I hereby certify that the following Agenda was posted at least 72 hours prior to the time of the Board Meeting so noticed below, at the usual agenda posting location of the South Orange County Wastewater Authority [SOCWA] and at www.socwa.com.

Betty Burnett, General Manager
SOCWA and the Board of Directors thereof

AGENDA

Regular Meeting of The
South Orange County Wastewater Authority
Board of Directors

Thursday, September 7, 2017
8:30 a.m.

THE BOARD OF DIRECTORS MEETING ROOM IS LOCATED AT 34156 DEL OBISPO STREET, DANA POINT, CA. THE ROOM IS WHEELCHAIR ACCESSIBLE. IF YOU REQUIRE ANY SPECIAL DISABILITY RELATED ACCOMMODATIONS (I.E. ACCESS TO AN AMPLIFIED SOUND SYSTEM, ETC.), PLEASE CONTACT THE SOUTH ORANGE COUNTY WASTEWATER AUTHORITY'S SECRETARY'S OFFICE AT 949-234-5421 AT LEAST SEVENTY-TWO (72) HOURS PRIOR TO THE SCHEDULED MEETING. THIS AGENDA CAN BE OBTAINED IN ALTERNATE FORMAT UPON WRITTEN REQUEST TO THE SOUTH ORANGE COUNTY WASTEWATER AUTHORITY SECRETARY AT LEAST SEVENTY-TWO (72) HOURS PRIOR TO THE SCHEDULED MEETING.

AGENDA ATTACHMENTS AND OTHER WRITINGS THAT ARE DISCLOSABLE PUBLIC RECORDS DISTRIBUTED TO ALL, OR A MAJORITY OF, THE MEMBERS OF THE SOUTH ORANGE COUNTY WASTEWATER AUTHORITY BOARD OF DIRECTORS IN CONNECTION WITH A MATTER SUBJECT TO DISCUSSION OR CONSIDERATION AT AN OPEN MEETING OF THE BOARD OF DIRECTORS ARE AVAILABLE FOR PUBLIC INSPECTION IN THE AUTHORITY OFFICE, 34156 DEL OBISPO STREET, DANA POINT, CA ("AUTHORITY OFFICE"). IF SUCH WRITINGS ARE DISTRIBUTED TO MEMBERS OF THE BOARD OF DIRECTORS LESS THAN SEVENTY-TWO (72) HOURS PRIOR TO THE MEETING, THEY WILL BE AVAILABLE IN THE RECEPTION AREA OF THE AUTHORITY OFFICE AT THE SAME TIME AS THEY ARE DISTRIBUTED TO THE BOARD OF DIRECTORS, EXCEPT THAT, IF SUCH WRITINGS ARE DISTRIBUTED IMMEDIATELY PRIOR TO, OR DURING, THE MEETING, THEY WILL BE AVAILABLE IN THE BOARD OF DIRECTORS MEETING ROOM.

1. CALL MEETING TO ORDER

2. PLEDGE OF ALLEGIANCE

3. ORAL COMMUNICATIONS

   A. Members of the public may address the board regarding an item on the agenda or may reserve this opportunity during the meeting at the time item is discussed by the board. There will be a three-minute limit for public comments.

4. CONSENT CALENDAR

   A. Financial Matters

   ACTION The Board will be requested to receive and file subject reports.

Page
Number

e) Budget vs. Actual Expenses Preliminary:

B. Operational Reports

ACTION The Board will be requested to receive and file subject reports.

C. Capital Improvement Program

ACTION The Board will be requested to receive and file subject reports.

D. Project Committee No.17

ACTION The PC17 Board will be requested to approve Change Orders 2, 3, 4, 5 and 6 to the construction services contract with Carollo Engineers for the Regional Treatment Plant Cogeneration and Switchgear Upgrade Project.

ACTION The PC17 Board will be requested to approve Change Orders 2 and 3 to the construction contract with Pacific Hydotech for the Regional Treatment Plant Miscellaneous Improvements 2016 Project.

5. ENGINEERING MATTERS

ACTION The Board will be requested to approve the award of the construction contract to the S.S. Mechanical Construction Corporation at a price of $53,775.

6. GENERAL MANAGER'S REPORTS

A. General Manager's Status Report 88

ACTION The Board will review the General Manager's Status Report:

- Kelp Consortium Presentation, Amber Baylor
- Board Questions
- Receive and file

B. Fiscal Year End June 30, 2017 Financial Audit Services – Selection of Auditor.....95

ACTION The Board will be requested to approve and authorize the General Manger to enter into a contract on behalf of SOCWA with the Pun Group for the FY 2016/17 Audit with the option of a two (2) years renewal; and, approve a Budget increase to the General Fund/Administration Budget of $5,000 for any additional audit costs.

C. Infrastructure Valuation Services 96

ACTION The Board will be requested to authorize the General Manger, on behalf of SOCWA, to enter into a contract with Carollo Engineers to perform the Infrastructure Valuation Services; and, authorize the inclusion of $115,000 in funding as an adjustment to the FY 2017-18 Administration Budget to cover item.

D. Employee MOU (July 1, 2017 – June 30, 2017) Side Letters 1 and 2.....150

ACTION Board will be requested to approve Resolution No. 2017-08, A Resolution Approving Side Letters of Agreement No. 1 and No. 2 to the July 1, 2017 to June 30, 2020 Memorandum of Understanding between the South Orange County Wastewater Authority and the SOCWA Employee Association.

7. CLOSED SESSION

A. Conference with SOCWA Labor Negotiator – Closed Session.

Employee MOU (July 1, 2017 – June 30, 2017), Side Letters 1 and 2, a Closed Session will be conducted in accordance with Government Code Section 54957.6.

Conference with SOCWA Negotiator - Betty Burnett, GM Employee Organization – SOCWA Employee Association.

8. OTHER MATTERS

A. Open discussion or items received too late to be agendized.

Note: Determine the need to take action on the following item(s) introduced by the General Manager which arose subsequent to the agenda being posted.

[Adoption of this action requires a two-thirds vote of the Board, or if less than two-this are present an unanimous vote.]

9. ADJOURNMENT

THE NEXT REGULAR SOCWA BOARD MEETING WILL HELD ON
OCTOBER 5, 2017 AT 8:30 A.M.

Agenda Item

	Legal Counsel Review: N/A
	Meeting Date: September 7, 2017

TO: Board of Directors

FROM: Betty Burnett, General Manager

STAFF CONTACT: Mary Carey, Finance Controller

SUBJECT: Financial Matters – For Month of and Year-to-Date June 30, 2017

Summary/Discussion

The following selected financial reports are routinely provided monthly to the Board of Directors. This information is presented, including the Monthly Financial Report, to the Finance Committee and may include a request for the Board to approve recommendations of the Finance Committee. The reports included are as follows:

a) Summary of Disbursements (Preliminary)
   - For Month of June 2017 (Exhibit A)

b) Schedule of Funds Available for Reinvestment – Preliminary (Exhibit B)

c) Schedule of Cash and Investments – Preliminary (Exhibit C)

d) Capital Projects Summaries - Preliminary (Exhibit D)
   - Large Capital Projects (Graph Exhibit D-1)

e) Budget vs. Actual Expenses (Preliminary):
   - O&M and Environmental Safety Costs Summary (Exhibit E-1)
   - O&M Budget vs. Actual Comparison by PC (Exhibit E-1-A)
   - Budget vs. Actual Comparison – Residual Engineering (Exhibit E-2)
   - Budget vs. Actual Comparison – Administration (Exhibit E-3)
   - Budget vs. Actual Comparison – Information Technology (IT) (Exhibit E-4)

Fiscal impact

During the month of June 2017, disbursements totaled $2,223,331 and are summarized by Project Committee in the attached Exhibit A.

The attached Exhibits B, C, and D are informational reports only.

Recommendation

None

Exhibit A

South Orange County Wastewater Authority
Summary of Disbursements for Month of June 2017

Staff Recommendation of Fiscal Matters

Preliminary

	Actual
General Fund	($601,534)
PC 2 - Jay B. Latham Plant	(544,664)
PC 3 - SOCWA Plant/PCA AWT	0
PC 5 - San Juan Creek Ocean Outfall	(38,044)
PC 8 - Pretreatment Program	(9,242)
PC 12 SO - Water Reclamation Permits	(1,385)
PC 15 - Coastal Treatment Plant/AWT	(269,248)
PC 17 - Joint Regional Wastewater Reclamation	(720,500)
PC 21 - Effluent Transmission Main	(11,143)
PC 24 - Aliso Creek Ocean Outfall	(27,570)
Total	**($2,223,331)**

Exhibit B

SOUTH ORANGE COUNTY WASTEWATER AUTHORITY
SCHEDULE OF FUNDS AVAILABLE FOR REINVESTMENT

as of June 30, 2017

Preliminary

CASH IN BANK: (BEGINNING BAL.)	$ 1,499,524
L.A.I.F. FUNDS: (BEGINNING BAL.)	13,699,069
DEPOSITS, TRANSFERS & ADJUSTMENTS:	(27,158)
FUND REQUIREMENTS:	
BILLS FOR CONSIDERATION	(2,223,331)
	$ 12,948,103

In accordance with Government Code 53646(c), since all funds are placed in the State LAIF, staff has included in the Financial Packet, the most current statement from the State LAIF, in lieu of the report required by Government Code 53646(b)(1).

In accordance with requirements of the Government Code and the "SOCWA Investment Policy", I hereby certify that:

1). All investment actions executed since the last report have been made in full compliance with the Investment Policy.

2). SOCWA does not have sufficient funds currently on hand to meet its expenditure obligations for the next six months (see note) due to the fact that SOCWA bills and receives operational funds on a quarterly basis only.

Betty Burnett
General Manager

Note: Operational funds are collected on a quarterly basis at the beginning of the quarter. Capital funds are collected on a quarterly basis in connection with projected needs. Member agencies have pledged to have funds available to meet all obligations.

Exhibit C

South Orange County Wastewater Authority
Schedule of Cash and Investments
as of June 30, 2017
Preliminary

MVA	$	29,331	(A)
A/P Checking		513,907	(B)
Payroll Checking		705,797	(C)
State LAIF		11,699,069	(D)
Total Cash in Bank		**12,948,103**	
Petty Cash		1,600	(E)
Total Operating Cash		**12,949,703**	
OPEB Trust		4,269,924	(F)
Total Cash and Investments	**$**	**17,219,627**	

Notes:
(A) Interest bearing account; all cash receipts are deposited in this account.
(B) Accounts Payable Checks are drawn against this account; money is transferred to this account from the LAIF account.
(C) Payroll including payroll taxes and related liabilities are drawn against this account; money is transferred to this account from the LAIF account.
(D) LAIF balance.
(E) Cash on hand with GM's office and held by Chief Operators at each Treatment facility.
(F) OPEB Trust Fund; these funds can only be used for Retiree health benefits.

Exhibit D

South Orange County Wastewater Authority
Capital Projects Summaries
as of
June 30, 2017
Preliminary

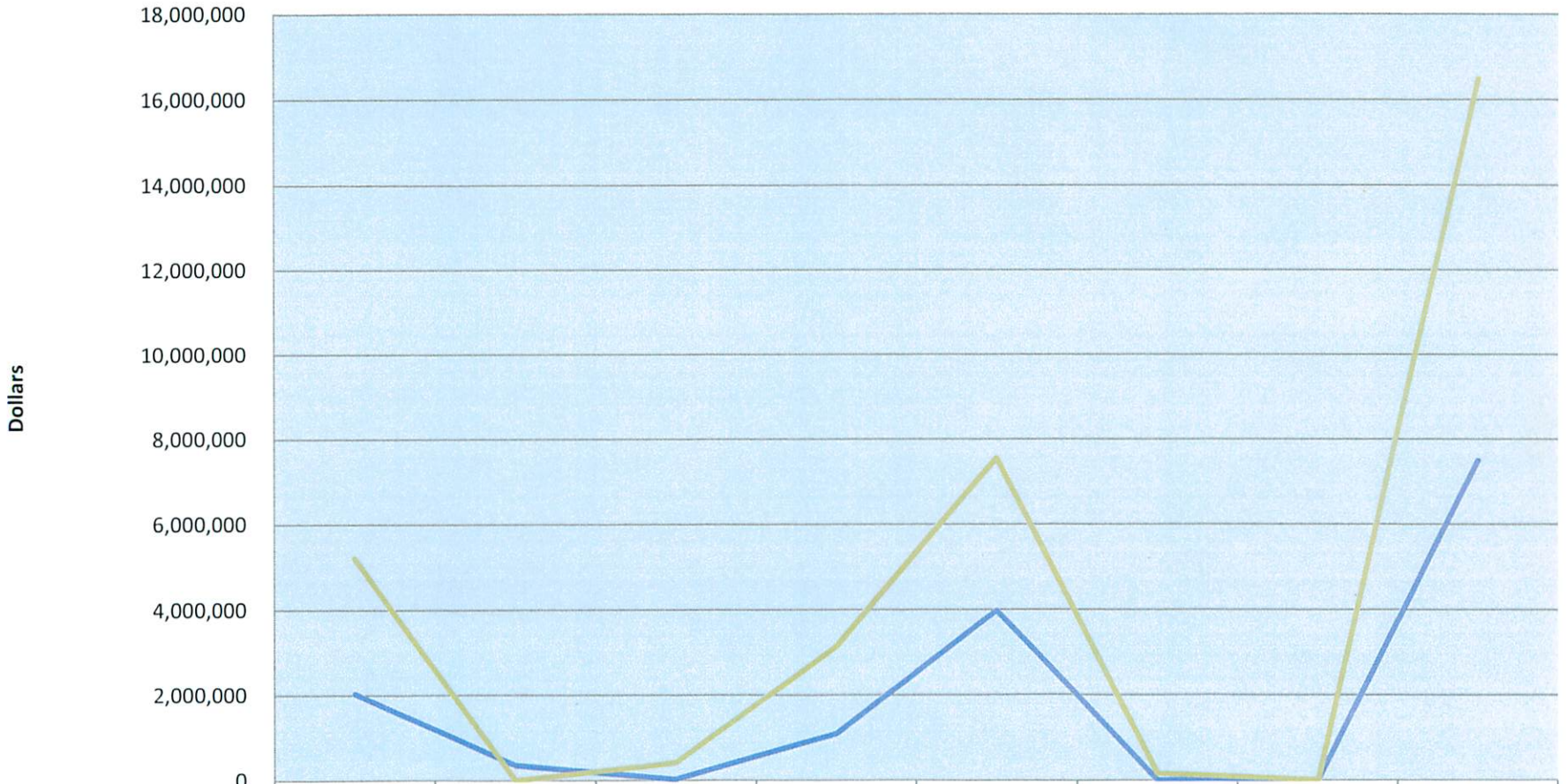
Description	FY 2016-17 Budget vs. Actual Spending							
	Capital Budget	Fiscal Year Spending	(Over)/ Under Budget	% Expended	Member Agency Billed	Member Agency Collected	Past Due Amount	
PC 2-JB Latham	5,211,980	2,035,485	3,176,495	39.1%	4,797,089	4,729,304	67,785	(5)
PC 3A	-	356,048	(356,048)		-	-	-	(3)
PC 5-San Juan Creek Outfall	414,437	21,941	392,496	5.3%	151,160	151,160	-	
PC 15-Coastal	3,149,813	1,096,269	2,053,544	34.8%	2,770,791	2,121,276	649,515	(1)
PC 17-Regional	7,551,483	3,980,129	3,571,354	52.7%	7,534,141	7,534,141	-	
PC 21 Effluent Transmission	159,719	628	159,091	0.4%	55,347	55,347	-	
PC 24 Aliso Creek Outfall	-	472	(472)		-	-	-	
Total Large Capital	**16,487,432**	**7,490,971**	**8,996,461**	**45.4%**	**15,308,528**	**14,591,228**	**717,300**	
Non-Capital Engineering	891,500	381,690	509,810	42.8%	785,488	763,671	21,817	(1)
Small Internal Capital	1,254,100	1,328,828	(74,728)	106.0%	1,254,114	1,169,576	84,538	(1)
Small Internal Capital carryover from 15/16	129,000	95,574	33,426	74.1%	129,000	129,000		(4)
It Small Internal Capital		89,147	(89,147)					(6)
Total Capital	**18,762,032**	**9,386,211**	**9,375,821**	**50.0%**	**17,477,130**	**16,653,475**	**823,655**	

(1) **Schedule for Past Due Amounts as of June 30, 2017**

Description	Past Due Amount MNWD	Past Due Amount SCWD	Past Due Amount TOTAL	
PC 2-JB Latham	33,525	34,260	67,785	(5)
PC 15-Coastal	649,515		649,515	
Total Large Capital	**683,040**	**34,260**	**717,300**	
Non-Capital Engineering	21,817		21,817	(2)
Small Internal Capital	84,538		84,538	(2)
Total Capital	**789,395**	**34,260**	**823,655**	

(2) Balances due are for PC 15 Coastal Treatment Plant
(3) Expenditures included in prior year, 2015-16 budget. Fluctuations from prior month due to true up of Fringe Rate to actual.
(4) Invoiced and Collected in Fiscal Year 2015-16
(5) Balances due are for SOCWA/Zephyr Boundary Wall invoiced outside of the budget. Payments were received from MNWD & SCWD on August 14, 201
(6) IT Small Capital as approved on May 4, 2017 by the Board was to come with leftover funding from the IT O&M budget.

Large Capital Projects Exhibit D-1
Budget vs. Actual
Year-to-Date 06/30/2017
Preliminary



	PC 2-JB Latham	PC 3A	PC 5-San Juan Creek Outfall	PC 15-Coastal	PC 17-Regional	PC 21 Effluent Transmission	PC 24 Aliso Creek Outfall	Total Large Capital
Spent - YTD	2,035,485	356,048	21,941	1,096,269	3,980,129	628	472	7,490,971
Capital Budget 16-17	5,211,980	0	414,437	3,149,813	7,551,483	159,719	0	16,487,432

South Orange County Wastewater Authority
O & M & Environmental Safety Costs Summary
Year-to-Date through June 30, 2017
Preliminary

Exhibit E-1

		FY 2016-17 Budget	Actual	(Over)/Under Budget	% Expended	
Salary and Fringe						
-5000--**-**	Regular Salaries-O&M	4,249,384	4,000,685	248,699	94.1%	(1)
-5001--**-**	Overtime Salaries-O&M	79,080	147,190	(68,110)	186.1%	(2)
-5306--**-**	Scheduled Holiday Work	50,700	25,116	25,584	49.5%	
-5307--**-**	Weekend Shift Pay	-	996	(996)	-	(3)
-5401--**-**	Fringe Benefits IN to PC's & Depts.	3,017,080	3,506,399	(489,319)	116.2%	(4)
-5700--**-**	Standby Pay	137,588	69,128	68,461	50.2%	
	Total Payroll Costs	7,533,832	7,749,514	(215,682)	102.9%	
Other Expenses						
-5002--**-**	Electricity	1,809,012	1,510,491	298,521	83.5%	
-5003--**-**	Natural Gas	167,304	142,930	24,374	85.4%	
-5004--**-**	Potable & Reclaimed Water	59,208	58,263	945	98.4%	
-5005--**-**	Co-generation Power Credit	(450,004)	(201,611)	(248,393)	44.8%	
-5006--**-**	Chlorine/Sodium Hypochlorite	542,404	422,596	119,808	77.9%	
-5007--**-**	Polymer Products	646,504	506,570	139,934	78.4%	
-5008--**-**	Ferric Chloride	251,800	259,012	(7,212)	102.9%	
-5009--**-**	Odor Control Chemicals	167,404	148,229	19,175	88.5%	
-5010--**-**	Other Chemicals - Misc.	5,000	988	4,012	19.8%	
-5011--**-**	Laboratory Services	35,700	29,233	6,467	81.9%	
-5012--**-**	Grit Hauling	113,200	120,131	(6,931)	106.1%	
-5013--**-**	Landscaping	160,000	199,368	(39,368)	124.6%	(5)
-5014--**-**	Engineering - Misc.	335,000	109,950	225,050	32.8%	
-5015--**-**	Management Support Services	294,024	101,533	192,491	34.5%	
-5016--**-**	Audit - Environmental	500	-	500		
-5017--**-**	Legal Fees	88,004	17,959	70,045	20.4%	
-5018--**-**	Public Notices/ Public Relations	500	145	355	29.0%	
-5019--**-**	Contract Services Misc.	270,408	204,070	66,338	75.5%	
-5021--**-**	Small Vehicle Expense	19,444	28,422	(8,978)	146.2%	(6)
-5022--**-**	Miscellaneous Expense	16,804	10,848	5,956	64.6%	
-5023--**-**	Office Supplies - All	33,604	39,431	(5,827)	117.3%	(7)
-5024--**-**	Petroleum Products	58,400	34,625	23,775	59.3%	
-5025--**-**	Uniforms	34,408	36,917	(2,509)	107.3%	(8)
-5026--**-**	Small Vehicle Fuel	33,704	16,086	17,618	47.7%	
-5027--**-**	Insurance - Property/Liability	110,188	160,201	(50,013)	145.4%	(9)
-5028--**-**	Small Tools & Supplies	63,128	64,336	(1,208)	101.9%	
-5030--**-**	Trash Disposal	4,808	4,863	(55)	101.1%	
-5031--**-**	Safety Program & Supplies	91,500	119,253	(27,753)	130.3%	(10)
-5032--**-**	Equipment Rental	7,204	15,754	(8,550)	218.7%	(11)
-5033--**-**	Recruitment	-	1,482	(1,482)		(12)
-5034--**-**	Travel Expense/Tech. Conferences	40,016	20,555	19,461	51.4%	
-5035--**-**	Training Expense	62,496	52,511	9,985	84.0%	
-5036--**-**	Laboratory Supplies	75,508	68,799	6,709	91.1%	
-5037--**-**	Office Equipment	21,404	19,969	1,435	93.3%	
-5038--**-**	Permits	488,020	475,018	13,002	97.3%	
-5039--**-**	Membership Dues/Fees	12,012	11,041	971	91.9%	
-5040--**-**	Natural Gas - 11-EPS - PC 5	396	-	396		
-5041--**-**	Electricity - 10-EPS - PC 5	31,500	-	31,500		
-5042--**-**	Contract Services - 29-EPS - PC 5	4,104	-	4,104		
-5044--**-**	Offshore Monitoring	40,008	32,634	7,374	81.6%	
-5046--**-**	Effluent Chemistry	52,004	38,855	13,149	74.7%	
-5047--**-**	Access Road Expenses	45,400	32,873	12,527	72.4%	
-5048--**-**	Storm Damage	18,600	30,592	(11,992)	164.5%	(13)
-5049--**-**	Biosolids Disposal	1,524,604	1,481,192	43,412	97.2%	
-5050--**-**	Contract Services Generators	19,704	22,514	(2,810)	114.3%	(14)
-5052--**-**	Janitorial Services	50,008	34,408	15,600	68.8%	(15)
-5054--**-**	Diesel Truck Maint	29,512	24,175	5,337	81.9%	
-5055--**-**	Diesel Truck Fuel	12,200	9,401	2,799	77.1%	
-5056--**-**	Maintenance Equip. & Facilities (Solids)	311,500	341,022	(29,522)	109.5%	(16)
-5057--**-**	Maintenance Equip. & Facilities (Liquids)	530,400	511,195	19,205	96.4%	
-5058--**-**	Maintenance Equip. & Facilities (Common)	60,300	71,872	(11,572)	119.2%	(17)
-5059--**-**	Maintenance Equip. & Facilities (Co-Gen)	158,500	93,997	64,503	59.3%	(18)
-5060--**-**	Maintenance Equip. & Facilities (AWT)	57,600	59,870	(2,270)	103.9%	
-5061--**-**	Mileage	4,952	4,506	446	91.0%	

Exhibit E-1

South Orange County Wastewater Authority
O & M & Environmental Safety Costs Summary
Year-to-Date through June 30, 2017
Preliminary

		FY 2016-17 Budget	Actual	(Over)/Under Budget	% Expended	
Salary and Fringe						
-5068--**-**	MNWD Potable Water Supplies & Svcs.	23,996	22,508	1,488	93.8%	
-5069--**-**	Misc-Capital-Dilution & Metering Study	65,004	75,395	(10,391)	116.0%	(19)
-5077--**-**	IT Direct	150,004	296,159	(146,155)	197.4%	(20)
-5101--**-**	Employee Recognition	-	1,925	(1,925)		(12)
-5105--**-**	Co-Generation Power Credit - Offset	450,004	201,611	248,393	44.8%	
-5302--**-**	Performance Based Merit Pay	-	23,922	(23,922)		(3)
-5303--**-**	Group Insurance Waiver	-	6,601	(6,601)		(12)
-5305--**-**	Medicare Tax Payments for Employees	-	12,106	(12,106)		(12)
-5309--**-**	Operating Leases	7,004	5,085	1,919	72.6%	
-5705--**-**	Monthly Car Allowance	37,320	31,665	5,655	84.8%	
-5802--**-**	Shipping/Freight	-	946	(946)		(12)
-6500--**-**	IT Allocations in to PC's & Depts.	577,252	515,941	61,311	89.4%	
	Total Other Expenses	9,930,492	8,792,935	1,137,557	88.5%	
	Total Expenses	**17,464,324**	**16,542,450**	**921,874**	**94.7%**	

(1) Labor and benefits under budget due to retirement caused vacancies.
(2) New equipment startup and troubleshooting Issues, January/February Storms, odor complaint investigations, and staff filling in for vacancies.
(3) Budgeted as regular salaries in past budgets.
(4) Used Fringe Rate of 71% in 16-17 Budget because lack of adequate history to support higher budgeted fringe rate. Actual fringe rate was 87.64%
(5) Carryover work from FY15-16 as presented to at the June 2016 Board meeting.
(6) Increasing expenses due to average fleet age of 11 years.
(7) Office supplies over budget due to increased employee turnover and new office set ups.
(8) Elevated new employee expenses due to 10% workforce turnover.
(9) Increased Premiums
(10) Safety supplies are restocked for the FY and limited expenses are planned for the remainder of the FY.
(11) Elevated expenses due for rental equipment (standby generators) for the major January and February storms.
(12) Expense Line Item Not Budgeted
(13) Elevated expenses due to damage from the major January and February storms.
(14) Work completed for the year and within the 5-year average of maintenance costs.
(15) Budgeted high level of expense for newly anticipated contract with more thorough cleaning requirements. Proposals received were too high and rejected by the Board in May. The contract services scope is being revised for reissuance.
(16) Solids expenses were elevated due to several large repairs to the buried pipes at RTP.
(17) A number of air conditioner units required repairs and were budgeted in FY17-18 for replacement,
(18) Engine projects at JBL and RTP are behind schedule. This budget included several contracted services for the new engines.
(19) This item was anticipated to be overbudget as presented at the December 8, 2016 Board Meeting.
(20) IT Direct higher due to unanticipated SCADA software and hardware upgrades due to obsolesce. Software upgrades were required to maintain reporting capabilities from SCADA and the SCADA hardware upgrades addressed identified cybersecurity risks.

South Orange County Wastewater Authority
O&M Budget vs. Actual Comparison by PC
Year-to-Date through June 30, 2017
Preliminary

Exhibit E-1-A

		FY 2016-17 Budget	Actual	(Over)/Under Budget	% Expended	
02 - Jay B. Latham Plant						
Salary and Fringe						
02-5000-01-**-**	Regular Salaries-O&M	1,164,588	1,181,091	(16,503)	101.4%	
02-5000-02-**-**	Regular Salaries-O&M	141,832	150,055	(8,223)	105.8%	
02-5001-01-**-**	Overtime Salaries-O&M	18,004	46,391	(28,387)	257.7%	(1)
02-5001-02-**-**	Overtime Salaries-O&M	2,404	595	1,809	24.7%	
02-5306-01-**-**	Scheduled Holiday Work	12,004	8,351	3,653	69.6%	
02-5306-02-**-**	Scheduled Holiday Work	1,596	1,393	203	87.3%	
02-5307-01-**-**	Weekend Shift Pay	-	399	(399)		(2)
02-5307-02-**-**	Weekend Shift Pay	-	37	(37)		(2)
02-5401-01-**-**	Fringe Benefits IN to PC's & Depts.	826,864	1,035,167	(208,303)	125.2%	(3)
02-5401-02-**-**	Fringe Benefits IN to PC's & Depts.	100,704	131,515	(30,811)	130.6%	(3)
02-5700-01-**-**	Standby Pay	51,492	28,665	22,827	55.7%	
	Total Payroll Costs	2,319,488	2,583,658	(264,170)	111.4%	
Other Expenses						
02-5002-01-**-**	Electricity	859,996	857,682	2,314	99.7%	
02-5003-01-**-**	Natural Gas	30,000	54,180	(24,180)	180.6%	(4)
02-5004-01-**-**	Potable & Reclaimed Water	14,804	14,225	579	96.1%	
02-5006-01-**-**	Chlorine/Sodium Hypochlorite	27,200	15,837	11,363	58.2%	
02-5007-01-**-**	Polymer Products	257,500	175,489	82,011	68.2%	
02-5008-01-**-**	Ferric Chloride	90,600	89,719	881	99.0%	
02-5009-01-**-**	Odor Control Chemicals	21,400	27,421	(6,021)	128.1%	(5)
02-5010-01-**-**	Other Chemicals - Misc.	1,000	523	477	52.3%	
02-5011-02-**-**	Laboratory Services	10,500	10,671	(171)	101.6%	
02-5012-01-**-**	Grit Hauling	38,500	46,645	(8,145)	121.2%	(6)
02-5013-01-**-**	Landscaping	45,000	33,144	11,856	73.7%	
02-5014-01-**-**	Engineering - Misc.	80,000	13,689	66,311	17.1%	
02-5015-01-**-**	Management Support Services	96,000	11,725	84,275	12.2%	
02-5015-02-**-**	Management Support Services	40,004	28,927	11,077	72.3%	
02-5017-01-**-**	Legal Fees	23,996	7,209	16,787	30.0%	
02-5019-01-**-**	Contract Services Misc.	77,304	70,126	7,178	90.7%	
02-5021-01-**-**	Small Vehicle Expense	7,204	12,541	(5,337)	174.1%	(7)
02-5022-01-**-**	Miscellaneous Expense	7,204	5,792	1,412	80.4%	
02-5023-01-**-**	Office Supplies - All	20,004	21,820	(1,816)	109.1%	(8)
02-5024-01-**-**	Petroleum Products	15,500	4,081	11,419	26.3%	
02-5025-01-**-**	Uniforms	12,004	13,474	(1,470)	112.2%	(9)
02-5026-01-**-**	Small Vehicle Fuel	14,108	7,408	6,700	52.5%	
02-5027-01-**-**	Insurance - Property/Liability	42,748	56,931	(14,183)	133.2%	(10)
02-5027-02-**-**	Insurance - Property/Liability	4,996	-	4,996		(10)
02-5028-01-**-**	Small Tools & Supplies	31,004	32,765	(1,761)	105.7%	(11)
02-5030-01-**-**	Trash Disposal	800	2,182	(1,382)	272.7%	(12)
02-5031-02-**-**	Safety Program & Supplies	35,004	42,719	(7,715)	122.0%	(13)
02-5032-01-**-**	Equipment Rental	3,000	600	2,400	20.0%	
02-5033-01-00-00	Recruitment	-	200	(200)		(14)
02-5034-01-**-**	Travel Expense/Tech. Conferences	11,000	8,968	2,032	81.5%	
02-5034-02-**-**	Travel Expense/Tech. Conferences	3,504	1,744	1,760	49.8%	
02-5035-01-**-**	Training Expense	31,004	15,946	15,058	51.4%	
02-5035-02-00-00	Training Expense	-	4,877	(4,877)		(15)
02-5036-02-**-**	Laboratory Supplies	14,000	13,275	725	94.8%	
02-5037-01-**-**	Office Equipment	15,004	13,975	1,029	93.1%	(8)
02-5038-02-**-**	Permits	22,000	17,679	4,321	80.4%	
02-5039-01-**-**	Membership Dues/Fees	4,000	4,431	(431)	110.8%	
02-5039-02-**-**	Membership Dues/Fees	1,000	270	730	27.0%	
02-5049-01-**-**	Biosolids Disposal	574,600	549,534	25,066	95.6%	
02-5050-01-**-**	Contract Services Generators	8,296	5,981	2,315	72.1%	
02-5052-01-**-**	Janitorial Services	20,004	16,009	3,995	80.0%	(17)
02-5054-01-**-**	Diesel Truck Maint	10,004	9,259	745	92.6%	
02-5055-01-**-**	Diesel Truck Fuel	6,000	4,896	1,104	81.6%	
02-5056-01-**-**	Maintenance Equip. & Facilities (Solids)	133,100	142,166	(9,066)	106.8%	(18)
02-5057-01-**-**	Maintenance Equip. & Facilities (Liquids)	232,204	233,342	(1,138)	100.5%	
02-5058-01-**-**	Maintenance Equip. & Facilities (Common)	24,500	14,792	9,708	60.4%	
02-5059-01-**-**	Maintenance Equip. & Facilities (Co-Gen)	69,000	36,230	32,770	52.5%	
02-5061-01-**-**	Mileage	496	1,018	(522)	205.3%	(19)
02-5061-02-**-**	Mileage	256	1,153	(897)	450.4%	(19)
02-5077-01-**-**	IT Direct	150,004	171,396	(21,392)	114.3%	(20)

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		FY 2016-17 Budget	Actual	(Over)/Under Budget	% Expended	
02-5302-01-**-**	Performance Based Merit Pay	-	10,634	(10,634)		(2)
02-5303-01-**-**	Group Insurance Waiver	-	2,660	(2,660)		(14)
02-5303-02-00-00	Group Insurance Waiver	-	646	(646)		(14)
02-5305-01-**-**	Medicare Tax Payments for Employees	-	3,557	(3,557)		(14)
02-5305-02-00-00	Medicare Tax Payments for Employees	-	75	(75)		(14)
02-5309-01-**-**	Operating Leases	4,000	5,085	(1,085)	127.1%	(22)
02-5705-01-**-**	Monthly Car Allowance	11,000	10,316	684	93.8%	
02-5705-02-**-**	Monthly Car Allowance	12,316	-	12,316		
02-5802-01-00-00	Shipping/Freight	-	635	(635)		(14)
02-5802-02-00-00	Shipping/Freight	-	116	(116)		(14)
02-6500-01-**-**	IT Allocations in to PC's & Depts.	162,416	145,115	17,301	89.3%	
02-6500-02-**-**	IT Allocations in to PC's & Depts.	19,052	17,222	1,830	90.4%	
	Total Other Expenses	3,446,140	3,120,726	325,414	90.6%	
02 - Jay B. Latham Plant Total Expenses		**5,765,628**	**5,704,384**	**61,244**	**98.9%**	
03 - SOCWA Plant/PCA AWT						
Salary and Fringe						
03-5000-01-**-**	Regular Salaries-O&M	-	2,447	(2,447)		
03-5401-01-00-00	Fringe Benefits IN to PC's & Depts.	-	2,145	(2,145)		
	Total Payroll Costs	-	4,592	(4,592)		
03 - SOCWA Plant/PCA AWT Total Expenses		**-**	**4,592**	**(4,592)**		
05 - San Juan Creek Ocean Outfall						
Salary and Fringe						
05-5000-01-**-**	Regular Salaries-O&M	11,496	521	10,975	4.5%	
05-5000-02-**-**	Regular Salaries-O&M	99,672	99,088	584	99.4%	
05-5001-02-**-**	Overtime Salaries-O&M	3,000	57	2,943	1.9%	
05-5306-02-**-**	Scheduled Holiday Work	1,992	0	1,992		
05-5307-02-11-00	Weekend Shift Pay	-	3	(3)		(2)
05-5401-01-**-**	Fringe Benefits IN to PC's & Depts.	8,164	456	7,708	5.6%	(3)
05-5401-02-**-**	Fringe Benefits IN to PC's & Depts.	70,768	86,846	(16,078)	122.7%	(3)
	Total Payroll Costs	195,092	186,971	8,121	95.8%	
Other Expenses						
05-5002-01-**-**	Electricity	1,000	128	872	12.8%	
05-5002-02-**-**	Electricity	1,104	-	1,104		(15)
05-5003-01-00-00	Natural Gas	-	174	(174)		
05-5003-02-**-**	Natural Gas	504	-	504		(15)
05-5014-01-**-**	Engineering - Misc.	10,000	2,594	7,406	25.9%	
05-5015-02-**-**	Management Support Services	20,004	19,520	484	97.6%	
05-5017-01-00-00	Legal Fees	-	482	(482)		
05-5022-02-**-**	Miscellaneous Expense	-	228	(228)		
05-5027-01-00-00	Insurance - Property/Liability	-	4,425	(4,425)		(10)
05-5027-02-**-**	Insurance - Property/Liability	2,332	582	1,750	24.9%	(10)
05-5031-02-**-**	Safety Program & Supplies	504	5,715	(5,211)	1133.9%	(13)
05-5034-02-**-**	Travel Expense/Tech. Conferences	3,004	395	2,609	13.1%	
05-5036-02-**-**	Laboratory Supplies	16,996	15,403	1,593	90.6%	
05-5038-02-**-**	Permits	145,000	182,527	(37,527)	125.9%	
05-5040-02-**-**	Natural Gas - 11-EPS - PC 5	396	-	396		(23)
05-5041-02-**-**	Electricity - 10-EPS - PC 5	31,500	-	31,500		(23)
05-5042-02-**-**	Contract Services - 29-EPS - PC 5	4,104	-	4,104		(23)
05-5044-02-**-**	Offshore Monitoring	20,004	15,592	4,412	77.9%	
05-5046-02-**-**	Effluent Chemistry	26,000	14,111	11,889	54.3%	
05-5056-01-00-00	Maintenance Equip. & Facilities (Solids) 41-A	-	2,091	(2,091)		(24)
05-5069-02-**-**	Misc-Capital-Dilution & Metering Study	50,004	41,165	8,840	82.3%	
05-5101-02-03-00	Employee Recognition	-	1,220	(1,220)		(14)
05-5305-02-**-**	Medicare Tax Payments for Employees	-	1,926	(1,926)		(14)
05-5705-02-**-**	Monthly Car Allowance	-	4,119	(4,119)		(25)
05-5802-01-00-00	Shipping/Freight	-	26	(26)		(14)
05-6500-02-**-**	IT Allocations in to PC's & Depts.	28,308	21,286	7,022	75.2%	
	Total Other Expenses	360,764	333,708	27,056	92.5%	
05 - San Juan Creek Ocean Outfall Total Expenses		**555,856**	**520,679**	**35,177**	**93.7%**	

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		FY 2016-17 Budget	Actual	(Over)/Under Budget	% Expended	
08 - Pre Treatment						
Salary and Fringe						
08-5000-02-**-**	Regular Salaries-O&M	87,744	76,494	11,250	87.2%	
08-5001-02-**-**	Overtime Salaries-O&M	1,800	-	1,800		
08-5306-02-**-**	Scheduled Holiday Work	1,196	-	1,196		
08-5401-02-**-**	Fringe Benefits IN to PC's & Depts.	62,292	67,043	(4,751)	107.6%	(3)
	Total Payroll Costs	153,032	143,537	9,495	93.8%	
Other Expenses						
08-5011-02-**-**	Laboratory Services	2,500	(1,690)	4,190	-67.6%	(26)
08-5015-02-**-**	Management Support Services	4,000	-	4,000		
08-5016-02-**-**	Audit - Environmental	500	-	500		
08-5017-02-**-**	Legal Fees	2,000	-	2,000		
08-5018-02-**-**	Public Notices/ Public Relations	500	145	355	29.0%	
08-5021-02-**-**	Small Vehicle Expense - 31A	848	-	848		(7)
08-5022-02-**-**	Miscellaneous Expense	1,496	728	768	48.7%	
08-5026-02-**-**	Small Vehicle Fuel - 37A	1,196	-	1,196		
08-5027-02-00-00	Insurance - Property/Liability	-	1,439	(1,439)		(10)
08-5028-02-**-**	Small Tools & Supplies	3,400	1,873	1,527	55.1%	
08-5031-02-00-00	Safety Program & Supplies	-	145	(145)		(13)
08-5034-02-**-**	Travel Expense/Tech. Conferences	3,496	3,133	363	89.6%	
08-5035-02-**-**	Training Expense	1,496	1,500	(4)	100.3%	
08-5039-02-**-**	Membership Dues/Fees	1,004	135	869	13.4%	
	Total Other Expenses	22,436	7,407	15,029	33.0%	
08 - Pre Treatment Total Expenses		**175,468**	**150,945**	**24,523**	**86.0%**	
12 - Water Reclamation Permits						
Salary and Fringe						
12-5000-01-09-00	Regular Salaries-O&M	-	250	(250)		
12-5000-02-**-**	Regular Salaries-O&M	33,040	35,311	(2,271)	106.9%	
12-5001-02-**-**	Overtime Salaries-O&M	1,444	247	1,197	17.1%	
12-5306-02-**-**	Scheduled Holiday Work	956	-	956		
12-5401-01-00-00	Fringe Benefits IN to PC's & Depts.	-	219	(219)		(2)
12-5401-02-**-**	Fringe Benefits IN to PC's & Depts.	23,464	30,948	(7,484)	131.9%	(2)
	Total Payroll Costs	58,904	66,976	(8,072)	114.0%	
Other Expenses						
12-5015-02-**-**	Management Support Services	45,004	2,400	42,604	5.3%	
12-5017-02-**-**	Legal Fees	8,008	-	8,008		
12-5027-02-00-00	Insurance - Property/Liability	-	1,848	(1,848)		
12-5038-02-**-**	Permits	130,008	109,095	20,913	83.9%	
12-6500-02-**-**	IT Allocations in to PC's & Depts.	20,000	13,598	6,402	68.0%	
	Total Other Expenses	203,020	126,941	76,079	62.5%	
12 - Water Reclamation Permits Total Expenses		**261,924**	**193,917**	**68,007**	**74.0%**	
15 - Coastal Treatment Plant						
Salary and Fringe						
15-5000-01-**-**	Regular Salaries-O&M	732,484	682,554	49,930	93.2%	
15-5000-02-**-**	Regular Salaries-O&M	111,304	122,847	(11,543)	110.4%	
15-5001-01-**-**	Overtime Salaries-O&M	10,440	22,860	(12,420)	219.0%	(1)
15-5001-02-**-**	Overtime Salaries-O&M	2,996	786	2,210	26.2%	
15-5306-01-**-**	Scheduled Holiday Work	6,960	3,222	3,738	46.3%	
15-5306-02-**-**	Scheduled Holiday Work	1,996	1,212	784	60.7%	
15-5307-01-**-**	Weekend Shift Pay	-	67	(67)		(2)
15-5307-02-**-**	Weekend Shift Pay	-	54	(54)		(2)
15-5401-01-**-**	Fringe Benefits IN to PC's & Depts.	520,060	598,224	(78,164)	115.0%	(3)
15-5401-02-**-**	Fringe Benefits IN to PC's & Depts.	79,032	107,669	(28,637)	136.2%	(3)
15-5700-01-**-**	Standby Pay	34,596	11,050	23,546	31.9%	
	Total Payroll Costs	1,499,868	1,550,545	(50,677)	103.4%	
Other Expenses						
15-5002-01-**-**	Electricity	270,008	246,158	23,850	91.2%	
15-5003-01-**-**	Natural Gas	2,600	2,320	280	89.2%	
15-5004-01-**-**	Potable & Reclaimed Water	12,404	18,132	(5,728)	146.2%	(28)

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		FY 2016-17 Budget	Actual	(Over)/Under Budget	% Expended	
15-5006-01-**-**	Chlorine/Sodium Hypochlorite	115,200	64,489	50,711	56.0%	
15-5007-01-**-**	Polymer Products	2,000	-	2,000		
15-5008-01-**-**	Ferric Chloride	30,804	28,075	2,729	91.1%	
15-5009-01-**-**	Odor Control Chemicals	82,400	71,550	10,850	86.8%	
15-5010-01-00-00	Other Chemicals - Misc.	-	466	(466)		(29)
15-5011-02-**-**	Laboratory Services	9,700	8,146	1,554	84.0%	
15-5012-01-**-**	Grit Hauling	28,200	24,669	3,531	87.5%	
15-5013-01-**-**	Landscaping	50,000	76,352	(26,352)	152.7%	(30)
15-5014-01-**-**	Engineering - Misc.	65,000	7,196	57,804	11.1%	
15-5015-01-**-**	Management Support Services	8,008	6,117	1,891	76.4%	
15-5015-02-**-**	Management Support Services	4,000	-	4,000		
15-5017-01-**-**	Legal Fees	50,000	7,366	42,634	14.7%	
15-5019-01-**-**	Contract Services Misc.	71,104	46,491	24,613	65.4%	
15-5021-01-**-**	Small Vehicle Expense	5,692	5,325	367	93.6%	(7)
15-5022-01-**-**	Miscellaneous Expense	2,704	1,471	1,233	54.4%	
15-5023-01-**-**	Office Supplies - All	6,400	5,779	621	90.3%	(8)
15-5024-01-**-**	Petroleum Products	1,700	3,968	(2,268)	233.4%	(31)
15-5025-01-**-**	Uniforms	5,900	7,380	(1,480)	125.1%	(9)
15-5026-01-**-**	Small Vehicle Fuel	5,900	1,391	4,509	23.6%	
15-5027-01-**-**	Insurance - Property/Liability	5,904	26,066	(20,162)	441.5%	(10)
15-5027-02-**-**	Insurance - Property/Liability	7,240	-	7,240		(10)
15-5028-01-**-**	Small Tools & Supplies	7,200	7,710	(510)	107.1%	
15-5030-01-**-**	Trash Disposal	3,104	1,257	1,847	40.5%	
15-5031-02-**-**	Safety Program & Supplies	18,496	20,406	(1,910)	110.3%	(13)
15-5032-01-**-**	Equipment Rental	1,200	245	955	20.4%	
15-5033-01-00-00	Recruitment	-	300	(300)		(14)
15-5034-01-**-**	Travel Expense/Tech. Conferences	2,000	1,225	775	61.2%	
15-5034-02-**-**	Travel Expense/Tech. Conferences	3,000	-	3,000		
15-5035-01-**-**	Training Expense	5,992	8,681	(2,689)	144.9%	
15-5035-02-00-00	Training Expense	-	3,515	(3,515)		(15)
15-5036-02-**-**	Laboratory Supplies	10,004	7,463	2,541	74.6%	
15-5037-01-**-**	Office Equipment	1,000	174	827	17.4%	
15-5038-01-**-**	Permits	6,504	-	6,504		(16)
15-5038-02-**-**	Permits	6,504	4,736	1,768	72.8%	
15-5039-01-**-**	Membership Dues/Fees	1,000	1,583	(583)	158.3%	
15-5039-02-**-**	Membership Dues/Fees	1,000	-	1,000		
15-5047-01-**-**	Access Road Expenses	45,400	32,873	12,527	72.4%	
15-5048-01-**-**	Storm Damage	18,600	30,592	(11,992)	164.5%	(32)
15-5049-01-**-**	Biosolids Disposal - 21B	125,004	-	125,004		
15-5050-01-**-**	Contract Services Generators	4,208	10,553	(6,345)	250.8%	(33)
15-5052-01-**-**	Janitorial Services	10,000	6,975	3,025	69.8%	(17)
15-5054-01-**-**	Diesel Truck Maint	1,004	3,356	(2,352)	334.2%	(34)
15-5056-01-00-00	Maintenance Equip. & Facilities (Solids) 41-A	-	5	(5)		
15-5057-01-**-**	Maintenance Equip. & Facilities (Liquids)	149,096	122,653	26,443	82.3%	
15-5058-01-**-**	Maintenance Equip. & Facilities (Common)	16,600	23,813	(7,213)	143.5%	(35)
15-5060-01-**-**	Maintenance Equip. & Facilities (AWT)	26,700	29,942	(3,242)	112.1%	(36)
15-5061-01-**-**	Mileage	1,204	472	732	39.2%	
15-5077-01-**-**	IT Direct	-	82,731	(82,731)		(20)
15-5302-01-**-**	Performance Based Merit Pay	-	6,775	(6,775)		(2)
15-5303-01-**-**	Group Insurance Waiver	-	1,708	(1,708)		(14)
15-5305-01-**-**	Medicare Tax Payments for Employees	-	4,461	(4,461)		(14)
15-5705-01-**-**	Monthly Car Allowance	4,004	6,017	(2,013)	150.3%	(37)
15-5802-01-00-00	Shipping/Freight	-	15	(15)		(14)
15-6500-01-**-**	IT Allocations in to PC's & Depts.	103,256	91,948	11,308	89.0%	
15-6500-02-**-**	IT Allocations in to PC's & Depts.	15,592	13,915	1,677	89.2%	
	Total Other Expenses	1,430,540	1,185,006	245,534	82.8%	
15 - Coastal Treatment Plant Total Expenses		**2,930,408**	**2,735,552**	**194,856**	**93.4%**	
17 - Joint Regional Reclamation						
Salary and Fringe						
17-5000-01-**-**	Regular Salaries-O&M	1,522,376	1,317,858	204,518	86.6%	
17-5000-02-**-**	Regular Salaries-O&M	236,376	237,655	(1,279)	100.5%	
17-5001-01-**-**	Overtime Salaries-O&M	32,996	73,688	(40,692)	223.3%	(1)
17-5001-02-**-**	Overtime Salaries-O&M	2,996	2,009	987	67.1%	
17-5306-01-**-**	Scheduled Holiday Work	22,004	8,562	13,442	38.9%	

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		FY 2016-17 Budget	Actual	(Over)/Under Budget	% Expended	
17-5306-02-**-**	Scheduled Holiday Work	-	2,324	(2,324)		
17-5307-01-**-**	Weekend Shift Pay	-	343	(343)		(2)
17-5307-02-**-**	Weekend Shift Pay	-	89	(89)		(2)
17-5401-01-**-**	Fringe Benefits IN to PC's & Depts.	1,080,888	1,155,036	(74,148)	106.9%	(3)
17-5401-02-**-**	Fringe Benefits IN to PC's & Depts.	167,828	208,293	(40,465)	124.1%	(3)
17-5700-01-**-**	Standby Pay	51,500	29,413	22,088	57.1%	
	Total Payroll Costs	3,116,964	3,035,270	81,694	97.4%	
Other Expenses						
17-5002-01-**-**	Electricity	675,504	406,524	268,980	60.2%	
17-5003-01-**-**	Natural Gas	134,200	86,256	47,944	64.3%	
17-5004-01-**-**	Potable & Reclaimed Water	32,000	25,906	6,094	81.0%	(15)
17-5005-01-**-**	Co-generation Power Credit	(450,004)	(201,611)	(248,393)	44.8%	
17-5006-01-**-**	Chlorine/Sodium Hypochlorite	400,004	342,270	57,734	85.6%	
17-5007-01-**-**	Polymer Products	387,004	331,081	55,923	85.5%	
17-5008-01-**-**	Ferric Chloride	130,396	141,218	(10,822)	108.3%	(38)
17-5009-01-**-**	Odor Control Chemicals	63,604	49,259	14,345	77.4%	
17-5010-01-**-**	Other Chemicals - Misc.	4,000	-	4,000		
17-5011-02-**-**	Laboratory Services	13,000	12,106	894	93.1%	
17-5012-01-**-**	Grit Hauling - 21A	46,500	48,816	(2,316)	105.0%	(6)
17-5013-01-**-**	Landscaping	65,000	89,872	(24,872)	138.3%	(30)
17-5014-01-**-**	Engineering - Misc.	95,000	82,277	12,723	86.6%	
17-5015-01-**-**	Management Support Services	8,000	11,924	(3,924)	149.1%	
17-5015-02-**-**	Management Support Services	49,000	3,000	46,000	6.1%	
17-5017-01-**-**	Legal Fees	4,000	2,441	1,559	61.0%	
17-5019-01-**-**	Contract Services Misc.	122,000	86,929	35,071	71.3%	
17-5021-01-**-**	Small Vehicle Expense	5,700	10,556	(4,856)	185.2%	(7)
17-5022-01-**-**	Miscellaneous Expense	5,400	2,628	2,772	48.7%	
17-5023-01-**-**	Office Supplies - All	7,200	11,832	(4,632)	164.3%	(8)
17-5024-01-**-**	Petroleum Products	41,200	26,576	14,624	64.5%	
17-5025-01-**-**	Uniforms	16,504	16,063	441	97.3%	
17-5026-01-**-**	Small Vehicle Fuel	12,500	7,287	5,213	58.3%	
17-5027-01-**-**	Insurance - Property/Liability	40,004	64,478	(24,474)	161.2%	(10)
17-5027-02-**-**	Insurance - Property/Liability	5,004	-	5,004		(10)
17-5028-01-**-**	Small Tools & Supplies	20,604	21,988	(1,384)	106.7%	
17-5030-01-**-**	Trash Disposal	904	1,424	(520)	157.5%	(12)
17-5031-02-**-**	Safety Program & Supplies	36,996	44,553	(7,557)	120.4%	(13)
17-5032-01-**-**	Equipment Rental	3,004	14,909	(11,905)	496.3%	(39)
17-5033-01-00-00	Recruitment	-	982	(982)		(14)
17-5034-01-**-**	Travel Expense/Tech. Conferences	9,004	2,715	6,289	30.2%	
17-5034-02-**-**	Travel Expense/Tech. Conferences	3,004	2,375	629	79.1%	
17-5035-01-**-**	Training Expense	24,004	17,257	6,747	71.9%	
17-5035-02-00-00	Training Expense	-	735	(735)		(16)
17-5036-02-**-**	Laboratory Supplies	18,504	17,682	822	95.6%	
17-5037-01-**-**	Office Equipment	5,400	5,820	(420)	107.8%	(8)
17-5038-02-**-**	Permits	40,004	17,534	22,470	43.8%	
17-5039-01-**-**	Membership Dues/Fees	3,004	3,921	(917)	130.5%	
17-5039-02-**-**	Membership Dues/Fees	1,004	702	302	69.9%	
17-5049-01-**-**	Biosolids Disposal	825,000	931,658	(106,658)	112.9%	(40)
17-5050-01-**-**	Contract Services Generators	7,200	5,981	1,219	83.1%	
17-5052-01-**-**	Janitorial Services	20,004	11,424	8,580	57.1%	(17)
17-5054-01-**-**	Diesel Truck Maint	18,504	11,560	6,944	62.5%	
17-5055-01-**-**	Diesel Truck Fuel	6,200	4,505	1,695	72.7%	
17-5056-01-**-**	Maintenance Equip. & Facilities (Solids)	178,400	196,760	(18,360)	110.3%	(41)
17-5057-01-**-**	Maintenance Equip. & Facilities (Liquids)	149,100	155,200	(6,100)	104.1%	
17-5058-01-**-**	Maintenance Equip. & Facilities (Common)	19,200	29,256	(10,056)	152.4%	(42)
17-5059-01-**-**	Maintenance Equip. & Facilities (Co-Gen)	89,500	57,767	31,733	64.5%	
17-5060-01-**-**	Maintenance Equip. & Facilities (AWT)	30,900	29,928	972	96.9%	
17-5061-01-**-**	Mileage	2,996	1,849	1,147	61.7%	
17-5061-02-00-00	Mileage	-	14	(14)		
17-5068-02-**-**	MNWD Potable Water Supplies & Svcs.	23,996	22,508	1,488	93.8%	
17-5077-01-**-**	IT Direct	-	42,031	(42,031)		(20)
17-5101-01-00-00	Employee Recognition	-	706	(706)		(14)
17-5105-01-**-**	Co-Generation Power Credit - Offset	450,004	201,611	248,393	44.8%	(43)
17-5302-01-**-**	Performance Based Merit Pay	-	6,510	(6,510)		(2)
17-5303-02-**-**	Group Insurance Waiver	-	1,588	(1,588)		(14)

South Orange County Wastewater Authority
O&M Budget vs. Actual Comparison by PC
Year-to-Date through June 30, 2017
Preliminary

Exhibit E-1-A

		FY 2016-17 Budget	Actual	(Over)/Under Budget	% Expended	
17-5305-01-**-**	Medicare Tax Payments for Employees	-	1,998	(1,998)		(14)
17-5305-02-03-00	Medicare Tax Payments for Employees	-	89	(89)		(14)
17-5309-01-**-**	Operating Leases	3,004	-	3,004		
17-5705-01-**-**	Monthly Car Allowance	10,000	10,574	(574)	105.7%	(37)
17-5705-02-00-00	Monthly Car Allowance	-	639	(639)		(37)
17-5802-01-00-00	Shipping/Freight	-	128	(128)		(14)
17-6500-01-**-**	IT Allocations in to PC's & Depts.	189,288	175,527	13,761	92.7%	
17-6500-02-**-**	IT Allocations in to PC's & Depts.	20,564	21,823	(1,259)	106.1%	
	Total Other Expenses	4,122,016	3,731,917	390,099	90.5%	
17 - Joint Regional Reclamation Total Expenses		**7,238,980**	**6,767,187**	**471,793**	**93.5%**	
21 - Effluent Transmission Main						
Other Expenses						
21-5014-02-**-**	Engineering - Misc.	85,000	800	84,200	0.9%	(15)
21-5019-02-00-00	Contract Services Misc. - 29	-	524	(524)		(44)
21-5027-02-**-**	Insurance - Property/Liability	564	13	551	2.3%	
21-5028-01-**-**	Small Tools & Supplies	920	-	920		
	Total Other Expenses	86,484	1,336	85,148	1.5%	
21 - Effluent Transmission Main Total Expenses		**86,484**	**1,336**	**85,148**	**1.5%**	
24 - Aliso Creek Ocean Outfall						
Salary and Fringe						
24-5000-01-**-**	Regular Salaries-O&M	6,456	664	5,792	10.3%	
24-5000-02-**-**	Regular Salaries-O&M	102,016	93,849	8,167	92.0%	
24-5001-02-**-**	Overtime Salaries-O&M	3,000	557	2,443	18.6%	
24-5306-02-**-**	Scheduled Holiday Work	1,996	53	1,943	2.6%	
24-5307-02-11-00	Weekend Shift Pay	-	4	(4)		(2)
24-5401-01-**-**	Fringe Benefits IN to PC's & Depts.	4,580	582	3,998	12.7%	(3)
24-5401-02-**-**	Fringe Benefits IN to PC's & Depts.	72,436	82,254	(9,818)	113.6%	(3)
	Total Payroll Costs	190,484	177,963	12,521	93.7%	
Other Expenses						
24-5002-01-**-**	Electricity	700	-	700		
24-5002-02-**-**	Electricity	700	-	700		
24-5014-01-00-00	Engineering - Misc.	-	3,394	(3,394)		(45)
24-5015-02-**-**	Management Support Services	20,004	17,920	2,084	89.6%	
24-5017-01-00-00	Legal Fees	-	461	(461)		
24-5027-01-00-00	Insurance - Property/Liability	-	4,421	(4,421)		(10)
24-5027-02-**-**	Insurance - Property/Liability	1,396	-	1,396		(10)
24-5031-02-**-**	Safety Program & Supplies	500	5,715	(5,215)	1143.0%	(13)
24-5034-02-**-**	Travel Expense/Tech. Conferences	2,004	-	2,004		
24-5036-02-**-**	Laboratory Supplies	16,004	14,975	1,029	93.6%	
24-5038-02-**-**	Permits	138,000	143,448	(5,448)	103.9%	
24-5044-02-**-**	Offshore Monitoring	20,004	17,042	2,962	85.2%	
24-5046-02-**-**	Effluent Chemistry	26,004	24,743	1,261	95.2%	
24-5058-01-00-00	Maintenance Equip. & Facilities (Common) 41-C	-	4,010	(4,010)		
24-5069-02-**-**	Misc-Capital-Dilution & Metering Study	15,000	34,231	(19,231)	228.2%	(46)
24-5302-01-00-00	Performance Based Merit Pay	-	2	(2)		(2)
24-5802-01-00-00	Shipping/Freight	-	26	(26)		(14)
24-6500-02-**-**	IT Allocations in to PC's & Depts.	18,776	15,508	3,268	82.6%	
	Total Other Expenses	259,092	285,895	(26,803)	110.3%	
24 - Aliso Creek Ocean Outfall Total Expenses		**449,576**	**463,858**	**(14,282)**	**103.2%**	
	SOCWA					
	Total Payroll Costs	7,533,832	7,749,514	(215,682)	102.9%	(3)
	Total Other Expenses	9,930,492	8,792,935	1,137,557	88.5%	
	SOCWA Total Expenses	**17,464,324**	**16,542,450**	**921,874**	**94.7%**	

(1) New equipment startup and troubleshooting Issues, January/February Storms, odor complaint investigations, and staff filling in for vacancies.

(2) Budgeted as regular salaries in past budgets.

South Orange County Wastewater Authority
O&M Budget vs. Actual Comparison by PC
Year-to-Date through June 30, 2017
Preliminary

Exhibit E-1-A

FY 2016-17 Budget	Actual	(Over)/Under Budget	% Expended

(3) Used Fringe Rate of 71% in 16-17 Budget because lack of adequate history to support higher budgeted fringe rate. Actual fringe rate was 87.64%
(4) Engine project at JBL was behind schedule. This caused increased natural gas purchases for the Boiler to heat the digesters.
(5) Three deliveries of chemicals were received at the end of the fiscal year and the chemicals will actually be used in FY17-18.
(6) The January and February storms caused equipment damage and the equipment failures increased the weight of the grit hauled offsite.
(7) Increasing expenses due to average fleet age of 11 years.
(8) Office supplies and equipment over budget due to increased employee turnover and new office set ups.
(9) Elevated new employee expenses due to 10% workforce turnover.
(10) Increased Premiums
(11) Extra metric and specialty tools required for the new engine maintenance were unanticipated.
(12) Elevated trash disposals due to cleaning areas for planned CIP projects.
(13) Safety supplies are restocked for the FY and limited expenses are planned for the remainder of the FY.
(14) Expense Line Item Not Budgeted
(15) Expenses to be reclassified to Department 01 in the Use Audit.
(16) Not used
(17) Budgeted high level of expense for newly anticipated contract with more thorough cleaning requirements. Proposals received were too high and rejected by the Board in May. The contract services scope is being revised for reissuance.
(18) Solids expenses were elevated due to several larger repairs to the digester gas system to allow the system to be placed back in service with the larger CIP project.
(19) Unexpected use of personal vehicle. Staff directed to use new company vehicle moving forward.
(20) IT Direct higher due to unanticipated SCADA software and hardware upgrades due to obsolesce. Software upgrades were required to maintain reporting capabilities from SCADA and the SCADA hardware upgrades
(21) Not used
(22) Engine project at JBL was behind schedule. This caused the construction trailer to be onsite longer than planned.
(23) Based on the cost allocation workshop recommendation these costs will be reclassified to PC-2.
(24) Unanticipated security and communications work occurred during the Fiscal Year.
(25) Expense under budgeted for PC. Overall expense is under budget.
(26) Pretreatment staff needs sufficient buffer should additional investigations occur.
(27) Not used
(28) Water usage is essentially the same as last Fiscal Year. The increase is due to increases in user rates higher than budgeted.
(29) Solvents and degreaser chemicals needed for several repair projects.
(30) Carryover work from FY15-16 as presented to at the June 2016 Board meeting.
(31) Elevated fuel usage was caused by an elevated number of power outages (8) that were over extended durations (2 over 12 hours).
(32) Elevated expenses due to damage from the major January and February storms.
(33) Work completed for the year and within the 5-year average of maintenance costs.
(34) The overall budget for diesel truck maintenance is within budget. These charges are associated with higher than planned maintenance of SOCWA's boom truck, which is split between the 3 treatment plants.
(35) A number of air conditioner units required repairs and were budgeted in FY17-18 for replacement,
(36) CTP AWT required several upgrades to eliminate water color from falsely increasing turbidity and causing AWT shutdowns.
(37) Expense under budgeted for PC. Overall expense is under budget.
(38) The Ferric Chloride was increased at RTP to reduce fugitive odors from the treatment processes adjacent to the walking trail.
(39) Elevated expenses due for rental equipment (standby generators) for the major January and February storms.
(40) RTP Biosolids expenses were elevated to due increases in Biosolids delivered to RTP. Biosolids increased primarily during the summer months and may reflect increases in tourism within SCWD, CLB and MNWD.
(41) Solids expenses were elevated due to several large repairs to the buried pipes at RTP.
(42) RTP had several gate operator repair projects. It is believed that the operators are seeing elevated usage due to the number of construction vehicles at the site with the construction projects.
(43) Engine project at RTP was behind schedule. This caused a decrease in power production.
(44) There were a number of projects along the pipe alignment that required utility location services.
(45) Carryover kelp survey expenses from FY15-16.
(46) This item was anticipated to be overbudget as presented at the December 8, 2016 Board Meeting.

South Orange County Wastewater Authority

Exhibit E-2

Budget vs. Actual Comparison - Residual Engineering
(Labor & Fringe Costs are Net of Labor & Fringe to Capital Projects)
Year-to-Date through June 30, 2017
Preliminary

		FY 2016-17 Original Budget	Actual	(Over)/Under Budget	% Expended	
Salary and Fringe						
-5000--**-00	Regular Salaries-O&M	103,896	146,150	(42,254)	140.7%	(1)
-5401--**-00	Fringe Benefits IN to PC's & Depts.	73,764	128,093	(54,329)	173.7%	(1)
	Total Payroll Costs	177,660	274,243	(96,583)	154.4%	
Other Expenses						
01-5015-03-00-00	Management Support Services	39,996	-	39,996	-	
01-5017-03-00-00	Legal Fees		830	(830)	-	(2)
01-5022-03-00-00	Miscellaneous Expense	11,400	-	11,400	-	
01-5033-03-00-00	Recruitment	-	265	(265)	-	(2)
01-5034-03-00-00	Travel Expense/Tech. Conferences	-	1,893	(1,893)	-	(2)
01-5035-03-00-00	Training Expense	-	943	(943)	-	(2)
01-5039-03-00-00	Membership Dues/Fees	1,200	779	421	64.9%	
01-5061-03-00-00	Mileage	396	147	249	37.0%	
01-5302-03-00-00	Performance Based Merit Pay	-	7,363	(7,363)	-	(3)
01-5309-03-00-00	Operating Leases	15,000	18,637	(3,637)	124.2%	(4)
01-5705-03-00-00	Monthly Car Allowance	5,820	4,281	1,539	73.6%	
01-5802-03-00-00	Shipping/Freight	300	79	221	26.5%	
01-6500-03-00-00	IT Allocations in to PC's & Depts.	44,028	31,124	12,904	70.7%	
	Total Other Expenses	118,140	66,342	51,798	56.2%	
	Total Expenses	**295,800**	**340,584**	**(44,784)**	**115.1%**	

(1) The change in labor and fringe is due to the amount of time charged to capital projects; these are residual amounts after the transfer to capital.

(2) Expense not budgeted.

(3) Budgeted as Regular Salaries.

(4) Delivery and setup of new trailer

This department's actual expenses will vary based on amount of time spent supporting O&M vs. Work on Capital Projects.

South Orange County Wastewater Authority
Budget vs. Actual Comparison- Administration
Year-to-Date through June 30, 2017
Preliminary

Exhibit E-3

		FY 2016-17 Budget	Actual	(Over)/Under Budget	% Expended	
Salary and Fringe						
01-5401-04-00-00	Fringe Benefits IN to PC's & Depts.	484,884	608,413	(123,529)	125.5%	(1)
01-6000-04-00-00	Regular Salaries-Admin or IT	682,932	694,179	(11,247)	101.6%	
01-6001-04-00-00	Overtime Salaries-Admin or IT	19,308	27,883	(8,575)	144.4%	(2)
	Total Payroll Costs	**1,187,124**	**1,330,476**	**(143,352)**	112.1%	
Other Expenses						
01-5018-04-00-00	Public Notices/ Public Relations	15,996	-	15,996	-	
01-5027-04-00-00	Insurance - Property/Liability	39,720	28	39,692	0.1%	
01-6101-04-00-00	Recruitment & Employee Relations	12,000	35,803	(23,803)	298.4%	(3)
01-6102-04-00-00	Subscriptions	996	1,334	(338)	134.0%	
01-6200-04-00-00	Management Support Services	215,004	152,297	62,707	70.8%	
01-6201-04-00-00	Audit	35,004	34,700	304	99.1%	
01-6202-04-00-00	Legal	62,004	188,130	(126,126)	303.4%	(4)
01-6203-04-00-00	Outside Services	2,004	5,110	(3,106)	255.0%	(5)
01-6204-04-00-00	Postage	1,896	2,521	(625)	133.0%	
01-6223-04-00-00	Office Supplies - Admin	9,996	4,041	5,955	40.4%	
01-6224-04-00-00	Office Equipment Admin or IT	8,004	9,132	(1,128)	114.1%	(6)
01-6234-04-00-00	Memberships & Trainings	96,108	78,782	17,326	82.0%	
01-6239-04-00-00	Travel & Conference	23,904	23,814	90	99.6%	
01-6240-04-00-00	Scholarship Sponsorship	996	1,000	(4)	100.4%	
01-6310-04-00-00	Miscellaneous	15,000	20,831	(5,831)	138.9%	(7)
01-6311-04-00-00	Mileage	708	941	(233)	132.9%	
01-6314-04-00-00	Performance Based Merit Pay Admin or IT	-	1,914	(1,914)	-	(8)
01-6317-04-00-00	Contract Services Misc	1,800	8,070	(6,270)	448.3%	(9)
01-6500-04-00-00	IT Allocations in to PC's & Depts.	122,172	74,223	47,949	60.8%	
01-6601-04-00-00	Shipping/Freight	-	2,647	(2,647)	-	(10)
01-6705-04-00-00	Monthly Car Allowance	12,000	12,231	(231)	101.9%	
	Total Other Expenses	**675,312**	**657,549**	**17,763**	97.4%	
	Total Expenses	**1,862,436**	**1,988,025**	**(125,589)**	106.7%	

(1) Used Fringe Rate of 71% in 16-17 Budget because lack of adequate history to support higher budgeted fringe rate. Actual fringe rate was 87.64%

(2) Due to increased time spend on state audit and budget process

(3) Recruitment fee for new Senior Accountant

(4) Varner & Brandt legal fees regarding Labor Laws and Employee Relations, negotiation year, occurs once every 3 years, not budgeted

(5) Bank Fees

(6) Board Room chairs

(7) Iron Mountain expenses, printing expenses for budget books

(8) Budgeted as Regular Salaries.

(9) OPEB analysis, monthly plant service

(10) Expense was not budgeted.

Exhibit E-4

South Orange County Wastewater Authority
Budget vs. Actual Comparison-IT
Year-to-Date through June 30, 2017
Preliminary

		FY 2016-17 Budget	Actual	(Over)/Under Budget	% Expended	
Salary & Fringe						
01-5401-05-00-00	Fringe Benefits IN to PC's & Depts.	52,572	38,956	13,616	74.1%	
01-6000-05-00-00	Regular Salaries-Admin & IT	74,052	44,447	29,605	60.0%	(1)
01-6001-05-00-00	Overtime Salaries-Admin & IT	2,004	2,122	(118)	105.9%	
	Total Salary & Fringe	128,628	85,525	43,103	66.5%	
Other Expenses						
01-5028-05-00-00	Small Tools & Supplies	504	-	504	-	
01-5037-05-00-00	Office Equipment	6,000	-	6,000	-	
01-5061-05-00-00	Mileage	348	-	348	-	
01-6101-05-00-00	Recruitment & Employee Relations, IT DEPT	-	684	(684)	-	(1)
01-6102-05-00-00	Subscriptions	-	465	(465)	-	(3)
01-6200-05-00-00	Management Support Services	-	55,348	(55,348)	-	(1)
01-6234-05-00-00	Memberships & Trainings	1,848	85	1,763	4.6%	
01-6239-05-00-00	Travel & Conference	2,496	-	2,496	-	
01-6300-05-00-00	Software Maintenance Agreements	57,144	50,374	6,770	88.2%	
01-6301-05-00-00	Hardware Maintenance Agreements	12,912	13,230	(318)	102.5%	
01-6302-05-00-00	Cloud Subscriptions (Internet)	9,516	-	9,516	-	
01-6303-05-00-00	Telecommunications	109,020	123,153	(14,133)	113.0%	(5)
01-6305-05-00-00	IT Professional Services	241,500	155,368	86,132	64.3%	
01-6306-05-00-00	Small Hardware Purchases (< $5k)	34,896	74,846	(39,950)	214.5%	(2)
01-6307-05-00-00	Small Software Purchases & Licenses (<$5k)	48,540	13,214	35,326	27.2%	
01-6308-05-00-00	IT Memberships	-	521	(521)	0.0%	(3)
01-6309-05-00-00	Operating Leases	44,004	44,903	(899)	102.0%	
01-6310-05-00-00	Miscellaneous	996	380	616	38.1%	
01-6312-05-00-00	Computer & Photocopy Supplies	252	3,194	(2,942)	1267.4%	(4)
01-6601-05-00-00	Shipping/Freight	252	-	252	-	
	Total Other Expenses	570,228	535,763	34,465	94.0%	
	Total Expenses before Allocation	**698,856**	**621,288**	**77,568**	88.9%	
IT Allocations (Out) to PC's & Depts						
01-6400-05-00-00	IT Allocations (OUT) to PC's & Depts.	(698,856)	(621,288)	(77,568)	88.9%	
	Total IT Allocations (Out) to PC's & Depts	(698,856)	(621,288)	(77,568)	88.9%	
		(698,856)	**(621,288)**	**(77,568)**	**88.9%**	

(1) Employee resigned, contractor was a temporary replacement.

(2) Variance due to purchases of cables, monitors, PCs, uninterruptable power supplies, network equipment, and peripheral devices (mice, keyboards, mouse pads) underbudgeted

(3) Expense not budgeted.

(4) Expense underbudgeted.

(5) Increased cost in UT Network, TPx, and Verizon

Agenda Item

Meeting Date: September 7, 2017

TO: Board of Directors

FROM: Betty Burnett, General Manager

STAFF CONTACT: Jim Burror, Director of Operations

SUBJECT: July 2017 Operations Report

Summary/Discussion

The following selected operational reports are provided monthly to the Board of Directors. The operational reports included are as follows:

1) Monthly Operational Report

   A six (6) page overview and comparison of owner use of facilities, including influent and recycled water production. The pages include ongoing calculation used by SOCWA for billing the agencies. Other items include important statistics for regulatory compliance, visitations by the public to the treatment works, and other vendor interactions. The information is broken down by facility and by member agency.

2) SOCWA Ocean Outfall Discharges by Agency

   This data shows how much water is being discharged to the ocean each month and for the last 12 months. This data is presented for the agencies planning reuse projects to better understand the potential to expand water reuse in their service area.

3) Beach Ocean Monitoring Report

4) Recycled Water Report

5) Pretreatment Report

Fiscal impact

No change

Recommendation

Receive and file the operational reports.

Monthly Operational Report

SOCWA Operational Report July, 2017

Excursion, Complaint, and Violation Events

Events	CTP	RTP	JBL	Totals
Odor	0	0	0	0
Noise	0	0	0	0
Spills	0	5	0	5
Violations	0	0	0	0
Others	0	0	0	0

RTP spills were all contained onsite are associated with ongoing construction projects and equipment damaged due to excessive debris in the influent sewers.

Plant Wastewater Billing Characteristics

Key Parameters	CTP	RTP	JBL TP1	JBL TP2	Totals
Influent (mgd)	3.14	7.69	5.90	1.00	17.73
Effluent (mgd)	2.81	0.93	5.90	1.23	10.88
Peak Flow (mgd)	3.58	18.84	12.44	4.72	39.58
Influent BOD (mg/l)	292	265	260	307	
Influent TSS (mg/l)	408	340	473	427	
Effluent BOD (mg/l)	5.0	3.2	6.8	6.9	
Effluent TSS (mg/l)	7.4	7.0	6.0	9.2	
Effluent Turbidity (NTU)	2.8	3.7	3.3	3.5	

Recycled Water (AWT) Operations

Key Parameters	CTP	RTP	JBL	Totals
Average Flow (mgd)	1.30	6.76		8.06
Days of Operation (days)	29	31		
Total Flow (million gallons)	40.4	209.6		249.9
Plant Irrigation (million gallons)	0.10	0.00	0.24	
AWT Time Online (%)	100.0	99.6		

Wastewater Unit Definitions

mgd = million gallons per day

mg/l = milligram per liter also known as parts per million

NTU = Nephelometric Turbidity Units

SOCWA Operational Report July, 2017 (cont'd)

Biosolids Management

Biosolids Management Site	CTP	RTP	JBL	Totals
Synagro Compost (tons)		NA	0.0	0.0
Nursery Products (tons)		148.4	NA	148.4
Prima Deshecha (tons)		258.4	255.6	514.0
Other:_____ (tons)		0.0	0.0	0.0
Total Processed (tons)		406.8	255.6	662.4

Summary of Maintenance Activities

Task Type	CTP	RTP	JBL	Totals
Preventative Maintenance	251	592	726	1,569
Corrective Maintenance	45	93	117	255

Site Visitors

Visitor Types	CTP	RTP	JBL	Totals
Regulatory	0	0	2	2
Member Agency	0	0	0	0
Residents	0	0	0	0
Others	15	0	51	66
Tours #/Visitors	0	15	45	60

Grit Disposal Management

Grit & Screenings	CTP	RTP	JBL	Totals
Simi Valley Landfill (tons)	NA	30.4	NA	30.4

Chemical and Energy Utilization

Chemical/Utility	CTP	RTP	JBL	Totals
Ferric Chloride (tons)	0.1	NA	NA	0.1
Power (kWh)	214,743	NA	NA	214,743
Natural Gas (Dth)	21	NA	NA	21
Digester Gas (scfm)		0(1)	NA(2)	0
Digester Gas Power Savings		(1)		

(1) Engine was off at RTP for ongoing contruction project.
(2) Readings for new engine being connected to SCADA and not available at this time.
NA = Not Available at the time this report was generated.

Wastewater Unit Definitions
kWh = kilowatt hours
Dth = Dekatherms
scfm = standard cubic feet per minute

SOCWA Operational Report July, 2017 (cont'd)

Agency Wastewater Flows to SOCWA by Facility
(Including Internal Waste Streams Used for Billing)

Agency	CTP (mgd)	CTP (%)	RTP (mgd)	JBL (mgd)	JBL (%)	Total (mgd)
CLB	1.828	55.88%				1.83
EBSD	0.060	1.83%				0.06
SCWD	1.383	42.29%		1.778	30.12%	3.16
MNWD	0.000	0.00%	7.69	1.400	23.71%	9.09
CSJC				2.146	36.35%	2.15
SMWD				0.580	9.82%	0.58
Total	3.271	100.00%	7.69	5.904	100.00%	16.87

Total Agency Outfall Flows by Outfall System-Billing Flows

Agency	SJCOO (mgd)	SJCOO (%)	SJCOO Meter (mgd)	ACOO (mgd)	ACOO (%)	Total (mgd)	Notes
CLB				1.83	28.29%	1.83	
EBSD				0.06	0.93%	0.06	
SCWD	1.94	22.01%		0.82	12.73%	2.76	Includes Desalters
MNWD	1.40	15.90%		0.93	14.46%	2.33	
ETWD				1.47	22.70%	1.47	Direct Outfall Only
CSJC	2.42	27.52%				2.42	Incudes Desalter
SMWD	1.45	16.43%				1.45	Includes Chiquita
CSC	1.60	18.15%				1.60	Direct Outfall Only
IRWD				1.35	20.90%	1.35	Direct Outfall Only
Total	8.81	100.00%	9.59	6.46	100.00%	15.27	

FY Flow/Solids Summary-Billing

Project Committee No. 2 Liquids (JBL)

Agency	Own (mgd)	Own (%)	Budget (mgd)	Budget (%)	Month (mgd)(1)	Month (%)	FY Avg to Date (mgd)	FY Avg to Date (%)
CSJC	4.00	30.77%	3.19	38.02%	2.146	36.35%	2.15	36.35%
MNWD	3.00	23.08%	1.40	16.69%	1.400	23.71%	1.40	23.71%
SCWD	3.75	28.85%	2.00	23.84%	1.778	30.12%	1.78	30.12%
SMWD	2.25	17.31%	1.80	21.45%	0.580	9.82%	0.58	9.82%
Total	13.00	100.00%	8.39	100.00%	5.904	100.00%	5.90	100.00%

Project Committee No. 2 Solids (JBL)

Agency	Own (lbs/d)	Own (%)	Budget (lbs/d)	Budget (%)	Month (lbs/d)	Month (%)	36 Month Rol. Avg. (lbs/d)	36 Month Rol. Avg. (%)
CSJC	11,572	30.00%	8,620	33.30%	5,914	26.99%	6,485	26.69%
MNWD	8,340	21.62%	5,270	20.36%	7,605	34.71%	5,953	24.51%
SCWD	7,715	20.00%	5,304	20.49%	5,240	23.92%	5,001	20.59%
SMWD	10,946	28.38%	6,695	25.86%	3,150	14.38%	6,853	28.21%
Total	38,573	100.00%	25,889	100.00%	21,909	100.00%	24,292	100.00%

Project Committee No. 5 - Effluent Pumping Station (SJCOO EPS)

Agency	Own (%)	Variable Budget (mgd)	Variable Budget (%)	Month Outfall Flow (mgd)	Month Outfall Flow (%)	Month EPS Outfall Flow (mgd)	Month EPS Outfall Flow (%)
CSC	16.62%	3.00	17.13%	1.60	18.15%		
CSJC	11.08%	3.83	21.87%	2.42	27.52%	2.15	36.35%
MNWD	15.51%	2.42	13.82%	1.40	15.90%	1.40	23.71%
SCWD	12.47%	2.67	15.25%	1.94	22.01%	1.78	30.12%
SMWD	44.32%	5.59	31.92%	1.45	16.43%	0.58	9.82%
Total	100.00%	17.51	100.00%	8.81	100.00%	5.90	100.00%

(1) Influent billing meter summary:

a. CSJC is metered for two weeks of each month to determine the monthly flow.
The area velocity metering system in the collection system has an accuracy of +/- 20%.

b. MNWD is assumed to be 1.4 mgd unless Treatment Plant 3A is discharging to the sewer. If other discharges occur they are estimated.

c. SCWD is the summation of the DPSD and Victoria PS meters.
The two metering systems have an accuracy of +/- 10%.

d. The Oso Trabuco sewer is metered for two weeks of each month to determine the monthly flow.
The flows from MNWD are subtracted from the metering data collected to determine SMWD's flows. The area velocity metering system in the collection system has an accuracy of +/- 20%.

Source: Cost Allocation Methodology for Project Committees, Dudek Engineering 2012.

FY Flow/Solids Summary-Billing (cont'd)

Project Committee No. 5 - Outfall (SJCOO)

Agency	FY Avg Outfall Flow (mgd)	FY Avg Outfall Flow (%)	FY Avg EPS Outfall Flow (mgd)	FY Avg EPS Outfall Flow (%)
CSC	1.598	15.15%		
CSJC	2.424	22.97%	2.15	36.35%
MNWD	1.416	13.42%	1.40	23.71%
SCWD	1.939	18.37%	1.78	30.12%
SMWD	3.174	30.09%	0.58	9.82%
Total	10.550	100.00%	5.90	100.00%

Project Committee No. 15 (CTP)

Agency	Own (mgd)	Own (%)	Budget (mgd)	Budget (%)	Month (mgd)	Month (%)	FY Avg to Date (mgd)	FY Avg to Date (%)
CLB	2.54	37.91%	1.960	60.61%	1.828	55.88%	1.828	55.88%
EBSD	0.20	2.99%	0.061	1.89%	0.060	1.83%	0.060	1.83%
SCWD	2.00	29.85%	1.213	37.51%	1.383	42.29%	1.383	42.29%
MNWD	1.96	29.25%	0.000	0.00%	0.000	0.00%	0.000	0.00%
Total	6.70	100.00%	3.234	100.00%	3.271	100.00%	3.271	100.00%

Project Committee No. 17 Liquids (RTP)

Agency	Budget Liquids (mgd)	Budget Liquids (%)	Month Plant Influent (mgd)	Month Centrate (mgd)	Month Total (mgd)(1)	Month Total (%)	FY Avg to Date (mgd)	FY Avg to Date (%)
CLB	0.01408	0.167%	0.0000	0.0148	0.0148	0.19%	0.0148	0.19%
EBSD	0.00044	0.005%	0.0000	0.0005	0.0005	0.01%	0.0005	0.01%
SCWD	0.00871	0.103%	0.0000	0.0112	0.0112	0.14%	0.0112	0.14%
ETWD	0.01719	0.204%	0.0000	0.0126	0.0126	0.16%	0.0126	0.16%
MNWD	8.40541	99.521%	7.6939	0.0490	7.7429	99.50%	7.7429	99.50%
Total	8.44583	100.000%	7.6939	0.0880	7.7819	100.00%	7.7819	100.00%

(1) Month total does not double count MNWD centrate. It is included in the Monthly Plant Influent too.

FY Flow/Solids Summary (cont'd)

Project Committee No. 17 Solids (RTP)

Agency	Own (lbs/d)	Own (%)	Budget (lbs/d)	Budget (%)	Total Month (lbs)	Total Month (%)	FY Avg Total to Date (lbs)	FY Avg Total to Date (%)
CLB	5,605	11.22%	4,728	12.95%	204,114	16.76%	204,114	16.76%
EBSD	295	0.59%	147	0.40%	6,700	0.55%	6,700	0.55%
SCWD	4,480	8.96%	2,926	8.02%	154,459	12.68%	154,459	12.68%
ETWD	10,200	20.41%	5,903	16.17%	174,711	14.34%	174,711	14.34%
MNWD	29,395	58.82%	22,801	62.46%	677,953	55.66%	677,953	55.66%
Total	49,975	100.00%	36,505	100.00%	1,217,937	100.00%	1,217,937	100.00%

Project Committee No. 24 (ACOO)

Agency	Own (%)	Budget (mgd)	Budget (%)	Month Outfall Flow (mgd)	Month Outfall Flow (%)	FY Avg Outfall Flow (mgd)	FY Avg Outfall Flow (%)
CLB	11.000%	1.49	13.32%	1.828	28.29%	1.828	28.29%
EBSD	0.780%	0.06	0.54%	0.060	0.93%	0.060	0.93%
ETWD	16.302%	2.89	25.83%	1.467	22.70%	1.467	22.70%
IRWD	15.760%	2.62	23.41%	1.351	20.90%	1.351	20.90%
MNWD	43.848%	2.96	26.45%	0.934	14.46%	0.934	14.46%
SCWD	12.310%	1.17	10.46%	0.822	12.73%	0.822	12.73%
Total	100.000%	11.19	100.00%	6.462	0.00%	6.462	100.00%

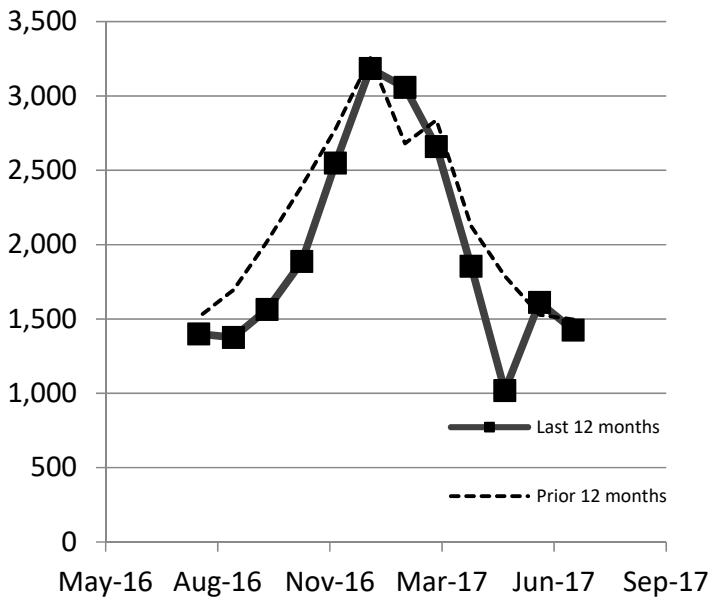
SOCWA Ocean Outfall Discharges by Agency

SOCWA Outfall Discharge Report July, 2017

Agency	SJCOO (mgd)	SJCOO (%)	ACOO (mgd)	ACOO (%)	Total (mgd)
CLB			1.83	28.29%	1.83
EBSD			0.06	0.93%	0.06
SCWD	1.94	22.01%	0.82	12.73%	2.76
MNWD	1.40	15.90%	0.93	14.46%	2.33
ETWD			1.47	22.70%	1.47
CSJC	2.42	27.52%			2.42
SMWD	1.45	16.43%			1.45
CSC	1.60	18.15%			1.60
IRWD			1.35	20.90%	1.35
Total	8.81	100.00%	6.46	100.00%	15.27
	or Acre-Feet per year equivalent				17,102

12-Month Running Total Discharge to Ocean Outfalls (AF)

Jul-17	1,425
Jun-17	1,611
May-17	1,018
Apr-17	1,854
Mar-17	2,659
Feb-17	3,057
Jan-17	3,184
Dec-16	2,549
Nov-16	1,886
Oct-16	1,564
Sep-16	1,376
Aug-16	1,399
Total	23,582



Beach / Ocean Monitoring Report

ALISO CREEK OCEAN OUTFALL MONITORING REPORT

July 2017

	IRWD LOS ALISOS WRP				EL TORO WRP				SOCWA REGIONAL PLANT				SOCWA COASTAL PLANT				IRWD IDP	IRWD SGU	SCWD ACWRF	ACOO	Rain
	FLOW	TSS	cBOD	SS	FLOW	TSS	cBOD	SS	FLOW	TSS	cBOD	SS	FLOW	TSS	cBOD	SS	FLOW	FLOW	FLOW	FLOW	Fall
DATE	MGD	mg/L	mg/L	ml/L	MGD	mg/L	mg/L	ml/L	MGD	mg/L	mg/L	ml/L	MGD	mg/L	mg/L	ml/L	MGD	MGD	MGD	MGD	inches
07/01/17	No Flow				1.325	12.6	4.0	<0.1	0.680				2.791				0.840	0.551	0.113	6.300	0.00
07/02/17	No Flow				1.681	12.0	6.0	<0.1	0.600	5.7	4.0	<0.1	2.999	14.9	9.0		0.840	0.551	0.101	6.772	0.00
07/03/17	No Flow				1.305	11.2	6.9	<0.1	0.740	3.6	2.0	0.6	3.500	7.8	5.0	<0.1	0.840	0.550	0.096	7.031	0.00
07/04/17	No Flow				2.630	11.2	6.4	<0.1	0.530	24.3	4.0	0.3	3.185	7.2	5.0	0.1	0.840	0.551	0.104	7.840	0.00
07/05/17	No Flow				1.690	10.2	5.9	<0.1	0.570	7.1	2.0	0.2	4.443	9.1	6.0	0.1	0.840	0.549	0.081	8.173	0.00
07/06/17	No Flow				1.705	9.6	5.4	<0.1	0.700	4.3	2.0	0.2	3.491	4.8	6.0	0.1	0.840	0.549	0.125	7.410	0.00
07/07/17	No Flow				1.582	10.2	6.0	<0.1	3.420	5.1	2.0	0.1	3.161	8.3	4.0	<0.1	0.722	0.549	0.098	9.532	0.00
07/08/17	No Flow				1.120	10.2	5.2	<0.1	1.820				1.993				0.839	0.551	0.108	6.431	0.00
07/09/17	No Flow				1.351	15.2	3.8	<0.1	1.840	4.7	3.0	1.7	2.774	9.5	6.0		0.840	0.547	0.088	7.440	0.00
07/10/17	No Flow				1.666	11.0	5.0	<0.1	0.800	14.5	4.0	<0.1	3.081	11.9	11.0	0.1	0.839	0.548	0.090	7.024	0.00
07/11/17	No Flow				1.555	9.8	6.3	<0.1	0.810	3.3	3.0	0.1	2.381	13.9	4.0	0.2	0.840	0.547	0.110	6.243	0.00
07/12/17	No Flow				1.600	15.8	5.0	<0.1	1.360	3.7	3.0	0.2	2.362	4.9	4.0	<0.1	0.840	0.547	0.076	6.785	0.00
07/13/17	No Flow				1.360	13.0	6.8	<0.1	1.410	8.3	3.0	0.2	3.649	6.7	5.0	0.1	0.442	0.545	0.100	7.506	0.00
07/14/17	No Flow				1.248	13.0	6.8	<0.1	0.800	6.3	2.0	0.1	2.967	5.7	3.0	0.1	0.724	0.547	0.098	6.384	0.00
07/15/17	No Flow				1.086	13.4	1.8	<0.1	0.630				1.430				0.841	0.545	0.117	4.649	0.00
07/16/17	No Flow				1.421	7.4	6.6	<0.1	1.030	4.7	4.0	0.1	2.320	2.1	4.0		0.840	0.546	0.095	6.252	0.00
07/17/17	No Flow				1.295	11.4	5.9	<0.1	1.290	4.2	4.0	0.2	2.577	11.6	7.0	0.1	0.840	0.545	0.091	6.638	0.00
07/18/17	No Flow				1.418	21.8	7.3	<0.1	0.540	6.6	5.0	0.1	2.453	7.3	4.0	0.1	0.841	0.545	0.094	5.891	0.00
07/19/17	No Flow				1.054	13.8	7.3	<0.1	0.380	5.4	2.0	0.1	2.587	8.5	2.0	<0.1	0.841	0.544	0.091	5.497	0.00
07/20/17	No Flow				1.550	13.4	9.6	<0.1	0.520	5.5	3.0	0.1	2.750	5.2	3.0	<0.1	0.841	0.544	0.099	6.304	0.00
07/21/17	No Flow				1.460	10.2	6.9	<0.1	0.420	5.1	2.0	0.3	2.339	3.9	3.0	0.1	0.443	0.544	0.098	5.304	0.00
07/22/17	No Flow				0.919	10.4	4.2	<0.1	0.460				2.018				0.727	0.559	0.109	4.792	0.00
07/23/17	No Flow				1.328	11.2	5.9	<0.1	0.720	4.6	5.0	<0.1	2.792	9.5	7.0		0.827	0.561	0.068	6.296	0.00
07/24/17	No Flow				1.160	10.8	5.7	<0.1	0.820	4.4	3.0	0.1	3.026	3.3	4.0	<0.1	0.843	0.561	0.002	6.412	0.00
07/25/17	No Flow				1.882	9.8	3.1	<0.1	0.520	6.6	4.0	0.1	3.579	6.7	4.0	0.1	0.843	0.560	0.106	7.490	0.00
07/26/17	No Flow				1.398	9.4	4.4	<0.1	0.350	5.1	2.0	<0.1	2.175	3.0	3.0	0.1	0.842	0.560	0.097	5.422	0.00
07/27/17	No Flow				1.591	7.4	4.5	<0.1	0.590	3.7	2.0	0.4	1.227	3.0	3.0	<0.1	0.843	0.560	0.104	4.915	0.00
07/28/17	No Flow				1.152	8.0	5.6	<0.1	1.110	9.4	4.0	0.3	2.658	2.9	4.0	0.1	0.842	0.591	0.094	6.447	0.00
07/29/17	No Flow				1.598	9.2	5.1	<0.1	0.520				2.122				0.731	0.592	0.111	5.674	0.00
07/30/17	No Flow				1.982	10.8	4.7	<0.1	0.710	10.1	5.0	0.5	2.614	8.3	7.0		0.694	0.592	0.101	6.693	0.00
07/31/17	No Flow				1.372	20.4	2.3	<0.1	2.270	16.2	5.0	<0.1	2.573	11.5	7.0	<0.1	0.842	0.591	0.098	7.746	0.00
AVG	No Flow				1.467	11.7	5.5	<0.1	0.934	7.0	3.2	<0.3	2.710	7.4	5.0	<0.1	0.795	0.556	0.096	6.558	
TOTAL	No Flow				45.48				28.96				84.02				24.65	17.22	2.963	203.29	0.00

Unified Beach Monitoring #1

South Orange County Wastewater Authority-Aliso Creek Ocean Outfall

REPORT FOR: July 2017
REPORT DUE: September 1 2017
SAMPLE SOURCE: Surf zone
TYPE OF SAMPLE: Grab

REPORT FREQUENCY: Monthly
EXACT SAMPLE POINTS: As specified in Unified Monitoring Plan
SAMPLES COLLECTED BY: SOCWA Lab
SAMPLES ANALYZED BY: SOCWA Lab

Tidal Condition: High Tide 0857
Weather: Clear
COMMENTS:

STA#	DATE	TIME	Total Coliform CFU/100ml SM9222B	Fecal Coliform CFU/100ml SM9222D	Entero-coccus CFU/100ml EPA 1600	Material of Sewage Origin Onshore	Offshore	Oil & Grease	Odor	Water Color	H20 Temp(F	Water Condition	Water Outlet	Birds
S3	07/06/17	900	9	<20	<3	None	None	None	None	Green	69	Clear		
S4	07/06/17	1135	<20	<20	<3	None	None	None	None	Green		Clear		
S5	07/06/17	1115	<20	<20	2	None	None	None	None	Green		Clear		
S6	07/06/17	1055	<20	9	<3	None	None	None	None	Green		Clear		
WEST	07/06/17	1050	<20	<20	<3	None	None	None	None	Green		Clear		
S7	07/06/17	1045	9	<20	<3	None	None	None	None	Green		Clear		
S8	07/06/17	1035	<20	<20	<3	None	None	None	None	Blue		Clear		
S9	07/06/17	1020	<20	<20	3	None	None	None	None	Green		Clear		
ACM1	07/06/17	1015	<20	<20	<3	None	None	None	None	Green		Clear		
S10	07/06/17	950	9	<20	<3	None	None	None	None	Green		Clear		
S11	07/06/17	940	<20	<20	<3	None	None	None	None	Green		Clear		
S12	07/06/17	930	30	20	2	None	None	None	None	Green		Clear		

RECREATIONAL WATER LIMITATIONS:Single Sample Maximum - Total coliform density shall not exceed 10,000 per 100ml; Fecal coliform density shall not exce 400 per 100ml; Enterococcus density shall not exceed 104 per 100ml.

Unified Beach Monitoring #2

South Orange County Wastewater Authority-Aliso Creek Ocean Outfall

REPORT FOR: July 2017
REPORT DUE: September 1, 2017
SAMPLE SOURCE: Receiving water surf zone
TYPE OF SAMPLE: Grab

REPORT FREQUENCY: Monthly
EXACT SAMPLE POINTS: As specified in Unified Monitoring Plan
SAMPLES COLLECTED BY: SOCWA Lab
SAMPLES ANALYZED BY: SOCWA Lab

Tidal Condition: High Tide 1147
Weather: Clear
COMMENTS:

STA#	DATE	TIME	Total Coliform CFU/100ml SM9222B	Fecal Coliform CFU/100ml SM9222D	Entero-coccus CFU/100ml EPA 1600	Material of Sewage Origin Onshore	Offshore	Oil & Grease	Odor	Water Color	H20 Temp(F	Water Condition	Water Outlet	Birds
S3	07/11/17	730	20	<20	3	None	None	None	None		70			
S4	07/11/17	1030	<20	<20	<3	None	None	None	None	Green		Clear		
S5	07/11/17	945	<20	<20	3	None	None	None	None	Green		Clear		
S6	07/11/17	920	<20	<20	3	None	None	None	None	Green		Clear		
WEST	07/11/17	915	<20	<20	<3	None	None	None	None	Green		Clear		
S7	07/11/17	910	<20	<20	<3	None	None	None	None	Green		Clear		
S8	07/11/17	905	<20	<20	<3	None	None	None	None	Blue		Clear		
S9	07/11/17	850	<20	<20	<3	None	None	None	None	Green		Clear		
ACM1	07/11/17	845	<20	<20	<3	None	None	None	None	Green		Clear		
S10	07/11/17	820	30	<20	<3	None	None	None	None	Green		Clear		
S11	07/11/17	810	<20	<20	<3	None	None	None	None	Green		Clear		
S12	07/11/17	805	<10	<10	20	None	None	None	None	Green		Clear		

RECEIVING WATER LIMITATIONS:Single Sample Maximum - Total coliform density shall not exceed 10,000 per 100ml; Fecal coliform density shall not exceed 400 per 100ml; Enterococcus density shall not exceed 104 per 100ml.

Unified Beach Monitoring #3

South Orange County Wastewater Authority-Aliso Creek Ocean Outfall

REPORT FOR: July 2017
REPORT DUE: September 1, 2017
SAMPLE SOURCE: Receiving water surf zone
TYPE OF SAMPLE: Grab

REPORT FREQUENCY: Monthly
EXACT SAMPLE POINTS: As specified in Unified Monitoring Plan
SAMPLES COLLECTED BY: SOCWA Lab
SAMPLES ANALYZED BY: SOCWA Lab

Tidal Condition: High Tide 0753
Weather: Clear
COMMENTS:

STA#	DATE	TIME	Total Coliform CFU/100ml SM9222B	Fecal Coliform CFU/100ml SM9222D	Entero-coccus CFU/100ml EPA 1600	Material of Sewage Origin Onshore	Offshore	Oil & Grease	Odor	Water Color	H20 Temp(F)	Water Condition	Water Outlet	Birds
S3	07/20/17	850	<20	<20	<3	None	None	None	None	Green	72	Clear		
S4	07/20/17	1130	<20	<20	<3	None	None	None	None	Green		Clear		
S5	07/20/17	1110	<20	<20	<3	None	None	None	None	Green		Clear		
S6	07/20/17	1055	<20	<20	<3	None	None	None	None	Green		Clear		
WEST	07/20/17	1050	<20	<20	<3	None	None	None	None	Green		Clear		
S7	07/20/17	1045	20	<20	2	None	None	None	None	Green		Clear		
S8	07/20/17	1040	<20	<20	<3	None	None	None	None	Blue		Clear		
S9	07/20/17	1030	9	<20	<3	None	None	None	None	Green		Clear		
ACM1	07/20/17	1025	9	<20	10	None	None	None	None	Green		Clear		
S10	07/20/17	1000	9	<20	<3	None	None	None	None	Green		Clear		
S11	07/20/17	945	<20	<20	<3	None	None	None	None	Green		Clear		
S12	07/20/17	935	<10	<10	<4	None	None	None	None	Green		Clear		

RECEIVING WATER LIMITATIONS:Single Sample Maximum - Total coliform density shall not exceed 10,000 per 100ml; Fecal coliform density shall not exce 400 per 100ml; Enterococcus density shall not exceed 104 per 100ml.

Unified Beach Monitoring #4

South Orange County Wastewater Authority-Aliso Creek Ocean Outfall

REPORT FOR: July 2017
REPORT DUE: September 1, 2017
SAMPLE SOURCE: Receiving water surf zone
TYPE OF SAMPLE: Grab

REPORT FREQUENCY: Monthly
EXACT SAMPLE POINTS: As specified in Unified Monitoring Plan
SAMPLES COLLECTED BY: SOCWA Lab
SAMPLES ANALYZED BY: SOCWA Lab

Tidal Condition: Low Tide 0600
Weather: Overcast
COMMENTS:

STA#	DATE	TIME	Total Coliform CFU/100ml SM9222B	Fecal Coliform CFU/100ml SM9222D	Entero-coccus CFU/100ml EPA 1600	Material of Sewage Origin Onshore	Material of Sewage Origin Offshore	Oil & Grease	Odor	Water Color	H20 Temp(F)	Water Condition	Water Outlet	Birds
S3	07/26/17	1020	<20	<20	<3	None	None	None	None	Green		Slightly Turbid		
S4	07/26/17	1010	9	<20	3	None	None	None	None	Green	72	Slightly Turbid		
S5	07/26/17	0950	20	<20	<3	None	None	None	None	Green		Slightly Turbid		
S6	07/26/17	0935	<20	9	20	None	None	None	None	Green		Slightly Turbid		
WEST	07/26/17	0930	20	<20	<3	None	None	None	None	Green		Slightly Turbid		
S7	07/26/17	0925	<20	<20	<3	None	None	None	None	Green		Slightly Turbid		
S8	07/26/17	0920	40	40	<3	None	None	None	None	Green		Slightly Turbid		
S9	07/26/17	0910	<20	<20	5	None	None	None	None	Green		Slightly Turbid		50
ACM1	07/26/17	0900	9	<20	3	None	None	None	None	Green		Slightly Turbid		
S10	07/26/17	0850	20	5	<4	None	None	None	None	Green		Slightly Turbid		
S11	07/26/17	0845	<20	<20	<3	None	None	None	None	Green		Slightly Turbid		
S12	07/26/17	0840	90	80	<3	None	None	None	None	Green	72	Slightly Turbid		

RECEIVING WATER LIMITATIONS:Single Sample Maximum - Total coliform density shall not exceed 10,000 per 100ml; Fecal coliform density shall not exceed 400 per 100ml; Enterococcus density shall not exceed 104 per 100ml.

Aliso Creek Ocean Outfall

Unified Beach Water Quality Monitoring Stations

SOCWA's NPDES discharge permit requires participation in the South Orange County Unified Beach Water Quality Monitoring Program. The monitoring stations below are tested by SOCWA at least once per week for Total and Fecal Coliform and Enterococcus Bacteria.

Station	Location
S3	Three Arch Bay Beach; 10,000' down-coast from ACOO
S4	Ninth Street-1000 Steps; 5,000' down-coast from ACOO
S5	Laguna Lido Beach; 4,000 down-coast from ACOO
West	West Street Drain; 2,000' down-coast from ACOO
S6	Table Rock Beach; 3,000' down-coast from ACOO
S7	Camel Point Beach; 2,000' down-coast from ACOO
S8	Aliso Beach south; 1,000' down-coast from ACOO
S9	Aliso Beach middle; at ACOO
ACM1	Aliso Beach at Aliso Creek Outlet
S10	Aliso Beach north; 1,000' up-coast of ACOO
S11	Treasure Island Beach; 2,000' up-coast of ACOO
S12	Goff Island Beach; 3,000' up-coast of ACOO

Unified Beach Water Quality Sample Station Map – Aliso Creek Ocean Outfall

MONITORING REPORT

Off Shore Stations

South Orange County Wastewater Authority

DISCHARGE: Aliso Creek Ocean Outfall
REPORT FOR: July 2017
REPORT DUE: September 1, 2017
SAMPLE SOURCE: Receiving water, nearshore and offshore
EXACT SAMPLE POINTS: As specified in permit
SAMPLES COLLECTED BY: Seaventures/SOCWA staff
SAMPLES ANALYZED BY: SOCWA Lab

REPORT FREQUENCY: Monthly

SAMPLING FREQUENCY: Monthly
TYPE OF SAMPLE: Grab

Comments: Low Tide 557

Sta No.	Sample Depth	Sample Date	Total Coliform CFU/100ml SM9222B	Fecal Coliform CFU/100ml SM9222D	Entero-coccus CFU/100ml EPA 1600	Sample Time	Oil & Grease	Sewage Debris
A-1	Surface	07/12/17	<2	<2	<2	758	0	0
A-1	Mid depth	07/12/17	<10	<10	<10			
A-2	Surface	07/12/17	<2	2	<2	748	0	0
A-2	Mid depth	07/12/17	<10	<10	<10			
A-3	Surface	07/12/17	<2	<2	<2	752	0	0
A-3	Mid depth	07/12/17	<10	<10	<10			
A-4	Surface	07/12/17	<2	<2	<2	804	0	0
A-4	Mid depth	07/12/17	<10	<10	<10			
A-5	Surface	07/12/17	<2	<2	<2	757	0	0
A-5	Mid depth	07/12/17	<10	<10	<10			
B-1	Surface	07/12/17	<2	<2	<2	742	0	0
B-1	Mid depth	07/12/17	<10	<10	<10			
B-2	Surface	07/12/17	<2	<2	2	811	0	0
B-2	Mid depth	07/12/17	<10	<10	<10			
N1	Surface	07/12/17	2	<2	<2	828	0	0
N2	Surface	07/12/17	<2	2	<2	827	0	0
N3	Surface	07/12/17	2	<2	<2	826	0	0
N4	Surface	07/12/17	<2	<2	<2	824	0	0
N5	Surface	07/12/17	4	<2	<2	822	0	0
N6	Surface	07/12/17	<2	<2	<2	821	0	0
N7	Surface	07/12/17	2	2	<2	819	0	0

0 - None
1 - Mild
2 - Moderate
3 - Severe

REQUIREMENT: (1) Floating particulates and grease and oil shall not be visible. (2) The discharge of wasteshall not cause aesthetically undesireable discoloration of the ocean surface.

Compliance Summary Report
Aliso Creek Ocean Outfall 2017

ACOO Permit Order No. R9-2012-0013							
Agency - Facility	**Violation Date**	**Constituent**	**Effluent Limit Violation**	**Units**	**Permit Limit**	**Reported Value**	**Potential Fine**
There were no water quality violations during this reporting period.							

SOCWA and MEMBER AGENCY FACILITIES
ACOO Spill / Overflow Report Log - 2017
Order No. R9-2012-0013 ~ NPDES Permit No. CA0107611

Reporting Agency	Responsible Agency	Estimated Volume (Gallons)	Type of Discharge	Location/Comments	Receiving Waters	Date Reported To State	Date Resolved
SOCWA	Regional Treatment Plant	60	Tertiary Effluent	Broken 3WHP 1" reclaimed water line due to a broken elbow. Spill was contained and pumped back to the plant.	None	N/A	1/11/2017
SOCWA	Regional Treatment Plant	124,320	Secondary Effluent	One of two applied reclaimed water effluent pumps failed. These pumps push water from the reclaimed water effluent pond to the reclaimed water reservoirs. The single pump could not keep up with the demand thus leading to a spill from the pond. All flows were diverted to the outfall while the applied pump was repaired. Sandbags were placed around the overflow in an effort to contain secondary water in the pond.	Sulphur Creek Aliso Creek Pacific Ocean	1/23/2017	1/22/2017
SOCWA	Pacific Hydrotech	100	Untreated Sewage	Pacific Hydrotech and Herc Rental has a sewer bypass in operation at RTP. One of the bypass pumps did not start. One of their employees noticed the spill and started the pump. The spill was contained in the area and internal drains routed the flow to the influent Junction Structure.	None	7/11/2017	7/11/2017
SOCWA	Pacific Hydrotech	225	Untreated Sewage	Pacific Hydrotech and Herc Rental has a sewer bypass in operation at RTP. One of the bypass pumps got a rag ball stuck in the pump One of their employees noticed the spill and remove rags form suction of the pump. The spill was contained in the area and internal drains routed the flow to the influent Junction Structure.	None	7/14/2017	7/14/2017
SOCWA	Pacific Hydrotech	300	Untreated Sewage	Pacific Hydrotech and Herc Rental has a sewer bypass in operation at RTP. One of the bypass pumps got a rag ball stuck in the pump One of their employees noticed the spill and remove rags form suction of the pump. The spill was contained in the area and internal drains routed the flow to the influent Junction Structure.	None	07-17-17	07-17-17
SOCWA	Regional Treatment Plant	7,575	Untreated Sewage	The control power on Barscreen 1 blew a 30 amp fuse making the barscreen inoperable. Spill was contained treated in the plant.	None	7/18/2017	7/18/2017
SOCWA	Pacific Hydrotech	200	Untreated Sewage	The control power fuse blew, preventing operation of Bar Screen 1. A pacific hydrotech employee on site for the bypass found the spill and called the standby operator. The standby operator called the CPO.	None	7/18/2017	7/19/2017

SAN JUAN CREEK OCEAN OUTFALL MONITORING REPORT

July 2017

	J.B. LATHAM FACILITY				SAN CLEMENTE WRP				SMWD CHIQUITA WRP				3-A PLANT				CSJC Desalter	SCWD Desalter	SJCOO	Rain
DATE	FLOW MGD	TSS mg/L	cBOD mg/L	SS ml/L	FLOW MGD	TSS mg/L	cBOD mg/L	SS ml/L	FLOW MGD	TSS mg/L	cBOD mg/L	SS ml/L	FLOW MGD	TSS mg/L	cBOD mg/L	SS ml/L	FLOW MGD	FLOW MGD	FLOW MGD	Fall inches
07/01/17	5.990				1.107				0.240				0.353				0.443	0.158	7.970	0.00
07/02/17	6.360	5.4	6.0		1.965				1.710				0.351				0.441	0.163	9.570	0.00
07/03/17	6.750	5.5	4.6	0.2	2.031	17.2	9.0	<0.1	2.320	4.3	4.8	0.1	0.038	5.0	4.0	<0.1	0.443	0.158	11.600	0.00
07/04/17	6.860	5.3	5.0	0.2	1.173	10.0	5.0	<0.1	0.490	6.4	9.3	<0.1	0.031	4.7	3.0	<0.1	0.442	0.162	11.030	0.00
07/05/17	7.010	8.6	5.5	<0.1	1.909	11.0	6.0	<0.1	0.850	7.7	8.4	<0.1	0.090	4.2	3.0	<0.1	0.444	0.156	10.080	0.00
07/06/17	7.110	7.2	8.9	0.1	1.036	6.8	4.0	<0.1	0.740	5.5	2.4	0.1	0.047	3.2	9.0	<0.1	0.432	0.157	9.930	0.00
07/07/17	6.550	11.3	10.1	0.1	3.037	12.0	6.0	<0.1	0.080	9.2	8.7	<0.1	0.195	3.6	2.0	<0.1	0.446	0.157	10.590	0.00
07/08/17	6.280				2.077	9.0	5.0	<0.1	0.300	5.7	8.6	<0.1	0.331	3.5	4.0	<0.1	0.449	0.163	9.690	0.00
07/09/17	6.280	4.0	7.6		3.125	9.1	6.0	<0.1	1.450	4.4	6.3	<0.1	0.426	3.8	3.0	<0.1	0.448	0.158	10.800	0.00
07/10/17	6.180	6.5	6.6	0.1	1.356	6.0	5.0	<0.1	0.660	9.8	15.4	0.2	0.539	4.1	13.0	<0.1	0.448	0.163	10.650	0.00
07/11/17	6.150	7.0	5.7	0.2	1.662	5.2	4.0	<0.1	0.330	8.8	18.0	0.1	0.341	4.4	14.0	<0.1	0.450	0.158	9.700	0.00
07/12/17	6.170	5.0	5.6	0.1	0.925	9.6	5.0	<0.1	0.920	10.6	8.2	<0.1	0.225	3.4	3.0	<0.1	0.466	0.160	8.450	0.00
07/13/17	5.980	6.0	6.0	0.2	1.009	7.8	4.0	<0.1	0.980	4.8	5.8	0.2	0.311	3.1	2.0	<0.1	0.488	0.161	9.210	0.00
07/14/17	6.100	5.3	5.8	0.1	1.447	6.6	4.0	<0.1	0.510	8.2	8.4	<0.1	0.169	3.8	3.0	<0.1	0.507	0.158	9.180	0.00
07/15/17	6.260				1.128				0.610				0.047				0.516	0.162	8.830	0.00
07/16/17	6.370	7.1	8.4		2.269				0.680				0.144				0.530	0.158	9.940	0.00
07/17/17	6.400	6.3	8.2	0.1	1.115	7.2	5.0	<0.1	0.380	13.4	15.2	<0.1	0.224	3.5	13.0	<0.1	0.528	0.158	9.420	0.00
07/18/17	6.270	6.4	9.0	0.1	1.430	8.4	5.0	<0.1	0.660	9.6	13.8	0.1	0.084	3.7	12.0	<0.1	0.535	0.165	9.010	0.00
07/19/17	6.340	6.8	6.2	0.1	1.421	19.2	8.0	<0.1	0.260	5.7	9.2	<0.1	0.063	2.5	3.0	<0.1	0.159	0.160	8.720	0.00
07/20/17	6.140	5.6	7.6	<0.1	1.314	10.0	6.0	<0.1	0.200	10.0	8.4	<0.1	0.076	2.8	3.0	0.3	No Flow	0.164	8.220	0.00
07/21/17	6.280	6.1	7.8	0.1	1.304	9.4	6.0	<0.1	0.280	10.4	9.2	0.3	0.059	3.6	3.0	0.1	No Flow	0.160	8.450	0.00
07/22/17	6.170				1.630				0.620				0.078				No Flow	0.159	9.230	0.00
07/23/17	6.250	4.5	6.8		1.485				2.560				0.212				No Flow	0.164	9.270	0.00
07/24/17	6.310	6.6	5.1	0.2	1.431	5.2	4.0	<0.1	1.550	6.6	13.5	0.3	0.237	2.5	12.0	<0.1	No Flow	0.160	11.600	0.00
07/25/17	6.420	9.2	6.4	0.1	1.606	11.5	6.0	<0.1	0.640	10.6	14.5	<0.1	0.210	2.9	13.0	<0.1	No Flow	0.162	9.620	0.00
07/26/17	6.170	6.2	4.8	0.1	1.682	10.0	6.0	<0.1	0.770	8.2	10.0	0.2	0.087	2.7	3.0	<0.1	No Flow	0.163	8.940	0.00
07/27/17	6.350	9.2	5.4	0.1	1.366	10.2	6.0	<0.1	0.270	7.7	9.2	<0.1	0.055	3.4	3.0	<0.1	No Flow	0.162	8.610	0.00
07/28/17	6.990	7.3	7.5	0.2	1.550	9.8	6.0	<0.1	0.410	8.6	8.6	<0.1	0.062	4.4	7.0	0.1	No Flow	0.165	8.450	0.00
07/29/17	6.820				1.356				1.700				0.049				No Flow	0.160	8.490	0.00
07/30/17	6.790	6.4	8.8		1.380				2.160				0.171				No Flow	0.159	10.050	0.00
07/31/17	6.720	7.2	7.4	<0.1	2.221	11.0	6.0	<0.1	1.540	10.0	14.4	0.1	1.010	8.6	12.0	<0.1	No Flow	0.164	11.960	0.00
AVG	6.414	6.6	6.8	<0.1	1.598	9.7	5.5	<0.1	0.867	8.1	10.0	<0.1	0.204	3.8	6.4	<0.1	0.278	0.161	9.589	
TOTAL	198.820				49.547				26.870				6.315				8.615	4.977	297.260	0.00

Unified Beach Monitoring #1

South Orange County Wastewater Authority-San Juan Creek Ocean Outfall

REPORT FOR: July 2017
REPORT DUE: September 1, 2017
SAMPLE SOURCE: Receiving water surf zone
TYPE OF SAMPLE: Grab

REPORT FREQUENCY: Monthly
EXACT SAMPLE POINTS: As specified in Unified Monitoring Plan
SAMPLES COLLECTED BY: SOCWA Lab
SAMPLES ANALYZED BY: SOCWA Lab

Tidal Condition: High Tide 0633
Weather: Partly Cloudy
COMMENTS:

STA#	DATE	TIME	Total Coliform CFU/100ml SM9222B	Fecal Coliform CFU/100ml SM9222D	Entero-coccus CFU/100ml EPA 1600	Material of Sewage Origin Onshore	Offshore	Oil & Grease	Odor	Water Color	H20 Temp(F	Water Condition	Water Outlet	Birds
S0	07/03/17	0830	<40	<40	<4	None	None	None	None	Green		Turbid		
S1	07/03/17	0850	20	<40	4	None	None	None	None	Green		Turbid		
S2	07/03/17	0821	<40	<40	4	None	None	None	None	Green	69	Turbid		
DSB5	07/03/17	0805	20	<40	7	None	None	None	None	Brown		Turbid		
S3	07/03/17	0855	<40	<40	<4	None	None	None	None	Green		Turbid		
DSB4	07/03/17	0859	<40	<40	<4	None	None	None	None	Green		Turbid		
S5	07/03/17	0905	<40	<40	4	None	None	None	None	Green		Turbid		
DSB1	07/03/17	0912	<40	<40	<4	None	None	None	None	Green	70	Turbid		
SJC1	07/03/17	0830	<100	<100	<20	None	None	None	None	Brown		Turbid		

RECEIVING WATER LIMITATIONS:Single Sample Maximum - Total coliform density shall not exceed 10,000 per 100ml; Fecal coliform density shall not exceed 400 per 100ml; Enterococcus density shall not exceed 104 per 100ml.

Unified Beach Monitoring #2

South Orange County Wastewater Authority-San Juan Creek Ocean Outfall

REPORT FOR: July 2017
REPORT DUE: September 1, 2017
SAMPLE SOURCE: Receiving water surf zone
TYPE OF SAMPLE: Grab

REPORT FREQUENCY: Monthly
EXACT SAMPLE POINTS: As specified in Unified Monitoring Plan
SAMPLES COLLECTED BY: SOCWA Lab
SAMPLES ANALYZED BY: SOCWA Lab

Tidal Condition: Low tide 640
Weather: Overcast
COMMENTS:

STA#	DATE	TIME	Total Coliform CFU/100ml SM9222B	Fecal Coliform CFU/100ml SM9222D	Entero-coccus CFU/100ml EPA 1600	Material of Sewage Origin Onshore	Offshore	Oil & Grease	Odor	Water Color	H20 Temp(F	Water Condition	Water Outlet	Birds
S0	07/13/17	835	50	<40	<4	None	None	None	None	Green	71	Turbid		
S1	07/13/17	840	<40	<40	2	None	None	None	None	Green		Turbid		
S2	07/13/17	815	20	40	<4	None	None	None	None	Green		Turbid		
DSB5	07/13/17	800	20	<40	4	None	None	None	None	Green		Turbid		
S3	07/13/17	845	<40	<40	<4	None	None	None	None	Green		Turbid		
DSB4	07/13/17	850	40	<40	5	None	None	None	None	Green	72	Turbid		
S5	07/13/17	855	20	<40	20	None	None	None	None	Green		Turbid		
DSB1	07/13/17	900	<40	<40	7	None	None	None	None	Green	73	Turbid		
C1	07/13/17	830	<100	<100	<20	None	None	None	None	Green		Turbid		

RECEIVING WATER LIMITATIONS:Single Sample Maximum - Total coliform density shall not exceed 10,000 per 100ml; Fecal coliform density shall not exceed 400 per 100ml; Enterococcus density shall not exceed 104 per 100ml.

Unified Beach Monitoring #3

South Orange County Wastewater Authority-San Juan Creek Ocean Outfall

REPORT FOR: July 2017
REPORT DUE: September 1, 2017
SAMPLE SOURCE: Receiving water surf zone
TYPE OF SAMPLE: Grab

REPORT FREQUENCY: Monthly
EXACT SAMPLE POINTS: As specified in Unified Monitoring Plan
SAMPLES COLLECTED BY: SOCWA Lab
SAMPLES ANALYZED BY: SOCWA Lab

Tidal Condition: High Tide 0709
Weather: Partly Cloudy
COMMENTS:

STA#	DATE	TIME	Total Coliform CFU/100ml SM9222B	Fecal Coliform CFU/100ml SM9222D	Entero-coccus CFU/100ml EPA 1600	Material of Sewage Origin Onshore	Offshore	Oil & Grease	Odor	Water Color	H20 Temp(F	Water Condition	Water Outlet	Birds
S0	07/19/17	1037	100	<40	<4	None	None	None	None	Green		Turbid		
S1	07/19/17	1040	50	30	<5	None	None	None	None	Green		Turbid		
S2	07/19/17	1014	<40	<40	<4	None	None	None	None	Green	74	Turbid		
DSB5	07/19/17	1000	<200	<40	<4	None	None	None	None	Green		Turbid		
S3	07/19/17	1049	<200	40	5	None	None	None	None	Green		Turbid		
DSB4	07/19/17	1049	40	40	4	None	None	None	None	Green		Turbid		
S5	07/19/17	1057	<40	100	4	None	None	None	None	Green	75	Turbid		
DSB1	07/19/17	1106	40	<40	4	None	None	None	None	Green		Turbid		
C1	07/19/17	1037	<200	<200	<30	None	None	None	None	Green		Turbid		

RECEIVING WATER LIMITATIONS:Single Sample Maximum - Total coliform density shall not exceed 10,000 per 100ml; Fecal coliform density shall not exceed 400 per 100ml; Enterococcus density shall not exceed 104 per 100ml.

Unified Beach Monitoring #4

South Orange County Wastewater Authority-San Juan Creek Ocean Outfall

REPORT FOR: July 2017
REPORT DUE: September 1, 2017
SAMPLE SOURCE: Receiving water surf zone
TYPE OF SAMPLE: Grab

REPORT FREQUENCY: Monthly
EXACT SAMPLE POINTS: As specified in Unified Monitoring Plan
SAMPLES COLLECTED BY: SOCWA Lab
SAMPLES ANALYZED BY: SOCWA Lab

Tidal Condition: Low tide 700
Weather: Overcast
COMMENTS:

STA#	DATE	TIME	Total Coliform CFU/100ml SM9222B	Fecal Coliform CFU/100ml SM9222D	Entero-coccus CFU/100ml EPA 1600	Material of Sewage Origin Onshore	Offshore	Oil & Grease	Odor	Water Color	H20 Temp(F	Water Condition	Water Outlet	Birds
S0	07/25/17	922	>=40	<40	5	None	None	None	None	Green	71	Turbid		
S1	07/25/17	930	40	<40	<5	None	None	None	None	Green				
S2	07/25/17	855	>=40	<40	<5	None	None	None	None	Green				
DSB5	07/25/17	845	>=100	100	190	None	None	None	None	Green		Slightly Turbid		
S3	07/25/17	935	<40	<40	15	None	None	None	None	Green				
DSB4	07/25/17	940	50	<40	<5	None	None	None	None	Green	72			
S5	07/25/17	945	40	<40	<5	None	None	None	None	Green				
DSB1	07/25/17	950	<40	<40	<5	None	None	None	None	Green	73			
C1	07/25/17	920	300	<200	<30	None	None	None	None	Green				

RECEIVING WATER LIMITATIONS:Single Sample Maximum - Total coliform density shall not exceed 10,000 per 100ml; Fecal coliform density shall not exceed 400 per 100ml; Enterococcus density shall not exceed 104 per 100ml.

Unified Beach Monitoring #5

South Orange County Wastewater Authority-San Juan Creek Ocean Outfall

REPORT FOR: July 2017
REPORT DUE: September 1, 2017
SAMPLE SOURCE: Receiving water surf zone
TYPE OF SAMPLE: Grab

REPORT FREQUENCY: Monthly
EXACT SAMPLE POINTS: As specified in Unified Monitoring Plan
SAMPLES COLLECTED BY: SOCWA Lab
SAMPLES ANALYZED BY: SOCWA Lab

Tidal Condition: Low Tide 1005
Weather: Overcast
COMMENTS:

STA#	DATE	TIME	Total Coliform CFU/100ml SM9222B	Fecal Coliform CFU/100ml SM9222D	Entero-coccus CFU/100ml EPA 1600	Material of Sewage Origin Onshore	Material of Sewage Origin Offshore	Oil & Grease	Odor	Water Color	H20 Temp(F	Water Condition	Water Outlet	Birds
S0	07/31/17	0847	<40	<40	<4	None	None	None	None	Green	73	Turbid		
S1	07/31/17	0850	<40	40	4	None	None	None	None	Green		Turbid		
S2	07/31/17	0830	<40	50	<4	None	None	None	None	Green		Turbid		
DSB5	07/31/17	0815	40	<30	8	None	None	None	None	Green		Turbid		
S3	07/31/17	0855	<40	<40	5	None	None	None	None	Green		Turbid		
DSB4	07/31/17	0856	<40	<40	<4	None	None	None	None	Green		Turbid		
S5	07/31/17	0902	<40	<40	<4	None	None	None	None	Green		Turbid		
DSB1	07/31/17	0907	<40	<40	<4	None	None	None	None	Green	73	Turbid		
C1	07/31/17	0847	<200	<200	<20	None	None	None	None	Green		Turbid		

RECEIVING WATER LIMITATIONS:Single Sample Maximum - Total coliform density shall not exceed 10,000 per 100ml; Fecal coliform density shall not exceed 400 per 100ml; Enterococcus density shall not exceed 104 per 100ml.

San Juan Creek Ocean Outfall

Unified Beach Water Quality Monitoring Stations

SOCWA's NPDES discharge permit requires participation in the South Orange County Unified Beach Water Quality Monitoring Program. The monitoring stations below are tested by SOCWA SOCWA at least once per week for Total and Fecal Coliform and Enterococcus Bacteria.

Station	Location
DSB 5	Doheny Beach – North Creek Outlet 1500' up-coast from SJCOO
S2	Doheny Beach- Midway between Jetty and San Juan Creek
SJC1	San Juan Creek Mouth – up-coast from SJCOO
S0	Doheny Beach at Outfall; surf line over SJCOO
S1	Doheny Beach Campground; 1,000' down-coast from SJCOO
DSB 4	Doheny State Beach; 1,900' down-coast from SJCOO
S3	South Day Use; 2000' down-coast from SJCOO
S5	Doheny Beach near overpass; 3000' down-coast from SJCOO
DSB 1	End of Doheny State Beach; 3500' down-coast from SJCOO


Pacific Coast Hwy
Coast Hwy
Golden Lantern St
Dana Point Harbor Dr
Dana Point Harbor
Dana Point Harbor
East Basin
Puerto Pl
Embarcadero Pl
San Juan Creek Trail
Victoria Blvd
Domingo Ave
Sepulveda Ave
La Playa Ave
Via Canon
Via Verde
Vista Dr W
Dana Bluff W
Vista Dr E
Park Lantern
Via California
Via Fortuna
Via San Juan
Via Gomez
Via Espinoza
Via Sacramento
Via Catalina
Camino Capistrano
Palisades Dr
Doheny Pl
Calle Las Flores
Deep Canyon
DSB 5
S2
SJC 1
S0
S1
S3
DSB 4
S5
DSB 1
Unified Beach Water Quality Sample Stations - SJCOO
DSB 5 Doheny Beach – North Creek Outlet 1500' up-coast from SJCOO
S2 Doheny Beach- Midway between Jetty and San Juan Creek
SJC1 San Juan Creek Mouth – up-coast from SJCOO
S0 Doheny Beach at Outfall; surf line over SJCOO
S1 Doheny Beach Campground; 1,000' down-coast from SJCOO
DSB 4 Doheny State Beach; 1,900' down-coast from SJCOO
S3 South Day Use; 2000' down-coast from SJCOO
S5 Doheny Beach near overpass; 3000' down-coast from SJCOO
DSB 1 End of Doheny State Beach; 3500' down-coast from SJCOO

MONITORING REPORT Offshore

South Orange County Wastewater Authority

DISCHARGE: San Juan Creek Ocean Outfall
REPORT FOR: July 2017
REPORT DUE: September 1, 2017
SAMPLE SOURCE: Receiving water, nearshore and offshore
EXACT SAMPLE POINTS: As specified in permit
SAMPLES COLLECTED BY: Seaventures/SOCWA staff
SAMPLES ANALYZED BY: SOCWA Lab

REPORT FREQUENCY: Monthly
SAMPLING FREQUENCY: Monthly
TYPE OF SAMPLE: Grab

Comments: Strong Swells; Skum at A4. Low Tide 0557

Sta No.	Sample Depth	Sample Date	Total Coliform CFU/100ml SM9222B	Fecal Coliform CFU/100ml SM9222D	Entero-coccus CFU/100ml EPA 1600	Sample Time	Oil & Grease	Sewage Debris
A-1	Surface	07/12/17	<2	<2	<2	925	0	0
A-1	Mid depth	07/12/17	<10	20	<10			
A-2	Surface	07/12/17	<2	<2	<2	928	0	0
A-2	Mid depth	07/12/17	50	<10	<10			
A-3	Surface	07/12/17	<2	<2	<2	932	0	0
A-3	Mid depth	07/12/17	<10	<10	<10			
A-4	Surface	07/12/17	>=120	8	2	939	0	0
A-4	Mid depth	07/12/17	260	140	60			
A-5	Surface	07/12/17	<2	<2	<2	936	0	0
A-5	Mid depth	07/12/17	520	400	70			
B-1	Surface	07/12/17	<2	<2	<2	919	0	0
B-1	Mid depth	07/12/17	<10	10	<10			
B-2	Surface	07/12/17	<2	<2	<2	947	0	0
B-2	Mid depth	07/12/17	80	20	10			
N1	Surface	07/12/17	<2	<2	<2	908	0	0
N2	Surface	07/12/17	<2	<2	<2	906	0	0
N3	Surface	07/12/17	2	<2	<2	903	0	0
N4	Surface	07/12/17	<2	<2	<2	900	0	0
N5	Surface	07/12/17	<2	<2	<2	856	0	0
N6	Surface	07/12/17	<2	<2	<2	853	0	0

0 - None
1 - Mild
2 - Moderate
3 - Severe

REQUIREMENT: (1) Floating particulates and grease and oil shall not be visible. (2) The discharge of waste shall not cause aesthetically undesireable discoloration of the ocean surface.

Compliance Summary Report
San Juan Creek Ocean Outfall 2017

SJCOO Permit Order No. R9-2012-0012							
Agency	**Violation Date**	**Constituent**	**Effluent Limit Violation**	**Units**	**Permit Limit**	**Reported Value**	**Potential Fine**
SMWD - 3A	4/8/2017	Turbidty	Deficient Monitoring	ntu	weekly	not monitored	$3,000
SMWD - CWRP	4/17/2017	TSS	TSS Monthly Average Limit	mg/L	30	87.8	$3,000
SMWD - CWRP	4/18/2017	TSS	TSS Weekly Average Limit	mg/L	45	292	$3,000
SMWD - CWRP	4/17/2017	TSS	TSS % Removal	%	85	0	$3,000
SMWD - CWRP	4/30/2017	TSS	TSS % Removal	%	85	0	$3,000
SOCWA - Outfall	7/12/2017	Fecal Coliform	30 Day Geometric Mean	cfu/100mL	200	315	N/A

SOCWA and MEMBER AGENCY FACILITIES
SJCOO Spill / Overflow Report Log - 2017
Order No. R9-2012-0012 ~ NPDES Permit No. CA0107417

Reporting Agency	Responsible Agency	Estimated Volume (Gallons)	Type of Discharge	Location/Comments	Receiving Waters	Date Reported To State	Date Resolved
SOCWA	JB Latham Plant	100	Primary	High flows experienced at the plant.	N/A	N/A	01-22-17

Recycled Water Report

Compliance Summary Report
Recycled Water Permit
2017

Waste Discharge Requirement Order 97 - 52							
Agency - Facility	**Violation Date**	**Constituent**	**Effluent Limit Violation**	**Units**	**Permit Limit**	**Reported Value**	**Remarks**
SCWD-CTP	1/4/2017	Manganese	12-Month	mg/L	0.05	0.06	
SOCWA - RTP	1/4/2017	TDS	12-month	mg/L	1,000	1026	
SOCWA - RTP	1/4/2007	Manganese	12-Month	mg/L	0.05	0.06	
SMWD-3A	1/31/2017	Manganese	12-Month	mg/L	0.05	0.06	Plant offline in January
SOCWA - RTP	2/14/2017	TDS	12-month	mg/L	1,000	1101	
SOCWA - RTP	2/14/2017	TDS	Daily	mg/L	1,100	1101	
SOCWA - RTP	2/14/2017	Manganese	12-Month	mg/L	0.05	0.06	
SMWD-3A	2/28/2017	Manganese	12-Month	mg/L	0.05	0.06	Plant offline in February
SOCWA - RTP	3/7/2017	TDS	12-month	mg/L	1,000	1047	
SOCWA - RTP	3/7/2017	Manganese	12-Month	mg/L	0.05	0.08	
SCWD-RTP	3/7/2017	Manganese	Daily	mg/L	0.06	0.11	
SMWD-3A	3/16/2017	Manganese	Daily	mg/L	0.06	0.07	
SMWD-3A	3/16/2017	Manganese	12-Month	mg/L	0.05	0.06	
SOCWA - RTP	4/11/2017	TDS	12-month	mg/L	1000	1083	
SOCWA - RTP	4/11/2017	Manganese	12-Month	mg/L	0.05	0.08	
SMWD-3A	4/13/2017	Manganese	12-Month	mg/L	0.05	0.06	
SMWD-3A	4/13/2017	Manganese	Daily	mg/L	0.06	0.07	
SMWD-3A	5/10/2017	Manganese	12-Month	mg/L	0.05	0.06	
SCWD-CTP	5/6/2017	Coliform	Daily	cfu/100mL	23	NR*	Monitoring violation
SOCWA - RTP	5/16/2017	Manganese	12-Month	mg/L	0.05	0.07	
SMWD-OCWRP	5/21/2017	Coliform	Daily	cfu/100mL	23	1600	Possible sample contamination reported by the Chief Plant Operator
SOCWA - RTP	6/6/2017	Manganese	12-Month	mg/L	0.05	0.08	
SMWD-3A	6/8/2017	Manganese	12-Month	mg/L	0.05	0.06	
SMWD-3A	7/1/2017	Manganese	12-Month	mg/L	0.05	0.06	
SOCWA - RTP	7/4/2017	Manganese	12-Month	mg/L	0.05	0.07	

SOUTH ORANGE COUNTY WASTEWATER AUTHORITY

QUARTERLY RECYCLED WATER MONITORING

Monitoring Period Ending: Jul 31, 2017

Constituent	Units	12-month Avg Maximum Permit Limit	IRWD-LAWRP 12-month Average *	ETWD-WRP 12-month Average **	TCWD 12-month Average	SMWD Oso 12-month Average	SMWD Chiquita 12-month Average	SMWD Nichols 12-month Average	MNWD-3A 12-month Average	MNWD-RTP 12-month Average	SCWD-CTP 12-month Average ***
TDS	mg/L	1000	752	924	977	818	867	959	850	962	709
Chloride	mg/L	375	144	185	218	165	196	271	191	238	207
Sulfate	mg/L	400	194	216	250	245	223	234	220	321	254
Sodium	mg/L	None	149	159	179	140	150	217	150	180	150
Alkalinity	mg/L	None	-	-	-	-	-	-		257	185
Adjusted SAR	Ratio	None	5.10	-	4.36	4.36	4.49	83.73	4.85	4.39	4.52
Iron	mg/L	0.3	0.023	0.038	0.037	0.295	0.086	0.071	0.13	0.187	0.123
Manganese	mg/L	0.05	0.024	0.010	0.020	0.022	0.033	0.023	0.060	0.082	0.044
MBAS	mg/L	0.5	0.11	0.03	0.04	0.60	0.60	0.44	0.60	0.10	0.10
Boron	mg/L	0.75	0.36	0.280	0.339	0.290	0.320	0.350	0.29	0.347	0.27
Fluoride	mg/L	None	0.49	1.685	0.32				0.92	0.93	0.79
Total Organic Carbon	mg/L	None	8.5	-	8.3	9.3	11.2	9.8	10.5	13.0	11.0

* The LAWRP 12-month permit limits are listed below:

TDS 1000 mg/L
Chloride 180 mg/L
Sulfate 340 mg/L

**The ETWD 12-month permit limits are listed below:

TDS 910 mg/L

*** The CTP 12-month permit limits are listed below:

TDS 1200 mg/L
Chloride 400 mg/L
Sulfate 500 mg/L

SOCWA Service Area
Recycled Water Production (Ac-Ft) - 2017

Agency	Facility or Region	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Annual Totals
CSJC[1]	3-A Plant/MNWD	0.00	0.91	5.54	1.51	0.48	0.00	0.00						8.44
CSJC[2]	Chiquita/SMWD	0.30	0.02	9.60	22.50	21.70	21.00	21.90						97.02
CSJC[3]	Non-Domestic Well	3.18	4.44	NR	46.32	56.30	61.32	79.19						250.75
ETWD	Region 8	27.67	21.00	28.97	88.91	169.07	168.67	170.35						674.64
IRWD														
[4]	IRWD - 8	2.71	3.65	39.50	74.46	94.27	100.26	106.56						421.40
[4]	IRWD - 9	1.11	4.97	28.05	63.80	85.49	88.45	102.61						374.48
SCWD	SOCWA CTP	3.32	10.16	49.66	116.27	116.12	76.77	123.91						496.21
MNWD	JRP	153.48	158.57	268.68	479.15	505.02	559.34	643.09						2767.33
	3-A Plant	0.00	0.00	70.24	123.24	174.31	175.83	178.74						722.36
[5]	CTP	-1.25	4.36	2.16	18.65	12.63	-34.25	0.40						2.70
SMWD	Oso Creek	151.60	141.02	149.58	136.93	142.67	143.50	153.23						1018.53
	Chiquita	197.02	95.04	205.46	421.26	351.57	404.51	377.81						2052.67
	Nichols	1.73	1.53	1.82	1.72	1.98	2.21	2.84						13.83
TCWD	RRWRP	52.88	36.21	43.81	49.50	53.28	51.90	48.67						336.25
TOTALS		594.70	476.59	885.77	1601.56	1750.08	1832.75	1987.00	0.00	0.00	0.00	0.00	0.00	9128.45

[1] Denotes transfer of recycled water from MNWD (3A Plant) for use in the CSJC service area. Not counted as additional production.
[2] Denotes recycled water purchased from SMWD Chiquita-WRP used in the CSJC service area. Not counted as additional production.
[3] Denotes nondomestic groundwater produced from wells used for landscape irrigation.
[4] IRWD production is from recycled water production, nonpotable water wells, and surface water impoundments
[5] Denotes transfer of recycled water from SCWD (SOCWA CTP) for use in the MNWD service area. Not counted as additional production.
Note: All of ETWD reclaimed water produced and used in Region 8.
NR = No Report

Pretreatment Report

Agenda Item

	Legal Counsel Review: N/A
	Meeting Date: September 7, 2017

TO: SOCWA Board of Directors

FROM: Betty Burnett, General Manager

STAFF CONTACT: Katie Greenwood, Source Control Manager

SUBJECT: Monthly Pretreatment Report, July and August 2017
San Juan Creek Ocean Outfall
NPDES Permit #CA0107417 Order #R9-2012-0012
Aliso Creek Ocean Outfall
NPDES Permit #CA0107611 Order #R9-2012-0013

Summary of Program Activities

State contractors conducted a Pretreatment Compliance Inspection (PCI) of SOCWA's Pretreatment Program on March 23, 2017. The following two categorical industrial user (CIU) files and facilities were inspected: IRWD-Dynacast & SMWD-Applied Medical (003).

Preliminary findings were presented verbally and include the requirement to modify permit language to state that all self-monitoring performed (at the sampling location described in the permit) must be reported to SOCWA, even if the IU is monitoring more frequently than required.

Several recommendations for program improvement were also given verbally and include:

1.) SOCWA should evaluate IU facilities for the need to have a Slug Discharge Control Plan (SDCP) more frequently than federal law requires, and

2.) SOCWA Staff should be less specific as to when compliance sampling will occur over a timeframe when communicating with IUs.

- Staff anticipates receiving a formal audit report by the end of August 2017.

<u>The Dental Amalgam Rule became effective on July 14, 2017</u>. The compliance date, meaning the date that Existing Sources subject to the rule must comply with the standards in this rule, is July 14, 2020. New Sources subject to this rule must comply immediately with the standards in this rule. Staff is in the process of updating SOCWA's list of all existing dental offices. Staff created a Dental Discharger One-Time Compliance Report in advance of EPA published report. Staff is awaiting EPA Control Authority (CA) guidance and expects that a fact sheet describing the responsibility of CA's will soon be published. Staff plans to post information about the Rule along with a link to SOCWA's One-Time Compliance Report on its website. If required, Staff will conduct a mass mail-out to all Dental Users to provide the Discharger One-Time Compliance Report.

SOCWA Staff sent, via e-mail on July 14, 2017, to all MAs the appropriate reporting sheets for their necessary data submittals to assist in the production of the annual pretreatment report, which is due to the RWQCB-SD by March 1, 2018. Once received, Staff will review and enter the data into the Water Information Management Solution (WIMS) database so it can be uploaded electronically to the State CA Integrated Water Quality System (CIWQS) database. Influent and effluent data from each of the treatment plants and the narrative portion of the report will only be submitted electronically to the State.

SOCWA Staff completed the Semi-Annual Pretreatment Report narrative. This report was uploaded to the CIWQS electronic database on August 15, 2017 and a copy of the report was provided to MA's via email on August 17, 2017.

Trainings and Committee Meetings Attended

SOCWA Staff participated in a Water Emergency Response Organization of Orange County (WEROC) training event at the Municipal Water District of Orange County on August 10, 2017. The training consisted of a tabletop discussion on an unknown contamination to OC water and wastewater systems.

SOCWA Staff participated in a CalEPA Basic Inspector Academy training course from August 22-25, 2017. The course encourages cross-media awareness and covered access and entry, inspection and search warrants, interviewing skills, evidence to prove a violation, sampling, report writing, enforcement, and testimony skills.

Permit Related Activities

The following Wastewater Discharge (WD) Permits, Nuisance-water Special Wastewater Discharge (NSWD) Permits, Non-Industrial Wastewater Discharge (NIWD) forms, and BMP letters were issued or are in the process of being drafted for issuance:

SCWD – NSWD Permit Nos. N4-010 (Three Arch Bay Community Association) – Renewal NSWD Diversion Permit - Issued June 26, 2017.

SOCWA-Stormwater NSWD Permit No. S1-001 (Zephry-South Cove Property) – New Permit allows stormwater and nuisance urban runoff to discharge to JBL WWTP. - Issued 8/1/17.

CSC – WD Permit No. 2-009 (Custom Ingredients) – New, Non-SIU, Class II WD Permit to allow cleaning in place wastewater from flavor manufacturing to be discharged to sanitary sewer. – Issued August 8, 2017.

CSJC – NSWD Permit No. N4-010 (Alipaz Stormwater Diversion) – Renewal NSWD Permit to allow nuisance urban runoff to sewer facilities. - Issued August 11, 2017.

SCWD - N4-007 (Montage Resorts) – Montage Council submitted Agreement legal revisions to SCWD on July 27, 2017. SCWD Staff are working with legal to incorporate changes into the Agreement. The Permit may not be finalized until the Agreement is approved and signed by all parties.

Enforcement Events

CDP Alipaz Diversion, Alipaz Road, 1500' South of Stonehill Drive, Dana Point, CA 92629 (Permit No. CSJC-N4-001)
Issued a Warning Notice of non-Compliance (WNON) on July 25, 2017.
Site exceeded the permit flow limit on June 12, 2017.

J01P28 Diversion, Woodfield Park at Woodfield Drive/Pacific Park Drive, Aliso Viejo, CA 92656 (Permit No. MNWD-N4-001)
Issued a NON on July 26, 2017.
Site exceeded the permit flow limit over a six day period, May 5-10, 2017.

Jared the Galleria of Jewelry #2498, 28241 Marguerite Parkway, Mission Viejo, CA 92692 (Permit No. MNWD-NS1-002)

Issued a WNON on July 26, 2017.
Site submitted their Semi-Annual Certification late and past the due date of July 20, 2017.

Snowpure, 130 Calle Iglesia, San Clemente, CA 92672
(Permit No.CSC-2-006)
Issued WNON on July 28, 2017 for submitting June Report past due date of July 20, 2017.

Inspection and Monitoring Activities

SOCWA Staff has started the annual site inspections and monitoring/sampling of all SIU/CIU's in the SOCWA service area. This is a required activity of the SOCWA approved pretreatment program. The information and data obtained from these required activities will be incorporated into the SOCWA Pretreatment Annual Report.

On July 27, 2017 SOCWA Staff inspected Custom Ingredients prior to permit issuance, WD Permit No. CSC-2-009.

On August 1-2, 2017 SOCWA Staff inspected and sampled process wastewater from South Coast Fashion Jewelry, WD Permit No. CSC-1-001, to verify compliance with permit limits. Staff is awaiting laboratory results.

On August 3, 2017 SOCWA Staff inspected Control Components, WD Permit No. SMWD-2-001. The inspection was conducted to meet new EHS Manager and verify no change in processes from site.

Summary of Activities and Types of IUs in the SOCWA Service Area.
YTD through August 17, 2017.

MA		Events	Permit	NIWD	BMP	FSE	OSE	Closed	Enforcement	# of IUs
CLB	(S)	1	3	2	5	8	111	0	0	129
CSC	(M)	0	6	35	18	181	1283	0	2	1522
CSJC	(S)	0	2	27	59	137	1669	0	1	1894
ETWD	(M)	0	3	98	0	262	134	0	0	497
EBSD	(U)	0	1	0	0	0	0	0	0	1
IRWD	(S)	1	3	51	21	63	920	0	0	1058
MNWD	(S)	54	5	125	40	608	2041	7	2	2819
SMWD	(S)	44	5	20	20	183	728	2	1	956
SCWD	(S)	0	6	33	7	148	184	0	4	386
TCWD	(S)	0	11	0	0	7	33	0	0	51
SOCWA	(S)	2	3	1	0	0	0	0	2	4
Totals		88	55	392	170	1596	7097	7	8	9317
Dentist (All)										444
									Total Known IUs	**9761**

(S) = SOCWA conducts PT program.
(M) = MA conducts PT program /w SOCWA oversight.
(U) = Urban Diversion Only.

NIWD = Non-industrial Waste Discharger.
BMP = Best Management Practices.
FSE = Food Service Establishment.
OSE = Other Surveyed Establishment.
YTD = Year to Date.

Agenda Item

	Legal Counsel Review: N/A
	Meeting Date: September 7, 2017

TO: Board of Directors

FROM: Betty Burnett, General Manager

STAFF CONTACT: Brian Peck, Director of Engineering

SUBJECT: Capital Improvement Program Status Report

The status of the SOCWA Capital Improvement Program is presented in the tables on the following pages.

SOUTH ORANGE COUNTY WASTEWATER AUTHORITY
PROJECT COMMITTEE NO. 2(R) - JB LATHAM TREATMENT PLANT CAPITAL PROJECTS
('17/'18)

Task Code	*Description*	*Phase*	*Status*
CAPITAL IMPROVEMENT PROJECT LIQUIDS			
3213-000	Water System Piping Improvements (2014)	Design	Study completed. Remaining work is part of the Package 'B' Improvements.
3201-000	Aeration/Secondary Upgrade (2009)	Constuction	Part of the Package 'A/C' Improvements. Gateway Pacific has substantially completed the aeration improvements.
3214-000	4MGD Diversion Flow Meter & Control Structure (2012)	Design	Part of the Package 'B' Improvements.
3212-000	East Primary Influent Channel Repair (2015)	Design	Part of the Package 'B' Improvements.
3202-000	Preliminary and Primary Treatment Improvements (Package "B") (2016)	Design	Preliminary design completed; final design proposals due on August 30, 2017.
3280-000	Facility Improvements B - Basin Upgrades (2018)	Design	Preliminary design completed; final design proposals due on August 30, 2017.
3203-000	Effluent Standby Generator ATS Replacement (2016)	Constuction	Part of the Package 'A/C' Improvements. Gateway Pacific has substantially completed the ATS replacement.
3252-000	Plant 1 Standby Power Generator Replacement (2017)	Design	SOCWA staff reviewed 95% complete design transmittal; design is proceeding.
3251-000	Effluent Flow Meter Replacement (2017)	Design	SOCWA staff reviewed 95% complete design transmittal; design is proceeding.
3250-000	Plant 1 Grit Basin Improvements (2017)	Design	SOCWA staff reviewed 95% complete design transmittal; design is proceeding.
3253-000	Effluent System Valve Replacement (2017)	Design	SOCWA staff reviewed 95% complete design transmittal; design is proceeding.
3285-000	Main Plant Drain Line Reconstruction (2018)	Construction	Part of the Package 'B' Improvements.
3204-000	Facility Improvements - Structural Repair (2015)	Constuction	Part of the Package 'A/C' Improvements. Gateway Pacific has substantially completed the structural improvements.

SOUTH ORANGE COUNTY WASTEWATER AUTHORITY
PROJECT COMMITTEE NO. 2(R) - JB LATHAM TREATMENT PLANT CAPITAL PROJECTS
('17/'18)

Task Code	*Description*	*Phase*	*Status*
CAPITAL IMPROVEMENT PROJECT COMMON			
3218-000	Energy Building Roof Reconstruction (2015)	Design	Part of the Package 'B' Improvements.
3206-000	Diesel Storage Tank (2016)	Construction	Installation of the new storage tank has been substantially completed.
4014-000	Foul Air System Evaluation (2016) (NCP)	Study	DHK Engineering scheduled to transmit draft document during the last week of August, 2017.
3205-000	West Side Power System Upgrade (2013)	Constuction	Part of the Package 'A/C' Improvements. Gateway Pacific has substantially completed the power supply upgrade.
3216-000	Hoist System for Maintenance Shop (2013)	Design	Part of the Package 'B' Improvements.
3286-000	PLC Upgrades (2018)	Construction	Project underway by SOCWA Operations department.
4001-000	Plant Drain System Study (2017) (NCP)	Study	RFP to be issued in November, 2017.
CAPITAL IMPROVEMENT PROJECT SOLIDS			
3209-000	Facility Improvements - Co-Generation Reconstruction (2015)	Construction	Part of the Package 'A/C' Improvements. Gateway Pacific has substantially completed the cogeneration upgrade.
3287-000	Facility Improvements B - DAFT and Ancillary Solids Improvements (2018)	Design	Preliminary design completed; final design proposals due on August 30, 2017.
4002-000	Dewatering System Condition Assessment (2017) (NCP)	Condition Assessment	Carollo Engineers has completed the condition assessment; working on the performance assessment.
4003-000	Heating System Condition Assessment (2017) (NCP)	Condition Assessment	Carollo Engineers has completed the condition assessment; working on the performance assessment.
3210-000	Facility Improvements - Solids Area (2015)	Design	Preliminary design completed; final design proposals due on August 30, 2017.

SOUTH ORANGE COUNTY WASTEWATER AUTHORITY
PROJECT COMMITTEE NO. 5 - SAN JUAN CREEK OCEAN OUTFALL CAPITAL PROJECTS
('17/'18)

Task Code	*Description*	*Phase*	*Status*
CAPITAL IMPROVEMENT PROJECTS			
3601-000	Junction Structure Rehabilitation Design	Design	Black & Veatch and Dudek are currently working on resource agency and Coastal Commission permit applications.
4004-000	Emergency Plan Development (2016) (NCP)	Study	Draft plan submittal expected in August, 2017.
4005-000	Dilution Study (2017) (NCP)	Study	Presented to Engineeing Committee on July 13, 2017.

SOUTH ORANGE COUNTY WASTEWATER AUTHORITY
PROJECT COMMITTEE NO. 15(R) - COASTAL TREATMENT PLANT CAPITAL PROJECTS
('17/'18)

Task Code	Description	Phase	Status
CAPITAL IMPROVEMENT PROJECTS LIQUIDS			
1367	Export Sludge Line Repair & Rip Rap (R - 2) (2012)	Design	Protection in this area has been largely addressed through the routing of the new Export Sludge pipeline as well as through minor embankment protection features that will be integrated with Export Sludge System replacement.
3504-000	Aeration System Modification Design (2015)	Design	CH2MHill has completed this work.
3507-000	East Primary Influent Gates (2015)	Construction	This item is part of the Miscellaneous Improvements 2017 project; Olsson Contruction is mobilizing on site in September, 2017.
3508-000	Grit System Knife Gate Valve Replacement (2015)	Construction	This item is part of the Miscellaneous Improvements 2017 project; Olsson Contruction is mobilizing on site in September, 2017.
3509-000	Switchgear Replacement Design (2016)	Design	This is part of the Facility Improvements Project; a final design RFP is expected to be issued in September, 2017.
3593-000	Primary Sludge Valve Replacement (2018)	Design	An RFP for design services will be issued for this project in October, 2017.
3595-000	Primary Device Electrical Conduit and Conductor Replacement (2018)	Design	An RFP for design services will be issued for this project in October, 2017.
3514-000	CTP Facility Upgrade Design (2016)	Study	This is part of the Facility Improvements Project; a final design RFP is expected to be issued in August, 2017.
3534-000	Export Sludge System (1997)	Design	Staff conducted a fourth review meeting with the USFWS in August, 2017; a pathway to completing the permitting was identified.
3510-000	Grating Rebate and Concrete Repair Between Aeration Basins and Primary Basins (2016)	Construction	This item is part of the Miscellaneous Improvements 2017 project; Olsson Contruction is mobilizing on site in September, 2017.
3512-000	Grating Rebate and Concrete Repair Between HW Building and Primary Basins (2016)	Construction	This item is part of the Miscellaneous Improvements 2017 project; Olsson Contruction is mobilizing on site in September, 2017.

SOUTH ORANGE COUNTY WASTEWATER AUTHORITY
PROJECT COMMITTEE NO. 15(R) - COASTAL TREATMENT PLANT CAPITAL PROJECTS
('17/'18)

Task Code	***Description***	***Phase***	***Status***
CAPITAL IMPROVEMENT PROJECTS LIQUIDS			
3550-000	Export Sludge Pump Addition (2017)	Construction	This item is part of the Miscellaneous Improvements 2017 project; Olsson Contruction is mobilizing on site in September, 2017.
3594-000	PLC Replacement (2018)	Construction	Project underway by SOCWA Operations department.
3592-000	Facility Improvements Project Design (2018)	Design	The final design RFP is expected to be issued in Septebmer, 2017.
3553-000	Plant Drainage Improvements (2017)	Design	The draft technical memorandum form TetraTech is currently under review by SOCWA staff.
3554-000	Odor Scrubber Bleach Tank Replacement (2017)	Construction	This item is part of the Miscellaneous Improvements 2017 project; Olsson Contruction is mobilizing on site in September, 2017.
3503-000	Scrubber Upgrade (2013)	Construction	This item is part of the Miscellaneous Improvements 2017 project; Olsson Contruction is mobilizing on site in September, 2017.
4015-000	Conceptual Building Design (2017) (NCP)	Study	AECOM has completed the first phase of work regarding the Vehicle Storage Building.

SOUTH ORANGE COUNTY WASTEWATER AUTHORITY
PROJECT COMMITTEE NO. 15(R) - COASTAL TREATMENT PLANT CAPITAL PROJECTS
('17/'18)

Task Code	***Description***	***Phase***	***Status***
CAPITAL IMPROVEMENT PROJECT AWT			
3562-000	AWT Applied Water Pump Replacement (2017)	Construction	This item is part of the Miscellaneous Improvements 2017 project; this project is in shop drawing phase.
4006-000	Effluent Equalization System Condition Assessment (2017) (NCP)	Condition Assessment	Project completed.
4007-000	Contact Basins Condition Assessment (2017) (NCP)	Condition Assessment	Project completed.
3596-000	Applied Water VFD Pump Panel and Electrical (2018)	Design	An RFP for design services will be issued for this project in October, 2017.
3597-000	MCC A Replacement Design (2018)	Design	An RFP for design services will be issued for this project in October, 2017.
3517-000	AWT Backwash Water Pump Replacement (2016)	Construction	This item is part of the Miscellaneous Improvements 2017 project; Olsson Contruction is mobilizing on site in September, 2017.

SOUTH ORANGE COUNTY WASTEWATER AUTHORITY
PROJECT COMMITTEE NO. 17(R) - REGIONAL TREATMENT PLANT CAPITAL PROJECTS
('17/'18)

Task Code	Description	Phase	Status
CAPITAL IMPROVEMENT PROJECT LIQUIDS			
3701-000	Secondary Electrical System Rerouting (2014)	Design	Lee & Ro has submitted 30% complete documents for SOCWA review.
3730-000	Primary Gallery Upgrade (2014)	Design	The design project has been awarded to Lee & Ro.
3702-000	Waste Activated Sludge VFD Control Panel (2013)	Design	The design project kick-off meeting was held with Lee & Ro on July 12, 2017.
3704-000	Odor Control Scrubber Control Panel No. 1 (2013)	Design	This project pending completion of odor technology evaluation.
3707-000	Influent Manholes 1 and 2 and Sewer Repair (2016)	Construction	Part of the RTP Miscellaneous Improvements 2016 Project; this work is substantilly completed.
3708-000	Influent Junction Structure Gate Replacement (2016)	Construction	Part of the RTP Miscellaneous Improvements 2016 Project; this work is substantilly completed.
201617RL3	Influent Junction Structure and Pipe Condition Assessment (2016) (NCP)	Condition Assessment	V&A Consultants performed this work during the week of July 17, 2017.
3710-000	AWT Water Quality Instrumentation (2016)	Construction	Part of the RTP Miscellaneous Improvements 2016 Project; this work is substantilly completed.
3712-000	Grit Basin Drop Gate and Weir Replacement (2016)	Construction	This is part of the RTP Miscellaneous Improvements 2016 Project. Pacific Hydrotech is currently performing the field work.
3752-000	AWT No.2 Upgrade Design (2017)	Design	Carollo Engineers is proceeding with the design.
3781-000	Primary Scum Skimmer Replacement (2018)	Design	The design project has been awarded to Lee & Ro.
3784-000	DAF (Mannich) Polymer System Replacement (2018)	Design	The design project has been awarded to Lee & Ro.

SOUTH ORANGE COUNTY WASTEWATER AUTHORITY
PROJECT COMMITTEE NO. 17(R) - REGIONAL TREATMENT PLANT CAPITAL PROJECTS
('17/'18)

Task Code	Description	Phase	Status
CAPITAL IMPROVEMENT PROJECT LIQUIDS			
3785-000	DAF Dissolution Tank System Replacement (2018)	Design	The design project has been awarded to Lee & Ro.
3786-000	Primary Gallery Mechanical and Electrical Upgrade (2018)	Design	The design project has been awarded to Lee & Ro.
3787-000	Aeration Area Upgrade Design (2018)	Design	An RFP for design services will be issued for this project in September, 2017.
201717RL1	Effluent Equalization Pond and Gate Condition Assessment (2017) (NCP)	Condition Assessment	Project has been awarded to V&A consultants; assessments to be performed in December, 2017.
201617RL5	Primary Influent Channel Condition Assessment (2016) (NCP)	Condition Assessment	Project has been awarded to V&A consultants; assessments to be performed in August, 2017.
CAPITAL IMPROVEMENT PROJECT COMMON			
3715-000	Switchgear Upgrade (2006)	Construction	Pacific Hydrotech is currently working on the electrical connections for Panel SSG.
3760-000	Develop Buried Piping Reconstruction Master Plan (2017)	Study	Lee & Ro is working on finalizing the master plan based on SOCWA comments.
3761-000	External Lighting Upgrade (2017)	Design	The design project has been awarded to Lee & Ro.
3762-000	Secondary Access Road CEQA (2017)	Permitting	Purchase order issued to Dudek to perform CEQA work.
3788-000	PLC Upgrade (2018)	Construction	Project underway by SOCWA Operations Dept.
3717-000	Security Fencing (2015)	Construction	Part of the RTP Miscellaneous Improvements 2016 Project; this work is substantilly completed.
3718-000	Access Bridge Upgrades (2015)	Construction	Part of the RTP Miscellaneous Improvements 2016 Project; this work is substantilly completed.

SOUTH ORANGE COUNTY WASTEWATER AUTHORITY
PROJECT COMMITTEE NO. 17(R) - REGIONAL TREATMENT PLANT CAPITAL PROJECTS
('17/'18)

Task Code	Description	Phase	Status
CAPITAL IMPROVEMENT PROJECT SOLIDS			
3720-000	Digester Dome Recoating (2014)	Construction	Pacific Hydrotech has sustantially completed this work.
1478	Underground Piping Upgrade (2006)	Construction	Pacific Hydrotech has sustantially completed this work.
3722-000	Co-Generation System Retrofit (2008)	Construction	Pacific Hydrotech is currently working on the electrical and control wiring for the new engine generator.
3790-000	Solids Area Upgrade Design (2018)	Design	An RFP for design services will be issued for this project in October, 2017.
3723-000	Recoat Top of Digesters (2016)	Construction	Pacific Hydrotech has substantially completed the recoating work.

SOUTH ORANGE COUNTY WASTEWATER AUTHORITY
PROJECT COMMITTEE NO. 21 - EFFLUENT TRANSMISSION MAIN CAPITAL PROJECTS
('17/'18)

Task Code	*Description*	*Phase*	*Status*
CAPITAL IMPROVEMENT PROJECTS			
3601-000	Reach B/C Techite Pipeline Replacement Concept Update (Reach B/C)	Study	TetraTech retained to update study; draft technical memorandum expected in August, 2017.
3181-000	Air Vacuum Release Valve Replacement Reach D (2018)	Construction	Evaluating valve size prior to procurement.
3182-000	Air Vacuum Release Valve Replacement Reach E (2018)	Construction	Evaluating valve size prior to procurement.
4004-000	Trail Bridge Creek Crossing Protection (Reach D)	Design	RFP for design has been issued; proposals due on August 31, 2017.

SOUTH ORANGE COUNTY WASTEWATER AUTHORITY
PROJECT COMMITTEE NO. 24 - ALISO CREEK OCEAN OUTFALL CAPITAL PROJECTS
('17/'18)

Task Code	*Description*	*Phase*	*Status*
CAPITAL IMPROVEMENT PROJECTS			
3480-000	Internal Seal Replacement (2018)	Design	Issue RFP in November, 2017.
4004-000	Emergency Plan Development (2016) (NCP)	Study	Draft plan submittal expected in August, 2017.

SOUTH ORANGE COUNTY WASTEWATER AUTHORITY
PROJECT COMMITTEE NO. 2(R) - JB LATHAM TREATMENT PLANT CAPITAL PROJECTS

Task Code	Description	Fiscal Year 17/18				Fiscal Year 18/19	
		1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	1st Qtr	2nd Qtr
FACILITY IMPROVEMENTS PACKAGES A/C		C					
3203-000	Effluent Standby Generator ATS Replacement (2016)	C					
3204-000	Facility Improvements - Structural Repair (2015)	C					
3205-000	West Side Power System Upgrade (2013)	C					
3209-000	Facility Improvements - Co-Generation Reconstruction (2015)	C					
FACILITY IMPROVEMENTS PACKAGE B		D	D	D	B&A	C	C
3213-000	Water System Piping Improvements (2014)	D	D	D	B&A	C	C
3214-000	4MGD Diversion Flow Meter & Control Structure (2012)	D	D	D	B&A	C	C
3202-000	Preliminary and Primary Treatment Improvements (Package "B") (2016)	D	D	D	B&A	C	C
3285-000	Main Plant Drain Line Reconstruction (2018)	D	D	D	B&A	C	C
3280-000	Facility Improvements B - Basin Upgrades (2018)	D	D	D	B&A	C	C
3287-000	Facility Improvements B - DAFT (2018)	D	D	D	B&A	C	C
3212-000	East Primary Influent Channel Repair (2015)	D	D	D	B&A	C	C
3218-000	Energy Building Roof Reconstruction (2015)	D	D	D	B&A	C	C
3216-000	Hoist System for Maintenance Shop (2013)	D	D	D	B&A	C	C
3210-000	Facility Improvements - Solids Area (2015)	D	D	D	B&A	C	C

SOUTH ORANGE COUNTY WASTEWATER AUTHORITY
PROJECT COMMITTEE NO. 2(R) - JB LATHAM TREATMENT PLANT CAPITAL PROJECTS

Task Code	Description	Fiscal Year 17/18				Fiscal Year 18/19	
		1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	1st Qtr	2nd Qtr
MISCELLANEOUS IMPROVEMENTS 2017		D	B&A	C	C	C	C
3252-000	Plant 1 Standby Power Generator Replacement (2017)	D	B&A	C	C	C	C
3251-000	Effluent Flow Meter Replacement (2017)	D	B&A	C	C	C	C
3250-000	Plant 1 Grit Basin Improvements (2017)	D	B&A	C	C	C	C
3253-000	Effluent System Valve Replacement (2017)	D	B&A	C	C	C	C

INDEPENDENT PROJECTS							
4014-000	Foul Air System Evaluation (2016) (NCP)	P					
3286-000	PLC Upgrades (2018)	C	C	C	C		
4001-000	Plant Drain System Study (2017) (NCP)	P	P				
4002-000	Dewatering System Condition Assessment (2017) (NCP)	CA					
4003-000	Heating System Condition Assessment (2017) (NCP)	CA					

SOUTH ORANGE COUNTY WASTEWATER AUTHORITY
PROJECT COMMITTEE NO. 15(R) - COASTAL TREATMENT PLANT CAPITAL PROJECTS

Task Code	Description	Fiscal Year 17/18				Fiscal Year 18/19	
		1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	1st Qtr	2nd Qtr
MISCELLANEOUS IMPROVEMENTS 2017		C	C	C			
3507-000	East Primary Influent Gates (2015)	C	C	C			
3508-000	Grit System Knife Gate Valve Replacement (2015)	C	C	C			
3510-000	Grating Rebate and Concrete Repair Between Aeration Basins and Primary Basins (2016)	C	C	C			
3512-000	Grating Rebate and Concrete Repair Between HW Building and Primary Basins (2016)	C	C	C			
3550-000	Export Sludge Pump Addition (2017)	C	C	C			
3554-000	Odor Scrubber Bleach Tank Replacement (2017)	C	C	C			
3503-000	Scrubber Upgrade (2013)	C	C	C			
3562-000	AWT Applied Water Pump Replacement (2017)	C	C	C			
3517-000	AWT Backwash Water Pump Replacement (2016)	C	C	C			
FACILITY IMPROVEMENTS PACKAGE		D	D	D	D	B&A	C
3504-000	Aeration System Modification Design (2015)	D	D	D	D	B&A	C
3592-000	Facility Improvements Project Design (2018)	D	D	D	D	B&A	C
3509-000	Switchgear Replacement Design (2016)	D	D	D	D	B&A	C
3514-000	CTP Facility Upgrade Design (2016)	D	D	D	D	B&A	C

SOUTH ORANGE COUNTY WASTEWATER AUTHORITY
PROJECT COMMITTEE NO. 15(R) - COASTAL TREATMENT PLANT CAPITAL PROJECTS

Task Code	Description	Fiscal Year 17/18				Fiscal Year 18/19	
		1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	1st Qtr	2nd Qtr
MISCELLANEOUS IMPROVEMENTS 2018			D	D	B&A	C	C
3593-000	Primary Sludge Valve Replacement (2018)		D	D	B&A	C	C
3595-000	Primary Device Electrical Conduit and Conductor Replacement (2018)		D	D	B&A	C	C
3597-000	MCC-A Replacement (2018)		D	D	B&A	C	C
3596-000	Applied Water VFD Pump Panel and Electrical (2018)		D	D	B&A	C	C
EXPORT SLUDGE SYSTEM REPLACEMENT		ENV	ENV	B&A	C	C	C
1367	Export Sludge Line Repair & Rip Rap (R - 2) (2012)	ENV	ENV	B&A	C	C	C
3534-000	Export Sludge System (1997)	ENV	ENV	B&A	C	C	C
INDEPENDENT PROJECTS							
3594-000	PLC Replacement (2018)	C	C	C	C		
3553-000	Plant Drainage Improvements (2017)	D	B&A	C			
4015-000	Conceptual Building Design (2017) (NCP)	P					

SOUTH ORANGE COUNTY WASTEWATER AUTHORITY
PROJECT COMMITTEE NO. 17(R) - REGIONAL TREATMENT PLANT CAPITAL PROJECTS

Task Code	Description	Fiscal Year 17/18				Fiscal Year 18/19	
		1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	1st Qtr	2nd Qtr
MISCELLANEOUS IMPROVEMENTS 2016		C					
3707-000	Influent Manholes 1 and 2 and Sewer Repair (2016)	C					
3708-000	Influent Junction Structure Gate Replacement (2016)	C					
3710-000	AWT Water Quality Instrumentation (2016)	C					
3712-000	Grit Basin Drop Gate and Weir Replacement (2016)	C					
3717-000	Security Fencing (2015)	C					
3718-000	Access Bridge Upgrades (2015)	C					
3723-000	Recoat Top of Digesters (2016)	C					
MISCELLANEOUS IMPROVEMENTS 2017		D	D	B&A	C	C	C
3701-000	Secondary Electrical System Rerouting (2014)	D	D	B&A	C	C	C
3702-000	Waste Activated Sludge VFD Control Panel (2013)	D	D	B&A	C	C	C
3730-000	Primary Gallery Upgrade (2014)	D	D	B&A	C	C	C
3781-000	Primary Scum Skimmer Replacement (2018)	D	D	B&A	C	C	C
3784-000	DAF (Mannich) Polymer System Replacement (2018)	D	D	B&A	C	C	C
3785-000	DAF Dissolution Tank System Replacement (2018)	D	D	B&A	C	C	C
3786-000	Primary Gallery Mechanical and Electrical Upgrade (2018)	D	D	B&A	C	C	C
3761-000	External Lighting Upgrade (2017)	D	D	B&A	C	C	C

SOUTH ORANGE COUNTY WASTEWATER AUTHORITY
PROJECT COMMITTEE NO. 17(R) - REGIONAL TREATMENT PLANT CAPITAL PROJECTS

Task Code	Description	Fiscal Year 17/18				Fiscal Year 18/19	
		1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	1st Qtr	2nd Qtr
COGENERATION AND SWITCHGEAR UPGRADE		C	C				
3715-000	Switchgear Upgrade (2006)	C	C				
3720-000	Digester Dome Recoating (2014)	C	C				
1478	Underground Piping Upgrade (2006)	C	C				
3722-000	Co-Generation System Retrofit (2008)	C	C				
MISCELLANEOUS IMPROVEMENTS 2017			D	D	B&A	C	C
3787-000	Aeration Area Upgrade Design (2018)		D	D	B&A	C	C
3752-000	AWT No.2 Upgrade Design (2017)	D	D		B&A	C	C
3790-000	Solids Area Upgrade Design (2018)		D	D	B&A	C	C
INDEPENDENT PROJECTS							
3704-000	Odor Control Scrubber Control Panel No. 1 (2013)						
201617RL3	Influent Junction Structure and Pipe Condition Assessment (2016) (NCP)	CA					
201717RL1	Effluent Equalization Pond and Gate Condition Assessment (2017) (NCP)		CA	CA			
201617RL5	Primary Influent Channel Condition Assessment (2016) (NCP)	CA					
3760-000	Develop Buried Piping Reconstruction Master Plan (2017)	P					
3762-000	Secondary Access Road CEQA (2017)	ENV					
3788-000	PLC Upgrade (2018)	C	C	C	C		

Agenda Item

Budgeted: Yes
Budget amount: $13,295,000.00
Line Items: PC 17 Tasks 3715-000, 3720-000, 3721-000, and 3722-000
Legal Counsel Review: No
Meeting Date: September 7, 2017

TO: Project Committee 17

FROM: Betty Burnett, General Manager

STAFF CONTACT: Brian Peck, Director of Engineering

SUBJECT: Change Orders to Carollo Engineers Construction Services Contract for the Regional Treatment Plant Cogeneration and Switchgear Upgrade Project

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Recommendation

The Engineering Committee recommends that the Board of Directors approve Change Orders 2, 3, 4, 5, and 6 to the construction services contract with Carollo Engineers for the Regional Treatment Plant Cogeneration and Switchgear Upgrade Project.

Change Orders

1. Recommend Change Orders 3 and 4 to the construction services contract for the Switchgear Upgrade (PC 17, Task 3715-000).

CO #	CO Item	Description	Change Order Price	Cumulative Change Order*	Status
3	SCE Coordination	Assisted SOCWA in working with SCE regarding zero net metering plan.	$11,070.00	$90,884.00	SOCWA Engineering Committee Recommended
4	Island Mode Operation	Review existing load shed system to determine impact on island mode operation.	$5,732.00	$96,616.00	SOCWA Engineering Committee Recommended

* Total change order price associated with that specific task code.

2. Recommend Change Orders 2, 5 and 6 for the Cogeneration Upgrade (PC 17, Task 3722-000)

CO #	CO Item	Description	Change Order Price	Cumulative Change Order	Status
2	SGIP Coordination	Prepared and processed two extensions for start-up time for new co-generation in order to maintain SGIP grant funding.	$4,240.00	$4,240.00	SOCWA Engineering Committee Recommended
5	Coordination with AQMD Regarding Engine Permitting	Provided assistance to SOCWA and AQMD staff in addressing questions on CEMS, catalyst and pre-treatment systems for development of permits.	$11,784.00	$16,024.00	SOCWA Engineering Committee Recommended
6	Additional Submittal and RFI Review	Number of RFI reviews increased from 120 (scope per Order No.1) to 126 and number for shop drawing reviews increased from 190 (scope per Change Order No.1) to 306.	$22,164.00	$38,188.00	SOCWA Engineering Committee Recommended

∗ Cumulative for specific budget task code.

Advisory Status

Reviewed and recommended by the SOCWA Engineering Committee on August 10, 2017.

Financial Status

Original Contract Amount:	____$	298,428.00
Net change by previous change orders:	____$	79,814.00
Contract amount prior to this change order:	____$	378,242.00
Net increase, decrease due to this change order:	____$	54,990.00
New contract amount, including this change order:	____$	433,232.00

The overall project remains within budget. The allocation of the change order costs is shown below.

Task	**Task 3715-000**	**Task 3722-000**	
Member Agency	**Common**	**Solids**	**Total**
El Toro Water District	$1,723.89	$7,794.17	$9,518.06
Emerald Bay Service District	$55.45	$225.31	$280.76
City of Laguna Beach	$1,053.49	$4,284.69	$5,338.18
Moulton Niguel Water District	$13,127.40	$22,462.18	$35,589.58
South Coast Water District	$841.78	$3,421.64	$4,263.43
Total	**$16,802.00**	**$38,188.00**	**$54,990.00**

The overall project remains within budget. The revised project ledger is presented in Table 1.

Table 1
Project Cost Ledger: Regional Treatment Plant
Cogeneration and Switchgear Upgrades

(Millions)

	Switchgear Upgrade	Underground Piping Relocation	Digester Recoating	Co-Generation Upgrade	Total
Budget (2016/17)	**3.650**	**0.636**	**1.024**	**7.985**	**13.295**
Budget Task Codes	**3715-000**	**3721-000**	**3720-000**	**3722-000**	
Actual Bid Costs-Constr.	1.930	0.156	0.316	6.520	8.922
Construction Change Orders	0.452	0.000	0.000	0.059	0.511
Previous Costs (Prior Construct and Design)	0.365	0.292	0.621	0.443	1.721
Contingency	0.138	0.148	0.057	0.447	0.790
Construction Management	0.094	0.007	0.030	0.162	0.294
Construction Management Change Order No.1	0.191	0.000	0.000	0.035	0.226
Construction Management Change Order No.2	0.124	0.000	0.000	0.124	0.248
Construction Services	0.110	0.033	0.000	0.156	0.298
Construction Services Change Order No.1	0.080	0.000	0.000	0.000	0.080
Construction Services Change Order No.2	0.017	0.000	0.000	0.038	0.055
Southern California Edison (SCE)	0.150	0.000	0.000	0.000	0.150
Total Project Costs	**3.650**	**0.636**	**1.024**	**7.985**	**13.295**
Spending					
Total Current Spending	(2.300)	(0.610)	(0.960)	(6.500)	(10.370)
Remaining Spending	(1.350)	(0.026)	(0.064)	(1.485)	(2.925)
Remaining Budget	**1.350**	**0.026**	**0.064**	**1.485**	**2.925**
***Grants**				**1.700**	**1.700**
Net SOCWA Costs	**3.650**	**0.636**	**1.024**	**6.285**	**11.595**

Agenda Item

Budgeted: Yes
Budget amount: $1,860,000.00
Line Items: PC 17 Tasks 3707-000, 3708-000, 3712-000, 3713-000, 3717-000, 3718-000, 3710-000, and 3723-000
Legal Counsel Review: No
Meeting Date: September 7, 2017

TO: Project Committee 17

FROM: Betty Burnett, General Manager

STAFF CONTACT: Brian Peck, Director of Engineering

SUBJECT: Change Order to Pacific Hydrotech Contract for the Regional Treatment Plant Miscellaneous Improvements 2016 Project

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Recommendation

The Engineering Committee recommends that the Board of Directors approve Change Orders 2 and 3 to the construction contract with Pacific Hydrotech for the Regional Treatment Plant Miscellaneous Improvements 2016 Project.

Change Orders

1. Approve Change Order 2 for the Bridge and Bridge Approach Improvements (PC 17, Tasks 3717-000 and 3718-000)

CO #	CO Item	Description	Change Order Price	Total Change Order Price*	Status
2	Additional Chain-link Fencing	Based on a recommendation from SOCWA staff, additional fencing was added on the southwest side of the bridge to further prevent hikers from entering the facility.	$3,304.95	$16,688.69	SOCWA Engineering Committee Recommended

2. Recommend Change Order 3 for the Influent Manholes 1 & 2, and Sewer Rehab (PC 17, Task 3707-0000)

CO #	CO Item	Description	Change Order Price	Cumulative Change Order	Status
3	Additional Structural Repairs; Credit for Sewer Rehabilitation	Manholes 1 and 2 and connections to the Junction Structure required additional work and materials to bring them within the design specifications. Scouring and detached T-Lock were causing further deterioration of the structures. Repairs on the 42" RCP line were delayed for further review.	$27,142.18	$27,142.18	SOCWA Engineering Committee Recommended

∗ Cumulative for specific budget task code.

Advisory Status

Reviewed and recommended by the SOCWA Engineering Committee on August 10, 2017.

Financial Status

Original Contract Amount:	____$	1,451,200.00
Net change by previous change orders:	____$	13,383.74
Contract amount prior to this change order:	____$	1,464,583.74
Net increase, decrease due to this change order:	____$	30,447.13
New contract amount, including this change order:	____$	1,495,030.87

The overall project remains within budget. The revised project ledger is presented in Table 1. The allocation of the change order costs is shown below.

Task	Task 3717-000 and 3718-000	Task 3707	Total
Member Agency	**Common**	**Liquids**	
El Toro Water District	$339.09		$339.09
Emerald Bay Service District	$10.91		$10.91
City of Laguna Beach	$207.22		$207.22
Moulton Niguel Water District	$2,582.16	$27,142.18	$29,724.34
South Coast Water District	$165.58		$165.58
Total	**$3,304.95**	**$27,142.18**	**$30,447.13**

Table 1

Project Cost Ledger: Regional Treatment Plant
Miscellaneous Improvements 2016
(Millions)

	Influent Sewer System Upgrade	Grit Basin Stop Gates and Weirs	Bridge and Bridge Approach Imps.	Digester Roofing System Rehab,	Water Quality Inst. Replace-ment	Total
Budget (2016/2017)	**0.860**	**0.400**	**0.290**	**0.225**	**0.085**	**1.860**
Budget Task Codes	**3707/3708**	**3712/3713**	**3717/3718**	**3723**	**3710**	
Actual Bid Costs-Constr.	0.784	0.275	0.170	0.165	0.058	1.451
Construction Change Orders	0.027	0.000	0.017	0.000	0.000	0.044
Study & Design (Upfront Costs)	0.025	0.025	0.050	0.010	0.000	0.110
Contingency	-0.0006	0.0900	0.0033	0.0254	0.0271	0.1452
Construction Management	0.025	0.010	0.005	0.025	0.000	0.065
Gate Installation	0.000	0.000	0.045	0.000	0.000	0.045
Total Project Costs	**0.860**	**0.400**	**0.290**	**0.225**	**0.085**	**1.860**
Spending						
Total Current Spending	(0.550)	(0.050)	(0.220)	(0.195)	(0.058)	(0.853)
Remaining Spending	(0.310)	(0.350)	(0.070)	(0.030)	(0.027)	(0.717)
Remaining Budget	0.000	0.000	0.000	0.000	0.000	0.000

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Agenda Item

Budgeted:	Yes
Budget amount:	$7,422,870
Line Item:	PC 2 Task 3201-000
Legal Counsel Review:	No
Meeting Date:	September 7, 2017

TO: Project Committee 2 Board of Directors

FROM: Betty Burnett, General Manager

STAFF CONTACT: Brian Peck, Director of Engineering

SUBJECT: Construction Contract Award for the J. B. Latham Treatment Plant Blower Building No.1 Concrete Crack Repair Project

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Summary

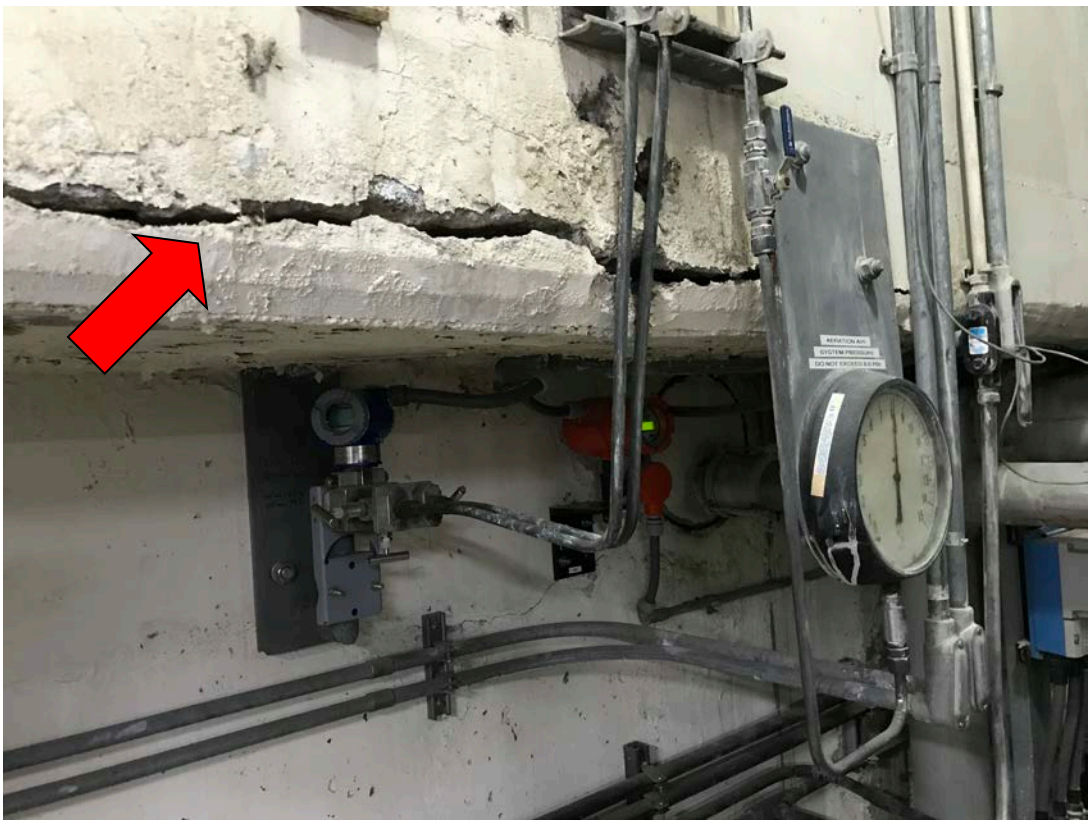
This agenda item provides a recommendation for the award of a construction contract to the S.S. Mechanical Construction Company for the J. B. Latham Treatment Plant (JBLTP) Blower Building No. 1 Concrete Crack Repair Project.

Background

Blower Building No.1 was constructed in 1965. The building contains the back-up multi-stage blowers, the raw sewage pumps, the return activated sludge (RAS) pumps, the waste activated sludge (WAS) pumps, and the primary sludge withdrawal control valves for Plant No.1. The building also controls the motor control centers, variable frequency drives, and the programmable logic controller that support a large portion of the work within Plant No.1. In addition, the building contains the automatic transfer switch for the Plant No.1 Standby Power Generator.

The proposed project will address a large crack that has developed on the west wall of the Plant No.1 Blower Building (see photograph below). The crack is approximately 12 feet long. The crack passes the west wall of the building to an abandoned step feed channel for Aeration Basin No.1. Water from the channel appears to have seeped into what were originally small cracks on the concrete wall over the life of the facility. The water has corroded the reinforcing steel in a cantilevered section. As the strength in the reinforcing steel was lost, the unsupported section of the cantilever began to significantly crack. The original intent was to address this rehabilitation as part of the work in Package ‘B’. However, the heavy rains during the winter of 2016/2017 resulted in significant leakage into the building. Failure of the cantilevered section of the wall is both a safety hazard and a threat to equipment, piping and electrical conduit in the vicinity. In addition, further widening of the crack could expose the interior of the building to flooding during a wet weather event.

SOCWA staff has determined to perform this structural improvement as an independent project.



Discussion/Analysis

Proposal Process

The proposed project was anticipated to have a construction cost less than $100,000. SOCWA staff determined to manage the procurement through a proposal process rather than a bid process. Requests for proposals (RFP's) were made available to the following list of contractors:

- Gateway Pacific
- Olsson Construction
- S.S. Mechanical

Three proposals were received on July 26, 2017. The costs of the proposals are summarized below.

Proposing Contractor	Proposed Fee
Gateway Pacific	$98,829.00
Olsson Construction	$91,134.00
S.S. Mechanical Construction	$53,775.00

It is clear in comparing the proposals that Gateway and Olsson share a similar understanding and pricing for the work. The proposal pricing was reviewed with S.S. Mechanical Construction.

They indicated that the lower cost was largely related to overhead. They stood behind their proposal.

Advisory Committee Review

The J. B. Latham Treatment Plant Blower Building No.1 Crack Repair was reviewed by the Engineering Committee for Project Committee 2 on August 10, 2017. The four Project Committee 2 members were supportive of the work. However, the representative from the Moulton Niguel Water District (MNWD) questioned whether the project should be accounted as a capital expense.

Fiscal Impact

The controlling language for the cost allocation of the work is in Section 6.3.1(b) of the Joint Powers Authority (JPA) Agreement describing costs "not directly related to use" which is consistent with this capital repair project. SOCWA staff has recommended that other capital funding not expended at the Latham Plant for liquids projects to date should be utilized to fund this building repair. Consistent with the 2005 Capitalization & Depreciation Policy the improvement will be "actual physical" construction to improve the existing physical structure. The cost of the improvement will exceed $5,000.

The proposed fee for the work is $53,775.00. It is recommended that the work carry a 25% contingency (approximately $13,500) due to the uncertainty of the both the concrete and the reinforcing steel condition once the crack is fully exposed. This funding is available from existing capital funding for Project Committee 2 that is not expected to be spent.

The allocation of the proposed construction cost is presented below:

Member Agency	**Liquids**
Moulton Niguel Water District	$12,411.27
City of San Juan Capistrano	$16,546.57
Santa Margarita Water District	$9,308.45
South Coast Water District	$15,508.71
Total	**$53,775.00**

Recommendation

The following action is recommended:

> Approval of the award of the construction contract to the S.S. Mechanical Construction Corporation at a price of $53,775.00.

Agenda Item

	Legal Counsel Review: No
	Meeting Date: September 7, 2017

TO: Board of Directors

FROM: Betty Burnett, General Manager

SUBJECT: General Manager's Status Report

Old Business

Finance

SOCWA FY 2017-18 General Budget

At the June 14, 2017 Board of Directors meeting, the Board directed the staff to bring back to the Finance Committee the matter of the SOCWA General Budget within the first quarter of FY 2017-18. At the August 29, 2017 Finance Committee meeting, the Committee considered a staff report on a potential policy to be developed addressing the content, expenses and percentages appropriate to be shared as general fund expenses for administration of SOCWA. The Committee discussion and public comments addressed the desire to see a justifiable, rational, defensible and fair consideration of the costs. The Committee was requested by Trabuco Canyon Water District ("TCWD") Manager Hector Ruiz to bring the item back to the Finance Committee at the September, 2017 committee meeting. TCWD is researching the issue and will be prepared to discuss its ideas about the General Budget and its relationship with the services SOCWA provides to its member agencies.

New Business

Operations & Maintenance

ASCE Recognition of Outstanding Contributions

SOCWA's Director of Operations Jim Burror was recognized by the Orange County Branch of the American Society of Civil Engineers for his contributions to the 2016 Orange County Infrastructure Report Card. His efforts were in coordinating the collection of South Orange County data and contributions to the Infrastructure Report Card documents.

Kern County Concedes Measure E Loss

The County of Kern has given up on its efforts to ban the importation of Biosolids from Southern California into Kern County. Kern County Supervisors have conceded that the ban is unenforceable after an 11-year courtroom battle. The City and County of Los Angeles will be able to continue to manage the application of Class A Biosolids at their perspective farms without further legal challenge. A settlement agreement is in the process of being executed between the parties. Kern County will pay the City of Los Angeles about $50,000, but the City of Los Angeles will not seek the millions of dollars it spent in legal fees over the past 11 years.

It looks like the City and County of Los Angeles and OCSD will not challenge additional efforts by Kern County to make the direct application of Class B Biosolids more difficult, if not impractical.

New Chief Operators

SOCWA has named James Jones as interim Chief Operator. He will begin his work as interim Chief Operator at the JB Latham (JBL) facility. Joe Zimmerman, the current Chief Operator at JBL, will be taking command of the Regional Treatment Plant to replace retiring Chief Operator Bob Waters. Bob Waters has notified SOCWA that he will be retiring at the end of the calendar year. The overlap until the end of the calendar year will allow for both Joe and James to train under the existing Chiefs to help ensure a smooth transition.

James is a Grade V Certified Operator and has been with SOCWA for 7 years. James also has a Business Degree and a Grade IV Mechanical Certification.

Maintenance New Hires

Maintenance has two (2) new staff members to replace retired employees. Adam Rachac is a Mechanic I and came to SOCWA from the wastewater treatment plant in the City of Oceanside. He already has his CEWA Mechanical 1 Certification.

Travis Juhnke is also a Mechanic I and came to SOCWA from the City of Poway. Travis was a Water Utilities Crew Leader with welding experience and a Level II coatings inspector certification. Travis is also recently married.

Both new employees are motorcycle and motocross enthusiasts. Adam started on August 14th and Travis started on the August 28th.

Environmental Compliance

2016 Region 9 Kelp Consortium Report

Amber Baylor, SOCWA Director of Environmental Compliance, will provide a presentation at the Board Meeting regarding the outcome of the work on the Kelp Consortium.

A summary of the information is as follows:

The NPDES permits covering the Aliso Creek and San Juan outfalls require participation by SOCWA in the Region 9 Kelp Consortium which covers 24 individual kelp beds. The aerial survey begins at Abalone Point in Laguna Beach and extends to the San Onofre Kelp bed just south of San Clemente covering eight (8) kelp beds.

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For Region 9 as a whole, Figure 34 illustrates the average kelp canopy size fluctuations from 1967 to present.

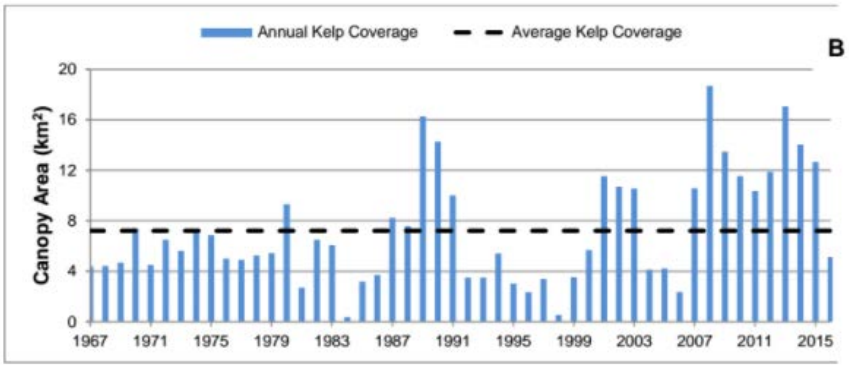


Figure 34. Annual and average kelp coverage in (A) the Central Region and (B) Region Nine.

The report provided the size reduction or enlargement from 2015 to 2016 and staff has included maximum size of kelp forests for reference in the following table for the SOCWA service area:

Kelp Bed Location	Size 2015 (km2)	Size 2016 (km2)	% Change	Year Max Size	Max Size (km2)
North Laguna Beach	0.08	0.074	-7.5	2013	0.2075
South Laguna Beach	0.048	0.035	-27	2013	0.2075
South Laguna	0.016	0.006	-63	2013	0.017
Dana Point/Salt Creek	0.137	0.11	-20	2008	1.068
Capistrano Beach	0.007	0.012	71	1989	0.223
San Clemente	0.343	0.187	-45	1.097	2013
San Mateo Point	0.062	0.053	-15	0.87	1989
San Onofre	0.043	0.12	179	0.767	2013

The report concluded that the overall reduction in kelp canopies coincided with a third year of mostly above average sea surface temperatures and there was no evidence of any adverse effects on the giant kelp resources from any of the region's treatment plant dischargers. The outlook for 2017 looks favorable due to lower sea surface temperatures, increased upwelling, and associated La Nina conditions which will favorably impact kelp forest rebounding in 2017. Please see appendix for visual guides to the kelp reports.

<u>CASA Update</u>

Staff attended the CASA conference in San Diego the third week of August. Staff attended CSMRA specialty safety program, regulatory committee, legislative committee and attorneys committee sessions.

Biosolids/Air Regulations of Importance:

Measure E in Kern County was invalidated by bench trial due to the limited police powers of the Kern County Supervisors and the violation of the Integrated Waste Management Act. This allows the application of class A and class B biosolids for land application in Kern County.

Senate Bill (SB) 1383, a companion bill to SB 605, targets short term climate pollutants, specifically methane emissions. SB 1383 requires a 40% reduction in methane in 2030 below 2013 levels, 50% organics diversion below 2014 levels by 2020, and 75% organics below 2014 levels by 2025. CalRecycle is in the informal rule making process and regulations will become effective in 2022. Staff is planning a meeting with county landfill staff to understand the potential impacts to biosolids diversions. SOCWA and member agencies disposed of 7000 tons of biosolids in landfills in 2016.

For community food wastes diversion requirements, discussion ensued and the EPA attendee reflected that from a sustainability perspective, anaerobic digestion is the preferred alternative to dealing with food waste. Funding sources include the Green House Gas Emissions (GHG) fund which was built by cap and trade monies, California Energy Commission, the Public Utilities Commission, and the CFDA GHG fund. Orange County affiliates commented that a renewable co-digestion project would be a local win for sustainability despite market challenges.

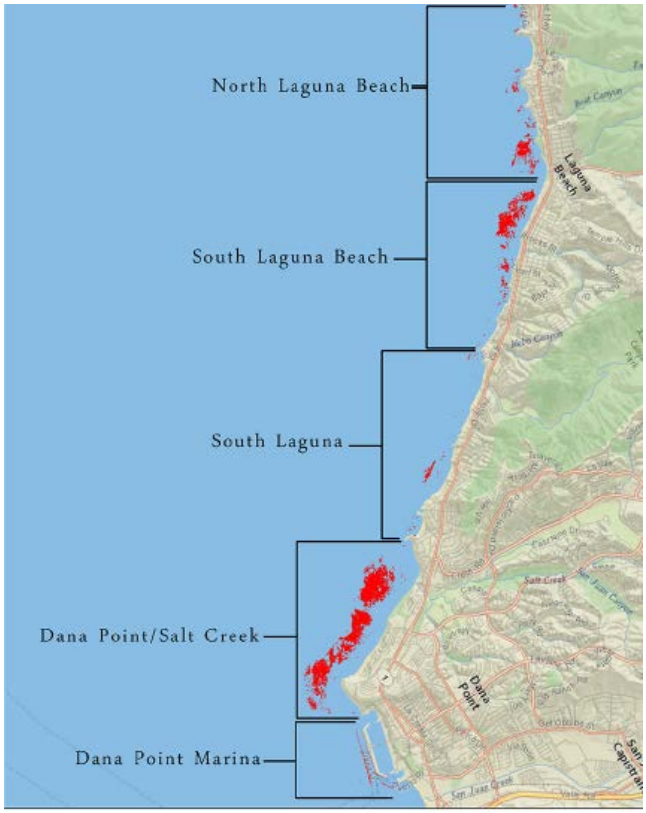
AB 901 will require reporting to CalRecycle of the amount of biosolids leaving the county of origin by wastewater treatment plants starting in the first quarter of 2019.

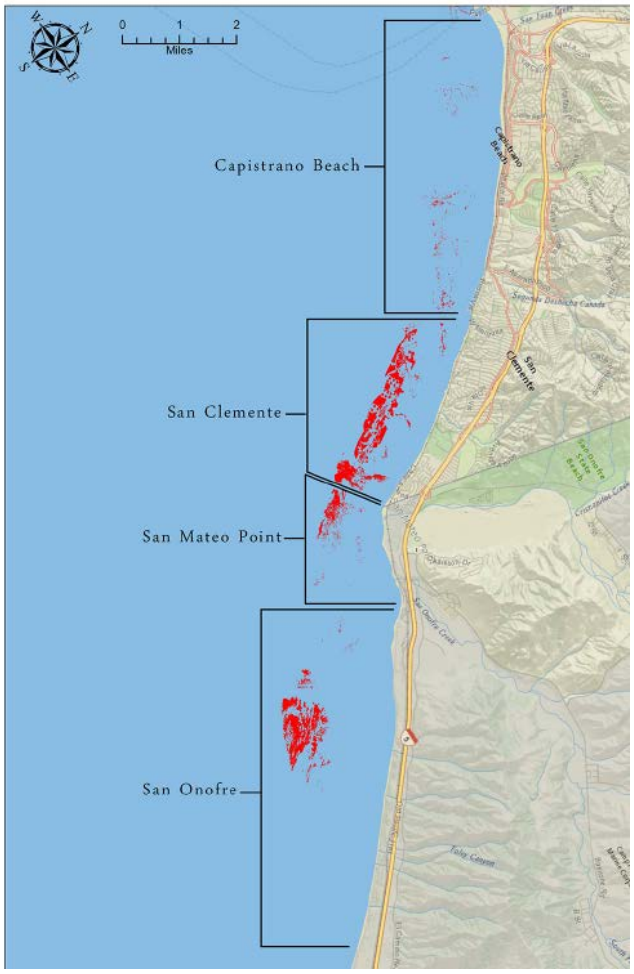
Water Regulations of Importance:

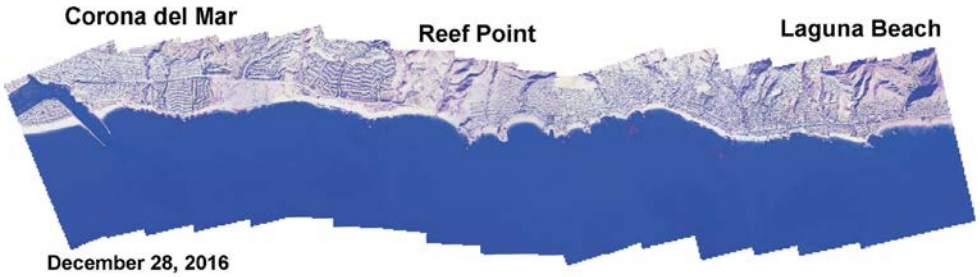
Amber Baylor of SOCWA staff gave a short presentation on the update to the ELAP draft regulations. ELAP released draft regulations in July 2017 and there appears many inconsistencies in the regulations as they relate to on site assessment frequency, fee structures, field testing requirements, and modifications to the TNI standards. Staff is working with CASA, the Coalition of Accredited Laboratories, and other industry groups on letters to address the issues. A follow-up survey has been sent to all labs in California to relay demographic information to ELAP to prevent the mandatory TNI requirement for small labs.

Appendix A

Visual Representations of the 2016 Kelp Surveys

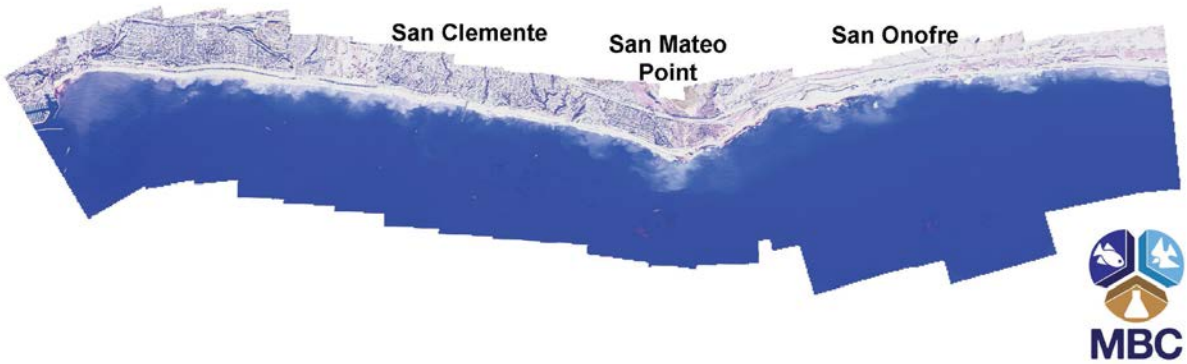






MBC

Appendix E.5


San Clemente
San Mateo
Point
San Onofre
MBC

Agenda Item

	Legal Counsel Review: NO
	Meeting Date: 9/7/2017
	General Fund Budget FY 17-18: $365,323

TO: Board of Directors

FROM: Betty Burnett, General Manager

STAFF CONTACT: Jeanette Cotinola, Procurement and Contract Administrator

SUBJECT: Year End June 30, 2017 Financial Auditing Services – Selection of Auditor

Summary

SOCWA prepared and distributed an original Request for Proposal (RFP) sent to nine (9) firms. Three of the nine (9) firms attended a Q&A session regarding the RFP and responsive proposals were due June 29, 2017. There was no response to the initial RFP. Staff reached out to member agencies for references and then reached out to six (6) firms to invite a second round of proposals due August 8, 2017. Three (3) proposals were received.

Discussion/Analysis

After interviewing all three, the review committee unanimously agreed that The Pun Group is the most responsive to SOCWA's requirements for the audit period FY 16-17.

Advisory Committee Review

Staff took this recommendation to the Finance Committee on August 29, 2017. Staff explained that all three responders submitted strong proposals and offer excellent qualifications and experience. Staff confirmed with each firm their availability, experience and contractual language requirements. The committee generally agreed that schedule responsiveness was important.

The Pun Group brings experience to the table of having worked with City of Milpitas Sanitation District, Santa Clara County Sanitation District 2-3, Cupertino Sanitary District and West Valley Sanitation District to name a few of their clients. The Pun Group also has favorable support of member agencies.

The Committee voted in favor of selecting The Pun Group as SOCWA's Auditors as well as increasing the General Fund/Administration Budget by $5,000.00 for any additional audit costs.

Recommendation

1) The Board of Directors to authorize the General Manager to enter into a contract on behalf of SOCWA with The Pun Group for the FY 2016/17 Audit with the option of two (2) years renewal.

2) The Board of Directors approve the Budget increase to the General Fund/Administration Budget by $5,000 for any additional audit costs.

Agenda Item

	Legal Counsel Review: No
	Meeting Date: September 7, 2017
	Administration Budget FY 17-18: $2,060,310

TO: Board of Directors

FROM: Betty Burnett, General Manager

STAFF CONTACT: Jeanette Cotinola, Procurement & Contracts Administrator

SUBJECT: Infrastructure Valuation Services

Summary

SOCWA received an audit comment from DavisFarr, LLC with the most recently approved SOCWA Audit for FY ending June 30, 2016 requiring additional detailed information to record infrastructure assets to the SOCWA record of assets. This comment was received by staff too late to be included in the valuation work conducted for the FY ending June 30, 2016 Audit, and the Board of Directors approved the audit with direction to staff to return in the first quarter of FY 2017-18 with proposals for the infrastructure valuation services.

SOCWA staff contacted three (3) firms to discuss the infrastructure valuation project and two (2) firms agreed to provide proposals for the Infrastructure Valuation Services.

Discussion/Analysis

Staff presented to the Finance Committee on August 29, 2017, a recommendation for the selection of Carollo Engineers as the firm to perform the Infrastructure Valuation Services.

Discussion at the Finance Committee included a desire to understand the methodology that would be used for the valuation and the intersection with the purpose of the work to record the acquisition value less depreciation. The Finance Committee requested that staff provide to the Board the task level budgets for comparison of Carollo and Hazen and Sawyer proposals. Staff was directed to prepare for a workshop of the Finance Committee on September 21, 2017, to bring together the Valuation Engineer selected with the Audit Firm representatives and discuss options for the valuation approach. The Finance Committee asked whether the review will include all infrastructure assets and staff confirmed that it will.

Upon the Board's approval of the Valuation Engineering selection, the workshop will be scheduled in September.

Based on the experience of Carollo Engineering with SOCWA facilities and their understanding of the valuation work, Staff recommends Carollo Engineering.

Recommendation

1) Board of Directors to authorize the General Manager, on behalf of SOCWA, to enter into a contract with Carollo Engineering to perform the Infrastructure Valuation Services.

2) Board of Directors to authorize the inclusion of $115,000 in funding as an adjustment to the FY 2017-18 Administration Budget to cover this item.

REQUEST FOR PROPOSAL

Summary

SOCWA is seeking to obtain their infrastructure value of its wastewater treatment and outfall system assets as part of a broader analysis to support its regular “use audit” and other ongoing SOCWA asset management objectives.

Scope of work

Wastewater System Information Review and Asset Identification

Consultant will review information provided by SOCWA that would be beneficial towards determining the current asset inventory and its conditions. Consultant will provide a Microsoft Excel-based asset inventory model that identifies a preliminary list of the above and below ground assets for the wastewater treatment plants and collections system.

Deliverables:

- Project kick off meeting
- Request for information
- Preliminary wastewater system asset inventory model

Wastewater Asset and Valuation Approach Confirmation Workshop

Consultant will facilitate a half-day workshop to review the contents of the precursory asset inventory model prepared with SOCWA staff. During this time SOCWA staff will communicate assets or asset categories that may not be in written form and discuss with SOCWA’s selected auditors methodology suggested.

Deliverables:

- One four (4) hour Confirmation Workshop
- Workshop agenda and materials

Wastewater System Field Visits and Preliminary Condition Assessment

Consultant will perform on-site evaluations and precursory asset condition assessments for all exposed wastewater system assets. This will involve assessing the degree to which the system components have been historically maintained. Data acquired from above tasks will guide the field assessment. Consultant can expect the visual inspection to consist of four (4) days of on-site field visits. Consultant will incorporate this information into the inventory model with the approximated remaining useful life of each asset utilizing the industry standards and estimating approaches. The consultant will rely on fixed asset installation, maintenance records and industry-standard service life estimates to approximate remaining useful life of the below-ground and unexposed wastewater system assets.

Deliverables:

- Field visit kick-off meetings and four (4) days of visual inspection
- Wastewater system asset inventory model update

Note: SOCWA has six groups of wastewater assets for valuation:

1. J. B. Latham Treatment Plant
2. San Juan Creek Ocean Outfall
3. Coastal Treatment Plant (including access road, access bridge, and Export Sludge pipeline)
4. Regional Treatment Plant (including access road and access bridge)
5. Effluent Transmission Main
6. Aliso Creek Ocean Outfall

The ocean outfalls, the transmission main, and the Export Sludge pipeline require valuation; however, visual inspection of these facilities is not possible.

Wastewater Asset Valuation

Consultant will provide SOCWA with a Draft Technical Memorandum, accompanied by supporting model outputs to be followed with a Final Technical Memorandum. Consultant is required to attend up to two (2) SOCWA staff, management, and/or Board meetings as requested.

Deliverables:

- Wastewater system asset inventory model update
- Draft Technical Memorandum describing valuation approach and findings
- One meeting with the SOCWA staff to discuss findings
- Final Technical Memorandum
- Attendance at up to two (2) additional meetings

SOCWA is looking to have this project completed within two (2) months from receiving notice to proceed by SOCWA.

August 23, 2017

South Orange County Wastewater Authority
Attn: Mr. Brian Peck, Director of Engineering
Administration Building
34156 Del Obispo Street
Dana Point, CA 92629

Re: Infrastructure Valuation

Dear Mr. Peck,

South Orange County Wastewater Authority (SOCWA) has an immediate need to determine the original value of its existing assets for SOCWA's regular "use audit". The challenge is that due to changes in design standards, construction methods, machinery and technology, there is no one method or formula that can be applied to all existing assets to estimate their value at the time they were originally installed or constructed. Hazen is proposing an approach and recommended combination of methodologies that we believe will best achieve SOCWA's need for an estimation of the original value of existing assets in a transparent, methodical, efficient manner.

Hazen also proposes to provide *added value* by using asset management best practices to:

- Create an asset inventory with the appropriate framework to serve as the foundation of an asset register for a future asset management program.
- Customize electronic field data collection forms to improve the quality and consistency of asset data collected and provide the forms to SOCWA for future use by staff.

At the conclusion of this project, SOCWA will be able to have confidence in the estimations of the original valuation of its assets at the time of installation and have the added value of high quality data, processes and tools that will serve as the foundation for a future asset management program.

We appreciate the opportunity to present our qualifications for the Infrastructure Valuation project and look forward to further consideration.

Sincerely,

Cindy Miller, PE
Vice President

Dawn Guendert
Senior Associate

Project Approach and Methodology

Project Understanding

South Orange County Wastewater Authority (SOCWA) has requested consulting services to develop an asset inventory and a recommended methodology for determining an asset valuation at the date of installation to satisfy the requirements of its "use audit".

Hazen is proposing an approach that achieves SOCWA's immediate need of determining the original installed cost of its existing assets through a combination of methodologies based on asset classes (types) that can be performed in a timely, efficient and cost-effective manner.

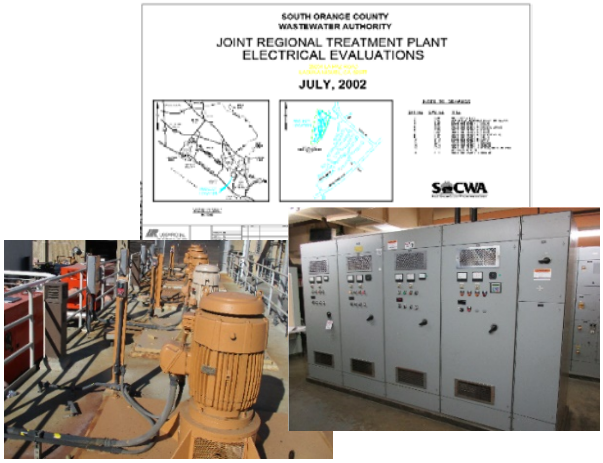
Task 1: Data Collection and Consolidation

Hazen will collect and review any relevant information available for the assets owned and managed by SOCWA that are included in the scope of work document received from SOCWA:

- J. B. Latham Treatment Plant
- San Juan Creek Ocean Outfall
- Coastal Treatment Plant (including access road, access bridge and Export Sludge pipeline)
- Regional Treatment Plant (including access road and access bridge)
- Effluent Transmission Main
- Aliso Creek Ocean Outfall

Hazen will start with Excel spreadsheets maintained by Engineering and supplement it with data from SOCWA's Computerized Maintenance Management System (CMMS), O&M Manuals and other systems and databases along with as-built drawings. We will use our familiarity with the existing facilities and documents acquired from our previous project work to quickly build a preliminary inventory of SOCWA's facilities. Sources of data we will collect and review include:

- As-built drawings
- Design drawings
- Manufacturer's manuals
- Bid documents
- Schedules of quantities
- Staff
- Photos and videos
- Field verification



Our team will also use relevant data from other projects Hazen has conducted for SOCWA to increase our efficiency such as:

- JB Latham Miscellaneous Improvements
- Regional Treatment Plant Site Lighting Study
- Coastal Treatment Plant Evaluation of Aeration System Diffusers and Blowers Study
- Coastal Treatment Plant Replacement Cost Estimating As-Needed Services

Our team will review existing data on the underground assets including record drawings, surveys, field assessments and other assessments conducted by SOCWA staff or consultants. This information will be consolidated with asset attribute information such as size, material, install year into the asset inventory

Establishment of an accurate comprehensive asset inventory will be the foundation on which this project will be built. The assets will be grouped into asset classes to increase efficiency during the asset valuation. An asset class can be defined as a group of assets with similar type, function, useful life, and valuation attributes (e.g., size and material).

As shown in the example below, Hazen has already developed a preliminary asset inventory based on a location-based asset hierarchy using as-built drawings for JB Latham Digesters, digested sludge pump station, boilers and dewatering facility, and identified data gaps such as size, equipment, manufacturer, model and rehabilitation year. This comprehensive asset inventory has the appropriate level of asset granularity for a future asset management program. For the purpose of the Infrastructure Valuation project, Hazen proposes to identify an "assembly" as the granularity for which asset valuation will be estimated.

Portion of Preliminary Asset Inventory with Data Gaps Highlighted

Ownership Location Process System Sub-Process Assembly Asset

Preliminary Asset Register
- JB Latham – Digester No.2

Level1	Level 2	Level3	Level 4	Level 5	Level 6	Asset Description	Class	Type	Quantity	Discipline	Tag(s)	Install Year	Mfr.	Model	Material	Size1	Unit1
SOCWA	JBL WW	Solids	Anaerobic Digesters Area	Digester No. 2 Assembly	Boiler Assembly	Boiler	Boiler Assembly		1	Mechanical		1989					
SOCWA	JBL WW	Solids	Anaerobic Digesters Area	Digester Assembly	Digester Assembly	Anaerobic Digester No. 2 Tank	Process Structur	Sludge Digester Ta	1	Structural		1974			Concrete	21800	gal
SOCWA	JBL WW	Solids	Anaerobic Digesters Area	Digester No. 2 Assembly	Digester Assembly	Digester Dome	Process Structur	Cover	1	Structural		1974			Metal	65	ft-dia
SOCWA	JBL WW	Solids	Anaerobic Digesters Area	Digester No. 2 Assembly	Gas Mixing Assembly	Gas Flow Meter	Meter	Mass Flow	1	Instrumentation		1998				2000	scfm
SOCWA	JBL WW	Solids	Anaerobic Digesters Area	Digester No. 2 Assembly	Heat Exchanger Assembly	Heat Loops			1	Mechanical		1980					
SOCWA	JBL WW	Solids	Anaerobic Digesters Area	Digester No. 2 Assembly	Sludge Circulation Assembly	Sludge Circulation Pump No. 2	Pump	Recessed Impeller	1	Mechanical	CP-2	1980	Wemco			30	hp
SOCWA	JBL WW	Solids	Anaerobic Digesters Area	Digester No. 2 Assembly	Digester Assembly	Supernate Gates	Valve	Telescoping	1	Mechanical		1991			Bronze	5	in-dia
SOCWA	JBL WW	Solids	Anaerobic Digesters Area	Digester No. 2 Assembly	Boiler Assembly	Hot Water Return Plug Valve	Valve	Plug	1	Mechanical		1991					
SOCWA	JBL WW	Solids	Anaerobic Digesters Area	Digester No. 2 Assembly	Boiler Assembly	Hot Water Supply Plug Valve	Valve	Plug	1	Mechanical		1991					
SOCWA	JBL WW	Solids	Anaerobic Digesters Area	Digester No. 2 Assembly	Gas Mixing Assembly	Digester Gas Circulate Compressor 1	Compressor		1	Mechanical	GM-1	1966					
SOCWA	JBL WW	Solids	Anaerobic Digesters Area	Digester No. 2 Assembly	Gas Mixing Assembly	Flame Trap	Manual Trap	Flame	1	Mechanical		1991					
SOCWA	JBL WW	Solids	Anaerobic Digesters Area	Digester No. 2 Assembly	Gas Mixing Assembly	Gas Mixing Piping	Piping		1	Mechanical		1991					
SOCWA	JBL WW	Solids	Anaerobic Digesters Area	Digester No. 2 Assembly	Gas Mixing Assembly	Sedimentation Trap	Sediment Trap		1	Mechanical		1991					
SOCWA	JBL WW	Solids	Anaerobic Digesters Area	Digester No. 2 Assembly	Heat Exchanger Assembly	Heat Exchanger Control Valve No. 2	Valve	Control	1	Mechanical	HCV-2	1991					
SOCWA	JBL WW	Solids	Anaerobic Digesters Area	Digester No. 2 Assembly	Heat Exchanger Assembly	Heat Exchanger No. 2	Heat Exchanger	Sludge Digester Ta	1	Mechanical	HEX-2	1991					
SOCWA	JBL WW	Solids	Anaerobic Digesters Area	Digester No. 2 Assembly	Heat Exchanger Assembly	Heat Exchanger Piping	Piping		1	Mechanical		1991					
SOCWA	JBL WW	Solids	Anaerobic Digesters Area	Digester No. 2 Assembly	Heat Exchanger Assembly	Heat Exchanger Pump No. 2	Pump	Centrifugal	1	Mechanical	HXP-2	1994				200	GPM
SOCWA	JBL WW	Solids	Anaerobic Digesters Area	Digester No. 2 Assembly	Heat Exchanger Assembly	Discharge Digested Sludge Plug Valve	Valve	Plug	1	Mechanical		1991					
SOCWA	JBL WW	Solids	Anaerobic Digesters Area	Digester No. 2 Assembly	Heat Exchanger Assembly	Discharge Plug Valve	Valve	Plug	1	Mechanical		1991					
SOCWA	JBL WW	Solids	Anaerobic Digesters Area	Digester No. 2 Assembly	Heat Exchanger Assembly	Plug Valve to Digested Sludge Pump	Valve	Plug	1	Mechanical		1991					
SOCWA	JBL WW	Solids	Anaerobic Digesters Area	Digester No. 2 Assembly	Sludge Circulation Assembly	CS1 Tank E Plug Valve 1	Valve	Plug	1	Mechanical		1991					
SOCWA	JBL WW	Solids	Anaerobic Digesters Area	Digester No. 2 Assembly	Sludge Circulation Assembly	CS1 Tank E Plug Valve 2	Valve	Plug	1	Mechanical		1991					
SOCWA	JBL WW	Solids	Anaerobic Digesters Area	Digester No. 2 Assembly	Sludge Circulation Assembly	CS1 Tank E Plug Valve 3	Valve	Plug	1	Mechanical		1991					
SOCWA	JBL WW	Solids	Anaerobic Digesters Area	Digester No. 2 Assembly	Sludge Circulation Assembly	CS1 Tank N Plug Valve	Valve	Plug	1	Mechanical		1991					
SOCWA	JBL WW	Solids	Anaerobic Digesters Area	Digester No. 2 Assembly	Sludge Circulation Assembly	CS1 Valve Tree Plug Valve 1	Valve	Plug	1	Mechanical		1991					
SOCWA	JBL WW	Solids	Anaerobic Digesters Area	Digester No. 2 Assembly	Sludge Circulation Assembly	CS1 Valve Tree Plug Valve 2	Valve	Plug	1	Mechanical		1991					
SOCWA	JBL WW	Solids	Anaerobic Digesters Area	Digester No. 2 Assembly	Sludge Circulation Assembly	CS2 Tank S Plug Valve	Valve	Plug	1	Mechanical		1991					
SOCWA	JBL WW	Solids	Anaerobic Digesters Area	Digester No. 2 Assembly	Sludge Circulation Assembly	CS2 Valve Tree Plug Valve 1	Valve	Plug	1	Mechanical		1991					
SOCWA	JBL WW	Solids	Anaerobic Digesters Area	Digester No. 2 Assembly	Sludge Circulation Assembly	CS2 Valve Tree Plug Valve 2	Valve	Plug	1	Mechanical		1991					
SOCWA	JBL WW	Solids	Anaerobic Digesters Area	Digester No. 2 Assembly	Sludge Circulation Assembly	DS Valve Tree Plug Valve 1	Valve	Plug	1	Mechanical		1991					
SOCWA	JBL WW	Solids	Anaerobic Digesters Area	Digester No. 2 Assembly	Sludge Circulation Assembly	DS Valve Tree Plug Valve 2	Valve	Plug	1	Mechanical		1991					
SOCWA	JBL WW	Solids	Anaerobic Digesters Area	Digester No. 2 Assembly	Sludge Circulation Assembly	MTS Valve Tree Plug Valve 1	Valve	Plug	1	Mechanical		1991					
SOCWA	JBL WW	Solids	Anaerobic Digesters Area	Digester No. 2 Assembly	Sludge Circulation Assembly	MTS Valve Tree Plug Valve 2	Valve	Plug	1	Mechanical		1991					
SOCWA	JBL WW	Solids	Anaerobic Digesters Area	Digester No. 2 Assembly	Sludge Circulation Assembly	RS Tank Inlet Plug Valve	Valve	Plug	1	Mechanical		1991					
SOCWA	JBL WW	Solids	Anaerobic Digesters Area	Digester No. 2 Assembly	Sludge Circulation Assembly	RS Valve Tree Plug Valve	Valve	Plug	1	Mechanical		1991					

Data Gap Closure

Having the right asset attribute information (size, manufacturer, model, material, and age among others) is key to higher confidence in estimating the asset valuation. Hazen's approach to filling the data gaps will be to conduct a data gap closure workshop with SOCWA staff and perform a field inventory. During the workshop, our team will use the institutional knowledge of staff to fill in data

gaps and gain more insight into the installation history of each facilities' systems. Any remaining data gaps in the asset inventory, will be filled during the field inspection.

Deliverables:

- Project kick off meeting
- Request for information
- Data Consolidation and desktop inventory
- Gap Closure Workshop
- Preliminary wastewater system asset inventory model

Task 2: Asset Valuation Methodology Validation

Hazen's proposed methodologies for estimating the valuation of existing assets at the time of installation will be reviewed with SOCWA in a workshop.

Based on conversations with SOCWA, the agency will provide available original asset valuation information for the following electrical assets which will be beyond the responsibility of Hazen:

- Programmable Logic Controllers (PLC's)
- Variable Frequency Drive (VFD's)

SOCWA may also have additional asset valuation information that can be shared with Hazen. For those assets with no available original asset valuation, Hazen proposes a combination of asset valuation methodologies based on the following:

Methodologies	Limitations
Historical cost of "like assets".	Ability to find "like assets" may be limited especially for older assets.
Estimate the current replacement cost and develop a formula that will use ENR, RS Means or other appropriate historical cost indices to adjust the current replacement cost to estimate the cost of the asset at the time of installation.	This methodology may not account for changes in design standards, construction methods, machinery or technology.
Current replacement cost without adjustment	Does not account for changes in design standards, construction methods, machinery or technology.

The original asset valuation or historical costs for "like assets" would offer the most accuracy. Our approach will be to first use any original asset valuation or historical asset valuation for "like assets" available either from SOCWA or Hazen's historical databases. When original asset valuation or historical "like assets" costs are not available current replacement costs will be used and adjusted using ENR, RS Means or other appropriate historical indices. For assets for which the design standards or construction methods, machinery or technology have changed, a current replacement cost will be provided without adjustment.

Our approach to developing replacement cost estimates will not only use databases such as RS Means to gather information, but our experience in water and wastewater projects allows us to create our own database using cost estimates from similar projects. To improve efficiency Hazen will develop cost libraries with unit costs and cost matrixes for asset classes/types versus developing replacement cost asset by asset.

Deliverables:

- One Asset Valuation Methodology Confirmation Workshop (4 hours)
- Workshop agenda and materials

Task 3: Field Inventory

To close the asset inventory data gaps for the above and below-ground assets at the wastewater treatment plants, access roads and bridges, Hazen will visit each plant. During the site visits, existing data gaps in the asset attribute information (e.g., install year, model, type, size, and material) at the assembly-level will be closed. Our team will also compare the asset inventory with the existing assets in each plant and identify and add any missing assets to the asset inventory.

Having advanced data collection tools will enable field inspectors to securely access the asset inventory using mobile tablets and phones and increase efficiency and the quality of data collected. Multiple photos and sketches can be attached to each asset and system to help the cost estimators better understand the configuration of the assets.

Mobile Data Collection Tools

- Mobile data collection
- Electronic data transfer to server
- Photographic evidence of condition score
- Annotate photos on site

All data collected for each asset, including photographs of the assets, size information, the inspectors' notes, etc., are stored digitally and can be exported in a variety of formats (including Microsoft Excel). The Hazen field data collection forms will be provided as a deliverable enabling SOCWA staff to easily continue to periodically collect asset information and update the asset inventory.

Deliverables:

- Two days of field inventory at each plant
- Customized electronic asset inventory forms
- Updated asset inventory

Task 4: Asset Valuation

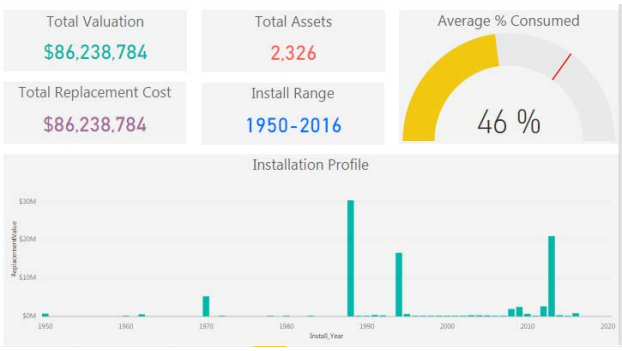
Using the data in the asset inventory, Hazen will apply the asset valuation methodology approved by SOCWA. The results of the asset valuation will be updated in the asset inventory and delivered to SOCWA for review.

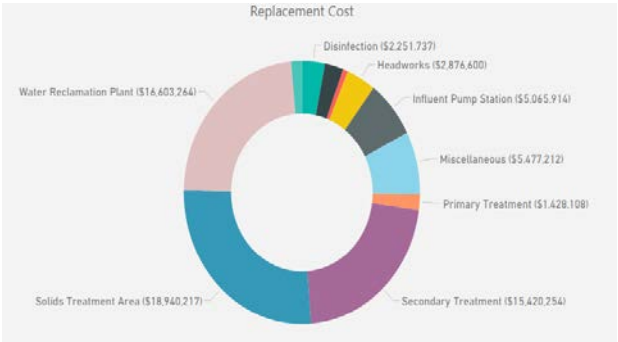
Deliverables:

- Draft asset inventory updated with asset valuations
- Asset inventory review workshop (2 hours)
- Final asset inventory

Task 5: Final Documentation

Our approach includes using a non-proprietary asset management decision support tool with Dashboards that imports the asset inventory with asset valuations. Along with the asset inventory and decision support tool, a Technical Memorandum summarizing the methodology for determining the asset valuation at the time of installation and results will be provided to SOCWA.





At the end of the project, SOCWA will benefit from having:

- A comprehensive asset inventory including asset attributes and estimated asset valuation at the time of installation
- An asset inventory created and populated with the right structure and much of the data to support a future asset management program
- Capability to visualize the total asset valuation, each asset class valuation and individual asset valuation through a customized interactive Dashboard

Deliverables:

- Final asset inventory with Dashboard
- Draft Technical Memorandum describing asset valuation approach and findings
- One meeting with the SOCWA staff to discuss findings (2 hours)
- Final Technical Memorandum
- Attendance at up to two additional meetings (2 hours each)

Project Management

Our Project Manager, Dawn Guendert will utilize her project management experience to provide leadership to the team to ensure:

- Management and seamless coordination of all deliverables
- Implementation and confirmation of Hazen's Quality Assurance Policy is followed
- Tracking and reporting of project progress
- Leadership of project meetings, preparation of agendas and meeting minutes

Facilitate Early Decision Making to Keep on Schedule. The schedule will be updated periodically in Progress Reports, at Workshops and meetings. Identification of potential task problems, issues and constraints in completing specific tasks on schedule and within budget by identifying potential technical issues upfront is one of the cornerstones of our process.

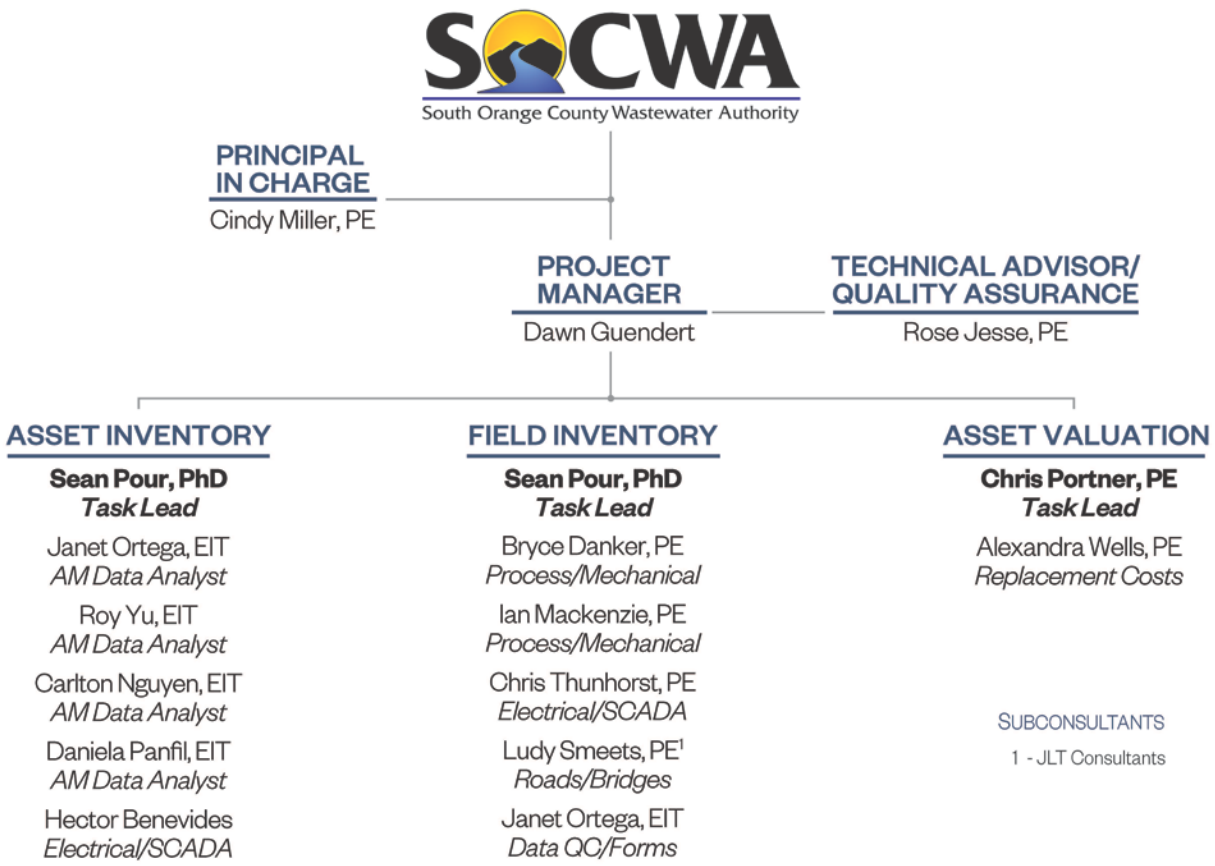
SOCWA Staff Participation - Participation by and coordination with SOCWA staff will be addressed during the Kick-Off Meeting. It is anticipated that SOCWA staff involved in the asset inventory and condition assessment will participate in meetings, conference calls and workshops. Additional meetings and conference calls may be necessary, and in that case, sufficient notice will be provided.

Quality Assurance and Quality Control

Hazen is committed to delivering work products which exceed SOCWA's expectations and Hazen's own internal standards. Quality assurance is not relegated to reviews before deliverables or milestones, but is an ongoing activity. All project team members are responsible for checking their work as engineering professionals. As part of the formal quality assurance process, the responsibility for checking the documents is that of the Project Manager, Principal in Charge and Technical Advisor.

Project Team

The Hazen Team is comprised of individuals with experience in developing asset inventories, conducting condition assessments and determining asset valuations.



A brief description of key project team members is provided below. Resumes with relevant experience for all team members is provided in Appendix A.

	**Dawn Guendert** - ***Project Manager*** Dawn Guendert has experience managing teams in developing asset management programs, developing asset inventories, conducting condition assessments, risk assessment, asset valuation and modeling long range funding needs. Ms. Guendert currently serves as the PM for the Goleta Sanitary District Asset Management Program and Moulton Niguel Sewer Pipeline Rehabilitation Prioritization project.

	**Cindy Miller, PE** – ***Principal in Charge*** Cindy Miller serves as Operations Manager for Hazen's Irvine office. Ms. Miller's 20+ years of experience in planning, design and construction of water and wastewater infrastructure and treatment facilities will enable her to provide guidance and support to all aspects of the project.
	**Rose Jesse, PE** - ***Technical Advisor / Quality Assurance*** Rose leads Hazen's cost estimating team. Rose has over 15 years of experience managing, directing, evaluating and performing work in the construction industry, with proven success in the areas of cost estimating, project management, budgeting, scheduling, design review, constructability review, document control and project controls.
	**Sean Pour, PhD** – ***Asset Inventory/Field Inventory Lead*** Sean specializes in development of asset inventory frameworks and analyzing condition assessment data to improve the accuracy of the estimation of remaining effective life, risk analysis and asset valuation. Sean recently led the condition assessment of Goleta's wastewater treatment plant, Central Basin's Rio Hondo pump station and City of Carlsbad's Maerkle Reservoir.
	**Ian Mackenzie, PE** – ***Process/Mechanical*** Ian has extensive experience in planning, design and construction of wastewater treatment facilities. Ian recently was the senior process/mechanical lead for condition assessment of Goleta's wastewater treatment plant, Central Basin's Rio Hondo recycled water pump station and SOCWA's JB Latham's Miscellaneous Improvements Project.
	**Bryce Danker, PE** – ***Process/Mechanical Field Inventory*** Bryce is a wastewater engineer with expertise in biological process modeling, process controls and mechanical systems. Bryce recently led the system level risk analysis for Goleta's wastewater treatment plant and was the lead project engineer for SOCWA's CTP Evaluation of Aeration Systems Diffusers and Blowers Study.

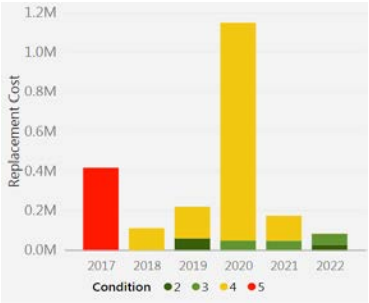
	**Chris Thunhorst, PE -** ***Electrical Field Inventory*** Chris serves as Hazen's Electrical and Instrumentation Group Leader for the West Region and has extensive experience in electrical water and wastewater treatment and conveyance systems. Chris recently provided electrical condition assessment services to SOCWA for the JB Latham Miscellaneous Improvements Project and RTP Site Lighting Study.
	**Ludy Smeets, PE –** ***Access Roads and Bridges Field Inventory*** Ludy has over 38 years of experience in the civil engineering profession, including 15 years in the public sector, and over 23 years with private consulting firms serving public entities and private land developers. Ludy has provided condition assessment services as an engineer assessing roads, bridges, and storm channels for input determining remaining useful life for various agencies including City of Livermore, Port of San Diego, Cities of Chula Vista, Carlsbad, San Diego, Coronado, Thousand Oaks, Lake Elsinore, Dublin, and Irvine Ranch Water District and Eastern Municipal Water District.
	**Chris Portner, PE –** ***Asset Valuation Lead*** Chris has extensive experience in construction management and cost estimating. His experience includes providing cost estimation for numerous water and wastewater planning and design projects such as SOCWA's Coastal Treatment Plant and asset valuation for asset management programs.
	**Alexander Wells, PE –** ***Replacement Costs*** Alexandra has extensive experience in wastewater engineering, cost estimating and construction phase services. Alexandra's experience includes assisting DCWater with management of a $500 million CIP budget.
	**Janet Ortega, EIT –** ***Asset Inventory/AM Data Analyst*** Janet serves as an asset management data analysis for the Goleta Sanitary District's Management Program, Moulton Niguel's Sewer Pipeline Rehabilitation Prioritization and Guidance Document and SOCWA's AM Data and CMMS Gap Analysis. Janet will assist in the development of the asset inventory, analysis of condition assessment data and asset valuation.

Project Experience

Asset Management Plan

Goleta Sanitary District, Goleta, CA

Hazen developed a comprehensive asset inventory and performed a condition assessment of the wastewater and water reclamation facilities. The condition scores were used to calculate the **probability of failure (PoF) and develop customized remaining useful life (RUL) for each asset.** An asset valuation was developed for each asset and combined with the RUL to project short and long-term rehabilitation and replacement funding needs.



Relevant Highlights

- Comprehensive asset inventory developed
- On-site inventory and condition assessment utilizing mobile devices with electronic forms
- Customized remaining useful life (RUL) developed for each asset
- Estimated replacement costs for each asset
- Developed Long Range Funding Needs

Related Team

Dawn Guendert
Sean Pour
Chris Portner
Janet Ortega
Ian Mackenzie
Bryce Danker
Roy Yu
Daniela Panfil

Reference

Mr. Steve Wagner
General Manager
Goleta Sanitary District
(805) 967-4519
swagner@goletasanitary.org

Coastal Treatment Plant Asset Replacement Cost Valuation On-Call Services

South Orange County Wastewater Authority (SOCWA), Dana Point, CA

Hazen developed updated cost estimates for replacement of Coastal Treatment Plant assets identified for replacement within the next 10 years. Hazen used databases such as RS Means to gather cost information, along with cost libraries built from Hazen's experience in water and wastewater projects. Cost estimates were adjusted for Southern California region and were tied to the Engineering News Record Construction Cost Index (ENR CCI) for the LA area for this project. Cost escalation was based upon the projected replacement date in the District's "Asset Management Listing".

Project Task Elements									
Total Construction Cost	DAFT Structural[1]	1	LS	$ 165,000	$ 165,000	25%	$ 41,250	$ 206,250
	DAFT Collector Recoating[2]	1	LS		$ -		$ -	$ 150,000
	DAFT Compressor and Piping[1]	1	LS	$ 11,000	$ 11,000	25%	$ 2,750	$ 13,750
	DAFT Dissolution Tank[1]	1	LS	$ 29,000	$ 29,000	25%	$ 7,250	$ 36,250
	DAFT TWAS Pumps[1]	1	LS	$ 35,000	$ 34,000	25%	$ 8,500	$ 42,500
	DAFT Recirculation Pumps[1]	1	LS	$ 52,500	$ 52,500	25%	$ 13,125	$ 65,625
	DAFT Drain Pump[1]	1	LS	$ 25,000	$ 25,000	25%	$ 6,250	$ 31,250
	DAFT Piping	1	LS	$ -	$ -	0%	$ -	$ 75,000
	DAFT Flow Meter[1]	1	LS	$ 9,500	$ 9,500	25%	$ 2,375	$ 11,875
	TWAS Flow Meter[1]	1	LS	$ 7,000	$ 7,000	25%	$ 1,750	$ 8,750
	DAFT Electrical	1	LS	$ -	$ -	0%	$ -	$ 50,000
Subtotal								$ 691,250
General Conditions. Contractor Overhead and Profit,								
and Bonds and Insurance @		32%						$ 221,200
Shipping Rate		0%						included
Sale Tax		8.00%						$ 26,640
Project Contingency@		25%						$ 234,773
Total Main Project Cost (Year of Estimate or Estimate Update)								
Original Estimate	2017 Dollars							$ 1,173,863
Updated Estimate	2017 Dollars							$ 1,173,863

Project Phases Cost	Rate	Amount	Contingency	Subtotal	Total
Condition Assessment	0.0%	$ -	0%	$ -	$ -	
Conceptual Study	0.0%	$ -	0%	$ -	$ -	
Design	5.0%	$ 58,693	0%	$ -	$ -	$ 58,693
Engr. During Construction	10.0%	$ 117,386	0%	$ -	$ -	$ 117,386
Construction Mgt.	5.0%	$ 58,693	0%	$ -	$ -	$ 58,693
Total Project Contingency	0.0%	$ -	0%	$ -	$ -	$ -
Total Project Cost (Present Value in 2017 Dollars)						$ 1,408,635

Notes:

1. Cost estimate provided by Hazen & Sawyer
2. Cost estimate based on recoating of DAF collector mechanisms at RTP in 2015.

Relevant Highlights

- Developed asset replacement valuations

Related Team

Chris Portner

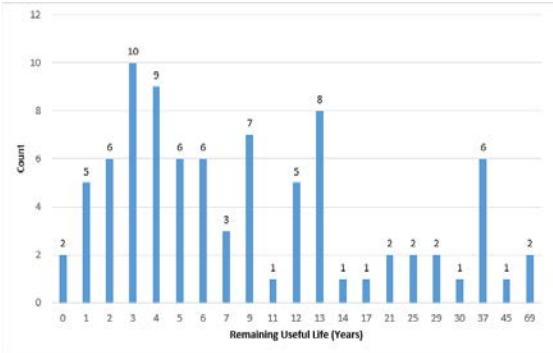
Reference

Roni Young
Project Engineer
South Orange County
Wastewater Authority
(949) 234-5400
ryoung@socwa.com

Condition Assessment and Risk of Failure Analysis

Central Basin Municipal Water District, Commerce, CA

The Rio Hondo Recycled Water Pump Station was constructed in 1993 as one of the first recycled water pump stations for the Central Basin Municipal Water District (District) and continues to be a critical pump station for their recycled water system. The District's concerns included the reliability of the aging pump station's mechanical and electrical equipment, the risk of failure and whether to continue repairing assets or replace them. Reviewed existing drawings, run logs, maintenance records.



Relevant Highlights

- Developed asset inventory
- On site condition assessment
- Hydraulic analysis
- Risk Analysis
- Risk of Failure Analysis Report with Risk Matrix
- Asset inventory with risk model and dashboards

Related Team

Dawn Guendert
Sean Pour
Chris Portner
Janet Ortega
Ian Mackenzie

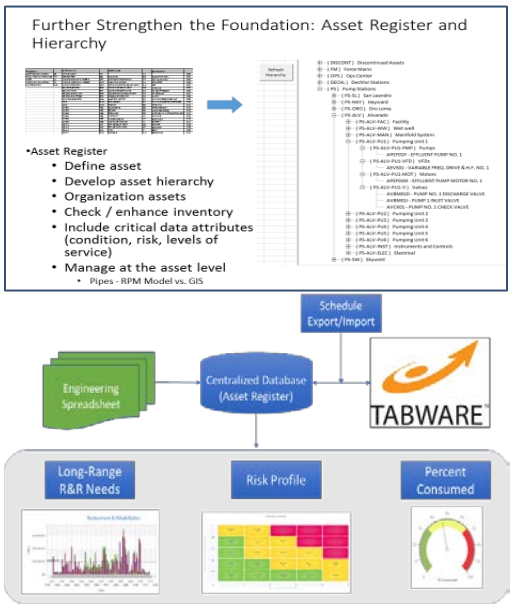
Reference

Jacque Koontz, P.E
Senior Engineer
Central Basin Municipal Water District
6252 Telegraph Road
Commerce, CA 90040
(323)-201-5500
lonniec@centralbasin.org

Asset Data and CMMS Gap Analysis

South Orange County Wastewater Authority (SOCWA), Dana Point, CA

SOCWA wanted to have a better understanding of the timing of asset replacement and future funding needs. The focus of this project was to evaluate the gaps in the wastewater treatment plant assets owned and managed by SOCWA. Hazen examined the quality of the data relevant to the asset data attributes (standards) needed to support the decisions and/or the life cycle cost analysis. Data gaps were identified and SOCWA was provided with strategies for filling the data gaps. As part of the gap analysis, an evaluation of the technical and functional capabilities of SOCWA's existing CMMS to support a quality Asset Management Program was also conducted.



Relevant Highlights

- Development of a proposed asset data structure
- Asset data gaps identified and gap closure strategies recommended
- Recommended asset data collection and CMMS enhancements

Related Team

Dawn Guendert
Sean Pour
Janet Ortega
Bryce Danker

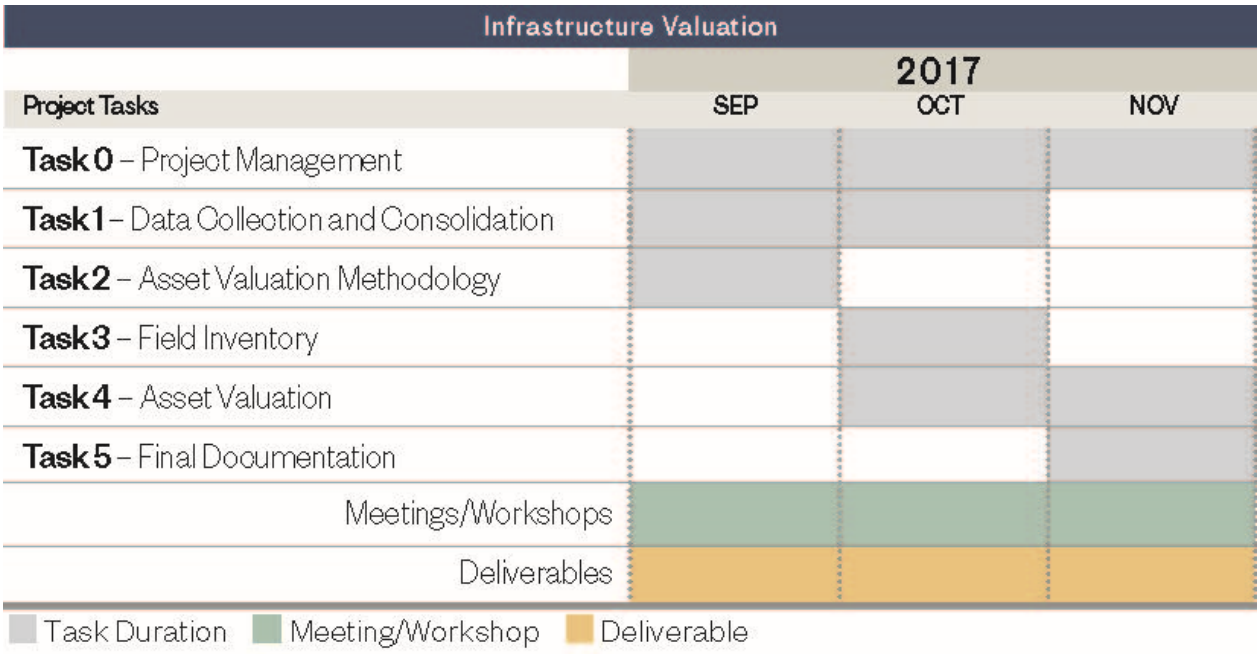
Reference

Brian Peck
Engineering Manager
South Orange County Wastewater Authority
(949) 234-5400
bpeck@socwa.com

Project Schedule

The Asset Valuation project is estimated to take approximately 3 months to complete as shown in the schedule below. There are five key components to this project and we propose to work on some tasks in parallel to complete the project in the most expeditious manner.

- Data Collection and Consolidation / Asset Inventory
- Asset Valuation Methodology
- Field Inventory
- Asset Valuation
- Final Documentation



Estimated Level of Effort

Based on our proposed approach, the total number of hours estimated to complete the Infrastructure Valuation project is 1,249 hours.

Tasks/Deliverables	Hazen and Sawyer						Total
	Senior Technical Advisor	Senior Associate	Senior Associate / Field	Associate Engineer	Principal Scientist	Assistant Engineer	
	Hours						Hours
Task 0 – Project Management							
Progress Reports		3					3
Project Coordination		60					60
Task 0 Total		**63**					**63**
Task 1 – Data Collection and Consolidation							
Project kick off meeting	2	2			2		6
Request for information		2	2	2	2	8	16
Data Consolidation and Desktop Inventory		16	4		80	400	500
Gap Closure Workshop		4			8	8	20
Preliminary wastewater system asset inventory database		2			4	16	22
QC		4					4
Task 1 Total	**2**	**30**	**6**	**2**	**96**	**432**	**568**
Task 2 – Asset Valuation Methodology							
One four (4) hour Asset Valuation Methodology Confirmation Workshop		4		4	4		12
Workshop agenda and materials		8		8	8		24
QC		4					4
Task 2 Total		**16**		**12**	**12**		**40**
Task 3 – Field Inspection							
Field visit kick-off meeting and two (2) days of visual inspection at each plant		16	16	48	48	24	152
Customized electronic condition assessment forms						8	8
Updated draft asset register					16	16	32
QC		8					8
Task 3 Total		**24**	**16**	**48**	**64**	**48**	**200**
Task 4 – Asset Valuation							
Draft asset register updated with asset valuations				200	16	40	256
QC		16	2				18
Task 4 Total		**16**	**2**	**200**	**16**	**40**	**274**
Task 5 – Final Documentation							
Final Wastewater system asset inventory model with Dashboards					16	4	20
Draft Technical Memorandum describing valuation approach and findings		18			16	8	42
One meeting with the SOCWA staff to discuss findings		4		4	4		12
Final Technical Memorandum		8			8		16
Attendance at up to two (2) additional meetings		4		4	4		12
QC	2						2
Task 5 Total	**2**	**34**		**8**	**48**	**12**	**104**
Total							**1,249**

Appendix
Resumes

Dawn Guendert

Project Manager

Ms. Guendert uses her extensive experience with water and wastewater systems to lead teams in all elements of asset management including asset inventory, condition assessment, risk assessment, operational performance efficiency improvement and implementation of asset management programs to help clients better manage their assets and improve productivity.

Education

BA, Political Science, University of California, San Diego

Areas of Expertise

- Advanced Water Treatment
- Desalination
- Operational Efficiency
- Asset Management Strategic Plan

Experience

- 27 total years
- 1 year with Hazen

Professional Activities

American Water Works Association

American Membrane Technology Association

WateReuse Association

CalDesal, San Diego Coastkeepers

Board of Directors, Equinox Center

Publications

Greg Finlayson, David de Haas, Dawn Guendert, "Comparing Desalination and Recycling for Water Supply Augmentation", International Desalination and Water Reuse Quarterly, 2014.

Al Bazzi, Slavica Hammond, Kenneth Redd, Michael Sarullo, Roshanak Aflaki , Dawn Guendert; "Microfiltration and Reverse Osmosis Membrane Replacement Understanding Operating Process Data and Autopsy Data Projection of Useful Remaining Life"; presented at WEFTEC 2011

Project Manager, AM Data and CMMS Gap Analysis, South Orange County Wastewater Authority, Dana Point, CA

Leading a team to examine the quality of the data relevant to the asset data attributes (standards) needed to support the decisions and/or the life cycle cost analysis. Data gaps were identified and SOCWA was provided with strategies for filling the data gaps. As part of the gap analysis, an evaluation of the technical and functional capabilities of SOCWA's existing CMMS to support a quality Asset Management Program was also conducted.

Project Manager, Asset Management Plan, Goleta Sanitary District, Goleta, CA

Leading a phased approach to the development of an asset management program for Goleta Sanitary District's wastewater treatment plant, water reclamation plant, collection system and ocean outfall. Project includes staff training, a pilot project expandable District-wide, development of an asset management implementation plan and assistance with integration of the asset management plan with a new Computer Management Maintenance System (CMMS).

Project Manager, Sewer Pipelines Rehabilitation Prioritization Plan and Guidance Document, Moulton Niguel Water District, Laguna Hills, CA

Leading the development of a risk methodology and risk model for for the prioritization of repair and rehabilitation (R&R) of the District's sewer pipelines and a decision tree and guidance document for selection of the most appropriate rehabilitation method.

Robert Huehmer, Lisa Henthorne, Dawn Guendert, "Increasing MF/UF Reliability in Seawater Desalination Pretreatment Applications using Enhanced Pre-filtration", presented at IDA World Congress, Singapore 2005.

Dawn Guendert; "Orange County's Innovative Water Reuse Project to Purify 70 mgd in 2007", AWWA Journal, July 2004.

Dawn Guendert, Ed Jordan; "Urban Reuse: Bringing Water Treatment Where It's Needed Most"; AWWA Journal, June 2004

Kevin Alexander, Dawn Guendert, Tom Pankratz, "Comparing MF/RO Performance on Secondary and Tertiary Effluents in Reclamation Applications", presented at IDA Conference, Bahamas 2003.

Dawn Guendert, "Carmichael Bajamont Way WTP Treats Backwash to Maximize Recovery and Minimize Waste Disposal", AMTA Journal, Fall 2004.

Marek Mierzejewski, Dawn Guendert, "Membranes for Reuse: Industrial Applications using Microfiltration as RO Pretreatment", Ultrapure Magazine, October 2004.

Dawn Guendert, "Case Study" Bendigo – 33 MWD WTP Successfully Meets the Challenge"; AMTA Journal, Spring 2004.

Dawn Guendert, "Membrane Filtration Conquers Water Quality at Australian Plant, Water & Wastewater Asia Journal, 2004.

Dawn Guendert, "Utility Turns to Integrated Membrane System for Wastewater Reclamation, "Water World Magazine, March 2003

Project Manager, Membrane Normalization Automation and Dashboards, Irvine Ranch Water District, Irvine, CA

IRWD currently retrieves data for four membrane plants from its Supervisory Control & Data Acquisition (SCADA) using the WonderWare Historian Client to a single database. The baseline data from the Historian database is manually retrieved and pasted in appropriate columns into excel based normalization worksheet(s) for the required date range. This can be a tedious and time consuming process prone to errors common in working with spreadsheets. Hazen's improved process to automate data cleanup, normalization and Dashboards eliminated over 90% of manual work required and resulted in improved data visualization to inform membrane maintenance and replacement.

Project Manager, Condition Assessment and Risk Analysis Rio Hondo Recycled Water Pump Station, Central Basin Municipal Water District, Commerce, CA

The project entails a condition assessment, risk of failure analysis, determination of remaining useful life and recommendations for rehabilitation or replacement of a critical recycled water pump station.

Quality Assurance / Quality Control, Port wide Asset Management Program, Port of San Diego, CA

Reviewer of deliverables for the development of an asset management project for the Port of San Diego. The project included conducting on-site condition assessment, and development of an asset registry, level of service, criticality assessment and projection of long range funding needs for the Port.

Technical Reviewer, Replacement and Rehabilitation Planning Model, Eastern Municipal Water District, Hemet, CA

The project included a data gap closure effort for assets owned and managed by the District. Asset information from Maximo was compared to actual asset configuration. Missing assets were added and missing attributes were captured. Conducted a visual condition assessment of assets for water, wastewater, and reclaimed water. Developed asset valuation based on the District's recent purchases of similar assets, knowledge from similar projects utilizing various cost estimation strategies.

Cindy Miller, PE

Principal in Charge

Ms. Miller serves as Hazen's Irvine Office Manager. She has extensive experience in the planning, design and construction of water supply, treatment, storage and conveyance facilities.

Education

BS, Civil Engineering, University of California, Irvine, 1994

Certification/License

Professional Engineer: CA (Civil), UT

Areas of Expertise

- Pump Station Planning and Design
- Pipeline Planning and Design
- Project Management
- Program Management
- Project Delivery
- Groundwater Supply
- Well Equipping Planning and Design
-
- Reservoir Storage Planning and Design
- Drinking Water

Experience

- 22 total years
- 1 year with Hazen

Professional Activities

AWWA, ASCE, AMTA

CA-NV AWWA,

CA Water Reuse Assoc.

Her assignments have included providing Program Management services for a $150 million groundwater supply project, which includes pipelines, wells, pump stations, and an advanced treatment system for R.O. concentrate reduction; Project Manager for preliminary and final design of a 28 MGD microfiltration treatment facility, and Project Manager for a 10 MGD R.O./Ion Exchange groundwater treatment plant. Ms. Miller has also led numerous water storage and conveyance infrastructure projects, including design of over 100 miles of pipeline Ductile Iron, CML&C steel, PVC, and HDPE pipeline), design of steel, pre-stressed concrete, and cast-in-place concrete storage reservoirs, up to 10 million gallons, and numerous pump station facilities. She has led feasibility/planning studies, developed treatment process evaluations and life-cycle cost evaluations, participated in value engineering studies and operations evaluations. She has developed detailed designs of many systems and provided construction and startup services. She has experience with different project delivery methods including: design-bid-build, design-build and design-build-operate-finance.

Baker Water Treatment Plant, Lake Forest, CA, Project Manager
The project includes planning and design of a 28-mgd microfiltration treatment plant with UV disinfection. The project includes design of a 100-percent redundant flow control facility utilizing dual sleeve valves, a 56- cfs raw water pump station to convey flow to the plant from Irvine Lake, upgrades to a Metropolitan Water District turnout facility and transmission pipeline to increase deliveries to 100 cfs, a 6-cfs raw water pump station for Trabuco Canyon Water District, a forebay designed to provide adequate contact time for chlorine dioxide injection, feedwater pump station, coagulation injection, strainers, 14 pressure microfiltration membrane racks, UV disinfection system, chlorine contact basin, chemical building housing 9 different chemicals, an extensive chemical piping delivery system, solids dewatering facilities, civil site work, finished water pipelines, retrofit of two16 MG pre-stressed concrete reservoirs, Product Water Pump Station, transmission pipeline and connection to Metropolitan Water District's South County Pipeline.

Chino I Desalter Expansion and Chino II Desalter Projects, Inland Empire, California

Provided engineering services to the Chino Basin Desalter Authority (CDA) for the multimillion-dollar Chino I Desalter Expansion and Chino II Desalter projects. The assignment involved design of a new desalter facility; expansion and upgrade of an existing desalter facility; design of water distribution facilities, including pump stations, pipelines, and well equipping. The project included expansion of an existing 9 MGD reverse-osmosis treatment plant to a 14 MGD plant by adding ion exchange treatment for nitrate removal and VOC treatment for removal of TCE. Other plant improvements included the upgrading of the existing disinfection system to 0.8 -percent solution sodium hypochlorite generated on site, expansion of the on-site product water pump station, and other miscellaneous upgrades to improve plant performance. In conjunction with increasing the Chino I Desalter's capacity, three new wells were added to increase the system's raw water supply. Delivery facilities from the Chino I Desalter were added to enhance movement of treated water to the end-users. Delivery facilities included two new booster pump stations with capacities of 2,600 gpm and 1,400 gpm and approximately 14,000 linear feet of product water pipeline, 12 inches to 24 inches in diameter. The project also included design of a new 10 MGD Chino II Desalter. This treatment plant was designed to target TDS and nitrate removal and using reverse-osmosis and ion exchange in parallel. The project included eight new groundwater wells; approximately 30,000 linear feet of raw water pipeline, 16 inches to 36 inches in diameter; approximately 24,000 linear feet of product water pipeline, 12 inches to 42 inches in diameter; and a new booster pump station with 3,000 gpm capacity.

Chino Basin Desalter Authority (CDA) Phase 3 Expansion, Chino, California

Ms. Miller is providing Program Management services to the Chino Basin Desalter Authority (CDA) for their Phase 3 Expansion Project. Once completed, the Phase 3 Expansion will increase production capacity of the CDA's groundwater desalter Facilities to over 35,000 acre-ft per year of potable water capacity. The project includes construction of new groundwater wells, pipelines, treatment facility to recover desalter concentrate (i.e. concentrate reduction facility), product water pump station expansion and new product water pump stations. The construction cost of the Phase 3 expansion is estimated at $150 million and construction is expected to be completed early 2018.

Rose Jesse, ENV SP

Technical Advisor / Quality Assurance

Ms. Jesse has over 15 years of experience managing, directing, evaluating and performing work in the construction industry, with proven success in the areas of cost estimating, project management, budgeting, scheduling, design review, constructability review, document control and project controls.

Education

BS, Civil Engineering Technology
Rochester Institute of Technology

Training/Certification

Envision Sustainability Professional (ENV SP)

Project Management for PMP Certification

OSHA 10 & 30 hour Construction Outreach

Risk Management (AACE)

Cost and Schedule Control (AACE)

Earned Value Management (AACE)

GHS/HAZCOM Training

Confined Space Entry Training

NYC DEP Hot Work Training

Lock Out – Tag Out Training

Behavior Based Safety Training

Areas of Expertise

- Construction Cost Estimating
- Constructability Review
- Project Management
- Risk Assessment
- Construction Sequencing/ Scheduling

Experience

- 17 total years
- 1 year with Hazen

Professional Affiliations

Project Management Institute

AACE International

NAWIC

NYWEA

City of White Plains, NY, Department of Public Works (2016)
Prepared cost estimates for options of installation of water tanks to provide 8 million gallons of water storage.

East Side Coastal Resiliency, Department of Design and Construction, New York, NY (2016)
Provided technical guidance and best practice input on the construction, scheduling and sequence of operations for the installation of combined sewer facilities and flood management appurtenances.

Combined Blower Building, Bayshore Regional Sewerage Authority, Monmouth County, NJ (2016)
Prepared cost estimates for the sequenced replacement of several blowers, including temporary installations.

Odor Control Facility, Massachusetts Water Resources Authority, Nut Island, MA (2016)
Provided oversight and guidance for the cost estimate for emergency design of odor control.

Flow Distribution Improvements, Stamford Water Pollution Control Authority, Stamford, CT (2015-Current)
Provided oversight for cost estimates for a complex distribution project including large bypass facilities to serve the entire plant during construction.

Experience Prior to Hazen

Granite Construction Northeast, Senior Estimator
Responsible for leading design, project management and estimating teams in the pursuit of a Public Private Partnership contract in the D.C. Metro area. Project value exceeds $2B. Responsible for M/E/P and architectural finish estimates with joint venture partner for Grand Central Terminal Cavern fit-out.

Hazen

New York City Department of Environmental Protection, Chief, Cost Estimating, Bureau of Engineering, Design and Construction
Responsible for a team of estimators, engineers, and consultants working to establish budgetary needs for a $13B, 10 year plan of NYC DEP's wide range of capital construction projects. Provide guidance on the impacts of schedule, scope creep, and risk. Review bid documents as they are developed from the planning phase to bid in order to minimize change orders. Assist construction managers and design engineers in the negotiation of change orders. Review bids and contractor qualifications to determine that bids are responsive and balanced. Perform independent constructability reviews during the design phase to insure less complication during construction. Provide mentoring of in-house staff and consulting engineers in best practices and consistency across estimates.

Malcolm Pirnie, Project Coordinator, CAT-DEL UV Light Treatment Plant
Worked with General, HVAC, Plumbing, and Electrical Contractors to coordinate installation of all construction material on a new $1.2 billion UV light water treatment plant. Reviewed shop drawings and submittals for constructability and installation conflicts. Monitored and followed the flow of information between Owner, Designer, Contractors, and the staff of the Construction Manager to ensure that all were aware of schedules and information regarding the construction of the plant.

Malcolm Pirnie, Cost Engineer
Worked with the Design group evaluating and pricing change orders valued between $1K and $50M for several different water and wastewater treatment plant projects. Performed constructability reviews. Audited engineer's estimates with values over $700M for several NYCDEP Projects. Led negotiations with the Contractor for change orders valued between $1K and $20M.

Spath Construction, Chief Estimator/Project Manager
Performed take-off and estimating for site work construction. Worked with construction managers and engineers to value engineer jobs in the private sector. Valued equipment and benefits to better estimate true cost burden of the company. During her tenure, positive business opportunities were realized.

Waters Construction Company, Chief Estimator/Project Manager
Performed full take-off and estimating site work, including paving, concrete flatwork, utility installations, and excavation for jobs with contract values between $1 and $20 million. Conducted price and contract negotiations with private developers and construction managers. Performed analysis of field production rates and reviewed methods to improve performance. Performed project management for 7+ active projects with contract values between $1 and $9.5 million on private site development, state highways and Department of Public Works contracts.

J. Iapaluccio, Inc., Project Manager
Performed project management and engineering duties in and out of the office for 5 active projects with contract values between $1.5 and $7 million. Authored impact statements for work delays and costs. Ordered and tracked materials and subcontractors and authorized payment for both. Filed all state paperwork for subcontractors and packaged submittals for architects, owners and engineers. Performed cost analysis and productivity analysis for active jobs.

Sean Pour, PhD

Asset Inventory and Field Inventory Lead

Mr. Pour has made significant advancements towards developing and implementing new condition assessment and asset management methodologies. Mr. Pour is actively engaged in development of asset inventory list, advanced strategies for evaluation of asset conditions, and long-range rehabilitation and replacement needs projections for a variety of assets. He has led the efforts in developing deterioration models that scientifically quantify the decay characteristics of infrastructure assets. He specializes in analyzing condition data to improve the accuracy of the estimation of remaining effective life and risk.

Education

Ph.D.,Civil and Environmental Engineering, concentration in Const. Eng. and Mgmt., Oklahoma State University

MS, Civil and Environmental Engineering, concentration in Const. Eng. and Mgmt., Amirkabir University of Technology (Tehran Polytechnic)

BS, Civil and Environmental Engineering, concentration in Const. Eng. and Mgmt., Amirkabir University of Technology (Tehran Polytechnic)

Areas of Expertise

- Asset Management
- Life Cycle Cost Analysis
- Asset Inventory/Condition Assessment
- Risk Assessment
- Capital Improvement Project Validation
- Condition Assessment

Experience

- 10 total years
- 2 years with Hazen

Professional Activities

American Society of Civil Engineers (ASCE)

American Water Works Association (AWWA)

Orange County Water Authority Association (OCWA)

Chi Epsilon (The civil engineering honor society)

Asset Management Specialist, Asset Management Plan for Wastewater Treatment Plant, Goleta Sanitary District, Goleta, CA
Led the inventory and condition assessment of the wastewater treatment plant to develop the asset register and identify the remaining useful life of assets. Developed an asset management program for the District using a phased approach. First phase included field inventory, condition assessment, risk assessment and long-range funding needs projection for the influent pump station at the wastewater treatment plant. The next phase comprised expansion of the asset management program developed during the pilot project to the full wastewater treatment plant and assistance with integration with a new CMMS.

Asset Management Specialist, Prioritization of Sewer Pipes and Rehabilitation Guidance Document, Moulton Niguel Water District, Laguna Hills, CA
Developed a risk methodology and prioritized the collection system replacement, rehabilitation and condition assessment activities considering both pipe condition and consequence of failure. Reviewed the CCTV inspection databased and correlated the defect codes and modifiers to the NASSCO's PACP coding standards. Created a decision tree to assist the District in selection a rehabilitation or replacement methodology using the frequency and type of sewer pipe defects.

Select Publications

Pour, S. A., and Jeong, H. S. (2012). "Realistic Life-Cycle Cost Analysis Using Typical Sequential Patterns of Pavement Treatments via Association Analysis," Transportation Research Record: Journal of the Transportation Research Board, No. 2304, Transportation Research Board of the National Academies, Washington, D.C., 2012, pp. 104-111.

Pour, S. A., Jeong, H. S., Burman, R. R., and Gunsaulis, F. (2012). "Performance Assessment of On-Grade Horizontal Directional Drilling," ASCE Journal of Construction Engineering and Management, Vol. 138, No. 458, March, pp. 458-468.

Asset Management Specialist, Asset Data and CMMS Gap Analysis, South Orange County Wastewater Authority, Dana Point, CA
Reviewed the asset databases maintained by the Engineering department and the CMMS data to identify the gaps in the data and evaluate the structure of the database to support asset management. The current CMMS were also evaluated with respect to functional and technical requirements to support wastewater facilities' asset management and recommendations were provided for improvement.

Asset Management Specialist, Evaluation Study for the Operation of the Maerkle Reservoir System, City of Carlsbad, CA
Reviewed the City's existing asset register and identified a list of high risk/critical assets associated with the operation of the Maerkle Reservoir. Following a field condition assessment of the identified critical assets, updated the asset register and provided recommendations for assets in need of repair, rehabilitation, or replacement at the Maerkle Reservoir.

Principal Engineer, Condition Assessment and Risk Analysis Rio Hondo Recycled Water Pump Station, Central Basin Municipal Water District, Commerce, CA
The project entailed a condition assessment, risk of failure analysis, determination of remaining useful life and recommendations for rehabilitation or replacement of a critical recycled water pump station.

Asset Management Specialist, Replacement and Rehabilitation Planning Model, Eastern Municipal Water District, CA
Consolidated water, wastewater, and reclaimed water assets owned and managed by the District in the asset register, led the data gap closure effort for treatment plant facility assets owned and managed by the District. Asset information from Maximo was compared to actual asset configuration on the site. Missing assets were added and missing attributes were captured to project rehabilitation and replacement needs.

Senior Management Consultant, City-Wide Asset Management Program, City of Chula Vista, CA
Conducted asset inventory and identified the assets owned and managed by the City for storm drain system. Performed a visual condition assessment of above-ground storm drain assets including brow ditches, detention basins, streams, concrete and natural channels. Developed an asset register in a format that can be integrated with Lucity's infrastructure management software. Development of asset register involved asset consolidation, asset classification, and asset valuation.

Christopher Portner, PE

Asset Valuation Lead

Mr. Portner is a Civil Engineer with experience in process engineering, wastewater treatment plant design, cost estimating and construction management. He has performed cost estimating from planning level through construction for both water and wastewater projects, including conveyance and treatment facilities. Mr. Portner is in AACEi Certified Estimating Professional.

Education

MS, Environmental Engineering, University of California at Berkeley

BS, Civil and Environmental Engineering, University of California at Berkeley

Certification/License

Professional Engineer: CA

Areas of Expertise

- Wastewater Treatment Plant Design
- Wastewater Process Engineering
- Construction Management
- Cost Estimating
- Scheduling
- Change Order Preparation and Negotiation
- Design Services During Construction

Experience

- 8 total years
- 6 years with Hazen

JB Latham Miscellaneous Improvements, South Orange County Wastewater Authority, Dana Point, CA
Cost Engineer for design of the miscellaneous improvements at the JB Latham WWTP. Improvements included rehabilitation of existing grit basins, including replacement of existing piping, covers and valves as well as structural modifications. Additionally replacement of the existing emergency generator and effluent flow meters and isolation valves were designed.

Asset Management List, South Orange County Wastewater Authority, Dana Point, CA
Cost Engineer for development of CIP-level estimates for replacement of various Authority assets at its wastewater treatment plant.

Asset Management Data Inventory and Validation Pilot Project, Goleta Sanitation District, California
Cost Engineer for development of long-term replacement costs for district assets located at its wastewater Treatment plant as part of a plant assessment.

Town of Windsor Modernization Study, Windsor, CA
Cost Engineer for the Plant Modernization Study to analyze potential process upgrades to meet upcoming Regional Water Quality Control Board zero Phosphorus nutrient limits and anticipated future flows and loads. The scope of work included condition assessment, field sampling, process modeling, evaluation and alternative analysis of all processes from headworks through solids handling. Along with the alternative analysis, a draft CIP list was developed and costed.

Reservoirs 1 & 2 Chemical Facilities, Mesa Water District, Costa Mesa, CA
Cost Engineer for design of upgrades at two reservoirs to address nitrification in the distribution system. Scope of work included addition of mixing to the reservoirs and chemical injection and monitoring systems and associated structures and appurtenances.

Nassau County Bay Park Sewage Treatment Plant Program Management Response to Hurricane Sandy, Bay Park, NY
Field services for the repair of the Bay Park Sewage Treatment Plant after Hurricane Sandy. Provided condition assessment and cost estimating of labor and material costs for the FEMA reimbursement process for replacement of damaged equipment throughout the site including: 480V Motor Control Centers, 2400V Switchgears, heating and ventilation equipment, mechanical process equipment and remote pump stations.

Ocean Outfall Improvements, Miami-Dade Water and Sewer District, Miami, Florida
Cost estimator for program management for ocean outfall improvements in Florida. The program management includes an estimated 28 capital projects valued at over $3.3 billion over 15 years to meet compliance plan requirements. The improvements will focus on increased effluent quality, decreased ocean outfall discharge volume, increased reuse of effluent and resilience against climate change. Improvements include work in the collection system, wastewater treatment facilities and groundwater replenishment wells. Cost estimating scope included validation of compliance plan costs for the selected alternatives which included liquid and solids upgrades at all three WWTPs, including a potential fourth WWTP, and collection system improvements.

EBMUD Struvite Control Project, Oakland, CA
Cost Engineer for a plant-wide assessment of struvite formation and assessment of control options at EBMUD's 168-mgd Main Wastewater Treatment Plant. The scope of work included field sampling, technological survey, process modeling, alternative evaluation and life cycle cost analysis of the centrate and dewatering systems.

Town of Windsor Influent Wet Well and Headworks Screening, Windsor, CA
Cost Engineer for the Influent Wet Well and Headworks Screening Project to provide upstream screening of the influent pump station and replacement of existing grit and fine screening equipment. The scope of work included alternative analysis of various vendors and technologies for both screening and grit washing equipment and detailed design of the selected alternatives. Cost estimating scope included new screening and grit equipment along with buried structures and process piping.

Alexandra F. Wells, PE

Asset Valuation

Ms. Wells has a range of experience in water supply and wastewater engineering. She has provided design, permitting, and construction phase services for numerous storage tanks, water transmission mains, pumping stations, and treatment facilities, as well as wastewater pumping stations.

Education

MS, Construction Management, Stevens Institute of Technology, 2000

BE, Environmental Engineering, Stevens Institute of Technology, 1997

BA, English Literature, Stevens Institute of Technology, 1996

Certification/License

Professional Engineer: NJ

OSHA Confined Space Entry

RAM-W Training, Haestad Methods, 2002

Areas of Expertise

- Program Management
- Storage Tanks
- Hydraulic Analysis
- Groundwater Treatment

Experience

- 19 total years
- 1 year with Hazen

Professional Activities

American Water Works Association

- New Jersey Section - Conference Committee Chair

Central Avenue Pump Station Fluoridation Station, City Of White Plains, NY
Project Engineer for the design of a new bulk fluoridation facility. Responsibilities included design calculations, design evaluation and coordinating design services among the design disciplines.

Condition Assessment Program for Delivery North, New Jersey American Water, NJ
Provided engineering support for an echologics condition assessment of approximately 76,000 linear feet of critical transmission mains in NJAW's northern NJ system. Responsibilities included providing planning and data review services, permitting support, hydraulic analyses involving transient determinations, and field inspection services, as needed.

Work Perfomed Under Prior Employment

Tingley Lane Pump Station, Middlesex Water Company, Edison, NJ
Project Engineer for the design and preparation of contract plans and specifications for a 3-mgd prefabricated booster pumping station and well chlorination facility. Responsible for obtaining required NJDEP permits.

Jumpers Hole and Kings Heights Elevated Water Storage Tank Rehabilitation, Anne Arundel County, MD
Assisted in the design and preparation of contract plans and specifications for two 1-MG elevated water storage tanks.

Marlboro Road Elevated Water Storage Tank, Old Bridge Municipal Utilities Authority, Middlesex County, NJ
Assisted in the design and permitting for a new 2-MG elevated storage tank. Provided assistance during construction.

Glen Avenue Water Tank, Ridgewood Village, Bergen County, NJ
Assisted in design of a new 1.15-MG dual-compartment tank.

Middletown Tank, New Jersey American Water, Monmouth County, NJ
Assisted in design of a new 1.5-MG hydropillar to replace an existing 1.17-MG standpipe. Responsible for obtaining required NJDEP permits and coordination between Federal, State, and local officials. Performed quantity take-offs and construction estimates.

Raritan Passaic System Hydraulic Modeling, New Jersey American Water, Essex, Mercer, Morris, Middlesex, Somerset, and Union Counties, NJ
Created and calibrated an 114,000-pipe (4,350-mile) model to reflect actual field conditions, added control settings, diurnal curves, and calibrated model to develop a Peak Day Extended Period Simulation (EPS). Data were directly imported from a GIS Geodatabase. Model simulated 47 separate hydraulic zones, 60 tanks, 222 pumps, and 57 PRVs. Model was comprised of three separate models – as the Passaic System, as the Raritan System, and as the combined Raritan-Passaic System.

Raritan Passaic System Pressure Zone Analysis, New Jersey American Water, Essex, Mercer, Morris, Middlesex, Somerset, and Union Counties, NJ
Performed analyses on adjoining pressure zones between the Raritan and Passaic systems to determine optimal operating conditions. Fire flow analyses, pressure analyses, and friction loss analyses were performed to evaluate feasibility of combining the different pressure zones. Capital improvements were evaluated for enhancement and upgrade of system-wide operations.

Project Schedule Administration, Various Water System Improvement Projects, New Jersey American Water, Various Sites, NJ
Assisted with the preparation and maintenance of design, permitting, and construction phase project schedules using Microsoft Project for various engineering studies. Schedules included timeframes for submission and completion of permit applications, completion of design phases, comparison of alternate bid start and finish dates, and substantial and final construction completion dates.

Engineering Project Management Consultant, District of Columbia Water and Sewer Authority (DCWater), Washington, DC
Responsible for maintaining the Water Capital Improvements Program (CIP) database, comprised of projects totalling $500 million. Responsibilities include interaction with DCWater project manager and schedule and budget checks to ensure projects are completed on time and within budget. Provided additional hydraulic modeling technical support, including water quality analyses and tank operations optimization.

Janet Ortega, EIT

AM Data Analyst, Data QC/Forms

Janet is a member of the asset inventory and condition assessment team and will assist in asset data gathering, organization and creation of condition assessment forms.

Education

BS, Environmental Engineering
University of California, Irvine

Areas of Expertise

- Asset Valuation
- Risk Assessment
- Life Cycle Cost Analysis
- Water Resources
- Water Treatment

Experience

- 1 year with Hazen

Professional Activities

American Water Works Association (AWWA)

American Society of Civil Engineers (ASCE)

Society of Hispanic Professional Engineers (SHPE)

Rio Hondo Recycled Water Pump Station Condition and Risk Assessment, Central Basin Municipal Water District, Commerce, California

Combined as-built drawing and field inspection data to create an asset register for the Rio Hondo Pump Station that consisted of a list of the pump station's assets with their attribute information (e.g., asset type, location, material, manufacturer, install date). Assisted in risk assessment evaluation by relating condition, useful life, asset and process level consequence of failure, and install year of the pump station's assets.

Asset Management Program, Goleta Sanitary District, Goleta, California

Assisted in asset valuation, risk assessment and long range funding needs for Goleta Sanitary District's wastewater and water reclamation facilities. Calculated probability of failure and developed customized remaining useful life that was combined with an asset valuation to project short term and long term rehabilitation and replacement funding needs.

Sewer Pipeline Rehabilitation Prioritization & Guidance Document, Moulton Niguel Water District, Laguna Niguel, California

Assisted in developing a risk-based prioritization tool for rehabilitation and replacement of the District's sewer pipelines. Used CCTV and GIS data to determine current condition of pipes and prioritize rehabilitation and replacement of pipes based on flow, surrounding land use, proximity to water bodies, capital cost and potential traffic impact. Developed a Sewer Pipeline Prioritization Guidance Document that provides general recommendations for type of rehabilitation actions based on pipe defect type, number of defects and frequency of defects.

Asset Data and CMMS Gap Analysis, South Orange County Wastewater Authority (SOCWA), Dana Point, California

Assisted in the identification and consolidation of all wastewater treatment assets owned and managed by SOCWA. Identified data gaps and provided data closure strategies along with an evaluation of the technical and functional capabilities of SOCWA's existing CMMS.

Roy Yu, EIT

AM Data Analyst

Mr. Yu has experience in field and bench scale testing, water treatment design, and design services during construction.

Education

MS, Civil and Environmental Engineering, Stanford University

BS, Civil Engineering, Columbia University

BA, Management Engineering, Claremont McKenna College

Areas of Expertise

- Water/wastewater
- Field and bench scale testing for water quality
- Water treatment design

Experience

- 1 total year
- 1 year with Hazen

Centralized Groundwater Treatment System, City of Monterey Park, CA
Project Engineer for the design of a UV AOP treatment facility for the removal of VOCs and 1,4 Dioxane in groundwater. Responsibilities include process mechanical design, support for procurement, and design services during construction.

Nanofiltration Water Treatment Plant for Color Removal, City of Signal Hill, CA
Served as the submittal coordinator and assistant engineer for design services during construction, including shop drawing submittals, and RFI's for a Design Build project delivery. Performed review of shop drawings, equipment cut sheets, and design drawings.

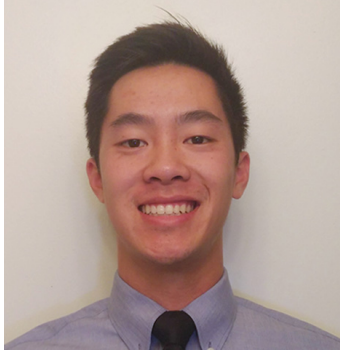
Treatment Plant Asset Inventory and Data Validation, Goleta Sanitary District, Goleta CA
Assisted in the development of an Asset Register for the Goleta wastewater treatment plant. Reviewed existing documents such as Operations & Maintenance Manuals, Vendor documents and as-built drawings to populate the asset register. Assisted in performing a field condition assessment of over 1500 assets to help develop a risk register for the plant.

Maerkle Reservoir Condition Assessment, Carlsbad Municipal Water District, CA
Performed a condition assessment and helped update the risk register for the Maerkle Reservoir System. Provided recommendations for asset rehabilitation and replacement in a technical memorandum.

Chromium VI Ion Exchange Water Treatment, Coachella Valley Water District, CA
Served as an assistant engineer in providing engineering support for the design of ion exchange treatment systems for hexavalent chromium removal. Tasks included the review of technical drawings, P&ID and mechanical sheets, pipe flow calculations, specifications, and general engineering support.

Emergency Response Plan, City of Beverly Hills, CA
The City of Beverly Hills recently brought a new RO groundwater treatment plant on-line to supplement its existing water supply. Mr. Yu helped assist in updating the City's Emergency Response Plan to incorporate the new treatment plant into its plan.

Pilot Study for Sulfides Removal, California Water Services Company, CA
Conducted field and bench scale tests to explore the removal of sulfides by aeration and the optimal contact time for ammonia breakpoint chlorination. Tasks included field sampling and analysis of groundwater quality parameters and constituents including ammonia and sulfides.



Carlton Nguyen, EIT

AM Data Analyst

Mr. Nguyen is an Assistant Engineer out of the Palm Desert Office. He has been involved with multiple Cr6 projects beginning at the University of California Riverside and most recently supporting the CVWD design. His experience includes supporting the preparation of design calculations, plans, specifications, and planning level cost estimates.

Education

BS Environmental Engineering, University of California, Riverside

Certification/License

Engineer-In-Training: California, #152540

Water Treatment Operator – Grade T2

Areas of Expertise

- Water Quality Compliance and Planning
- Groundwater Treatment
- Bench, Pilot, and Demonstration Testing
- Construction Management Support

Experience

- 2 total years

Professional Activities

American Water Works Association

American Society of Civil Engineers

His interests spans surface water, groundwater, wastewater, and the various treatment methods of each. Mr. Nguyen graduated in March 2015 from the University of California, Riverside with a B.S. in Environmental Engineering with a concentration in water pollution control. At the University of California, Riverside, Mr. Nguyen's senior design project was to derive a treatment process using UV light to reduced Cr(VI) to Cr(III). He began his career as a scientific assistant, providing data compilation and analysis, then moved deeper into the engineering field, first being introduced to the government side; then moving to the private contracting side where he learned about estimation, scheduling and general project management.

City of Coachella, Stannous Chloride Testing and Evaluation for Hexavalent Chromium Removal

Held the role of bench scale testing Stannous chloride (SnCl2) for the reduction and removal of Chromium 6 from the City of Coachella's drinking water. Mr. Nguyen assisted in the construction of a trailer mounted cartridge filter pilot system consisting of 6' contact chambers, automated valves and pumps, as well as chemical storage and dosage. Duties extended from reviewing the process diagrams and selecting suitable accessories to hands-on installation of said products. The pilot system was constructed and put into operation within two weeks to meet the test plan. Mr. Nguyen then spent the duration of six months operating the cartridge filter pilot and a pre-built media filter pilot. The operation of the two pilots consisted of daily water quality sampling and monitoring of testing variables. Following the pilot testing was a comprehensive report summarizing the testing and providing a feasible recommendation.

South Orange County Wastewater Authority, Evaluation of Aeration System Diffusers and Blowers

The Aerators for SOCWA's Regional Treatment Plant were analyzed to locate potential inefficiencies within the plant. Hourly readings from 2013-2016 of aerator flows and water quality were investigated to locate

specific instances of underperformance. Design of future aeration take upgrades is currently underway.

Coachella Valley Water District (CVWD) Chromium 6 Treatment Facilities

Assistant Engineer providing support for the design and construction Chromium treatment technologies across the Coachella Desert. Currently providing design services to CVWD for treatment facilities to remove hexavalent chromium from groundwater including 23 strong base anion (SBA) exchange sites, 2 weak base anion (WBA) exchange sites for a total of 27 wells, and a central resin regeneration facility for strong base resins, and 10 miles of transmission pipelines. Assisted in the design on transmission lines, yard piping, well pump sizing, and construction management support to start in July. Work is continuing with design, construction engineering with construction management at risk contractor, and operations optimization with a design fee of $22 million with estimated completion in 2020.

City of Banning Chromium 6 Treatment and Compliance Study

Assistant Engineer providing support for the assessment of Cr6 compliance options for the City of Banning. Evaluated 9 wells impacted with hexavalent chromium for different treatment technologies, treatment scenarios, blending options, plant siting, cost estimations, and conceptual design centered on the Client's specific needs and stipulations. Study is on-going estimated to be completed July, 2016

Coachella Water Authority SBA Operations and Implementation Evaluation

Assistant Engineer for the evaluation of cost and operational implications of various SBA treatment approaches, including containerized and conventional systems and various methods for resin regeneration and brine management. Well hydraulics and historical water quality were examined to identify the necessary well improvements associated with treatment. Supported Capital, O&M, and lifecycle cost estimations comparing the various options and scenarios.

Myoma Dunes Water Company Chromium 6 Treatment and Compliance Study

Assistant Engineer providing support for the assessment of Cr6 compliance options for Myoma Dunes Water Company. Evaluated 5 wells impacted with hexavalent chromium for different treatment technologies, treatment scenarios, plant siting, cost estimations, and conceptual design centered on the Client's specific needs and stipulations. Study is on-going estimated to be completed June, 2016

Daniela Panfil, EIT

AM Data Analyst

Ms. Panfil is an Assistant Engineer located in the Tempe, AZ office. She has experience in asset management and condition assessments, particularly at wastewater treatment plants, in addition to experience in engineering project planning and design of water and wastewater facilities. Her technical experience includes asset register development and condition assessment, assessment of reverse osmosis membrane performance, and design of water and wastewater infrastructure.

Education

BSE, Arizona State University, Tempe, 2016

BS, Arizona State University, Tempe, 2016

Certification/License

EIT: AZ

Areas of Expertise

- Asset Management/Condition Assessment
- Drinking Water
- Modeling and Data Analysis
- Wastewater Collection
- Water Distribution
- Energy Management

Experience

- 2 total years
- 1 year with Hazen

Professional Activities

AZ Water Association

American Water Works Association

Engineers Without Borders

Goleta Sanitary District, Asset Management Program, Goleta, California

Ms. Panfil worked with the project team to create an asset register and perform a condition assessment for the Goleta Sanitary District wastewater treatment plant. Tasks included finding and recording asset data from the operations and maintenance manual and record drawings, performing a gap assessment, performing a condition assessment in the field, and quality checking data from the field.

City of Scottsdale, Chaparral Water Treatment Plant Stainless Steel Corrosion Study, Arizona

The Chaparral Water Treatment Plant had been experiencing failure of its stainless steel piping due to corrosion. Ms. Panfil performed and drafted a literature review of possible causes of corrosion, led development of a field application for data collection and assessment of corrosion at the site, performed field assessments of corrosion, and presented findings from site visits.

City of Scottsdale, Large Diameter RO Assessment and Replacement, Scottsdale, Arizona

Project assessed the cause of failure for the Scottsdale Water Campus large diameter RO membranes, and specifications for replacement were developed. Ms. Panfil performed the normalization and analysis of the large diameter RO membrane operations data and compiled findings in a memo. The analysis revealed the need for membrane replacement, and Ms. Panfil drafted a membrane replacement specification. Ms. Panfil also

identified elements that were still operating at an acceptable performance level for continued used in order to reduce the number of new elements purchased.

City of Goodyear, Bullard Water Campus Membrane Assessment, Goodyear, Arizona
Performed normalization and detailed analysis of the City of Goodyear's RO membrane performance at the Bullard Water Campus. The intent of the study was to identify current membrane condition and which RO trains were in need of membrane replacement.

Town of Globe, Phase II Water System Improvements, Globe, Arizona
Was part of a team that performed wire to water efficiency testing of two existing pump stations to evaluate current pump performance and inform the design of future improvements. Ms. Panfil prepared a report summarizing the results of the testing and planned improvements to apply for rebates from the electric utility.

West Basin Municipal Water District, JMMCRWRP Phase II Expansion, Carson, California
This project involves the expansion of the Carson Water Recycling Plant with a new microfiltration system and tertiary membrane bioreactor. Ms. Panfil created an equipment list based on design drawings for project and identified optimal pump models for 12 different pumping applications.

City of Chandler, Drought Firming for 100 Year Water Supply, Chandler, Arizona, City of Chandler, Water Utilities Intern
Water utility intern tasked with updating an excel-based hydrological model of the City of Chandler's 100 year water supply based on 800+ years of tree ring and gaged data. The model was calibrated and run for multiple hydraulic scenarios and analyzed the data to determine the most likely water supply scenarios and presented strategies to drought proof Chandler's water supply. Highly experienced in manipulating and analyzing excel data.

Bryce Danker, PE

Process/Mechanical

Bryce Danker, PE, has experience in biological process modeling, tMBR pilot plant startup and operation, oxygen transfer testing and diffuser selection, analytical testing of water and wastewater quality, wastewater facility master planning, process controls and optimization.

Education

M.S., Environmental Engineering, University of California, Irvine

B.S., Civil and Environmental Engineering, California State Polytechnic University, Pomona

Certification/License

Professional Engineer: CA

Areas of Expertise

- Wastewater Process Engineering and Modeling
- Field testing (pilot testing, oxygen transfer determination, tracer studies)
- MBR pilot testing development, procurement, operation, and results analysis)

Experience

- 7 total years
- 2 year with Hazen

Professional Activities

CWEA SARBS Secretary 2017

Professional Member, WEF

Professional Member, CWEA

Member, CWEA Engineering Research Committee

Member, Tau Beta Pi, CA Nu Engineering Honor Society

Member, Chi Epsilon Civil Engineering Honor Society

Beneficial Use of Digester Gas at Regional Water Reclamation Facilities, Eastern Municipal Water District, Carson, CA
Lead Process Engineer for the biogas utilization study. His roles include technology evaluations, process modeling and analysis of conversation from IC to electric blowers, and assisting with preliminary siting and design.

Aeration System Preliminary Design, SOCWA Regional Treatment Plant , Laguna Niguel, CA
Process Engineer for this diffused aeration preliminary design project. His role includes evaluating current process loading, evaluating the current blower system, and completing a life-cycle analysis to select the preferred diffuser system for this 10-mgd facility.

Aeration System Improvements, Napa Sanitation District , Napa, CA
Process Engineer for this diffuser aeration design project. His roles include process modeling, aeration system evaluation, mechanical design, system startup, and optimization for this 15-mgd facility.

Tertiary Design, West Basin Municipal Water District, Carson, CA
MBR Lead Process Engineer for this innovative, 2.5-mgd water reuse facility design. His roles include process modeling, MBR system design, aeration system and process controls design, and process integration. Mr. Danker also developed membrane procurement packages for this project. Following construction, Mr. Danker will provide process and membrane startup and commissioning, and system optimization.

MBR Optimization and Piloting, Loudoun County Broad Run WRF , Loudoun County, VA
Process Engineer for this evaluation to optimize membrane flux and increase facility capacity. His role includes coordination with membrane vendors, preliminary design, and pilot plan development.

Signal Hill Nanofiltration Design-Build, City of Signal Hill, CA
Process Engineer for this nanofiltration treatment facility design. His duties include the design of chemical feed facilities and support mechanical equipment.

Experience Prior to Hazen and Sawyer

Lead Field Engineer, Tertiary MBR Nitrification Technology Pilot Test, West Basin Municipal Water District, Carson, CA
Served as the Lead Field Engineer and pilot operator for this innovative 10-month pilot project. The purpose of the pilot was to validate proof-of-concept to use a membrane bioreactor (MBR) for nitrification of tertiary-treated water for use as cooling tower water at refineries. His duties included operating the pilot unit, collaborating with laboratories for ongoing analyses, conducting process and equipment troubleshooting and optimization, completing all field analytical work, running progress meetings with the client, and leading tours for prospective clients.

Tertiary Membrane Bioreactor (tMBR) Nitrification Performance, West Basin Municipal Water District, Carson, CA
Mr. Danker completed independent bench testing of nitrifying biomass for validation of nitrification performance and response to changes in process environment. In addition, he developed spreadsheets to calculate nitrification rate, required HRT for nitrification, and alkalinity reduction. Additional analytical testing including effluent COD fractionations and mixed liquor concentration determination were conducted.

Lead Researcher, SOCWA Regional Treatment Plant, Plant Specific Oxygen Transfer Efficiency of Fine Bubble Diffusers , Laguna Niguel, CA
In the first half of 2015, Mr. Danker has completed in-process testing for two aeration basins at SOCWA's RTP. Analysis providing a comparison of transfer efficiency to the previous 2004 study has been completed. Additionally, the impacts of diurnal loading on oxygen transfer have been investigated. Outcomes of the research will include determination of transfer efficiency for newly cleaned aeration tanks and those which have operated for over 6 months. Biowin modeling will be utilized to assist in aeration system comparisons to quantify potential savings.

Ian Mackenzie, PE

Process/Mechanical

Mr. Mackenzie is an engineer with more than 25 years of experience in the design and construction of wastewater facilities.

Education

B.Sc., Civil Engineering, Queen's University (Canada)

Certification/License

Professional Engineer: CA

Areas of Expertise

- Design and construction of wastewater/water treatment plants
- Design and construction of pump stations

Experience

- 29 total years
- 4 years with Hazen

Professional Activities

California Water Environment Association

WEF Delegate Director

He has provided condition assessment expertise to previous Hazen asset management projects for Goleta Sanitary District and Central Basin Municipal Water District. He was also a key member of the team that designed improvements to the JB Latham Treatment Plant, including replacement of effluent valves and improvements to the covers and concrete repairs on the grit basins.

Rio Hondo Recycled Water Pump Station Condition Assessment, Central Basin Municipal Water District, City of Pico Rivera, CA
Assessment Lead. Mr. Mackenzie was responsible for condition assessment of mechanical equipment and civil and structural components of this 15,000 gpm recycled water pumping station. The condition assessment included the pumps, pipes, valves, electrical equipment and the hydraulic performance of the pumps. The condition assessment used a matrix approach for each asset to determine the remaining useful life and to prioritize the elements needing replacement immediately and over the next 5 years such as the large pump VFDs, one of the electrical transformers, some valves and a drain sump pump. CBMWD will use this Condition Assessment to evaluate their plans going forward to either update the pump station or replace it and add capacity for their future demands

Goleta Wastewater Treatment Plant Asset Management Program, Goleta Sanitary District
Wastewater Engineer. This project conducted an asset valuation and condition survey of all assets at the Goleta Sanitary District's wastewater Treatment Plant. Mr. Mackenzie provided expertise for condition surveys and asset criticality ranking carried out under this project.

JB Latham Treatment Plant Miscellaneous Improvements, South Orange County Wastewater Authority, Dana Point, CA
Process Mechanical Lead. Mr. Mackenzie was responsible for process mechanical design condition of improvements to this 13 mgd wastewater treatment facility. The project included improvements to the existing grit basins, replacement of the plant standby generator, effluent valves and effluent flow meters. The project was carefully coordinated with plant maintenance and operating staff to ensure that all improvements could be carried out with minimal impact on operations.

Terminal Island Water Reclamation Plant Headworks Improvements, City of Los Angeles, CA

Project Engineer. This project replaced the existing screens, grit removal and grit and screenings handling equipment for this 30 mgd treatment plant. The project includes conversion from chain and bucket grit removal to pumped grit removal and installation of a new screenings conveyance flume. Mr. Mackenzie conducted a comprehensive review of grit removal options including vortex grit units, Headcell units and renovating the existing aerated grit chambers. The construction sequence was evaluated in detail to ensure that the facility could remain online throughout the project. Mr. Mackenzie prepared the predesign report and oversaw the preparation of design drawings and specifications by civil, structural, mechanical, electrical and I&C engineers.

Investigation of Sewers and Drains Affecting the Safety of Slope Features in the Catalogue of Slopes, Phase 2, Hong Kong

Project Manager. This project conducted condition surveys of more than 250 miles of pipelines. The scope of works under the project included preparing and managing the investigation contract and making recommendations for the repairs of damaged pipelines. Investigation techniques employed included CCTV and man entry surveys of pipelines as well as manhole surveys. The project team developed and agreed with the client a strategy for prioritization of pipeline repairs. An urgent reporting channel was developed so that pipelines with major defects could be reported on an urgent basis for immediate action while those with less critical defects would be reported through normal channels for inclusion in a routine maintenance program.

Influent Wet Well and Headworks Screening Project, Town of Windsor, CA

Process Engineer. Mr. Mackenzie served as process lead for this project which upgraded the 2mgd Windsor Wastewater Reclamation Plant. The project evaluated replacement of the facility's existing fine screen and grit removal facilities as well additional upstream protection to resolve clogging issues at the influent pumping station.

Evaluation of Process Improvements for Proposed Phase I and Phase II Effluent Limitations at Tapia WRF, Las Virgenes Municipal Water District, CA

As Project Engineer, Mr. Mackenzie oversaw the evaluation of options for providing flow equalization including a new pump station capable of transferring up to 8000 gpm to a new flow equalization basin.

Christopher Thunhorst, PE

Electrical/SCADA

Mr. Thunhorst is a Senior Associate in the firm's Irvine office and he serves as Hazen's Electrical and Instrumentation Group Leader for the West Region. Mr. Thunhorst has over 16 years of experience in electrical engineering for building systems, water and wastewater treatment facilities, and pumping stations associated with water distribution and wastewater collection systems.

Education

BSEE, North Carolina State University

AAS, Asheville-Buncombe Technical Community College

Certification/License

Professional Engineer: CA, AZ OH, KY, TN, IN, PA,

Areas of Expertise

- Medium and Low Voltage Power Distribution
- Standby Power Systems
- Control Systems
- Process Instrumentation
- SCADA Systems

Experience

- 16 total years

Professional Activities

Instrumentation, Systems, and Automation Society

International Association of Electrical Inspectors

J.B. Latham Treatment Plant Miscellaneous Improvements – South Orange County Wastewater Authority

Project Manager and Lead Electrical Engineer for an improvements project that includes rehabilitation of the Plant 1 Grit Basins, replacement of the Plant 1 Standby Generator, Replacement of the Effluent Flow Meters, and Replacement of the Plant Effluent valves.

Well #9 Water Treatment Plant – Signal Hill, CA

Lead Electrical Engineer for the design of a nano-filtration water treatment plant with a treatment capacity of 2 MGD. The project included a new well pump, cartridge filter pre-treatment, two NF treatment trains, chemical feed systems, product water tank, product water pumps, non-recoverable waste system, clean in place system, and an operations/training building. The electrical design also included a 600kW diesel standby power generator.

Carson Regional WRF Plant Improvements – Carson, CA

Lead Electrical Engineer for the plant improvements project including design of a new 2 MGD tertiary-MBR, a 2.64 MGD microfiltration system, modifications to the potable water service, and a new standby power system to supply backup power to the RO product pumps and limited tMBR loads.

Standby Power Improvements – Sanitation District No. 1 of Northern Kentucky

Electrical Engineer for the Initial Action Generator Project including generator installations and electrical upgrades at twenty four (24) wastewater pumping stations.

Regional Treatment Plant Site Lighting Study – South Orange County Wastewater Authority
Project Manager and Electrical Engineer for a site lighting study which included a lighting survey, illumination survey with plant operations staff, and a technical memorandum to document findings, recommendations for improvements, and an opinion of probable cost broken down by area.

Aeration Basin Diffusers, Instrumentation and Controls Project – Napa Sanitation District, Napa, CA
Technical Advisor for the Aeration Basin Diffusers, Instrumentation and Controls Project. This project included replacement of the aeration basin diffusers and upgrade of the aeration basin control system to include ammonia based DO control.

Electrical Engineering Services for Treatment Plants and Pump Stations – Sanitation District No. 1 of Northern Kentucky
Project Manager for an electrical task order contract at SD1's Treatment Plants and Pump Stations. Tasks executed under this contract include evaluation of a hydroelectric generator for the Dry Creek WWTP outfall and multiple energy management implementation tasks. As Project Manager, Mr. Thunhorst managed design teams and sub consultants which provided electrical testing and SCADA implementation services.

Richard Miller Treatment Plant – Greater Cincinnati Water Works
Project Manager and Electrical Engineer for the Richard Miller Treatment Plant Generator Project which included the installation of a new 1,000kW, 4,160V standby generator to supply backup power to the Filter Building. The project also included relocation of a chemical fill station, expansion of the electrical room, modifications to the existing medium voltage switchgear and new paralleling controls to allow closed transition transfer and soft loading capabilities.

Central Basin Rio Hondo Pump Station Condition Assessment - Los Angeles, CA
Lead Electrical Engineer for the Condition Assessment and Risk Failure Analysis of the Rio Hondo Recycled Water Pump Station. The tasks performed by Mr. Thunhorst included a visual inspection and condition assessment, risk analysis, and asset valuation of all electrical assets.

Clarksville WWTP – Plant Improvements Project – Clarksville, TN
Lead Electrical Engineer for the Clarksville WWTP Improvements project design which included a new 1500 kW, 12,470V standby generator, modifications to the plants existing medium voltage distribution system, a new Headworks Facility, modifications to the plants Aeration Basins, new Final Clarifiers, RAS/WAS Pump Station, Chlorine Contact Basin, Chemical Building, Blended Sludge Storage and Pump Station, modifications to the Maintenance and Dewatering Building including the installation of four (4) new centrifuges and a dewatered sludge conveyance system, new Odor Control Facilities, and a new Administration Building.

LeSourdsville WRF Phase 2 Improvements – Butler County Water and Sewer Department, Butler County, OH
Lead Electrical Engineer for the LeSourdsville WRF Phase 2 Improvements Project design which included a new medium voltage electrical distribution system and a new main electrical building, paralleled generators with medium voltage paralleling switchgear, a new influent pump station, new preliminary treatment facility, conversion of an existing oxidation ditch to an equalization basin, new aeration basins and blower building, new final clarifier, existing final clarifier improvements, and existing RAS/WAS pump station expansion.

Hector Benavides

Electrical/SCADA

Mr. Benavides is an assistant engineer with Hazen working out of the company's Irvine, CA office. While attending graduate school at California State University of Long Beach, he concentrated in the areas of electronics and embedded systems. As a new engineer with Hazen, his current focus is in the design of electrical power distribution systems for water and wastewater treatment facilities which has included work on the design of lighting, motor control systems, variable frequency drives, and building automation systems.

Education

MS, Electrical Engineering, California State University of Long Beach

BS, Science-Business, University of Notre Dame

Areas of Expertise

- WT and WWTP Electrical Distribution

Experience

- 1 total year
- 1 year with Hazen

Professional Activities

IEEE

City of Montery Park – Design Build Project for a Centralized Groundwater Treatment System, Monterey Park, California

As part of the Filanc DB Team, Mr. Benavides assisted in designing the electrical power distribution system for the new UV light trains, hydrogen peroxide dosing system, converted LGAC filters, and a sodium hypochlorite generation system. This project required completion of electrical site plan designs, power distribution plans, controls and SCADA system interface as well as a lighting and grounding plans. The overall objective of this project was to address widespread groundwater contamination by volatile organic compounds (VOCs) while also increasing production from Wells 5, 12, and 15 from 5,700 gallons per minute (gpm) to 7,400 gpm.

City of Clifton – Waste Water Treatment Plant Upgrades, Clifton, Maryland

As an Assistant Engineer, Mr. Benavides was tasked with creating electrical site plans, area classification plans, single line diagrams, and control schematics in support of the installation of a new package treatment facility and demolition of existing electrical equipment associated with existing process tank.

West Basin Municipal Water District – Carson RWRF TMBR and MF Upgrades Project, Carson, California

Mr. Benavides participated in the design of the 2.5 MGD Tertiary MBR and 2.64 MGD MF Systems by working on the electrical controls portion of the design plan.

West Basin Municipal Water District – Seawater Desalination Demonstration Facility Decommissioning, Redondo Beach, California

As an Assistant Engineer, Mr. Benavides assisted the project for decommissioning of the 110 GPM seawater desalination system. As part of the engineering services provided during construction, Mr. Benavides was tasked with reviewing and addressing RFIs, RFCs, submittals and change order requests submitted by the Contractor that were pertinent to the electrical work required of the project.

RESUME

Ludwig I. Smeets, PE
(714) 328-3912
Ludy.Smeets@JLTConsultants.com

Mr. Smeets has over 38 years of experience in the civil engineering profession, including 15 years in the public sector, and over 23 years with private consulting firms serving public entities and private land developers. Mr. Smeets has provided condition assessment services as an engineer assessing roads, bridges, and storm channels for input into the asset management plan for various agencies including City of Livermore, Port of San Diego, Cities of Chula Vista, Carlsbad, San Diego, Coronado, Thousand Oaks, Lake Elsinore, Dublin, and Irvine Ranch Water District and Eastern Municipal Water District.

Relevant Experiences

- Asset Management Program – Condition Assessments of bridges, storm channels and flood control facilities, City of Livermore
- Asset Management Program – Condition Assessments of roads, waterfront facilities – piers, dock facilities, Port of San Diego
- Asset Management Program– Condition Assessments of numerous facilities, including buildings, roads, parks, and drainage facilities, City of Chula Vista
- Orange Avenue Improvements, City of Long Beach
- Bayshore Pedestrian Bridge condition assessment, OC Parks

Project Experiences

- Asset Management Program – Condition Assessments of bridges, storm channels and flood control facilities, City of Livermore
- Peer Review Contract, Port of Long Beach
- Contractor's project review, Port of Long Beach
- Ocean Blvd at Bluffs Staircase Projects, City of Long Beach
- Drake Soccer Field and Park, City of Long Beach
- Artesia Blvd Improvements, City of Long Beach
- Airport Access Roadway Design – Nellis Air Force Base, NV
- UCI Medical Center Infrastructure Planning, UCI
- City of Buena Park Plan Checking of public projects
- Environmental Discretionary Permit Plan Checking, County of Orange
- Building & Safety Code and Plan Checking, County of Orange
- Capital Projects construction cost review, Port of San Diego
- Ball / Sunkist Intersection Improvements – Anaheim, CA
- Alameda Corridor East (ACE) through 3 Cities – San Gabriel, CA
- Telegraph Road Improvements – Pico Rivera / Downey, CA
- Holiday Inn Express – Lake Forest, CA
- Fire System and Alarms Upgrade – Anaheim City Hall, Anaheim, CA
- Del Mar Fairgrounds, Multi-purpose Buildings Site Development – California Construction Authority
- Riverside County Jail Facility Improvements, Banning, CA
- Culver / Walnut Intersection Study – City of Irvine, CA
- Sunnymead Boulevard Revitalization Project – Moreno Valley, CA
- Pigeon Pass Road Widening – Moreno Valley, CA
- Quail Hill Development Project – Quail Valley, Riverside County, CA
- Santa Barbara Fairgrounds Infrastructure Improvements – California Construction Authority
- 17th Street Improvements – Costa Mesa, CA
- Wilson Street Improvements – Costa Mesa, CA

Education

Civil Engineering - 1979
California State University Long Beach

Command & General Staff College, Ft. Leavenworth, KS
U.S. Army – 1989

Masters Military Science – Texas A&M - 1990

Registration

Civil Engineer, California, 37221
Civil Engineer, Nevada, 11105
Civil Engineer, Arizona, 28642

Years of Experience

38 years in Civil Engineering

Professional Affiliations

Member
American Public Works Association

Member
American Society of Civil Engineers

Member
National Society of Professional Engineers

Member
Society of American Military Engineers

- Pavement Management Program – City of Villa Park
- Bolsa Avenue Median Island & Street Rehab – City of Westminster
- Friends Baptist Church – Yorba Linda, CA
- South Shores Church – Dana Point, CA
- Valley Storm Drain – City of Villa Park
- San Gabriel Blvd. Improvement Project – City of San Gabriel
- Villa Isle Area Storm Drain – City of Villa Park
- Carson Street Master Plan for Drainage & Sewer – City of Carson
- Carnelian Street Storm Drain – City of Rancho Cucamonga
- Sewer Improvement /Relief Lines – City of Stanton
- Main Street/Brian Street Rehabilitation – City of Tustin
- Magnolia Street et al Street Rehab – City of Lynwood
- Carlin Avenue Street Rehab – City of Lynwood
- 120th Street et al Rehab – County of Los Angeles
- John Wayne Airport Runway Rehabilitation – County of Orange
- Savage Canyon Landfill Expansion – City of Whittier
- Well-sites Reconstruction – City of Whittier
- Water Reservoir Upgrades – City of Whittier
- Earthquake-related-damage Facilities Repair, including parking structures and water reservoirs – City of Whittier
- Harbor Blvd Upgrade – City of Fullerton
- Lemon Street Underpass Detour Road – Fullerton
- Lemon Street Storm Drain – City of Fullerton
- Bastanchury Road Widening – City of Fullerton
- 15- acre Norwalk Town Center – Hughes/Townsend Developer
- 350-acre Oxnard Town Center – Warmington (Developer)
- Marbella Country Club Improvements – City of San Juan Capistrano
- Various Street Improvements – City of San Juan Capistrano
- Red-Line Improvements – Metro Rail
- Roadway Feasibility Studies – Worldport L.A.
- San Clemente Town Center – Comm'l Developer
- Needles Town Center – Hughes/Townsend Comm'l Developer
- Main Street Improvements & Storm Drain – City of Lake Elsinore
- Master Sewer Plan Update – City of Fullerton
- 600 acre Sunset Greens Master Plan, Mesquite, NV -Residential Developer
- Hyatt Hotel/Casino at Lake Las Vegas – Henderson, NV
- Hilton Hotel/Casino at Lake Las Vegas – Henderson, NV
- Dragon Ridge Golf Course – Henderson, NV
- Reflection Bay Golf Course – Henderson, NV
- Mountain Falls Golf Course – Pahrump, NV
- Reserve Hotel/Casino, Henderson, NV – Gaming Developer
- Sandy Valley Airstrip – Private Developer, Clark County, NV
- County Health Center – Clark County, NV
- Island 18 Sewer System – City of Reno, NV
- Island 5 Sewer System – City of Reno, NV
- Stephanie Street Improvements – City of Henderson, NV
- Wigwam Street Improvements – City of Henderson, NV
- Wigwam Street Water Main – City of Henderson, NV
- 1,100-acre MacDonald Highlands Master Residential Plan – Residential Developer, Henderson, NV
- 550-acre Front Sight Firearms Training Center – Pahrump, NV
- 1,050-acre Mountain Falls Master Plan – Pahrump, NV
- Village Center Commercial Center – Las Vegas, NV
- Front Sight Sewer/Water Master Plan – Pahrump, NV
- Front Sight Master Plan of Drainage & Hydrology Study – Pahrump, NV
- Parcel 38 Hydrology Study and Grading Plan – 30-acre 60-unit Residential Site, Lake Las Vegas, NV
- Gilbert Street Grade Separation – City of Fullerton
- Lemon Street Grade Separation – City of Fullerton
- Kierland Hotel/Kierland Road Improvements – Phoenix, AZ

- Kierland Road Shopping Center Grading Plan and Roadway Design – Phoenix, AZ
- ARCO Minimarts – CA, NV, AZ
- Chevron Minimarts/Service Stations – CA, NV, AZ
- BP Service Stations – Various CA Locations
- San Joaquin Hills Toll Road – County of Orange
- Lakewood Town Center – Hughes/Townsend Commercial Developer
- 166th Street Improvements – City of Cerritos
- Orangethorpe Avenue Street Reconstruction – City of Fullerton
- Del Obispo Street Improvements – City of San Juan Capistrano
- Marbella Golf Club Entry and Roadway Design – City of San Juan Capistrano
- City of Huntington Beach Various intersection improvements
- City of Huntington Beach Pier Development and site improvements
- Bastanchury Road Widening – City of Fullerton
- Master Plan of Drainage – City of Fullerton
- Master Plan of Sewers – City of Fullerton
- White Park Improvements – City of Fullerton
- Harbor Blvd Improvements – City of Fullerton
- Fullerton Transportation Center – City of Fullerton
- Union Pacific Train Depot Relocation – City of Fullerton

South Orange County Wastewater Authority Infrastructure Valuation Fee Estimate

Tasks/Deliverables	Hazen and Sawyer						Total	
	Senior Technical Advisor	Senior Associate	Senior Associate / Field	Associate Engineer	Principal Scientist	Assistant Engineer		
	Hours						Hours	Fees
Hourly Rate	$260	$230	$185	$165	$160	$120		
Task 0 – Project Management								$ -
Progress Reports		3					3	$ 690
Project Coordination		60					60	$ 13,800
Task 0 Total		**63**					**63**	**$ 14,490**
Task 1 – Data Collection and Consolidation								$ -
Project kick off meeting	2	2			2		6	$ 1,300
Request for information		2	2	2	2	8	16	$ 2,440
Data Consolidation and Desktop Inventory		16	4		80	400	500	$ 65,220
Gap Closure Workshop		4			8	8	20	$ 3,160
Preliminary wastewater system asset inventory database		2			4	16	22	$ 3,020
QC		4					4	$ 920
Task 1 Total	**2**	**30**	**6**	**2**	**96**	**432**	**568**	**$ 76,060**
Task 2 – Asset Valuation Methodology								$ -
One four (4) hour Asset Valuation Methodology Confirmation Workshop		4		4	4		12	$ 2,220
Workshop agenda and materials		8		8	8		24	$ 4,440
QC		4					4	$ 920
Task 2 Total		**16**		**12**	**12**		**40**	**$ 7,580**
Task 3 – Field Inspection								$ -
Field visit kick-off meeting and two (2) days of visual inspection at each plant		16	16	48	48	24	152	$ 25,120
Customized electronic condition assessment forms						8	8	$ 960
Updated draft asset register					16	16	32	$ 4,480
QC		8					8	$ 1,840
Task 3 Total		**24**	**16**	**48**	**64**	**48**	**200**	**$ 32,400**
Task 4 – Asset Valuation								$ -
Draft asset register updated with asset valuations				200	16	40	256	$ 40,360
QC		16	2				18	$ 4,050
Task 4 Total		**16**	**2**	**200**	**16**	**40**	**274**	**$ 44,410**
Task 5 – Final Documentation								$ -
Final Wastewater system asset inventory model with Dashboards					16	4	20	$ 3,040
Draft Technical Memorandum describing valuation approach and findings		18			16	8	42	$ 7,660
One meeting with the SOCWA staff to discuss findings		4		4	4		12	$ 2,220
Final Technical Memorandum		8			8		16	$ 3,120
Attendance at up to two (2) additional meetings		4		4	4		12	$ 2,220
QC	2						2	$ 520
Task 5 Total	**2**	**34**		**8**	**48**	**12**	**104**	**$ 18,780**
Direct Expenses								**$ 4,000**
Total							**1,249**	**$ 197,720**

August 17, 2017

Mary Carey
Finance Controller
South Orange County Wastewater Authority
34156 Del Obispo Street
Dana Point, CA 92629

VIA EMAIL

Re: Proposal to Provide Wastewater Infrastructure Valuation Services

Dear Ms. Carey,

Per your request, I am providing you with this letter proposal on behalf of Carollo Engineers, Inc. (Carollo) to conduct a valuation analysis for the wastewater treatment and collection/outfall system assets of the South Orange County Wastewater Authority (SOCWA). Carollo has provided services similar to those described below to wastewater utilities throughout California and the U.S.

It is our understanding that SOCWA wishes to gain a better understanding of the value of its wastewater treatment and collection/outfall system assets as part of a broader analysis to support its regular "use audit" and other ongoing SOCWA asset management objectives. The analysis described in the Scope of Work below will complement recent efforts undertaken by SOCWA to value land, buildings, and structures. Our goal is to gather and analyze information that will result in a supportable valuation of SOCWA's wastewater treatment and collection/outfall system assets based on industry best practices.

Scope of Work - Phase 1

Task 1: Wastewater System Information Review and Asset Identification

Carollo will review all currently available information pertaining to the wastewater treatment plant and collection/outfall system assets. This information includes geospatial data, maintenance system records, planning studies, facilities design documentation, fixed asset and depreciation information, financial studies, federal/state loan/grant applications, and other information that would be beneficial towards determining the current asset inventory and its condition. Because SOCWA is a current Carollo client, we anticipate that some of the necessary information will already be in our possession, however we will provide a formal request for additional information should the need arise.

Carollo will perform a cursory review of the information provided to better understand the options for valuation methodology to be used. As part of this task, Carollo will prepare a basic Excel-based asset inventory model that identifies a preliminary list of the above and below ground assets for the

wastewater treatment plant and outfall system. This model will be populated with additional information as described in subsequent tasks below.

Task 1 Deliverables:

- Project kick off meeting
- Request for information (if necessary)
- Preliminary wastewater system asset inventory model

Task 2: Wastewater Asset and Valuation Approach Confirmation Workshop

Carollo will facilitate a half-day workshop to review the findings of the data review and the contents of the preliminary asset inventory model prepared under Task 1. Carollo will present alternative approaches for performing the valuation, which will allow Carollo and SOCWA to discuss the relative strengths and weaknesses of various asset valuation approaches. The goal of the workshop will be to determine the preferred approach for conducting the valuation.

In addition, this meeting will provide Carollo and SOCWA staff the opportunity to share additional information regarding particular assets or asset categories that may not be readily available in written form, e.g. operational/maintenance challenges, installation/upgrade in-service dates, etc.

While Carollo recommends that SOCWA utilize the "*Replacement Cost New, Less Accumulated Depreciation*" approach for this exercise, as it is the most commonly applied and industry accepted methodology for these types of valuation exercises, we will work with SOCWA to select the most appropriate and supportable approach. The efforts under Task 2 will provide better context to the information obtained under Task 1, allowing the Carollo team to provide the condition assessment services under Task 3 with greater efficiency.

Should the valuation approach determined under Task 2 require a level of effort not anticipated under the Task 3 scope below, Carollo will work with SOCWA to revise the Task 3 scope and budget prior to executing the Scope of Work for Phase 2 in order to best meet the needs of this assignment.

Task 2 Deliverables:

- One four (4) hour Confirmation Workshop
- Workshop agenda and materials

Scope of Work - Phase 2

Task 3: Wastewater System Field Visit and Preliminary Condition Assessment

Carollo will conduct an on-site investigation and general asset condition assessment for all readily-accessible wastewater system assets. This effort will involve visual inspection of above ground wastewater treatment plant and collection/outfall system infrastructure to initially assess the degree to which the system components have been historically maintained. Asset maintenance records, installation date information, and other data acquired during Tasks 1 and 2 will guide our field assessment. It is assumed that the visual inspection will consist of four (4) days of on-site field visits - three (3) days focused on the wastewater treatment plants and one (1) day on the above-ground collection/outfall system facilities.

Information obtained during the Task 3 effort will be incorporated into the wastewater system inventory model developed under Task 1, and the remaining useful life of each asset will be approximated in accordance with general industry standards and estimating approaches. For below-ground and inaccessible wastewater system assets (e.g. collection/outfall system piping, treatment basins, etc.), Carollo will rely on fixed asset installation and maintenance records and industry-standard service life estimates to approximate remaining useful life.

Task 3 Deliverables:

- Field visit kick-off meeting and four (4) days of visual inspection
- Wastewater system asset inventory model update

Task 4: Wastewater Asset Valuation

Based on the asset information obtained under Tasks 1, 2, and 3, and the asset valuation calculation methodology confirmed under Task 2, Carollo will calculate an estimate of the value of all above- and below-ground wastewater system assets utilizing the wastewater system asset inventory model developed under Tasks 1 and 3.

Carollo's findings will be summarized in a draft Technical Memorandum, accompanied by supporting model outputs (i.e. spreadsheets). Following a findings meeting and review of the work product by SOCWA, Carollo will prepare a final version of the Technical Memorandum.
In addition the effort described above, Task 4 includes attendance by Carollo staff at up to two (2) additional SOCWA staff, management, and Board meetings as requested.

Task 4 Deliverables:

- Wastewater system asset inventory model update
- Draft Technical Memorandum describing valuation approach and findings
- One meeting with the SOCWA staff to discuss findings
- Final Technical Memorandum
- Attendance at up to two (2) additional meetings

Schedule

We propose to complete the Scope of Work described above within two (2) months from receiving notice to proceed by SOCWA, assuming reasonable access to information, and the scheduling of Task 3 activities.

Budget

Carollo will complete the Scope of Work described above for a sum not to exceed $**105,358**, inclusive of all labor, travel expenses, and other direct costs. A task-level breakdown of this level of effort has been provided as Attachment A to this letter proposal.

We look forward to working with you on this important project. If I can answer any questions, please let me know. I can be reached at 510-301-5066 or krhorer@carollo.com.

Very truly yours,
CAROLLO ENGINEERS

Kyle B. Rhorer
Vice President
Utility Advisory Services

CC: Betty Burnett, General Manager, South Orange County Wastewater Authority
Brian Peck, P.E., Director of Engineering, South Orange County Wastewater Authority

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Engineers...Working Wonders With Water™

ATTACHMENT A - Task Level Budget
Revised 8/17/2017

South Orange County Wastewater Authority
Wastewater Infrastructure Valuation Services

	Task	Project Manager *Kyle Rhorer*	Valuation Lead *David Baranowski*	Engineering Support	Valuation Support	Admin Support	Total Hours	Total Labor Costs	Other Direct Costs	Total Costs
1	Information Review and Asset Identification	12	40	12	8	0	**72**	$14,632	$2,042	$16,674
2	Asset and Approach Confirmation Workshop	12	12	0	0	8	**32**	$6,756	$1,574	$8,330
3	Wastewater System Field Visit and Condition Assessment	48	104	40	40	8	**240**	$47,600	$5,208	$52,808
4	Wastewater Asset Valuation	28	56	12	8	12	**116**	$23,788	$3,757	$27,545
	TOTAL HOURS	**100**	**212**	**64**	**56**	**28**	**460**			
	HOURLY RATE	$284	$205	$168	$126	$111				
	TOTAL COST	**$28,400**	**$43,460**	**$10,752**	**$7,056**	**$3,108**		**$92,776**	**$12,582**	**$105,358**

RESOLUTION NO. 2017-08

A RESOLUTION APPROVING SIDE LETTERS OF AGREEMENT NO. 1 AND NO. 2 TO THE JULY 1, 2017 TO JUNE 30, 2020 MEMORANDUM OF UNDERSTANDING BETWEEN THE SOUTH ORANGE COUNTY WASTEWATER AUTHORITY AND THE SOCWA EMPLOYEE ASSOCIATION

WHEREAS, the employees represented by the South Orange County Wastewater Authority Employee Association (SEA) are a viable and important part of the SOCWA organization, and

WHEREAS, the SEA has met and conferred in good faith with the designated Authority representatives on hours and other terms and conditions of employment; and

WHEREAS, as a result of the meet and confer process Side Letters of Agreement No. 1 and No. 2 to the Memorandum of Understanding (MOU) between SOCWA and the SEA have been presented to the Board for its approval.

NOW, THEREFORE, the Board of Directors of the South Orange County Wastewater Authority does hereby RESOLVE, DETERMINE AND ORDER as follows:

Section 1. The General Manager or the Chairperson of the Board of Directors are authorized to execute Side Letters of Agreement No. 1 and No. 2 on behalf of the Authority.

Section 2. The Secretary of SOCWA shall certify the adoption of Resolution No. 2017-04 and shall maintain a certified copy thereof at the principal office of SOCWA.

ADOPTED, SIGNED AND APPROVED this 7th day of September 2017

SOUTH ORANGE COUNTY WASTEWATER AUTHORITY

By:_____
Dan Ferons, Chairman

By:_____
Betty Burnett, Secretary