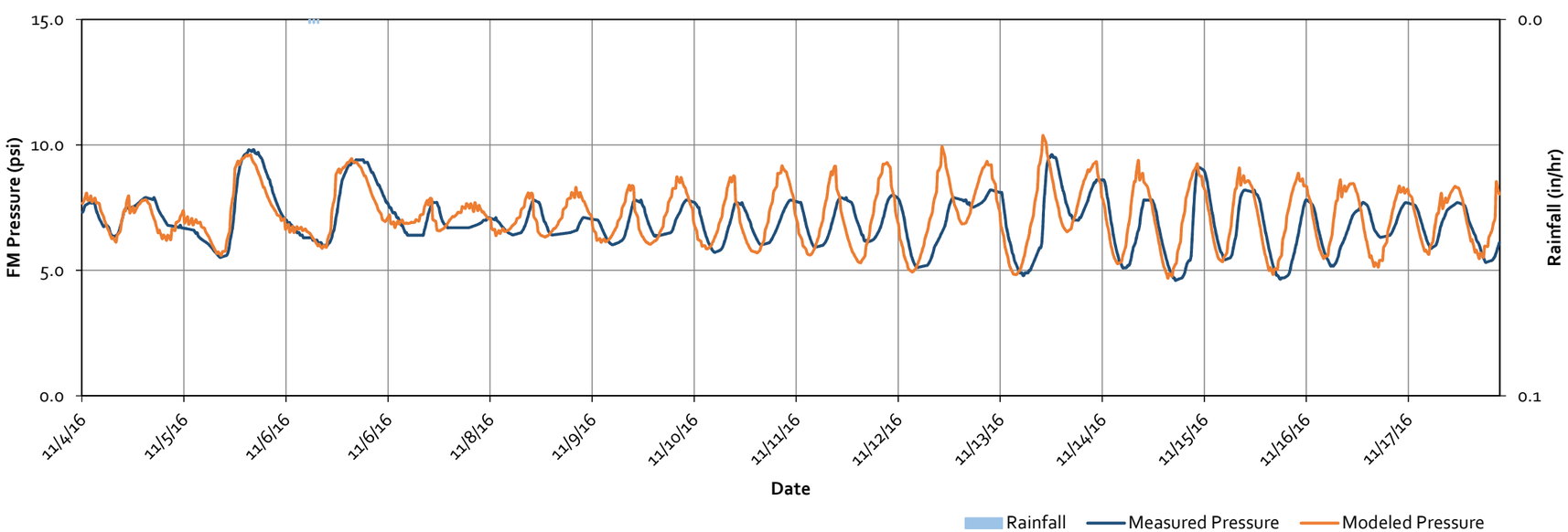
Variable	Measured[1] Avg. (mgd)	Measured[1] Max. (mgd)	Measured[1] Min. (mgd)	Modeled Avg. (mgd)	Modeled Max. (mgd)	Modeled Min. (mgd)	Percent Diff.[2] Avg.	Percent Diff.[2] Max.
Flow	4.1	6.7	1.4	4.1	5.6	2.0	0.1%	-16.6%
Pressure	6.9	9.8	4.6	7.2	10.4	4.7	3.6%	5.8%

Notes:

(1) Source: Data provided by EBDA staff and member agencies.

(2) % Difference = (Modeled - Measured) / Measured x 100

Pressure Calibration



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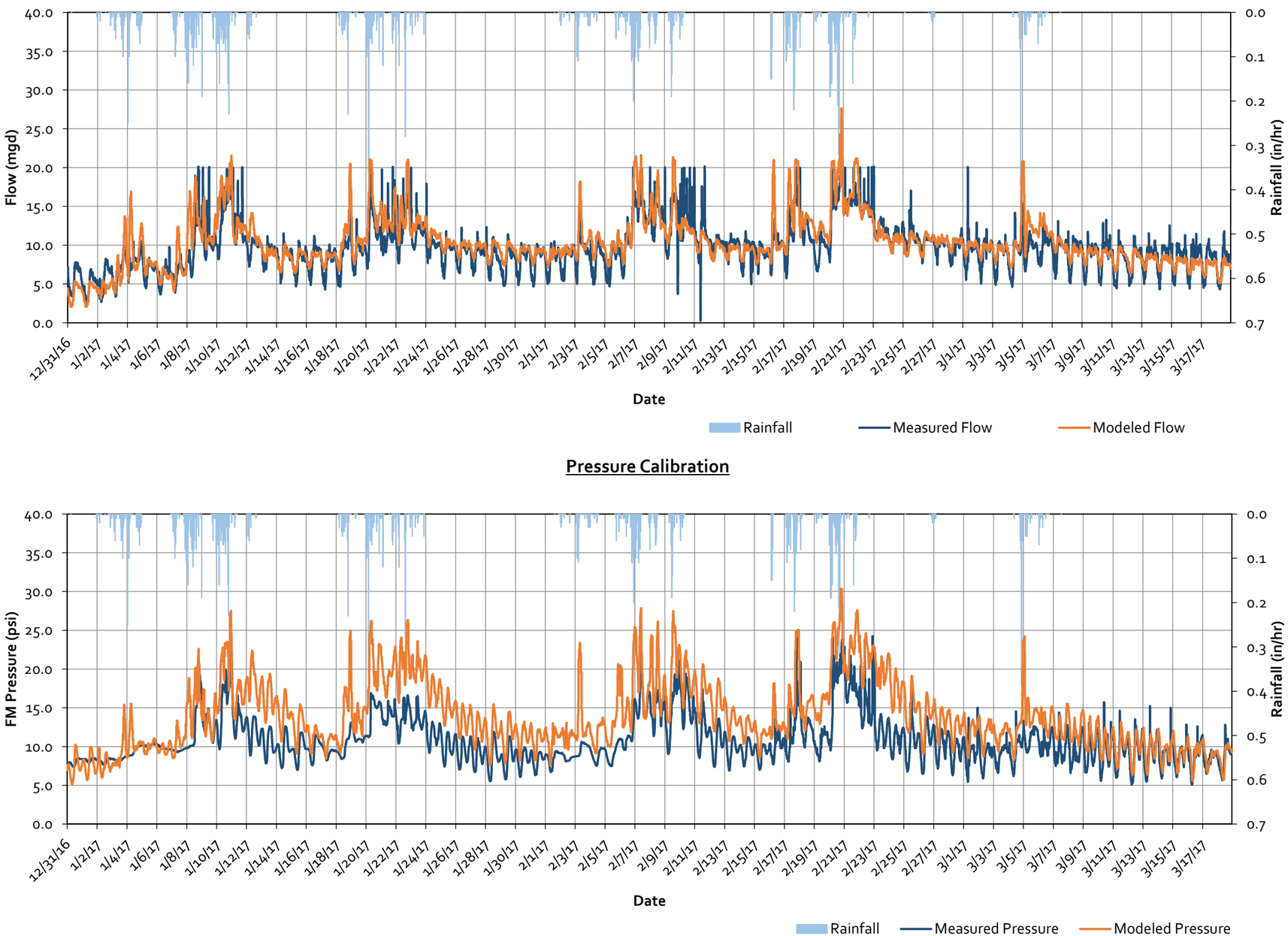
HYDRAULIC MODEL CALIBRATION

SAN LEANDRO EFFLUENT PUMP STATION

Flow Calibration



WWF Calibration Summary - Storm 1 - 1/7/17 - 1/16/17

Variable	Measured[1] Avg. (mgd)	Measured[1] Max. (mgd)	Measured[1] Min. (mgd)	Modeled Avg. (mgd)	Modeled Max. (mgd)	Modeled Min. (mgd)	Percent Diff.[2] Avg.	Percent Diff.[2] Max.
Flow	9.8	20.0	3.9	10.7	21.5	4.1	9.6%	7.7%
Pressure	11.7	22.8	7.0	15.1	27.5	8.5	29.5%	20.7%

WWF Calibration Summary - Storm 2 - 2/3/17 - 2/13/17

Variable	Measured[1] Avg. (mgd)	Measured[1] Max. (mgd)	Measured[1] Min. (mgd)	Modeled Avg. (mgd)	Modeled Max. (mgd)	Modeled Min. (mgd)	Percent Diff.[2] Avg.	Percent Diff.[2] Max.
Flow	11.1	20.0	0.3	11.6	21.6	7.3	5.2%	8.0%
Pressure	12.1	22.8	6.9	16.2	27.9	9.1	33.4%	22.2%

WWF Calibration Summary - Storm 3 - 2/16/17 - 3/4/17

Variable	Measured[1] Avg. (mgd)	Measured[1] Max. (mgd)	Measured[1] Min. (mgd)	Modeled Avg. (mgd)	Modeled Max. (mgd)	Modeled Min. (mgd)	Percent Diff.[2] Avg.	Percent Diff.[2] Max.
Flow	11.2	20.0	4.6	11.9	27.7	7.1	6.7%	38.3%
Pressure	11.5	24.5	5.4	15.8	30.3	8.3	37.0%	23.8%

Notes:

(1) Source: Data provided by EBDA staff and member agencies.

(2) % Difference = (Modeled - Measured) / Measured x 100

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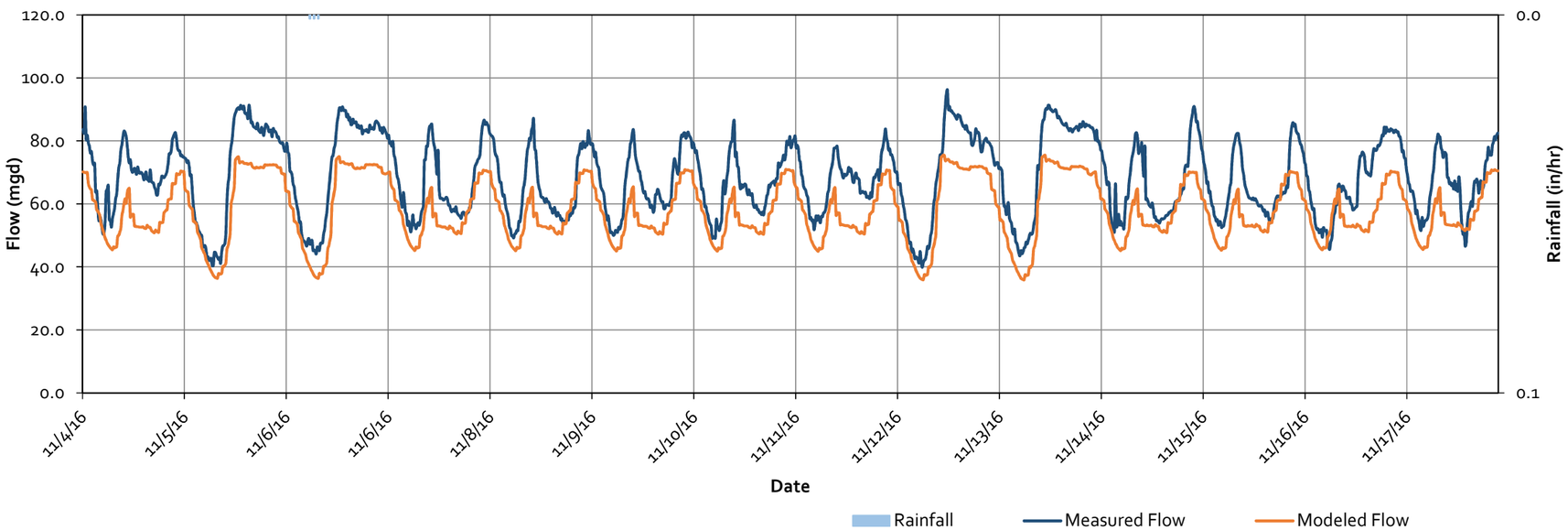
EBDA DRY WEATHER HYDRAULIC MODEL CALIBRATION
MARINA DECHLORINATION FACILITY

Flow Calibration



DWF Calibration Summary

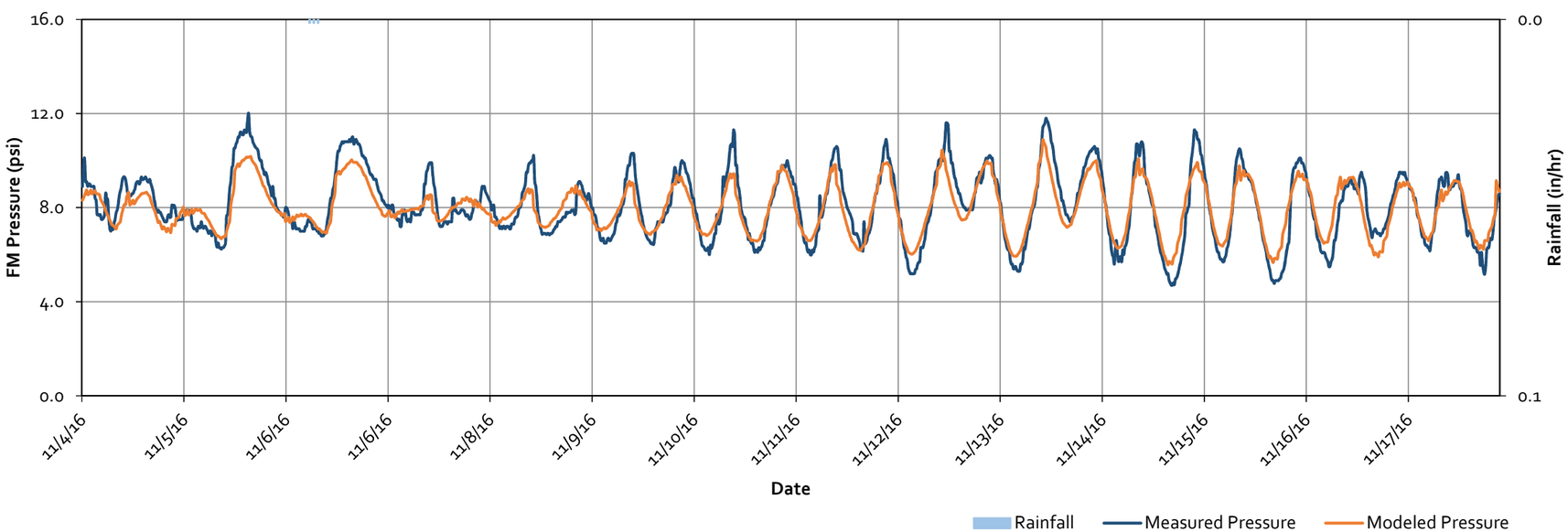
Variable	Measured[1] Avg. (mgd)	Measured[1] Max. (mgd)	Measured[1] Min. (mgd)	Modeled Avg. (mgd)	Modeled Max. (mgd)	Modeled Min. (mgd)	Percent Diff.[2] Avg.	Percent Diff.[2] Max.
Flow	68.1	96.1	39.9	57.9	75.4	35.9	-14.9%	-21.5%
Pressure	8.1	12.0	4.7	8.0	10.9	5.6	-1.3%	-9.3%

Notes:

(1) Source: Data provided by EBDA staff and member agencies.

(2) % Difference = (Modeled - Measured) / Measured x 100

Pressure Calibration



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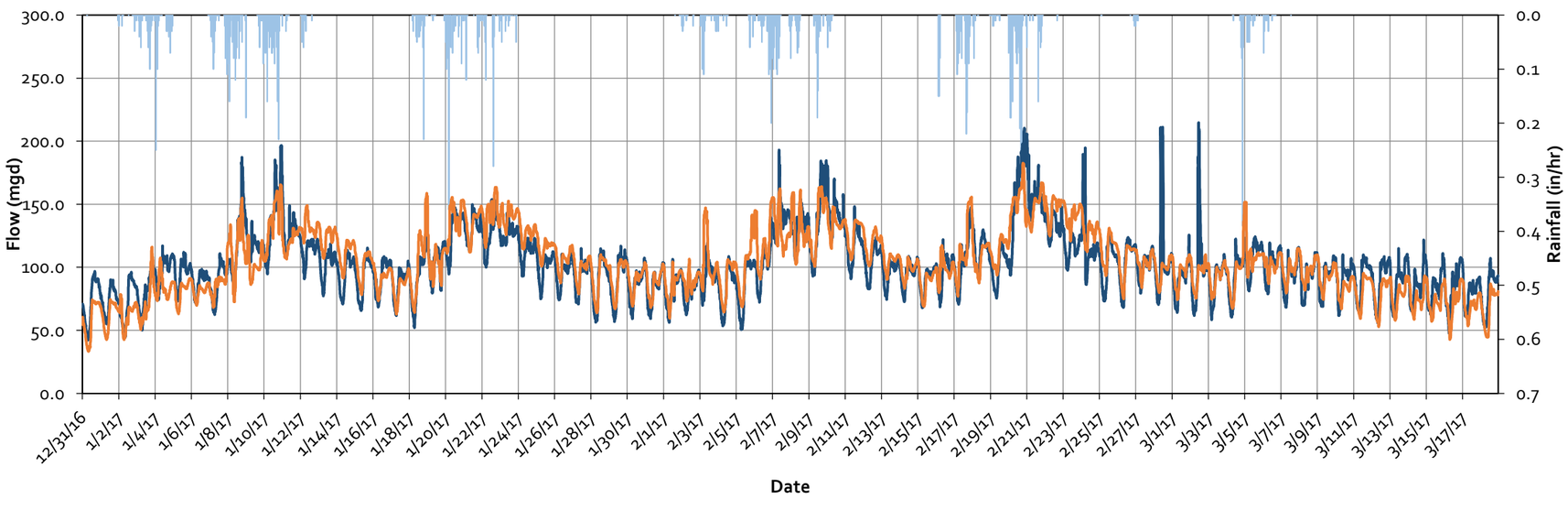
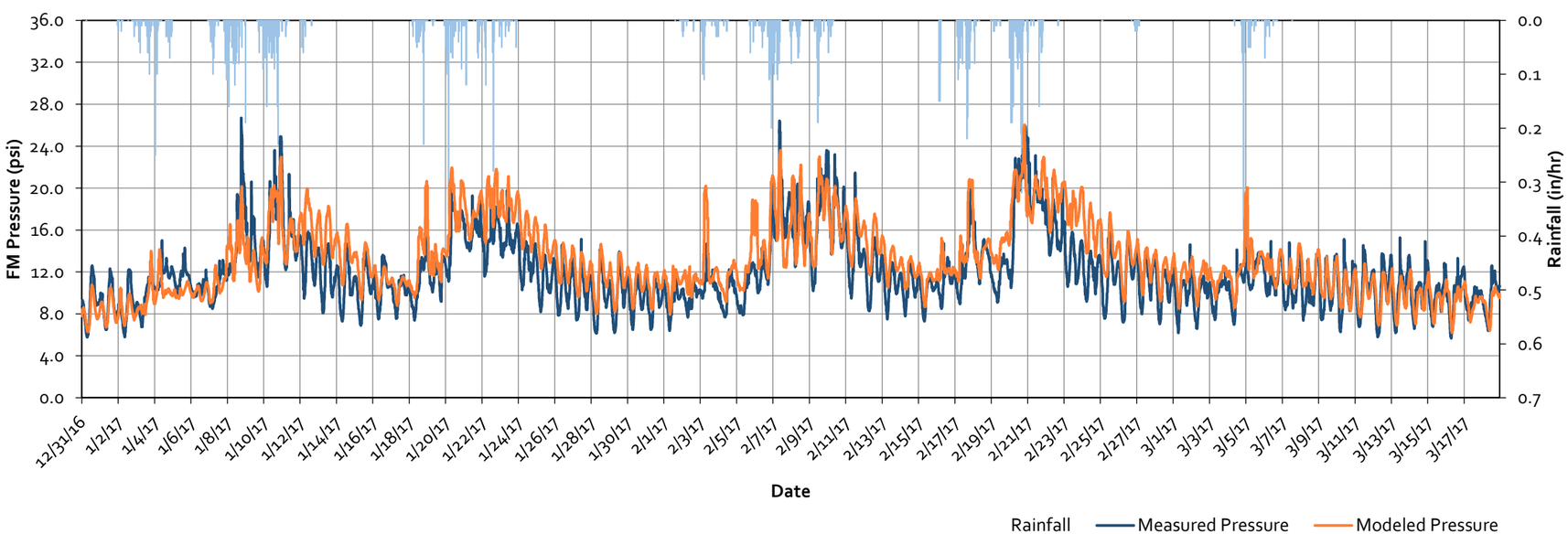
EBDA HYDRAULIC MODEL CALIBRATION
MARINA DECHLORINATION FACILITY

Flow Calibration



Pressure Calibration



WWF Calibration Summary - Storm 1 - 1/7/17 - 1/16/17

Variable	Measured[1] Avg. (mgd)	Measured[1] Max. (mgd)	Measured[1] Min. (mgd)	Modeled Avg. (mgd)	Modeled Max. (mgd)	Modeled Min. (mgd)	Percent Diff.[2] Avg.	Percent Diff.[2] Max.
Flow	109.5	196.4	62.5	112.6	165.5	68.2	2.9%	-15.7%
Pressure	13.1	26.6	6.9	14.1	23.0	9.0	7.8%	-13.7%

WWF Calibration Summary - Storm 2 - 2/3/17 - 2/13/17

Variable	Measured[1] Avg. (mgd)	Measured[1] Max. (mgd)	Measured[1] Min. (mgd)	Modeled Avg. (mgd)	Modeled Max. (mgd)	Modeled Min. (mgd)	Percent Diff.[2] Avg.	Percent Diff.[2] Max.
Flow	112.2	192.6	50.6	117.9	163.9	64.4	5.1%	-14.9%
Pressure	13.6	26.3	7.5	14.9	23.6	9.2	9.9%	-10.2%

WWF Calibration Summary - Storm 3 - 2/16/17 - 3/4/17

Variable	Measured[1] Avg. (mgd)	Measured[1] Max. (mgd)	Measured[1] Min. (mgd)	Modeled Avg. (mgd)	Modeled Max. (mgd)	Modeled Min. (mgd)	Percent Diff.[2] Avg.	Percent Diff.[2] Max.
Flow	111.2	211.7	58.4	114.8	182.5	67.4	3.2%	-13.8%
Pressure	12.6	25.9	6.2	14.5	26.0	8.5	15.1%	0.5%

Notes:

(1) Source: Data provided by EBDA staff and member agencies.

(2) % Difference = (Modeled - Measured) / Measured x 100

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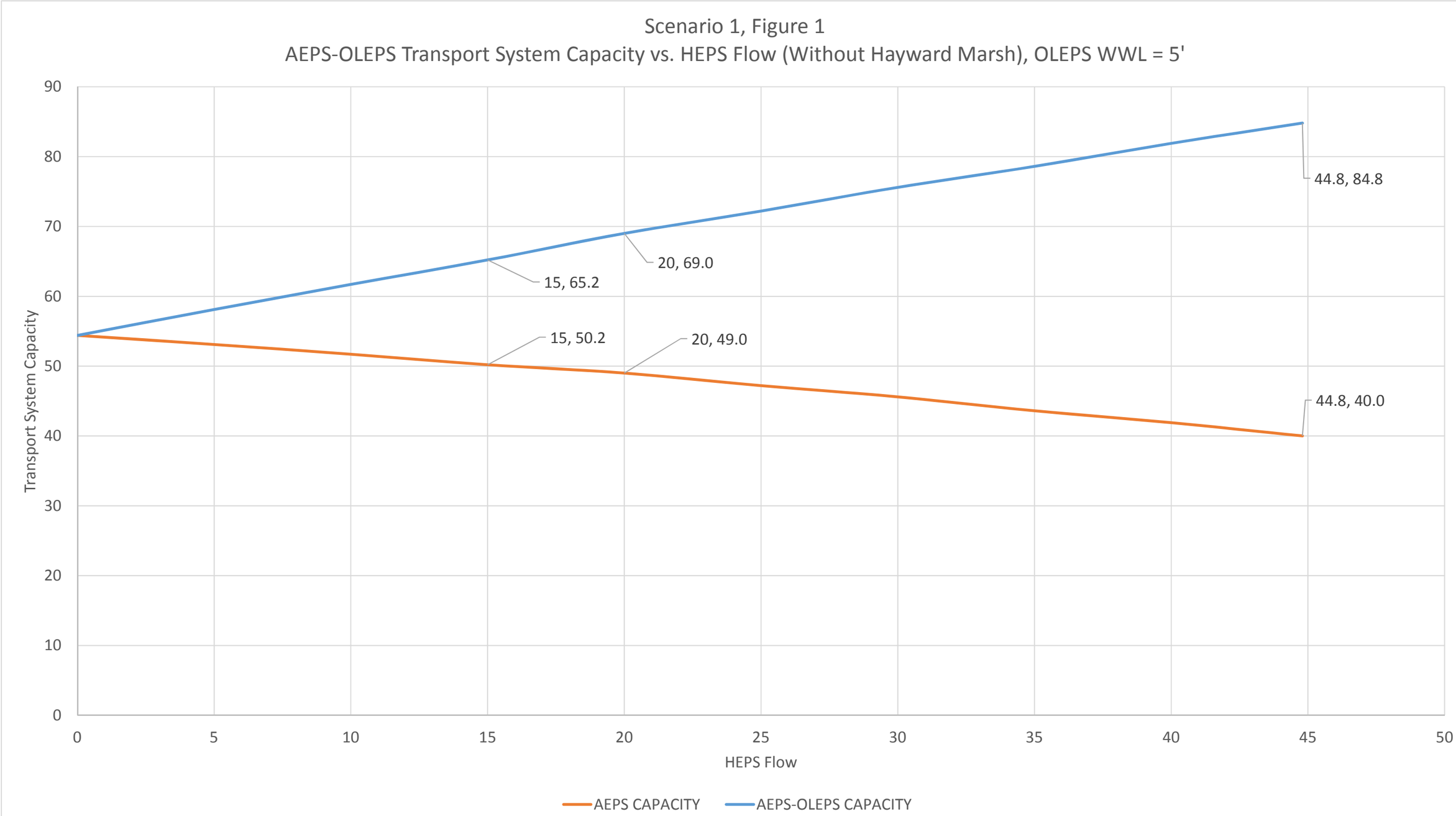
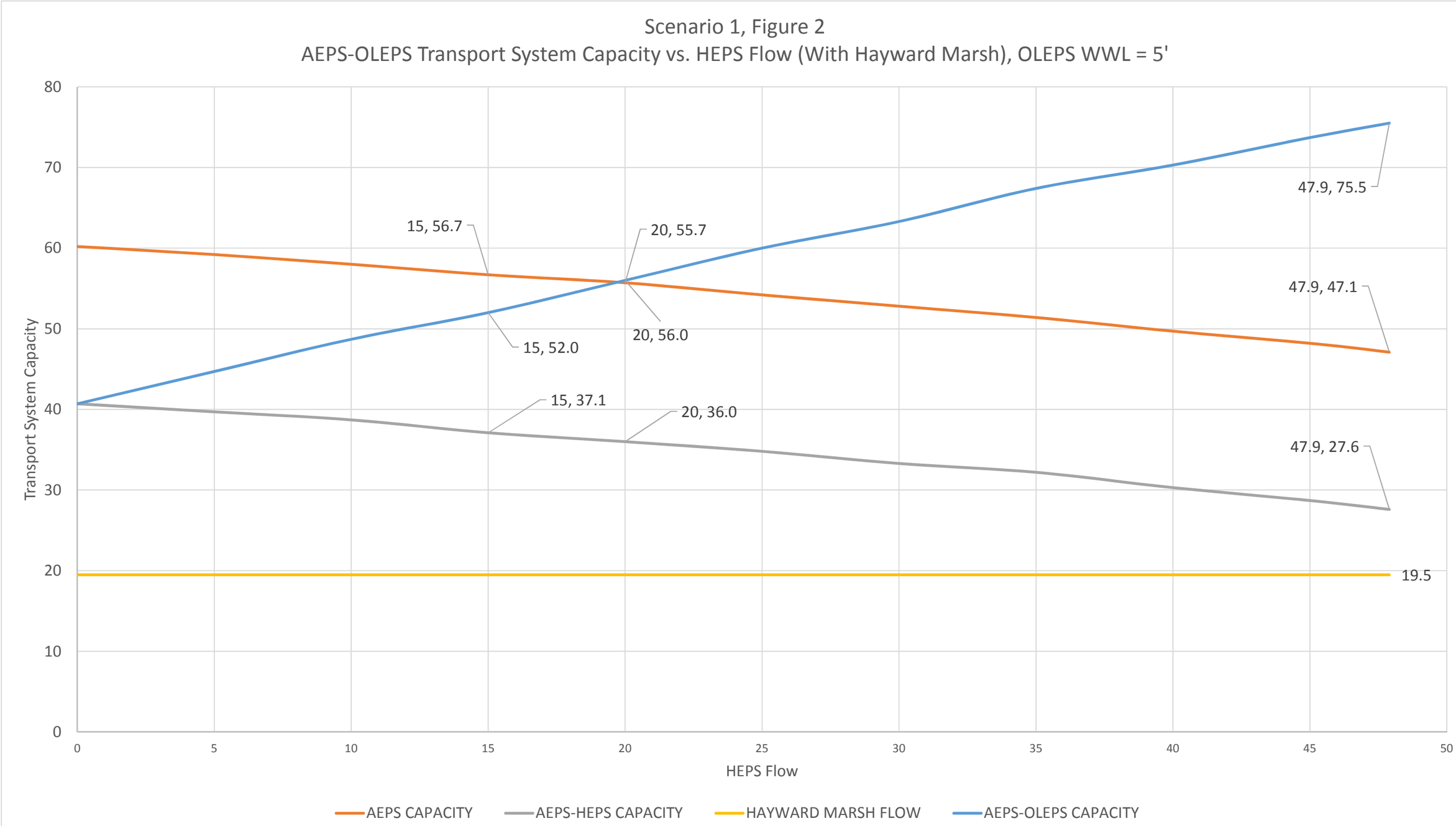
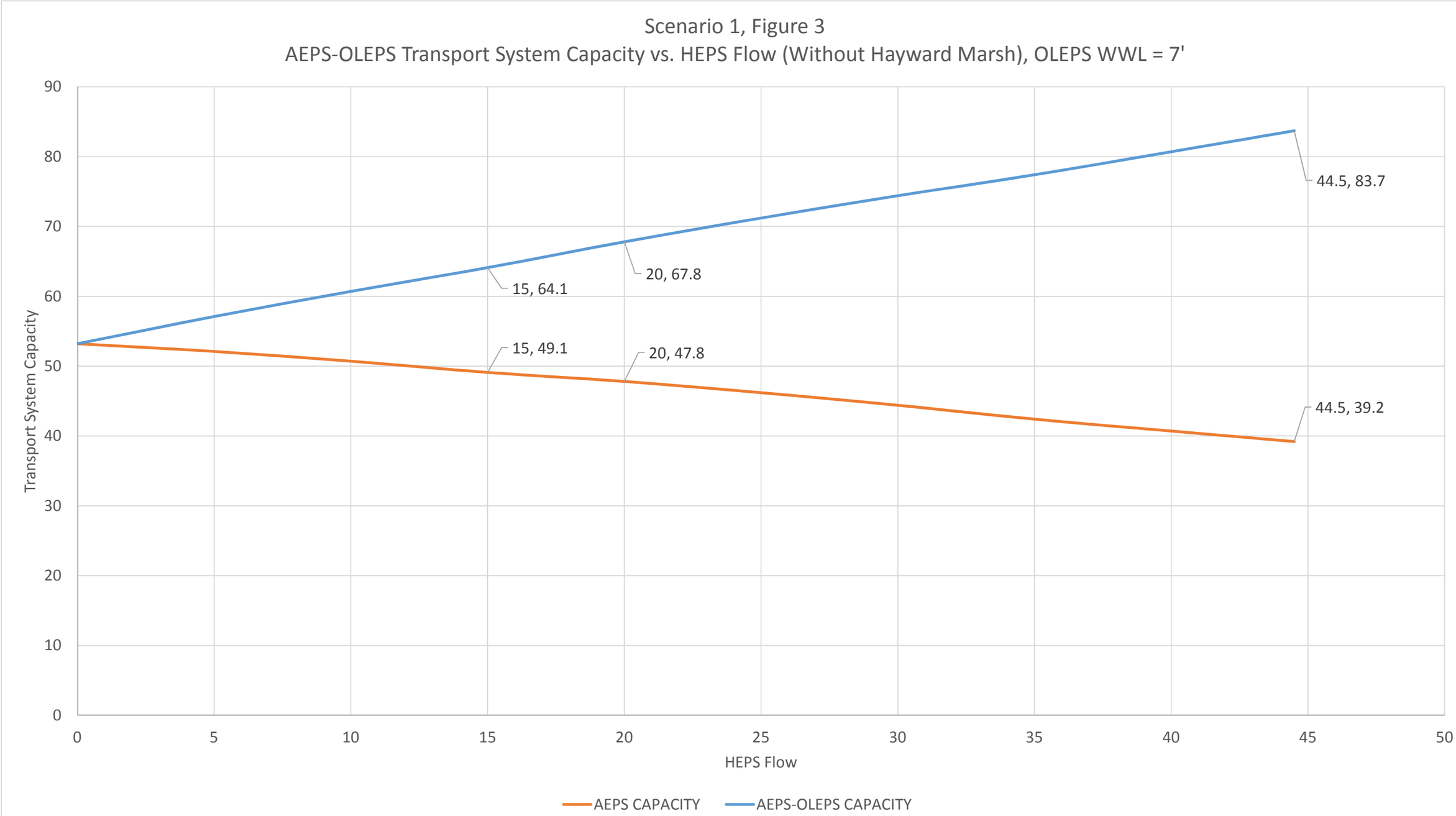
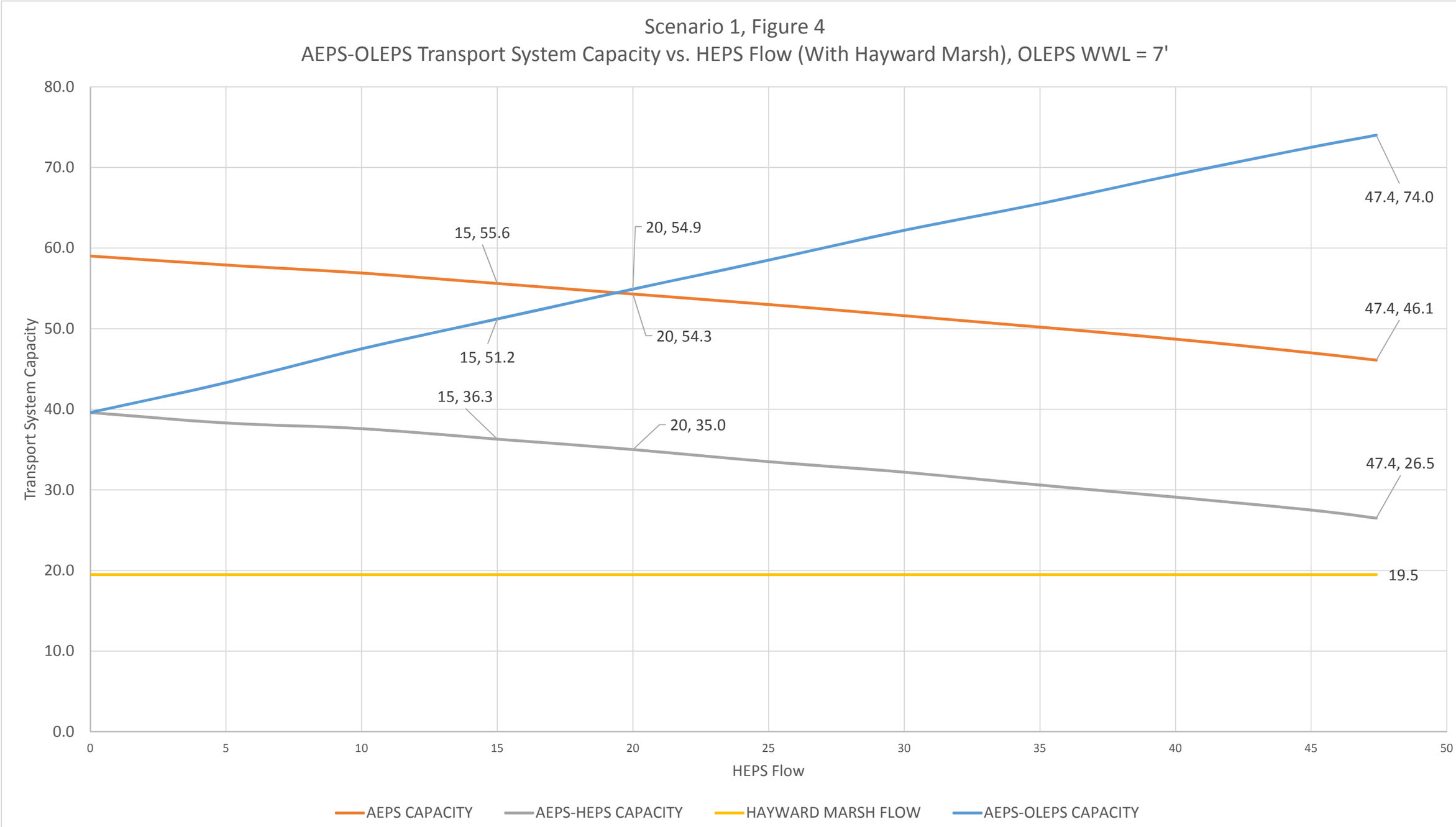
Appendix B

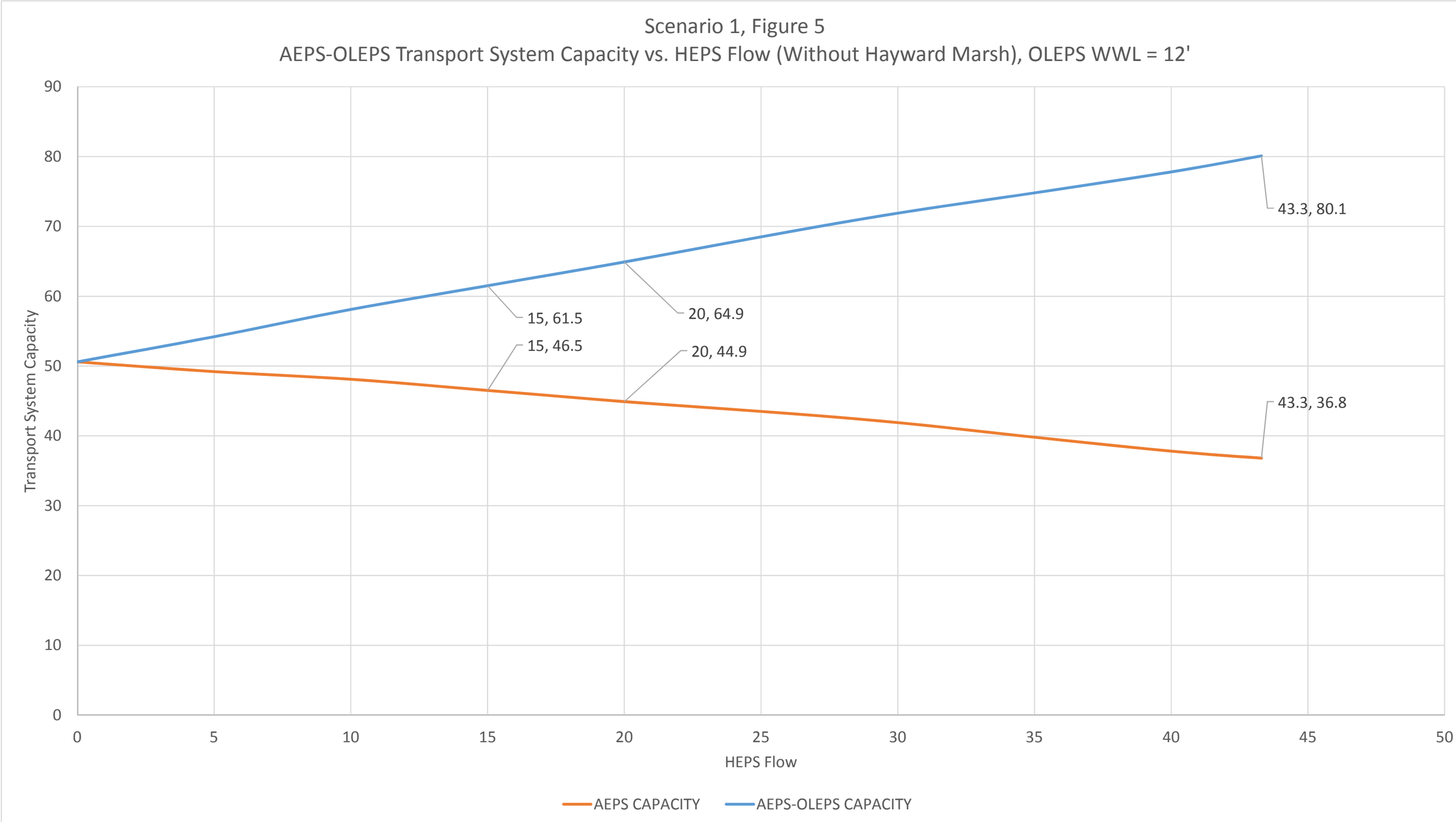
SCENARIO 1 MODEL RESULTS

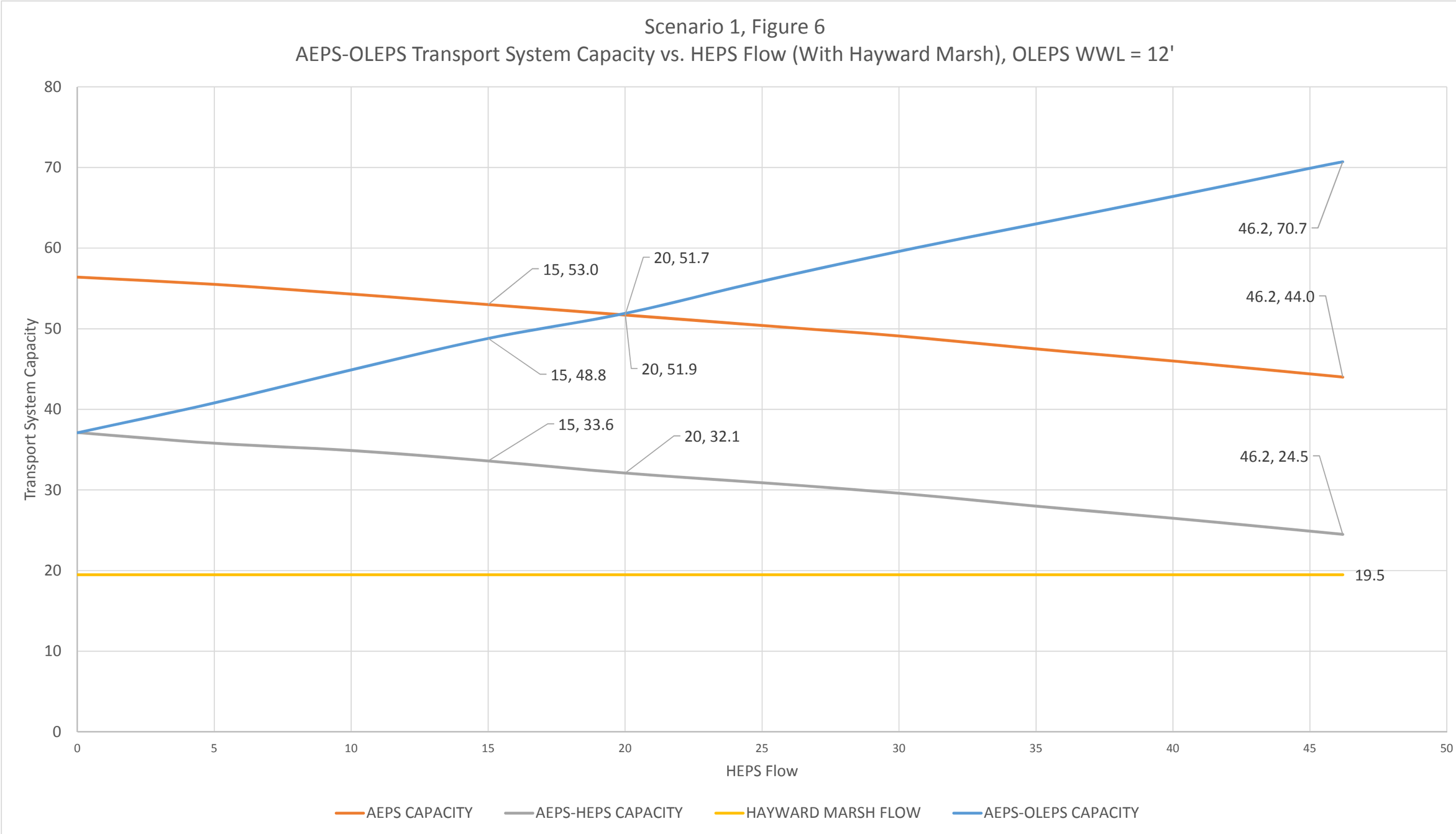

Scenario 1, Figure 1
AEPS-OLEPS Transport System Capacity vs. HEPS Flow (Without Hayward Marsh), OLEPS WWL = 5'
Transport System Capacity
HEPS Flow
0
10
20
30
40
50
60
70
80
90
0
5
10
15
20
25
30
35
40
45
50
44.8, 84.8
20, 69.0
15, 65.2
15, 50.2
20, 49.0
44.8, 40.0
AEPS CAPACITY
AEPS-OLEPS CAPACITY


Scenario 1, Figure 2
AEPS-OLEPS Transport System Capacity vs. HEPS Flow (With Hayward Marsh), OLEPS WWL = 5'
Transport System Capacity
HEPS Flow
0
10
20
30
40
50
60
70
80
0
5
10
15
20
25
30
35
40
45
50
15, 56.7
20, 55.7
47.9, 75.5
47.9, 47.1
15, 52.0
20, 56.0
15, 37.1
20, 36.0
47.9, 27.6
19.5
AEPS CAPACITY
AEPS-HEPS CAPACITY
HAYWARD MARSH FLOW
AEPS-OLEPS CAPACITY


Scenario 1, Figure 3
AEPS-OLEPS Transport System Capacity vs. HEPS Flow (Without Hayward Marsh), OLEPS WWL = 7'
Transport System Capacity
HEPS Flow
0
10
20
30
40
50
60
70
80
90
0
5
10
15
20
25
30
35
40
45
50
15, 64.1
20, 67.8
44.5, 83.7
15, 49.1
20, 47.8
44.5, 39.2
AEPS CAPACITY
AEPS-OLEPS CAPACITY


Scenario 1, Figure 4
AEPS-OLEPS Transport System Capacity vs. HEPS Flow (With Hayward Marsh), OLEPS WWL = 7'
Transport System Capacity
HEPS Flow
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
0
5
10
15
20
25
30
35
40
45
50
15, 55.6
20, 54.9
15, 51.2
20, 54.3
15, 36.3
20, 35.0
47.4, 74.0
47.4, 46.1
47.4, 26.5
19.5
AEPS CAPACITY
AEPS-HEPS CAPACITY
HAYWARD MARSH FLOW
AEPS-OLEPS CAPACITY


Scenario 1, Figure 5
AEPS-OLEPS Transport System Capacity vs. HEPS Flow (Without Hayward Marsh), OLEPS WWL = 12'
Transport System Capacity
HEPS Flow
0
10
20
30
40
50
60
70
80
90
0
5
10
15
20
25
30
35
40
45
50
43.3, 80.1
15, 61.5
20, 64.9
15, 46.5
20, 44.9
43.3, 36.8
AEPS CAPACITY
AEPS-OLEPS CAPACITY


Scenario 1, Figure 6
AEPS-OLEPS Transport System Capacity vs. HEPS Flow (With Hayward Marsh), OLEPS WWL = 12'
Transport System Capacity
HEPS Flow
0
10
20
30
40
50
60
70
80
0
5
10
15
20
25
30
35
40
45
50
15, 53.0
20, 51.7
46.2, 70.7
46.2, 44.0
15, 48.8
20, 51.9
15, 33.6
20, 32.1
46.2, 24.5
19.5
AEPS CAPACITY
AEPS-HEPS CAPACITY
HAYWARD MARSH FLOW
AEPS-OLEPS CAPACITY

Directors
Manny Fernandez
Tom Handley
Pat Kite
Anjali Lathi
Jennifer Toy

Officers
Paul R. Eldredge
General Manager/ District Engineer

Karen W. Murphy
Attorney

DATE: March 20, 2018

MEMO TO: Board of Directors - Union Sanitary District

FROM: Paul R. Eldredge, General Manager/District Engineer
Karen W. Murphy, General Counsel

SUBJECT: Agenda Item No. 12 - Meeting of March 26, 2018
Review and Consider Proposed Edits to District Ordinance #44 and Policy No. 3040, Board Member Compensation

Recommendation

Staff recommends that the Board adopt the revised Ordinance #44.01 and the proposed revisions to Policy No. 3040 Board Member Compensation.

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. Board Members have voted not to increase their meeting stipend since 2003. On November 14, 2016, the Board also directed staff to bring back an item to consider changing the annual review of compensation to prior to the end of the fiscal year, as opposed to the end of the calendar year.

Staff has prepared a revised version of Ordinance #44.01 for the Board's consideration, as well as a revised version of Policy No. 3040, Board Member Compensation, both of which modify the review date for compensation to the end of the fiscal year. The policy has also been revised to provide that review of Director Compensation will take place in April or May of each year in order to allow any increases to be incorporated in the operating budget. Red-lines

indicating changes to the prior versions are also included. Lastly, attached is a summary of the Board actions on this matter since 2000. If the ordinance and policy are adopted, staff will agendize review of Board Member Compensation in April or May of this year per the terms of the policy.

Attachments: Redline of Ordinance 44
Ordinance 44.01
Redline of Policy 3040
Revised Policy 3040
History of Board Member Compensation

ORDINANCE #44.01

Directors' Compensation

The Board of Directors of the Union Sanitary District hereby ordains as follows:

I. Effective January 1, ~~2001~~2003, Directors of the Union Sanitary District shall receive a stipend in the amount of $~~198.00~~ 212.10 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~~ July 1 of each year ~~thereafter~~ starting in 2018 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~~July 1, ~~2001~~ 2018, as a basis of increases and $~~198.00~~ 212.10 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~~March 26, ~~2000~~ 2018:

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

~~A-USD6:BD-ORD1.44~~

~~Adopted October 23, 2000~~

ORDINANCE #44.01

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I. Effective January 1, 2003, Directors of the Union Sanitary District shall receive a stipend in the amount of $212.10 for each day of service to Union Sanitary District as authorized by Health and Safety Code Sections 4733 and 6489. This compensation will be paid for no more than six (6) days of service per calendar month.

II. On July 1 of each year starting in 2018 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 July 1, 2018, as a basis of increases and $212.10 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.

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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 March 26, 2018:

AYES:
NOES:
ABSTAINED:
ABSENT:

Effective: ~~01/27/14~~03/26/18	**Boardmember Compensation Limits**	Policy Number 3040 Page 1 of 2

Policy

Boardmembers will be compensated in accordance with Union Sanitary District Ordinance No. 44 as adopted October 23, 2000, and amended on March 26, 2018. Compensation is based upon Section 6489 of the Health and Safety Code of the State of California, effective January 1, 1987, as amended in 2000.

Purpose

To publicly state the amount of compensation received for meeting attendance by Boardmembers and to provide for future changes in compensation limits.

Definitions

Allowable meetings Defined in the "Boardmember Meetings Compensated" Policy No. 3050.1

Procedure

In accordance with Union Sanitary District Ordinance 44, as may be amended, beginning January 1, ~~2001~~2003, the basis for compensation will be $~~198~~ 212.10 for each day of service, up to six days per month maximum. The amount will be increased by the same percentage as the increase to the salaries of the classified employees as agreed to in the current union/management Memorandum of Understanding. In no case will the annual increase exceed five (5) percent. Any increase will be effective ~~January 1~~July 1, starting in 2018, or at a later date as may be stipulated by the Board.

The Board will have the option of reviewing Director Compensation on an annual basis during a regularly scheduled public meeting of the Board of Directors. ~~If no action is taken~~For purposes of scheduling, ~~the~~ review of the Director Compensation shall be conducted at a regularly scheduled Board meeting in April or May so any changes can be included in the annual operating budget. Any annual increase will go into effect on ~~January~~ July 1.

Management Responsibility

The General Manager will be responsible for reviewing and approving Boardmembers' time sheets for consistency with this policy, and for scheduling an annual review of the Boardmember compensation for meetings~~,~~ prior to ~~January~~ July 1 each year.

Board of Directors Responsibility

The Board of Directors will annually review Ordinance 44 and Director Compensation during a regular Board meeting, in open session, and determine if any action will be taken.

Administrative Information

Supersedes Policy Dated October 1995, and previous versions and revisions dated August 7, 1992, November 26, 1990, and September 8, 1986 (Resolution 1807) November 26, 1990

Ordinance 44 Adopted by Board of Directors October 23, 2000, and amended on March 26, 2018.

Approved by-: Board of Directors : October 8, 2007, Reviewed Jan 10, 2011, January 27, 2014
Author/Owner: Human Resources AdministratorReviewers: General Manager, Board of Directors/Human Resources Manager
Notify Person: General Manager
Revision Frequency: Every 3 Years
Next Review: January 2017March 2021

Effective: 03/26/18	**Boardmember Compensation Limits**	Policy Number 3040 Page 1 of 2

Policy

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Procedure

In accordance with Union Sanitary District Ordinance 44, as may be amended, beginning January 1, 2003, the basis for compensation will be $212.10 for each day of service, up to six days per month maximum. The amount will be increased by the same percentage as the increase to the salaries of the classified employees as agreed to in the current union/management Memorandum of Understanding. In no case will the annual increase exceed five (5) percent. Any increase will be effective July 1, starting in 2018, or at a later date as may be stipulated by the Board.

The Board will have the option of reviewing Director Compensation on an annual basis during a regularly scheduled public meeting of the Board of Directors. For purposes of scheduling, review of the Director Compensation shall be conducted at a regularly scheduled Board meeting in April or May so any changes can be included in the annual operating budget. Any annual increase will go into effect on July 1.

Management Responsibility

The General Manager will be responsible for reviewing and approving Boardmembers' time sheets for consistency with this policy, and for scheduling an annual review of the Boardmember compensation for meetings prior to July 1 each year.

Board of Directors Responsibility

The Board of Directors will annually review Ordinance 44 and Director Compensation during a regular Board meeting, in open session, and determine if any action will be taken.

Administrative Information

Supersedes Policy Dated October 1995, and previous versions and revisions dated August 7, 1992, November 26, 1990, and September 8, 1986 (Resolution 1807) November 26, 1990.

Ordinance 44 Adopted by Board of Directors October 23, 2000, and amended on March 26, 2018.

Approved by:	Board of Directors
Author/Owner:	General Manager/Human Resources Manager
Notify Person:	General Manager
Revision Frequency:	Every 3 Years
Next Review:	March 2021

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)
2017	$212.10	Board voted unanimously not to increase compensation for 2017 and directed staff to bring back an item to consider changing the annual review of compensation to the end of the fiscal year. (11/14/2016)

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.

Summary of the EBDA Commission Meeting
Thursday, March 15, 2018, at 9:30 a.m.
Prepared by: P. Eldredge

- Commissioners Johnson, Cutter, Toy, Becker, and Peixoto 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 Managers Advisory, Financial Management, Regulatory Affairs, Operations & Maintenance, and Personnel committees. The following items were discussed:

- **General Managers Report -** The General Manager thanked everyone for their support during this time of transition.

- **Managers Advisory Committee (MAC)** – The MAC met with the General Manager on March 14, 2018, and reviewed the board package. The MAC discussed proposed JPA revision process and language.

- **Financial Management Committee** met with the General Manager on March 13, 2018, and reviewed the February List of Disbursements, Treasurer's Report, and draft FY 18/19 Budget recommendations. The Committee discussed a resolution appointing the new General Manager as Treasurer/Controller for the Authority effective June 1, 2018, and recommends Commission approval of the resolution.

- **Regulatory Affairs Committee** met with the General Manager on March 13, 2018. The Committee reviewed permit compliance and the Peracetic Acid Pilot test.

- **Operations and Maintenance (O&M) Committee** met with met on March 12, 2018 and discussed the status of EBDA facilities. The ongoing facility projects discussed included AEPS No. 1 and No. 6 effluent pumps; Hayward MCC replacement project; OLEPS fuel tank replacement and Pumps No. 1 and 4 discharge valve actuator replacement projects and the new OLEPS SPCC plan; Skywest No. 2 pump motor and mixer; MDF water champ; and the SCADA system upgrade. The Committee also reviewed the 2017/18 Wet Weather SOP. Lastly, the O&M Committee was updated on the status of special projects including the Transport Pipe Condition Assessment and the Hydraulic Study.

- **The Ad Hoc Committee** met on March 13, 2018 and reviewed the results of the draft Hydraulic Study. The Ad Hoc also discussed possible FY 2018/19 projects that may support JPA revisions.

- **The Personnel Committee** met on March 12, 2018. The Committee discussed personnel assumptions for the FY 2018/19 Budget. The Personnel Committee recommends Commission adoption of the resolution fixing EBDA's PEMHCA at $473.00. The Committee reviewed the General Manager's 2018/19 performance plan. Commissioner Becker requested addition of an item related to pursuit of a Basin Plan Amendment on chlorine residual.

- **Resolution Appointing a Treasurer/Controller for the East Bay Dischargers Authority**

  Commissioner Cutter moved to adopt the resolution appointing Jacqueline Zipkin as Treasurer/Controller for the Authority effective June 1, 2018. The adopted resolution also provides Ms. Zipkin with signing authority on EBDA's accounts effective immediately. The motion was seconded by Commissioner Becker and carried unanimously, 5-0.

- **Resolution Fixing the Employer's Contribution Under the Public Employees' Medical and Hospital Care Act**

  Commissioner Becker introduced the resolution fixing the Employer's Contribution under the Public Employees' Medical and Hospital Care Act at $473. The motion was seconded by Commissioner Cutter and carried unanimously, 5-0.

- **Items from the Commission and Staff**

  The Commission was reminded that completed Fair Political Practices Commission Form 700 – Statement of Economic Interests (Form 700) are due.

UNION SANITARY DISTRICT
CHECK REGISTER
03/02/2018-03/15/2018

Check No.	Date	Invoice No.	Vendor	Description	Invoice Amt	Check Amt
167089	3/8/2018	20180214	TERRENO PARK UNION CITY LLC	REFUND CAPACITY CHARGE OVERPAYMENT - 1550 PACIFIC ST	$305,954.88	$305,954.88
167052	3/8/2018	9344	DW NICHOLSON CORP	NEWARK PS MOD VALVE & BOOST LINE MODS	$275,195.76	$275,195.76
167148	3/15/2018	892820180301	PACIFIC GAS AND ELECTRIC	SERV TO 02/28/18 HAYWARD MARSH	$54.74	$85,040.44
	3/15/2018	140120180306		SERV TO 03/04/18 IRVINGTON PS	$28,146.23	
	3/15/2018	666720180301		SERV TO 02/28/18 PASEO PADRE PS	$283.06	
	3/15/2018	380420180301		SERV TO 02/28/18 CHERRY ST PS	$195.95	
	3/15/2018	898220180301		SERV TO 02/28/18 FREMONT PS	$220.76	
	3/15/2018	096020180301		SERV TO 02/28/18 CATHODIC PROJECT	$49.47	
	3/15/2018	013720180306		SERV TO 03/05/18 BOYCE RD PS	$2,784.27	
	3/15/2018	170120180307		SERV TO 02/19/2018 PLANT	$53,305.96	
167162	3/15/2018	30104781	SYNAGRO WEST LLC	JANUARY 2018 BIOSOLIDS DISPOSAL	$68,183.41	$68,183.41
167044	3/8/2018	11310958	BROWN & CALDWELL CONSULTANTS	PRIMARY DIGESTER NO. 7	$37,163.13	$55,094.32
	3/8/2018	11306475		STANDBY POWER SYSTEM UPGRADE	$1,933.45	
	3/8/2018	11310961		PRIMARY DIGESTER NO. 7	$10,836.26	
	3/8/2018	11311379		EMERGENCY OUTFALL OUTLET IMPROVEMENTS	$2,413.05	
	3/8/2018	11311370		EMERGENCY OUTFALL OUTLET IMPROVEMENTS	$2,748.43	
167152	3/15/2018	21106	PROMINENT SYSTEMS INC	GAS SKID MEDIA CHANGE OUT	$45,048.00	$45,048.00

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CHECK REGISTER
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Check No.	Date	Invoice No.	Vendor	Description	Invoice Amt	Check Amt
167070	3/8/2018	69852	MNS ENGINEERS INC	10/2017 TEMP LABOR OSWALD, W. - ADDITIONAL FEES	$13,884.00	$37,428.00
	3/8/2018	69131R2A		08/2017 TEMP LABOR OSWALD, W. - ADDITIONAL FEES	$11,278.50	
	3/8/2018	69850		09/2017 TEMP LABOR OSWALD, W. - ADDITIONAL FEES	$12,265.50	
167163	3/15/2018	20180111	THERMO FISHER SCIENTIFIC	REFUND PARTIAL FY16, FY17 & FY18 SEWER SERVICE CHARGES	$33,777.60	$33,777.60
167073	3/8/2018	104063	MUNIQUIP, LLC	2 APS PUMP REBUILD KITS & PARTS	$20,265.62	$20,265.62
167050	3/8/2018	2704233A	DELTA DENTAL SERVICE	FEBRUARY 2018 DENTAL	$2,459.68	$20,193.50
	3/8/2018	2704233C		FEBRUARY 2018 DENTAL	$17,733.82	
167047	3/8/2018	164673	CAROLLO ENGINEERS	DIGESTER NO. 3 INSP & REHAB	$10,593.03	$20,108.60
	3/8/2018	164762		NEWARK PS MOD VALVE & BOOST LINE MODS	$9,515.57	
167165	3/15/2018	533620180222	US BANK CORP PAYMENT SYSTEM	MONTHLY CAL CARD STMT - FEB 2018	$19,522.36	$19,522.36
167080	3/8/2018	761520180223	PACIFIC GAS AND ELECTRIC	SERV TO 02/22/18 NEWARK PS	$17,256.55	$17,256.55
167140	3/15/2018	180210	JSP AUTOMATION	HYPO TANKS AND PIPING REPLACEMENT	$12,352.50	$12,352.50
167098	3/8/2018	761817	WATER CANNON INC	HIGH PRESSURE POWER WASHER FOR PAINTERS	$10,518.93	$10,518.93
167164	3/15/2018	865468	UNIVAR USA INC	5001 GALS SODIUM HYPOCHLORITE	$2,453.41	$9,687.53
	3/15/2018	864722		4798 GALS SODIUM HYPOCHLORITE	$2,353.82	
	3/15/2018	865086		4949 GALS SODIUM HYPOCHLORITE	$2,427.89	
	3/15/2018	864725		4999 GALS SODIUM HYPOCHLORITE	$2,452.41	
167123	3/15/2018	10221907821	DELL MARKETING LP C/O DELL USA	3 FY18 Q3 LAPTOPS	$9,658.18	$9,658.18

UNION SANITARY DISTRICT
CHECK REGISTER
03/02/2018-03/15/2018

Check No.	Date	Invoice No.	Vendor	Description	Invoice Amt	Check Amt
167091	3/8/2018	863879	UNIVAR USA INC	5000 GALS SODIUM HYPOCHLORITE	$2,452.92	$9,517.80
	3/8/2018	863878		4602 GALS SODIUM HYPOCHLORITE	$2,257.66	
	3/8/2018	863796		5002 GALS SODIUM HYPOCHLORITE	$2,453.89	
	3/8/2018	863754		4797 GALS SODIUM HYPOCHLORITE	$2,353.33	
167117	3/15/2018	32669	CALIFORNIA WATER TECHNOLOGIES	45,040 LBS FERROUS CHLORIDE	$4,707.01	$9,022.01
	3/15/2018	32630		41,540 LBS FERROUS CHLORIDE	$4,315.00	
167062	3/8/2018	37432220180301	LINCOLN NATIONAL LIFE INS COMP	LIFE & DISABILITY INSURANCE - MAR 2018	$7,430.29	$7,430.29
167096	3/8/2018	8225	VON EUW TRUCKING	143.15 TONS 3/4 CLASS II AB & 72.66 TONS 3/4 CRUSH	$7,301.36	$7,301.36
167074	3/8/2018	1	MUSGRAVES CONSULTING SERVICES	SPECIALTY FINANCIAL SERVICES CONSULTANT	$6,594.60	$6,594.60
167127	3/15/2018	2196	ENS RESOURCES INC	PROFESSIONAL SERVICES - JAN 2018	$5,510.00	$5,510.00
167045	3/8/2018	32589	CALIFORNIA WATER TECHNOLOGIES	44,380 LBS FERROUS CHLORIDE	$4,806.20	$4,806.20
167104	3/15/2018	4017274120180306	ALAMEDA COUNTY WATER DISTRICT	SERV TO: 03/06/18 - FREMONT BLVD	$4,569.71	$4,764.85
	3/15/2018	4017275220180306		SERV TO: 03/06/18 - FREMONT BLVD	$145.09	
	3/15/2018	4017420220180306		SERV TO: 03/05/18 - FREMONT BLVD	$50.05	
167099	3/8/2018	40386	WECO INDUSTRIES LLC	CAMERA REPAIRS	$4,712.13	$4,712.13
167114	3/15/2018	17361	BLUE SKY ENVIRONMENTAL INC.	COGEN EMISSIONS TESTING	$2,345.00	$4,690.00
	3/15/2018	18002		COGEN EMISSIONS TESTING	$2,345.00	
167069	3/8/2018	40463890	MICRO MOTION INC	1 FLOWMETER SENSOR & TRANSMITTER	$4,410.48	$4,410.48
167116	3/15/2018	11311616	BROWN & CALDWELL CONSULTANTS	STANDBY POWER SYSTEM UPGRADE	$4,213.63	$4,213.63

UNION SANITARY DISTRICT
CHECK REGISTER
03/02/2018-03/15/2018

Check No.	Date	Invoice No.	Vendor	Description	Invoice Amt	Check Amt
167082	3/8/2018	1213448	POLYDYNE INC	41,260 LBS CLARIFLOC WE-539	$3,894.33	$3,894.33
167111	3/15/2018	10963364	AT&T	SERV: 01/20/18 - 02/19/18	$3,586.81	$3,817.44
	3/15/2018	10963386		SERV: 01/20/18 - 02/19/18	$210.32	
	3/15/2018	10963362		SERV: 01/20/18 - 02/19/18	$20.31	
167055	3/8/2018	9683258439	GRAINGER INC	ASTD PARTS & MATERIALS	$433.65	$3,709.89
	3/8/2018	9679741000		ASTD PARTS & MATERIALS	$51.47	
	3/8/2018	9684087761		ASTD PARTS & MATERIALS	$286.63	
	3/8/2018	9684512404		ASTD PARTS & MATERIALS	$45.17	
	3/8/2018	9678490237		ASTD PARTS & MATERIALS	$126.63	
	3/8/2018	9679740994		ASTD PARTS & MATERIALS	$51.47	
	3/8/2018	9678951824		ASTD PARTS & MATERIALS	$51.47	
	3/8/2018	9686892523		ASTD PARTS & MATERIALS	$286.63	
	3/8/2018	9685964604		ASTD PARTS & MATERIALS	$53.17	
	3/8/2018	9685964612		ASTD PARTS & MATERIALS	$1,811.10	
	3/8/2018	9687296682		ASTD PARTS & MATERIALS	$512.50	
167100	3/8/2018	8232	HAIYAN ZHAO	REFUND # 20820	$3,300.00	$3,300.00
167142	3/15/2018	9066	LAVENDER HOT POT	REFUND # 20840	$3,300.00	$3,300.00
167095	3/8/2018	20180301	VISION SERVICE PLAN - CA	MARCH 2018 VISION STMT	$3,239.72	$3,239.72
167119	3/15/2018	18316400	CANON SOLUTIONS AMERICA INC	MONTHLY LEASE 6 CANON COLOR COPIERS	$3,154.15	$3,154.15

Check No.	Date	Invoice No.	Vendor	Description	Invoice Amt	Check Amt
167043	3/8/2018	809658	BRENNTAG PACIFIC, INC.	2564 LBS SODIUM HYDROXIDE	$695.90	$3,122.04
	3/8/2018	809492		5128 LBS SODIUM HYDROXIDE	$1,385.46	
	3/8/2018	811379		2564 LBS SODIUM HYDROXIDE	$692.73	
	3/8/2018	811380		1282 LBS SODIUM HYDROXIDE	$347.95	
167039	3/8/2018	10939510	AT&T	SERV: 01/13/18 - 02/12/18	$757.12	$3,006.45
	3/8/2018	10939514		SERV: 01/13/18 - 02/12/18	$87.14	
	3/8/2018	10902948		SERV: 01/10/18 - 02/09/18	$2,053.76	
	3/8/2018	10939512		SERV: 01/13/18 - 02/12/18	$42.72	
	3/8/2018	10939513		SERV: 01/13/18 - 02/12/18	$65.71	
167136	3/15/2018	3592820180314	HASLER INC.	POSTAGE BY PHONE - TMS 35928	$3,000.00	$3,000.00
167155	3/15/2018	916003360371	REPUBLIC SERVICES #916	RECYCLE & ROLL OFF - MAR 2018	$2,949.83	$2,949.83
167166	3/15/2018	41766	VALLEY OIL COMPANY	ASTD GREASE & OIL	$2,831.80	$2,831.80
167102	3/15/2018	180201784	AIRTECH MECHANICAL INC	SERVICE CALL: BLDG 53 AERATION AC 1; BLDG 81 CENTRIFUGE A	$1,690.00	$2,605.00
	3/15/2018	180201785		FEB 2018: FILTER CHANGE BLDGS 54, 63, 81, 90	$915.00	
167051	3/8/2018	9445	DRAIN DOCTOR	REFUND # 20803	$500.00	$2,500.00
	3/8/2018	9546		REFUND # 20812	$500.00	
	3/8/2018	8450		REFUND # 20809	$500.00	
	3/8/2018	8763		REFUND # 20811	$500.00	
	3/8/2018	8528		REFUND # 20810	$500.00	

UNION SANITARY DISTRICT
CHECK REGISTER
03/02/2018-03/15/2018

Check No.	Date	Invoice No.	Vendor	Description	Invoice Amt	Check Amt
167153	3/15/2018	8971	PULTE HOME CORPORATION	REFUND # 20858	$2,500.00	$2,500.00
167157	3/15/2018	8629	ROBSON HOMES LLC	REFUND # 20841	$2,500.00	$2,500.00
167093	3/8/2018	9802071388	VERIZON WIRELESS	WIRELESS SERV 01/21/18 - 02/20/18	$2,393.94	$2,393.94
167046	3/8/2018	582195	CALTEST ANALYTICAL LABORATORY	5 LAB SAMPLE ANALYSIS	$1,042.00	$2,317.00
	3/8/2018	582279		21 LAB SAMPLE ANALYSIS	$1,275.00	
167169	3/15/2018	2034372	WEST YOST ASSOCIATES	HYPO TANKS AND PIPING REPLACEMENT	$2,229.25	$2,229.25
167168	3/15/2018	40400	WECO INDUSTRIES LLC	CAMERA REPAIRS	$2,206.87	$2,206.87
167034	3/8/2018	180201754	AIRTECH MECHANICAL INC	SERVICE CALL: HVAC REPAIRS FOR GM OFFICE	$2,186.94	$2,186.94
167133	3/15/2018	9694575359	GRAINGER INC	ASTD PARTS & MATERIALS	$392.16	$2,064.48
	3/15/2018	9688018986		ASTD PARTS & MATERIALS	$62.54	
	3/15/2018	9693398209		ASTD PARTS & MATERIALS	$498.27	
	3/15/2018	9693724982		ASTD PARTS & MATERIALS	$1,111.51	
167056	3/8/2018	20180212	GREEN BUSINESS PROGRAM	GREEN BUS PROG CONTRIB JULY 2017- JUNE 2018	$2,000.00	$2,000.00
167078	3/8/2018	9000260453	OPEN TEXT	ALCHEMY GOLD ANNUAL MAINTENANCE	$2,000.00	$2,000.00

Check No.	Date	Invoice No.	Vendor	Description	Invoice Amt	Check Amt
167122	3/15/2018	54K108124	CINTAS CORPORATION NO. 2	ASTD DUST MOPS, WET MOPS & TERRY TOWEL	$17.22	$1,925.50
	3/15/2018	54K107105		UNIFORM LAUNDERING SERVICE	$290.07	
	3/15/2018	54K108122		UNIFORM LAUNDERING SERVICE	$325.07	
	3/15/2018	54K102906.1		UNIFORM LAUNDERING SERVICE	$30.75	
	3/15/2018	54K107106		UNIFORM LAUNDERING & RUGS	$280.84	
	3/15/2018	54K109080		UNIFORM LAUNDERING SERVICE	$320.89	
	3/15/2018	54K108123		UNIFORM LAUNDERING & RUGS	$280.84	
	3/15/2018	54K106264		UNIFORM LAUNDERING SERVICE	$345.38	
	3/15/2018	54K107107		ASTD DUST MOPS, WET MOPS & TERRY TOWEL	$17.22	
	3/15/2018	54K109082		ASTD DUST MOPS, WET MOPS & TERRY TOWEL	$17.22	
167067	3/8/2018	103880	MCINERNEY & DILLON, P.C.	LEGAL SERVICES FREMONT & PASEO PADRE LS IMPROVEMENTS	$1,925.00	$1,925.00
167068	3/8/2018	57677894	MCMASTER SUPPLY INC	ASTD PARTS & MATERIALS	$477.83	$1,800.65
	3/8/2018	57550668		ASTD PARTS & MATERIALS	$586.97	
	3/8/2018	56742722		ASTD PARTS & MATERIALS	$105.25	
	3/8/2018	57704038		ASTD PARTS & MATERIALS	$343.10	
	3/8/2018	57462767		ASTD PARTS & MATERIALS	$287.50	

Check No.	Date	Invoice No.	Vendor	Description	Invoice Amt	Check Amt
167042	3/8/2018	12463610	BLAISDELL'S	1 BX PAPER	$27.43	$1,664.76
	3/8/2018	12462120		ASTD OFFICE SUPPLIES	$5.22	
	3/8/2018	12460220		1 PK CLIPS	$16.45	
	3/8/2018	12467790		40 RMS PAPER	$1,536.06	
	3/8/2018	12462121		ASTD OFFICE SUPPLIES	$19.09	
	3/8/2018	12461960		ASTD OFFICE SUPPLIES	$60.51	
167108	3/15/2018	10586	AMERICAN DISCOUNT SECURITY	02/01/18 - 02/28/18 GUARD AT DISTRICT GATE	$1,414.50	$1,414.50
167064	3/8/2018	26174	MAR-LEN SUPPLY INC	REPAIR CAR WASH PUMP	$1,358.27	$1,358.27
167092	3/8/2018	41695	VALLEY OIL COMPANY	COOLANT & GREASE	$1,356.46	$1,356.46
167134	3/15/2018	10853225	HACH COMPANY	LAB\PLANT OPERATIONS DATA MANAGEMENT SYSTEM	$1,295.00	$1,295.00
167033	3/8/2018	9516144	ABC IMAGING, INC.	FORCE MAIN CORROSION REPAIRS - PHASE 2	$1,280.07	$1,280.07
167085	3/8/2018	1831365001	SAN LEANDRO ELECTRIC SUPPLY	ASTD ELECTRICAL SUPPLIES	$913.16	$1,257.02
	3/8/2018	1831365002		ASTD ELECTRICAL SUPPLIES	$120.83	
	3/8/2018	1834670002		ASTD ELECTRICAL SUPPLIES	$223.03	
167097	3/8/2018	8081375074	VWR INTERNATIONAL LLC	LAB SUPPLIES	$339.83	$1,233.35
	3/8/2018	8081336179		LAB SUPPLIES	$660.42	
	3/8/2018	8081381356		LAB SUPPLIES	$88.63	
	3/8/2018	8081359604		LAB SUPPLIES	$144.47	
167076	3/8/2018	479658700	NEW PIG CORPORATION	36 BAGS RECYCLED RAGS	$1,185.03	$1,185.03

UNION SANITARY DISTRICT
CHECK REGISTER
03/02/2018-03/15/2018

Check No.	Date	Invoice No.	Vendor	Description	Invoice Amt	Check Amt
167118	3/15/2018	582314	CALTEST ANALYTICAL LABORATORY	19 LAB SAMPLE ANALYSIS	$1,125.00	$1,125.00
167115	3/15/2018	813480	BRENNTAG PACIFIC, INC.	3846 LBS SODIUM HYDROXIDE	$1,039.10	$1,039.10
167059	3/8/2018	6029007	KELLY SERVICES INC	TEMP LABOR-GONZALEZ, E. WK END 02/11/2018	$1,036.20	$1,036.20
167141	3/15/2018	7027315	KELLY SERVICES INC	TEMP LABOR-GONZALEZ, E. WK END 02/18/2018	$1,036.20	$1,036.20
167110	3/15/2018	621950	A-PRO PEST CONTROL INC	FEBRUARY PEST CONTROL	$1,005.00	$1,005.00
167083	3/8/2018	8938	ROOTER HERO	REFUND # 20818	$500.00	$1,000.00
	3/8/2018	9414		REFUND # 20802	$500.00	
167126	3/15/2018	9535	EHRET CO PLUMBING	REFUND # 20842 AND 20843	$1,000.00	$1,000.00
167158	3/15/2018	9532	ROOTER HERO	REFUND # 20833	$500.00	$1,000.00
	3/15/2018	9533		REFUND # 20834	$500.00	
167120	3/15/2018	21535132	CARBOLINE COMPANY	PAINT & RELATED PAINT SUPPLIES	$956.12	$956.12
167132	3/15/2018	118312	FOLGER GRAPHICS	5000 FOG POSTCARDS	$949.34	$949.34
167143	3/15/2018	58100102	MCMASTER SUPPLY INC	ASTD PARTS & MATERIALS	$860.93	$860.93
167103	3/15/2018	20180222	ALAMEDA COUNTY TREASURER	FORCE MAIN CORROSION PROJECT - DRAINAGE REVIEW	$843.69	$843.69
167151	3/15/2018	20180308	MICHELLE POWELL	TRAVEL REIMB: LODGING, AIRFARE, PER DIEM, MILEAGE - CASA (	$833.16	$833.16
167107	3/15/2018	20180210	AMAZON.COM LLC	02/18-ASTD OFFICE SUPPLIES	$819.18	$819.18
167060	3/8/2018	62600000125641	KELLY-MOORE PAINT COMPANY	ASTD PAINT SUPPLIES	$808.19	$808.19

Check No.	Date	Invoice No.	Vendor	Description	Invoice Amt	Check Amt
167053	3/8/2018	1093498	ENTHALPY ANALYTICAL LLC	5 LAB SAMPLE ANALYSIS	$180.00	$770.00
	3/8/2018	1093268		22 LAB SAMPLE ANALYSIS	$440.00	
	3/8/2018	1093675		9 LAB SAMPLE ANALYSIS	$150.00	
167112	3/15/2018	2522084656	BANK OF NEW YORK	JAN 2018 SERVICE FEE	$710.20	$710.20
167101	3/15/2018	9073012485	AIRGAS NCN	3 CYL ARGON	$700.19	$700.19
167135	3/15/2018	3L8221	HARRINGTON INDUSTRIAL PLASTICS	2 FLOWMETERS	$650.29	$650.29
167037	3/8/2018	778551	ALLIANT INSURANCE SERVICES INC	SPECIAL EVENT INS-DISTRICT CENTENNIAL OPEN HOUSE	$643.00	$643.00
167063	3/8/2018	91021	MAAS BROTHERS INC.	4 BLAST STEEL HALF ROUND PLATES	$600.00	$600.00
167058	3/8/2018	602882420	HILLYARD/SAN FRANCISCO	JANITORIAL SUPPLIES	$564.28	$564.28
167090	3/8/2018	9182	TURNER RISK CONSULTING INC	CONFINED SPACE TRAINING - SOTH & FARSAI	$550.00	$550.00
167041	3/8/2018	20180228	JEFFREY BARTON	EXP REIMB: MEAL FOR TPO & FMC MTG	$542.10	$542.10
167149	3/15/2018	20180314	ALEXANDER PAREDES	TRAVEL REIMB: AIRFARE - NACWA PRETREATMENT CONF	$533.50	$533.50
167094	3/8/2018	905555	VINCENT ELECTRIC MOTOR CO	IPS PUMP REPAIR WITH MEGGER, SURGE & HYPOTENTIAL TEST	$533.00	$533.00
167075	3/8/2018	20180228	NAPA AUTO PARTS	MONTHLY AUTO PARTS STMT - FEB 2018	$520.56	$520.56
167109	3/15/2018	7012696333	APPLIED INDUSTRIAL TECHNOLOGIE	20 BOXES GLOVES/ 2 BELTS	$249.92	$518.71
	3/15/2018	7012684429		20 BX GLOVES	$218.50	
	3/15/2018	7012682637		ASTD PARTS & MATERIALS	$50.29	
167038	3/8/2018	9388	ALLSTAR PLUMBING	REFUND # 20609	$500.00	$500.00
167079	3/8/2018	9523	ORTIZ CONSTRUCTION, INC.	REFUND # 20817	$500.00	$500.00

Check No.	Date	Invoice No.	Vendor	Description	Invoice Amt	Check Amt
167086	3/8/2018	9520	STAR ROOTER AND PLUMBING	REFUND # 20816	$500.00	$500.00
167125	3/15/2018	9526	E Z PLUMBING	REFUND # 20832	$500.00	$500.00
167147	3/15/2018	24029858	MOTION INDUSTRIES INC	6 AIR FILTER ELEMENTS	$492.67	$492.67
167139	3/15/2018	1057316	INDUSTRIAL SAFETY SUPPLY	PPE	$477.49	$477.49
167040	3/8/2018	324426001	AUTO BODY TOOLMART	ASTD PARTS & MATERIALS	$198.37	$457.68
	3/8/2018	324350001		ASTD PARTS & MATERIALS	$259.31	
167048	3/8/2018	41813	CLAREMONT BEHAVIORAL SERVICES	HARASSMENT PREVENTION TRAINING FOR MANAGERS	$450.00	$450.00
167049	3/8/2018	3096443	DAILY JOURNAL CORPORATION	AD: BIDS FOR FORCE MAIN CORROSION REPAIR PROJ-PHASE 2	$412.50	$412.50
167071	3/8/2018	24028947	MOTION INDUSTRIES INC	ASTD PARTS & MATERIALS	$396.56	$396.56
167130	3/15/2018	903445330	EVOQUA WATER TECHNOLOGIES	DI WATER SYSTEM	$375.40	$375.40
167124	3/15/2018	385418	DLT SOLUTIONS, LLC	AWS CLOUD STORAGE - JANUARY 2018	$362.14	$362.14
167077	3/8/2018	20180306	NOTARY LEARNING CENTER INC	CERTIFICATION: LEMOS, D. - NOTARY LEARNING CENTER	$337.32	$337.32
167088	3/8/2018	18021202	TELOG INSTRUMENTS INC	3 BATTERY PACK, ALKALINE, 6V, 80AH, ASSY	$330.45	$330.45
167121	3/15/2018	54750110	CINTAS CORPORATION	JACKETS FOR STUART BULLIS	$323.16	$323.16
167072	3/8/2018	125815	MUNICIPAL MAINT EQUIPMENT INC	NOZZLE REPAIR PARTS	$319.11	$319.11
167128	3/15/2018	1094608	ENTHALPY ANALYTICAL LLC	10 LAB SAMPLE ANALYSIS	$195.00	$275.00
	3/15/2018	1094188		2 LAB SAMPLE ANALYSIS	$80.00	
167066	3/8/2018	136390	MAZZEI INJECTOR	6 INJECTORS	$268.00	$268.00
167035	3/8/2018	1497	ALAMEDA COUNTY TREASURER	84 ASSESSOR MAPS	$252.00	$252.00

Check No.	Date	Invoice No.	Vendor	Description	Invoice Amt	Check Amt
167138	3/15/2018	21259	ICE SAFETY SOLUTIONS INC	MAINTENANCE 7 AED'S & 8 FIRST AID KITS	$205.00	$245.97
	3/15/2018	21260		FIRST AID & AED SUPPLIES	$40.97	
167161	3/15/2018	20180228	SPOK INC	MARCH 2018 PAGER SERVICE	$239.86	$239.86
167167	3/15/2018	8081440993	VWR INTERNATIONAL LLC	LAB SUPPLIES	$232.85	$232.85
167084	3/8/2018	853420180222	SAN FRANCISCO WATER DEPT	SERVICE 01/24/2018 TO 02/20/2018	$221.27	$221.27
167144	3/15/2018	58388041	MCMASTER SUPPLY INC	ASTD PARTS & MATERIALS	$212.83	$212.83
167160	3/15/2018	8122768022218	SIERRA SPRING WATER COMPANY	BOTTLESS COOLERS RENTAL	$212.63	$212.63
167145	3/15/2018	58182632	MCMASTER SUPPLY INC	ASTD PARTS & MATERIALS	$206.03	$206.03
167150	3/15/2018	17052	NICHOLAS J PEROS	NETWORK MASTER PLAN CONSULTING	$189.00	$189.00
167154	3/15/2018	20171005	MARC QUIJANO	EXP REIMB: AIRFARE INTERVIEW LAB DIRECTOR	$169.38	$169.38
167105	3/15/2018	23725	ALLIED FLUID PRODUCTS CORP	ASTD PARTS & MATERIALS	$161.69	$161.69
167087	3/8/2018	20180306	SWRCB - STATE WATER RESOURCES	GRADE IV OPERATOR CERTIFICATE RENEWAL - D. DRAKE	$150.00	$150.00
167061	3/8/2018	20180306	KEVIN LANDSBOROUGH	EXP REIMB: SAFETY SHOES - K. LANDSBOROUGH	$134.30	$134.30
167156	3/15/2018	343497	RKI INSTRUMENTS INC	1 OXYGEN SENSOR	$131.70	$131.70
167054	3/8/2018	2773804012	GLACIER ICE COMPANY INC	78 7-LB BAGS OF ICE	$114.66	$114.66
167113	3/15/2018	12477400	BLAISDELL'S	ASTD OFFICE SUPPLIES	$96.16	$96.16
167129	3/15/2018	17382	ENVIRONMENTAL BIOTECH INTL	REPLACEMENT FOR 4' EXTENSION	$85.91	$85.91
167065	3/8/2018	77882545	MATHESON TRI-GAS INC	MONTHLY CYLINDER RENTAL - JANUARY 2018	$85.32	$85.32
167159	3/15/2018	20180312	JAMES SCHOFIELD	EXP REIMB: FLOWERS - P. ROBERSON	$80.00	$80.00

Check No.	Date	Invoice No.	Vendor	Description	Invoice Amt	Check Amt
167036	3/8/2018	4088644120180222	ALAMEDA COUNTY WATER DISTRICT	SERV TO: 02/22/18 - BOYCE ROAD	$78.17	$78.17
167137	3/15/2018	944720180228	HOME DEPOT CREDIT SERVICES	MONTHLY HARDWARE STMT - FEB 2018	$61.50	$61.50
167106	3/15/2018	8013742	ALPHA ANALYTICAL LABORATORIES	1 LAB ANALYSIS	$55.00	$55.00
167131	3/15/2018	1350851	FERGUSON ENTERPRISES, INC.	ASTD PARTS & MATERIALS	$39.42	$39.42
167057	3/8/2018	268665	HANIGAN COMPANY INC	1 LOT BUSINESS CARDS: HOLSLAG, V	$37.68	$37.68
167081	3/8/2018	20180305	LUSINE PETROSYAN	EXP REIMB: LIVESCAN FEE PRE-EMPLOYMENT	$20.00	$20.00
167146	3/15/2018	57012479	MCMASTER SUPPLY INC	ASTD PARTS & MATERIALS	$12.68	$12.68

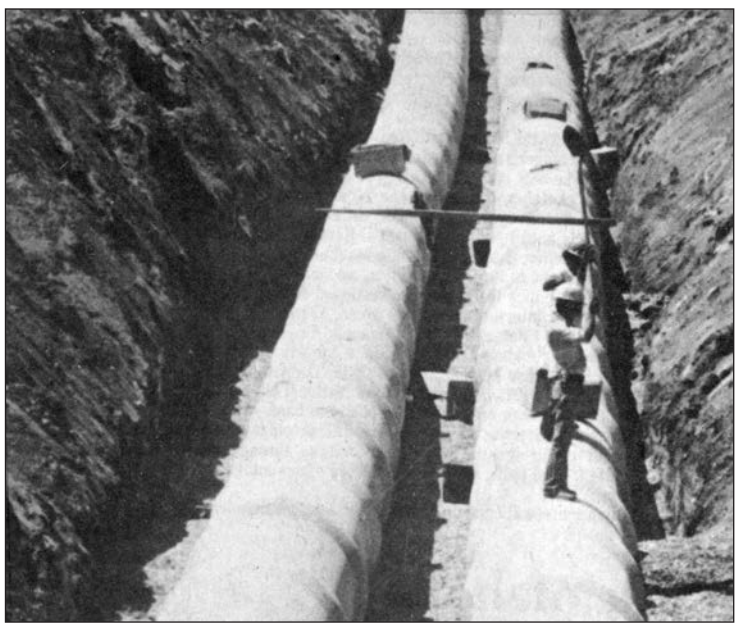
Invoices:

Credit Memos :	**0**	
$0 - $1,000 :	**138**	**44,240.93**
$1,000 - $10,000 :	**65**	**188,212.73**
$10,000 - $100,000 :	**17**	**422,131.40**
Over $100,000 :	**2**	**581,150.64**
Total:	**222**	**1,235,735.70**

Checks:

$0 - $1,000 :	**67**	**27,709.93**
$1,000 - $10,000 :	**55**	**182,085.30**
$10,000 - $100,000 :	**13**	**444,789.83**
Over $100,000 :	**2**	**581,150.64**
Total:	**137**	**1,235,735.70**

Union Sanitary District Centennial Stories



Force main construction – The Argus, 1979

Newark treatment plant – late 1950s – early 1960's

Submitted by Michelle Powell

"Why are you called Union Sanitary District?" USD staff members hear this question multiple times every day. We also hear: "Do you do garbage pickup?" (Not us) "Are you a department in the City of Union City?" (No, we're not) "Then who are you and why do you have that name?"

Union Sanitary District (USD) is a California Independent Special District. Independent special districts are voted into existence by the citizens they serve and perform specific local government functions within certain boundaries under California Law. USD was formed in 1918 to protect public health and the environment by providing the services of collecting, treating, and disposing of wastewater from residences, businesses and industries. We're proud to deliver this very complex, highly-regulated service to our communities.

Why do we have "Union" in our name? We've wondered ourselves, and our 100th birthday sparked a search for information. Popular folklore told us the District was named after The Union, a steamship that docked at a landing near the Bay. Although our Union City treatment plant is close to the site of the landing, the area was not within USD's boundaries in 1918.

Further research revealed a document describing our founding as a "union" of wastewater services for the towns of Centerville and Newark. Early boundaries included those townships, and the USD's first sewer lines were laid at the intersection of Hickory Street and Wells Avenue in Newark.

The first meeting of USD's Board of Directors was held at the home of Louis Ruschin on Thornton Avenue in Newark. Subsequent meetings were held in the Stevenson Building on Main Street in Centerville, now part of Fremont. The description of USD's original service area and the location of its Board meetings make the Centerville/Newark "union" theory the most likely basis for our name.

USD was one of several sanitary districts located in what became the Tri-Cities. Over time, they all merged into USD. Following are the names of local districts and the year they joined USD:

1949 Niles Sanitary District

1954 Decoto Sanitary District

1956 Irvington Sanitary District

1962 The City of Union City, served by Alvarado Sanitary District, annexed to USD

USD utilized Newark and Irvington Sanitary Districts' treatment plants after consolidation, enlarging and improving them beginning in 1947 and 1959. Our current 33-acre Union City treatment plant, built in 1963 and upgraded and expanded many times over the decades, has grown to encompass the site of the original Alvarado Sanitary District plant.

The Federal Clean Water Act of 1972 was a catalyst for construction of twin 12.5-mile long force mains, each about 3 feet in diameter, from the Irvington and Newark plants to the Union City treatment plant. When they were completed in 1980, all flows were combined and transported to our Union City plant, which now had the capacity to serve the entire Tri-City area. The Newark and Irvington plants were phased out, and USD's Newark and Irvington pump stations were constructed on the sites. The pump stations remain important components of our transport system today.

Union Sanitary District shares history with the towns that came together to become Fremont, Newark, and Union City. The joining of separate wastewater agencies created a utility that provides reliable, cost-effective service to the Tri-Cities today.

Be sure to visit our Centennial Open House at our Union City Treatment Plant from 10:00 a.m. to 2:00 p.m. on May 19, 2018, to see images from our history and enjoy family-friendly activities, displays, demonstrations, plant tours, and refreshments. We'd love to share our birthday celebration with you.

Women's Hall of Fame

Submitted by Susan S. Muranishi

Thirteen women recently inducted into the Alameda County Women's Hall of fame will be honored at a luncheon and awards ceremony co-sponsored by the Alameda County Board of Supervisors and the County's Commission on the Status of Women on Saturday, March 24.

The Women's Hall of Fame recognizes outstanding women for their achievements and contributions to Alameda County and its residents. Women are honored in 13 categories community leadership categories. Through this event and other community activities, the Women's Hall of Fame generates funds to support organizations that help women and families in Alameda County, including efforts to provide comprehensive breast cancer prevention, education, and treatment services.

This year's celebration will include the program's first inductee in the new category of Emerging Leader. This honor will go to Hilary Bass, Executive Director of the Alameda County Deputy Sheriff's Activities League (DSAL). Bass has led a vast expansion of the nonprofit DSAL's reach by launching wildly successful youth boxing, dance and soccer programs, as well as other innovative initiatives to build a healthier community.

In addition to Bass, the 2018 Women's Hall of Fame inductees are:

• Shonda Scott, Business and Professions. Shonda is the creator and CEO of 360 Total Concept, an Oakland-based management and marketing company. She is also a civic leader and philanthropist who has spearheaded efforts to assist Oakland schools and to promote cancer research and support cancer survivors.

• Rona Popal, Community Service. Rona leads the Afghan Coalition, a Fremont nonprofit supporting Afghan refugees. She is a tenacious leader who promotes community dialog to heal misunderstandings in the post 9-11 world and guides worldwide campaigns to end child marriages and other hardships faced by Afghan women.

• Winda I. Shimizu, Culture and Art. Winda is a master creator, coordinator and supporter of the arts who has had an invaluable impact on expanding arts programming in communities of central Alameda County and beyond. Winda has been pivotal in expanding arts programming in local schools, while driving scholarship programs and other efforts to promote local artists.

• Trina Ostrander, Education. For more than 20 years, Trina has driven cross-sector partnerships to promote education and career opportunities in Science, Technology, Engineering and Mathematics (STEM), leveraging prominent positions with Bayer life sciences and now as Executive Director of the East Bay STEM Institute at Cal State East Bay.

• Wendy Sommer, Environment. Wendy is Executive Director of Alameda County's Waste Management Authority, or StopWaste. She has been at the forefront of sustainability leadership for more than 25 years and has launched standard-setting programs for green building, bay-friendly landscaping and resource conservation.

• Janet Liang, Health. Janet is President of Kaiser Permanente's Northern California Region and a leader in the use of technology to advance clinical excellence, address disparities in health access and provide more affordable care to thousands of people across the northern part of the State.

• Amanda Berger, Justice. The Berkeley resident oversees gardening programs at eight California state prisons that bring vocational gardening and landscaping training to incarcerated people to allow them to reconnect to self, community, and the natural world. The program also aims to transform lives and end cycles of incarceration.

• Liisa Pine Schoonmaker, Non-Traditional Careers. Liisa is Chair of the welding department at Laney College in Oakland, and the department's only female instructor. In a 27-year welding career, Liisa has found herself to be the only woman on many welding jobs. This experience has ignited her passion about opening the field to women as a source of stable work, good pay and intellectual challenges.

• Nicole Curran, Philanthropy. Nicole is Board President of the Warriors Community Foundation. Under her leadership, the charitable arm of the Golden State Warriors basketball team has delivered about $9 million in impact to support education and youth development in the Bay Area – making it one of the most generous foundations in professional sports.

• Beena Ammanath. Science, Technology, Engineering. The Pleasanton resident is Global Vice President of AI, Data and Innovation at Hewlett Packard Enterprise. Beena has been instrumental in bringing analytic innovations to some of the world's top companies, while leading longstanding efforts to increase the ranks of women and minorities in technology and to make Artificial Intelligence accessible to all.

• Leilani Shaffer, Sports and Athletics. The San Lorenzo resident is a longtime volunteer coach and team manager with Special Olympics of Northern California. Initially motivated by a desire to find a sports program for her active, developmentally disabled son, Leilani has become a driving force in the growth of Special Olympics sports activity in Alameda County and across the East Bay.

• Roxana Perez, Youth. At just 17, Roxana has already assumed the role of community leader in the City of Oakland. She Chairs the Oakland Youth Advisory Commission, advising city leaders on matters such as youth-police relations. She also is an Oakland police explorer, a leader at the East Oakland Youth Development Center and a driving force in a program that delivers food to homeless encampments. She attends Aspire Golden State Preparatory Academy in East Oakland, captaining the girls' soccer team and maintaining a 4.0 grade point average.

The luncheon will be at the Greek Orthodox Cathedral, 4700 Lincoln Ave., Oakland. Doors open at 11:45 a.m. and the luncheon starts at 12:30 p.m. Tickets are $100 for individuals or $1,000 for sponsorship tables for 10. Funds raised will help support local partners serving women and families in Alameda County, and local girls' academic pursuits through the Mary V. King "Leading the Way" Youth Scholarship Fund.

Tickets are available online by visiting the Women's Hall of Fame website at www.acgov.org/whof. For details, call (510) 272-6984.

Women's Hall of Fame Luncheon
Saturday, Mar 24
12:30 p.m.
Greek Orthodox Cathedral,
4700 Lincoln Ave., Oakland
$100 individuals;
$1,000 for a table for 10
Tickets: www.acgov.org/whof/
(510) 272-6984

Left to right, Janet Liang, Roxana Perez, Shonda Scott, Dr. Stacy Thompson, Wendy Sommer, Beena Ammanath, Leilani Shaffer, Hilary Bass, Susan S. Muranishi and Rona Popal.

San Francisco Chronicle

‘Tax on rain’ to help S.F. maintain sewers

MATIER & ROSS March 7, 2018

When it rains, it pours — and that has San Francisco water officials looking into charging property owners a new “storm-water fee” to help with the upkeep of the city’s aging sewer system.

The first target will be the owners of vacant lots.

“It’s a tax on rain,” fumed **Jason Sanders**, who was just notified that effective July 1, he will be assessed $31.46 a month for runoff on his vacant lot on Ashbury Street.

According to the Public Utilities Commission, every inch of rainfall that falls on the 47-square-mile city puts about 430 million gallons into the storm-water runoff system.

And it all needs to be treated before it flows into the bay.

Right now, owners of vacant lots are exempt from having to pay the wastewater fees that are assessed to other properties. Utilities commission officials say they want to make all property owners pay to keep up the city’s wastewater and sewage treatment system.

So the PUC has notified 500 lot owners who don’t have either sewer service or an active water account that the agency is considering levying a flat rate of $31.46 a month, or $377 annually, per vacant parcel to pay for treating runoff.

The rain fee would increase by $3.70 a month, or $44.40 a year, by 2022.

The bill represents “the average amount an existing customer pays for storm-water treatment costs,” according to the notice from PUC General Manager **Harlan Kelly Jr**.

But for Sanders, who says all the rain that falls on his property soaks into the ground, it’s “just another way of ripping off customers.”

The $188,760 the city expects to get from the empty-lot owners would be just a drop in the bucket compared with the $732 million that the utilities agency collected in 2017 from city sewage and water bills.

And though vacant lots are first in line, officials said the new storm-water fee could eventually spill over to all households and commercial properties citywide.

"I'm not saying we are going to do that, but that discussion is happening now," said PUC spokesman **Tyler Gamble**.

As for how that affects the commission's fairness argument, Gamble would say only that this is the beginning of a process for overhauling the billing system — with rates adjusted up or down to reflect a customer's separate sewer and storm-water costs.

A state bill signed into law by Gov. **Jerry Brown** in October opened the gate for other cities across California to start adding storm-water costs to tax bills without going to the voters.

Seattle, Portland and Washington, D.C., already charge their customers a storm-water drainage fee. In Seattle, the fee generated nearly $121 million in 2016, a city report shows.

San Francisco's water and wastewater bills went up an average of nearly 39 percent in the past five years. Storm-water fee or not, the PUC is already in the midst of planning for another round of similar increases over the next five years.

Unhappy property owners will have a chance to sound off when the PUC meets April 10 to formally adopt the new storm-water charges.

San Francisco Chronicle columnists Phillip Matier and Andrew Ross appear Sundays, Mondays and Wednesdays. Matier can be seen on the KPIX TV morning and evening news. He can also be heard on KCBS radio Monday through Friday at 7:50 a.m. and 5:50 p.m. Got a tip? Call (415) 777-8815, or email ***matierandross@sfchronicle.com****. Twitter: @matierandross*

New York City stops sewage train to Alabama after residents complain of ‘horrific’ smell

By **Katherine Lam**

3/13/18

Alabama residents have complained about the "horrific" smell from the sewage. (Dennis Pillion/AL.com)

New York City wastewater treatment plants will reportedly stop sending trains filled with partially treated sewage to Alabama after Yellowhammer State residents complained about the “horrific” smell and sludge-driven health issues.

The wastewater treatment plants — six from New York City and one from New Jersey — began dumping biosolids into the Big Sky Environmental, LLC landfill in Adamsville, Alabama, more than a year ago, according to AL.com. The state became a landing zone

for New York City sewage as the state faces challenges to solve its waste problem. The Environmental Protection Agency said in 1988 that waste should not end up in the ocean.

But the operation has left a sour taste among locals, who said the waste brought on disgusting smell and a slew of health concerns.

“On a hot day, the odor and flies are horrific,” West Jefferson Mayor Charles Nix, who resides near the landfill, told The Guardian. “It’s better in winter time but if the wind blows in the wrong direction you get the smell. It’s like dead, rotting animals."

Nix said people were “miserable” being around the sewage. He added people would get sewage water splattered onto their vehicles when they drove too close. People in Walker county also reported fly infestations and a rotten stench.

“If you get close to the trucks the liquid would blow off on to your windshield and fill your car with a stink. It spilled out on to the road,” Nix said.

Edward Timbers, a spokesman for the New York City Department of Environmental Protection told AL.com the operation was being suspended to address local concerns after a slew of complaints. It’s unclear if the operation was just temporarily stopped, or is gone for good.

West Jefferson residents also filed a lawsuit against Big Sky for the sewage issue.

“I guess we are not even as good as the fish, down here in Alabama,” Nix said. “Every state should be responsible for its own waste. We don’t want it dumped here.”

About 7 percent of New York City waste goes to the Alabama landfill, according to the Guardian.

The Associated Press contributed to this report.