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CONSULTING ENGINEERS

LEUCADIA WASTEWATER DISTRICT
SEWER SYSTEM MANAGEMENT PLAN
FISCAL YEAR 2017 AUDIT

November 21, 2017

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LEUCADIA WASTEWATER DISTRICT
SEWER SYSTEM MANAGEMENT PLAN
FISCAL YEAR 2017 AUDIT

November 21, 2017

Prepared by:
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Job No. 103-015/7

DEXTER WILSON ENGINEERING, INC.

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November 21, 2017

103-015/7

Leucadia Wastewater District
1960 La Costa Avenue
Carlsbad, CA 92009

Attention: Paul Bushee, General Manager

Subject: Leucadia Wastewater District Sewer System Management Plan Fiscal Year 2017 Audit

The Leucadia Wastewater District's Sewer System Management Plan (SSMP) was adopted by the District Board and certified by the General Manager in June 2014. The purpose of the SSMP is to memorialize and publicly present in a central document the programs and activities utilized by the Leucadia Wastewater District (District) to effectively manage its wastewater collection system. The SSMP requires audits of the SSMP at least every two years. The District has decided to conduct annual audits.

The purpose of this letter-report is to present the Fiscal Year 2017 (FY17) Audit (the third audit of the 2014 SSMP) in fulfillment of the District's SSMP requirements. The Audit consists of completing the Section IX SSMP Evaluation Checklist and Section X SSMP Audit Checklist. These checklists are accompanied by summaries of the SSMP activities for the year.

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Section IX SSMP Evaluation Checklist

The Statewide Waste Discharge Requirements (WDR) governing sanitary sewers specify that each Wastewater Collection Agency shall:

- maintain relevant information that can be used to establish and prioritize appropriate SSMP activities,
- monitor the implementation and measure the effectiveness of each element of the SSMP,
- assess the success of the preventative maintenance program,
- update program elements, as appropriate based on monitoring or performance evaluations, and
- identify and illustrate Sewer System Overflow (SSO) trends, including frequency, location, and volume.

Maintaining the applicability of the SSMP to District activities necessitates ongoing evaluation of the activities the District performs, their success, and improvement if necessary. The Section IX SSMP Evaluation Checklist (Evaluation Checklist) is used on an annual basis to evaluate the applicability and effectiveness of the District's SSMP.

In completing the Evaluation Checklist (found in Attachment A), we find that, in general, the District's activities, programs, and efforts meet or exceed the requirements of the SSMP. Minor changes were made to the SSMP to more accurately reflect the District's procedures and customer/community outreach. However, the changes do not necessitate a re-adoption of the SSMP prior to the scheduled June 10, 2019 revision, per the required five year cycle. In completing the Evaluation Checklist, there are several items to note, as discussed in the Audit Discussion section below.

Section X SSMP Audit Checklist

The Statewide WDRs governing sanitary sewers specify that the District shall conduct periodic internal audits, appropriate to the size of the system and the number of SSOs. These audits must occur, at a minimum, every two years and a report must be prepared

and kept on file. The audit shall focus on evaluating the effectiveness of the SSMP and the District's compliance with the SSMP requirements, including the identification of any deficiencies in the SSMP and the steps taken to correct them.

The District has chosen to conduct their SSMP audit on an annual basis.
In completing the Audit Checklist, we find all requirements of the checklist to be current and implemented. The completed Audit Checklist for FY17 can be found in Attachment B.

Audit Discussion

The following paragraphs highlight notable elements of the Audit organized by the relevant SSMP Section. Additional notes can be found on the Evaluation Checklist in Attachment A.

Sections I, II, and III (District Goals, Organization, and Legal Authority). No appreciable changes have occurred to the District's Goals, Organization, or Legal Authority since the 2014 SSMP.

There were no new employees hired in FY17.

Section IV (Preventative Maintenance Program). General statistics regarding the District's preventative maintenance activities are provided in Attachment C. Also in Attachment C, Exhibit C-1 graphically illustrates those areas within the District which are readily accessible for hydrocleaning and closed circuit television (CCTV) inspection and those areas which have additional needs or requirements in order to hydroclean or CCTV, such as the need for significant traffic control procedures or night work due to day time traffic volume or wastewater flows.

Exhibit C-2 tracks the general progress of CCTV inspections in the District. Per the District's 2014 SSMP, the District strives to CCTV their entire system every three to four years. In review of Exhibit C-2, there are areas within the District which have not been CCTV inspected in the last 5 years. These areas will be CCTV inspected in FY18 and have been added to Exhibit C-1 as appropriate.

Outside of these isolated areas, the District is on track to meet its SSMP goal of CCTV inspecting all 200 miles in a three to four year timeframe.

In FY16, the District began introducing foam treatments in pipelines and manholes for the treatment of roots. The initial results were favorable and the District has incorporated foam treatment into the regular schedule of preventative maintenance activities. Twelve additional line segments utilized foam treatment for root control in FY17.

The District's Asset Management Plan (AMP) was revised in January 2013. Progress throughout FY17 with respect to this plan (and other asset planning efforts) is summarized in the Attachment I letter-report at the end of the audit. The District's AMP will be revised and updated in FY18.

The FY17 and FY18 SOP training schedules can be found in Attachment D and all updated SOPs are included on a CD in Attachment E.

In FY17, the District incorporated storm drain system information from the cities of Carlsbad and Encinitas into their geographic information system (GIS) and InfraMap software.

Section VI (Overflow Emergency Response Plan). A minor revision was made to the OERP. Field Services protocols were amended for SSOs that reach surface water.

Section VII (FOG Control Program). None of the FY17 SSOs were attributable to FOG, continuing the District's SSMP determination that a formal FOG control program is not warranted at this time.

Section VIII (System Evaluation and Capacity Assurance). The District continues to monitor (and address as necessary) the presence of scale in the Alga Hills area. The area was most recently CCTV inspected this past fiscal year and is hydrocleaned every six months. Any defects discovered during the CCTV inspections are incorporated into the District's Repair Priority List.

Inflow domes are present in 2,268 of the District's 5,103 manholes to aid in reducing inflow. Figure 1 shows the manhole locations where inflow domes have been installed throughout the District.

Flow analyses of the District were conducted as part of the District's 2008 and 2013 Asset Management Plans. Both documents concluded that estimates of average and peak ultimate flows are within the design values of the District and less than the flows utilized in the District's detailed capacity analyses conducted as part of the 1999 Wastewater Master Plan. There are no capacity-driven replacement projects currently identified for the District. This will be further validated in the 2018 update of the AMP.

The District's monthly flow comparison between FY16 and FY17 can be found in Attachment F.

Section IX (Monitoring, Measurement, and Program Modifications). The District's Spill Summary through June 30, 2017 can be found in Attachment G. Eight spills occurred in FY17; seven were from private laterals and one was from a public manhole. The Category 3 spill from the public manhole was approximately 700 gallons in volume and was completely captured. Additionally, spill review checklists for each event are on file at the District office. Figure 2 identifies the location of each spill in a public line or manhole over the last eight years.

One change was made to the Evaluation Checklist (Attachment A). A question was added to verify the implementation of the District's lateral reimbursement program.

Section XI (Communication Program). The District has made the 2014 SSMP and subsequent audits available on its website. Additionally, a formal presentation is provided to the Engineering Committee and Board of Directors and is part of those agendas and meeting packets.

LEGEND

- Inflow Dome Location
- District Service Area
- District Sphere of Influence
- Municipal Boundary
- District Office

District Gravity Sewers

- Drainage Basin 1
- Drainage Basin 2
- Drainage Basin 3
- Drainage Basin 4
- Drainage Basin 5
- Drainage Basin 6
- Drainage Basin 7
- Drainage Basin 8
- Drainage Basin 9
- Drainage Basin 10
- Drainage Basin 11

District Force Main

- Force Main

CITY OF ENCINITAS
MOONLIGHT
PUMP STATION

Pacific Ocean

CARLSBAD

ENCINITAS

S.D. COUNTY

SAN MARCOS

S.D. COUNTY

S.D. COUNTY

BATPS
SAXPS
LCPS
LEUCPS
APSWW
DPSWW
RVPS
VP7PS
VPV5PS
EEPS

CARLSBAD BL
POINSETTIA LN
CAM VIDA ROBLE
CAM DE LAS ONDAS
PASEO DEL NORTE
AVIARA PY
AVNDA ENCINAS
EL CAM REAL
ALGA RD
ELIJUETTE ST
MELROSE DR
SAN ELIJO RD
ELFIN FOREST RD
ALICANTE RD
LA COSTA AV
RANCHO SANTA FE RD
CAM JUNIPERO
LEVANTE ST
CALLE BARCELONA
OLIVENHAIN RD
LEUCADIA BL
N COAST HIGHWAY 101
GARDEN VIEW RD
N WILLOWSPRING DR
MTN VISTA DR
VILLAGE PARK WY
ENCINITAS BL
S WILLOWSPRING DR
CERRO ST
SAXONY RD
REQUEZA ST
NARDO RD
BALFOUR DR
S VULCAN AV
S COAST HIGHWAY 101
SANTA FE DR
MACKINNON AV
LAKE DR
SAN ELIJO AV
BIRMINGHAM DR
S EL CAM REAL
MANCHESTER AV
EL MIRLO
VIA DE FORTUNA
LA NORIA
EL CAM DEL NORTE
N RANCHO SANTA FE RD

0 0.25 0.5 Miles

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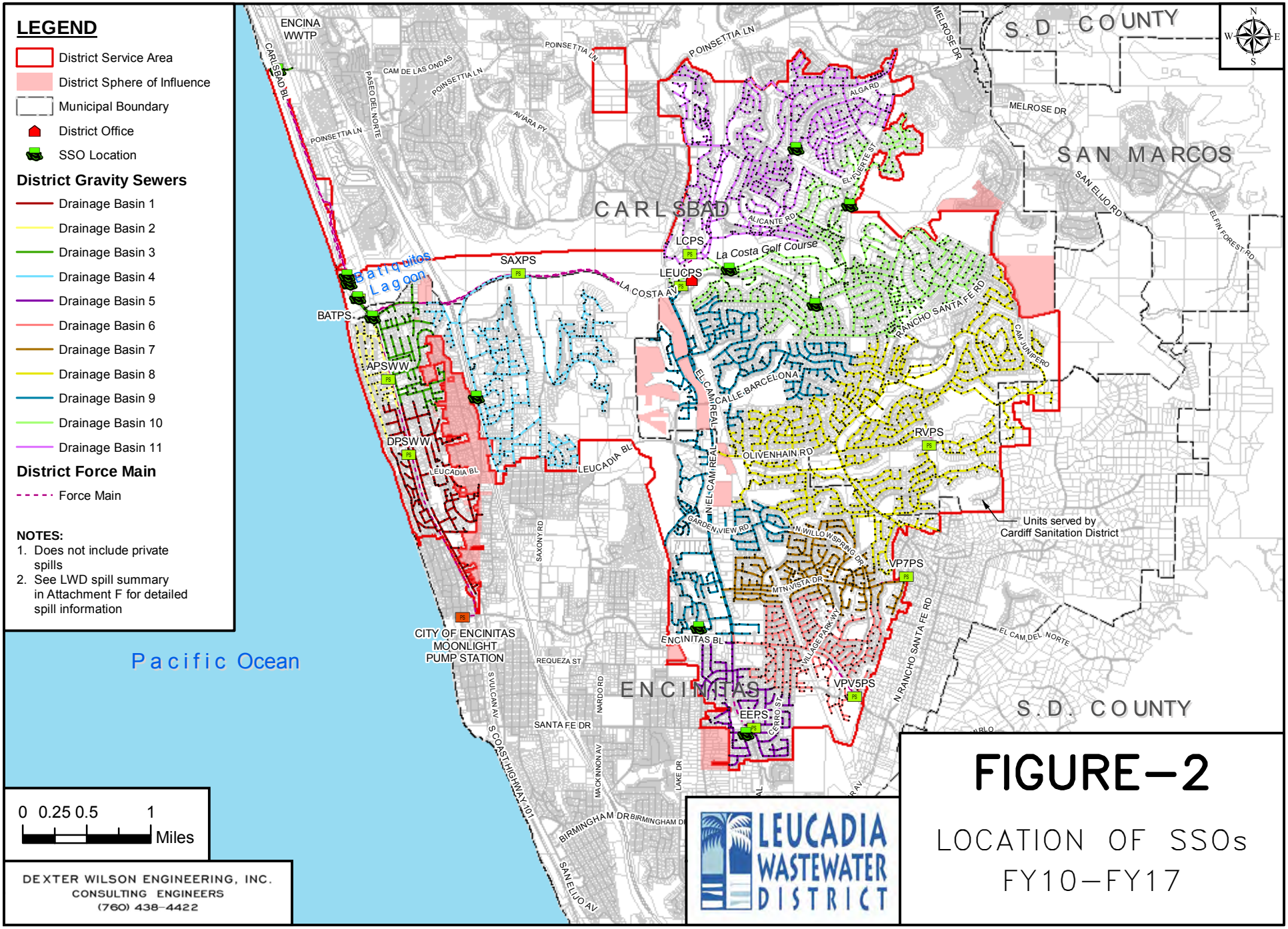
LEUCADIA WASTEWATER DISTRICT

FIGURE–1

INFLOW DOME LOCATIONS

Date Saved: 11/2/2017 10:43:40 AM
Document Path: \Arcgis\103015-T\2017-09_EXHIBITS\Figure-1_InflowDome.mxd

Date Saved: 10/5/2017 4:35:52 PM
Document Path: \\Artic\gis\103015-7\2017-09_EXHIBITS\Figure-2_SSO.mxd



Recommended SSMP Edits

Two edits are recommended to the SSMP. These edits are documented in the SSMP Change Log (Appendix B of the SSMP). The edits consist of a more detailed description of the District's lateral reimbursement program in Section IV of the SSMP and a minor revision to the OERP. Attachment H to this letter-report provides the specific edits to the SSMP. Additionally, the edits are documented in the SSMP change log (Appendix B of the SSMP). The revisions to the SSMP are not significant enough to warrant re-adoption of the District's SSMP prior to the scheduled June 10, 2019 revision.

Summary of Recommendations

The following section summarizes recommended items as a result of the FY17 Audit:

- The District should consider revising the sewer sub-basin map that is included in the monthly board packet to reflect the areas that have been de-annexed.
- Ensure that El Camino Real, La Costa Golf Course and La Costa Avenue, Alga Road, and Rancho Santa Fe Road sewers, which all require additional measures (e.g. traffic control, easements, etc.), maintain three year cleaning/CCTV cycles (See Attachment C, locations 7B and 13).
- Ensure that the planned O&M activities (e.g. hydroclean and CCTV inspect every 5 years) for Lanikai and Occidental are on track (see AMPI memorandum Attachment A).
- Recommend to revise Standard Drawing S-31 to reflect the change in cleanout connections to manholes at ends of sewer mains.

Next Steps

This FY17 SSMP Audit should be retained for inclusion in the next SSMP recertification by the General Manager and adoption by the District Board scheduled to occur by June 10, 2019. Please be sure to post this FY17 Audit on the District's website and include a hardcopy in the District's 2014 SSMP counter copy.

We appreciate the opportunity to have worked with the District on this project. Should you have any questions please do not hesitate to contact us.

Dexter Wilson Engineering, Inc.

Natalie J. Fraschetti, P.E.

NJF:SH:ps

Attachment(s)

LIST OF ATTACHMENTS

A – SSMP Evaluation Checklist

B – SSMP Audit Checklist

C – District Preventative Maintenance Statistics

D – SOP Training Schedule

E – Field Services SOPs

F – District Flow Comparison FY16 to FY17

G – LWD Spill Summary through June 30, 2017

H – SSMP Revisions

I – Letter-Report to LWD General Manager Regarding AMP Implementation

ATTACHMENT A

SSMP EVALUATION CHECKLIST

Leucadia Wastewater District SSMP Evaluation Checklist for FY2017						
Date Evaluation Completed:						
Last Date Checklist Revised: October 23, 2017						
Monitoring, Measurement, and Modification Question	**Yes**	**No**	**Update Needed in SSMP? ***	**Date**	**Staff Inter-viewed**	**Actions and Notes**
Sections I, II, III (District Goals, Organization, Legal						
1. Has there been an appreciable change in the Strategic Plan?		✓		8/16/17	TSM	
2. Was the current organizational chart included in the annual financial plan?	✓			8/16/17	TSM	
3. Were the District goals addressed in the annual Fiscal Year Tactics & Action Plan?	✓			8/16/17	TSM	
4. Has the District's Legal Authority been reviewed considering new regulations?	✓			8/16/17	TSM	
5. If appropriate for three year review cycle, has the District's Standard Spec been reviewed for necessary changes?	✓			8/16/17		Ongoing by D.E.
6. Was the staff size and organizational chain of command sufficient for implementation of the preventative maintenance programs and SSO spill response?	✓			8/16/17	FSS	
7. In review of the spill causes and environmental impacts (if any), would additional staff or a change in District organization lessened or eliminated the spill cause and environmental impact?		✓			FSS	Most likely not; cause of the single FY17 spill was a broken cleanout cap which caused dirt/gravel to get in gravIty sewer line. The spill occurred at the low point in the line and was removed from a storm water detention pond.
8. In review of the spill causes and environmental impacts (if any), was the sufficient legal authority for the District to respond and take action as necessary?	✓			8/16/17	FSS	
Section IV (Preventative Maintenance Program)						
1. Have all new construction or rehabilitation projects been entered into the GIS database?	✓			8/16/17	FSP	
2. Have the new pipelines, manholes, and updates from the field been included in CMMS?	✓			8/16/17	FSP	

Leucadia Wastewater District SSMP Evaluation Checklist for FY2017						
Date Evaluation Completed:						
Last Date Checklist Revised: October 23, 2017						
Monitoring, Measurement, and Modification Question	**Yes**	**No**	**Update Needed in SSMP? ***	**Date**	**Staff Inter-viewed**	**Actions and Notes**
3. Were all scheduled preventative maintenance activities in the CMMS completed as scheduled (e.g., hydrocleaning, video inspection, a release valve exercising, pump station inspections, etc.)?	✓			8/16/17	FSS & FSP	In FY17 the District completed 93 miles which is historically above average.
a. If not, determine cause and if additional staff is necessary to complete required schedule.	NA					
b. Did the lateral reimbursement program continue to be implemented as intended?	✓				FSP	In FY 17 there were 12 lateral reimbursements. There were 26 lateral reimbursement letters mailed to District customers; of which 0 applied for a lateral reimbursement.
4. Are pipeline CCTV inspections on-track for complete system inspection every three to four years?	✓			8/16/17	FSS & FSP	Yes. See above #3
5. Is the pipeline and manhole Rehab Priority List up-to-date and being addressed?	✓			8/16/17	FSP	
6. Is the Force Main Integrity inspection program on track?	✓			8/16/17	TSM & FSS	Yearly inspections by RF Yeager
7. Has the Pump Station Condition Assessment been completed and projects scheduled?	✓			9/26/17	TSM & FSS	Leucadia PS Rehabilitation and Village Park PS No. 5 Replacement are currently under construction.
8. Have the following standard operating procedures been reviewed and up-to-date?	✓			9/11/17	FSS	
a. SOP – Collection System	✓					
b. SOP – Video Inspection Procedure	✓					
c. SOP – Easement Inspection Duties	✓					
e. SOP – Pump Station Operator Duties	✓					
f. SOP – Pump Station Odor Control	✓					
g. SOP – Switching Force Main Lines	✓					
h. SOP – By-pass Pumping for Avocado	✓					
i. SOP – District Pipeline Location and	✓					
j. SOP – Traffic Control Procedures	✓					
k. SOP – Emergency Procedures for	✓					
l. SOP – Emergency By-pass Pumping	✓					
9. Has the appropriate ongoing training for these SOPs been conducted and recorded?	✓				FSS	Training for all SOPs was completed per schedule in FY17.

Leucadia Wastewater District SSMP Evaluation Checklist for FY2017						
Date Evaluation Completed:						
Last Date Checklist Revised: October 23, 2017						
Monitoring, Measurement, and Modification Question	**Yes**	**No**	**Update Needed in SSMP? ***	**Date**	**Staff Inter-viewed**	**Actions and Notes**
Section V (Design and Performance Provisions)						
1. Has the LWD Standard Spec been sufficient to address design and construction needs?	✓			8/16/17	TSM	Was revised in FY16.
2. Has the LWD Standard Spec been sufficient to address inspection and testing needs?	✓			8/16/17	TSM	Was revised in FY16.
Section VI (Overflow Emergency Response Plan)						
1. Have the following standard operating procedures and the attachments been reviewed and up-to-date?	✓					
a. SOP – Overflow Emergency Response Plan	✓					The OERP had a minor revision in FY17 to reflect a new attachment.
b. SOP – Pump Station Alarm Response	✓					
c. SOP – Posting and Sampling	✓					
d. SOP – SCADA Alarms and Alpha	✓					
e. SOP – Standby Duty Operator (On Call)	✓					
f. SOP – Reporting SSOs	✓					
2. Has the appropriate ongoing training for these SOPs been conducted?	✓				FSS	Training for all SOPs was completed per schedule in FY17.
3. Have the newly hired employees been provided with these procedures and trained on these procedures, as appropriate?	NA					No new employees hired in FY17.
4. Has the LRO certified No Spill for each month (when applicable)?	✓			8/16/17	FSS	
5. Has the Collection System Questionnaire been updated in CIWQS?	✓			8/16/17	FSS	
Section VII (FOG Control Program)						
1. Where permits processed for new food establishments in the District?	✓			9/28/17	RDD	
a. If so, is there a BMP agreement on file?	✓			9/28/17	RDD	
2. In review of the SSO causes for the year, have any been attributable to FOG?		✓		8/16/17	FSS	
3. In review of the SSO causes for the past 24 months have there been three FOG-related spills? This would trigger the District to conduct a comprehensive formal evaluation of implementing a formal FOG Control Program.		✓		8/16/17	FSS	

Leucadia Wastewater District SSMP Evaluation Checklist for FY2017						
Date Evaluation Completed:						
Last Date Checklist Revised: October 23, 2017						
Monitoring, Measurement, and Modification Question	**Yes**	**No**	**Update Needed in SSMP? ***	**Date**	**Staff Inter-viewed**	**Actions and Notes**
Section VIII (System Evaluation & Capacity Assurance						
1. Did the monthly board meeting agenda packets include the appropriate flow summary?	✓			8/16/17	RDD	
2. Have evaluations continued with respect to the inflow and infiltration?	✓			8/16/17	FSS	
Section IX (Monitoring, Measurement, & Program Modifications)						
1. Has the checklist evaluation been completed for the fiscal year?	✓			9/26/17		
2. Are there changes that need to be made to the Spill Review Checklist?		✓		8/16/17	FSS	
3. Are there changes that need to be made to the evaluation checklist?	✓					
a. If yes, are the changes substantial enough such that the SSMP needs to be revised? SSMP revisions will typically occur on a 5-year basis. The following is a list of items which would trigger a revision of the SSMP prior to the standard 5-year cycle update. Other minor changes within the District's organization, procedures, & activities would not necessitate an SSMP revision, but would be captured in the next revision cycle.		✓				The change to the evaluation checklist was an additional question to verify the implementation of the District's lateral reimbursement program.
i. A substantial change in organization such that the chain of command for spill response or reporting are altered.		✓				
ii. A substantial change in the regulations such that the District's legal authority (Standard Spec) is deemed by District counsel to provide insufficient authority to the District.		✓				
iii. A substantial change in regional board reporting policy (or other regulatory agency) such that standard operating procedures for spill response must be substantially re-written.		✓				

Leucadia Wastewater District SSMP Evaluation Checklist for FY2017						
Date Evaluation Completed:						
Last Date Checklist Revised: October 23, 2017						
Monitoring, Measurement, and Modification Question	**Yes**	**No**	**Update Needed in SSMP? ***	**Date**	**Staff Inter-viewed**	**Actions and Notes**
iv. Review SSO causes deems a formal FOG Control Program must be implemented.		✓				
v. The ongoing monitoring of District flow results indicates that the current conclusion that sufficient capacity exists in the District collection system to accommodate buildout flows is no longer valid.		✓				
Section X Evaluation (SSMP Program Audits)						
1. Has the SSMP Program Audit been completed for the fiscal year?	✓			11/14/17		
2. Are there changes that need to be made to the Audit checklist?		✓				
Section XI Evaluation (Communication Program)						
1. Is the SSMP section of the District website up-to-date? And has the SSMP status been relayed to the public?	✓			8/16/17	TSM	
2. Has the District continued to attend meetings with Encina Wastewater Authority, the City of Carlsbad, and the City of Encinitas as appropriate?	✓			8/16/17	TSM	
3. In review of the spill causes and environmental impacts (if any), would additional ongoing communication with the Encina Wastewater Authority, the City of Carlsbad, or the City of Encinitas lessened or eliminated the spill cause and environmental impact?		✓		8/16/17	FSS	
*** If an update is needed in the SSMP,**						
1. Determine if the update is significant enough to warrant re-development and re-adoption of the SSMP prior to the 5-year re-adoption schedule and				11/14/17		No re-development or re-adoption of the SSMP will be required.
2. describe the update needed				11/14/17		A section was added describing the District's lateral reimbursment program in better detail.

NA- Not Applicable
DE - District Engineer
GM - General Manager
GC - General Counsel
RDD - Reviewed District Documents
TSM - Technical Services Manager
FSS - Field Services Superintendent
FSP - Field Services Specialist

ATTACHMENT B

SSMP AUDIT CHECKLIST

Leucadia Wastewater District SSMP FY17 Audit Checklist			
Section	**Requirement**	**SSMP Current**	**SSMP Implemented**
I - Goals	Reduce, prevent, and mitigate SSOs	X	X
II - Organization	Designate Legal Responsible Oversight	X	X
	Organizational Chart	X	X
	Contact info for SSMP implementation	X	X
III - Legal Authority	Prevent illicit discharges	X	X
	Require proper design and construction	X	X
	Ensure access to facilities	X	X
	Limit FOG	X	X
	Enforce violations	X	X
IV - O&M Program	Up to date mapping	X	X
	Describe routine PM program	X	X
	Rehabilitation and replacement plan	X	X
	Proper training	X	X
	Equipment and replacement part inventories	X	X
V - Design and Performance Provisions	Design and construction standards for new facilities	X	X
	Design and construction standards for rehab and replacement facilities	X	X
	Procedures and standards for inspection and testing of new facilities	X	X
	Procedures and standards for inspection and testing of rehab facilities	X	X
VI - Overflow Emergency Response Plan	Notification procedures	X	X
	Response plan	X	X
	Appropriate training	X	X
	Procedures for emergency operations	X	X
	Program to contain and prevent SSOs from reaching waters	X	X
VII - FOG Control Program	Determine if applicable	X	X
VIII - System Capacity Assurance	Capacity evaluation up to date	X	X
	Design criteria in place	X	X
	Capacity enhancement measures	X	X
	Schedule	X	X
IX - MMM	Maintain relevant info	X	X
	Monitor implementation	X	X
	Assess success of PM program	X	X
	Update program elements	X	X
	Identify and illustrate SSO trends	X	X
X - SSMP Audits	Conduct annual audit	X	X
	Prepare audit report	X	X
	Record changes made/corrective action taken	X	X
XI - Communication Program	Communicate regarding preparation	X	X
	Communicate regarding performance	X	X
	Communicate with surrounding agencies	X	X

ATTACHMENT C

DISTRICT PREVENTATIVE MAINTENANCE STATISTICS

LWD Collection System CCTV Inspection Statistics

CCTV Inspection Production Miles Per Year

Year (FY)	2002	2003	2004	2005	2006	2007	2008	2008	2010	2011	2012	2013	2014
Miles Inspected	14.0	40.3	36.8	30.3	30.9	12.4	12.9	23.1	22.1	28.0	68.8	99.0	89.0
Year (FY)	2015	2016	2017	Average									
Miles Inspected	31.0	108.0	92.6	46.2									

CCTV Inspection Production Miles Per Month

Month	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	TOTAL
Miles Inspected	10.4	10.2	9.0	8.0	8.6	6.8	7.2	4.6	7.3	7.0	8.6	4.9	92.6

CCTV INSPECTIONS WITH ADDITIONAL REQUIREMENTS

Location #	Location	Additional Requirements Needed	Status	Clean/CCTV Frequency
1	RSF Road - Camino De Los Coches to Avenida Aragon	Traffic Control	CCTV'd in FY16	3
2	RSF Road - Calle Acevo to Avenida Aragon	Traffic Control	CCTV'd in FY16	3
3	La Costa Ave - Piraeus St to Saxony PS	Traffic Control	CCTV'd in FY17	3
4	ECR - Enci Blvd to Leucadia Blvd	Night Work	CCTV'd in April 2015	3
5	ECR - Leucadia Blvd to Levante (Green Valley)	Easement hydro-cleaning	CCTV'd in March 2015	3
6	ECR - Levante to 300' north of La Costa Ave	Traffic Control	TC plans done FY15, CCTV'd in April 2015	3
7A	La Costa Golf Course (North Portion)	Coordination w/ golf course	Most Lines CCTV'd in FY17	3
7B	La Costa Golf Course (East Portion)	Coordination w/ golf course	CCTV'd in May 2013	3
9	Alga Road and El Camino Real	Traffic Control	CCTV'd in FY17	3
10	La Costa Ave	Traffic Control	CCTV'd in FY17	3
11	RSF Road - Paseo Lupino to La Costa Avenue	Traffic Control	CCTV'd in FY17	3
12	Scotts Valley Easement	Night Work	CCTV'd by Contractor in FY16	3
13	Influent Gravity Line to Batiquitos PS	Night Work	CCTV'd in April 2012	3

Last revised 11-13-2017

CCTV INSPECTIONS WITH ADDITIONAL REQUIREMENTS

Location #	Location	Additional Requirements Needed	Status	Clean/CCTV Frequency
1	RSF Road - Camino De Los Coches to Avenida Aragon	Traffic Control	CCTV'd in FY16	3
2	RSF Road - Calle Acevo to Avenida Aragon	Traffic Control	CCTV'd in FY16	3
3	La Costa Ave - Piraeus St to Saxony PS	Traffic Control	CCTV'd in FY17	3
4	ECR - Enci Blvd to Leucadia Blvd	Night Work	CCTV'd in April 2015	3
5	ECR - Leucadia Blvd to Levante (Green Valley)	Easement hydro-cleaning	CCTV'd in March 2015	3
6	ECR - Levante to 300' north of La Costa Ave	Traffic Control	TC plans done FY15, CCTV'd in April 2015	3
7A	La Costa Golf Course (North Portion)	Coordination w/ golf course	Most Lines CCTV'd in FY17	3
7B	La Costa Golf Course (East Portion)	Coordination w/ golf course	CCTV'd in May 2013	3
9	Alga Road and El Camino Real	Traffic Control	CCTV'd in FY17	3
10	La Costa Ave	Traffic Control	CCTV'd in FY17	3
11	RSF Road - Paseo Lupino to La Costa Avenue	Traffic Control	CCTV'd in FY17	3
12	Scotts Valley Easement	Night Work	CCTV'd by Contractor in FY16	3
13	Influent Gravity Line to Batiquitos PS	Night Work	CCTV'd in April 2012	3

Last revised 11-13-2017

DEXTER WILSON ENGINEERING, INC.
CONSULTING ENGINEERS
(760) 438-4422

EXHIBIT C-1

GRAVITY SEWER PREVENTATIVE MAINTENANCE ACTIVITIES

Document Path: \\Artic\gis\103015-7\2017-09_EXHIBITS\Exhibit C-1_PreventativeMaintenance_Updated_2017-09.mxd


LEGEND
CCTV Gravity Sewer Inspection by Date
July 2016 - June 2017
July 2015 - June 2016
July 2014 - June 2015
July 2013 - June 2014
5 Years Since CCTV
Leucadia Wastewater District Boundary
LEUCADIA WASTEWATER DISTRICT
N
S
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W
POINSETTIA
POINSETTIA LN
CAM DE LAS ONDAS
PASEO DEL NORTE
AVIARA
AVNDA ENCINAS
MELROSE DR
ALGA
ALICANTE
LA COSTA AV
RANCHO SANTA FE RD
LEVANTE ST
CALLE BARCELONA
OLIVENHAIN RD
CAM JUNIPERO
SAN ELIJO RD
LEUCADIA BL
GARDEN VIEW
WILLOWSPRING
MTN VISTA
VILLAGE PARK
ENCINITAS BL
SAXONY
REQUEZA
VULCAN
NARDO
BALOUR
CERRO
EL CAM DEL NORTE
SANTA FE DR
MANCHESTER
EL MIRLO
LAKE
S EL CAM REAL
BIRMINGHAM DR
BIRMINGHAM
0
1,500
3,000
6,000
Feet

EXHIBIT C-2

GRAVITY SEWER CCTV COMPLETIONS
AS OF JUNE 2017

DEXTER WILSON ENGINEERING, INC.
CONSULTING ENGINEERS
2234 FARADAY AVENUE
CARLSBAD, CA 92008
(760) 438-4422

ATTACHMENT D

SOP TRAINING SCHEDULE

Leucadia Wastewater District

Standard Operating Procedures Training Schedule FY-17

		Date Completed:
1.	Collection System Maintenance Duties	1/11/2017
2.	Video Inspection Duties	1/18/2017
3.	Easement Inspection Duties	2/01/2017
4.	By pass pumping Avocado & Diana Response Plan	2/08/2017
5.	Standby Duty Operator (On Call) Duties	3/23/2017
6.	Pump Station Operator Duties	3/21/2017
7.	Pump Station Odor Control	4/04/2017
8.	Switching Force Main Lines	4/04/2017
9.	District Pipeline Location and Mark Out	4/19/2017
10.	Pump Station Alarm Response	5/03/2017
11.	SCADA Alarms	6/26/2017
12.	Overflow Emergency Response Plan	6/26/2017
13.	Reporting SSO's	6/27/2017
14.	Posting and Sampling Waters Impacted by an SSO	6/27/2017
15.	Traffic Control Procedures	6/28/2017
16.	Emergency Procedures for Air Release Valves	6/28/2017
17.	Rating and Repair of Manholes and Mainlines	3/27/2017
18.	Emergency By-Pass Pumping for Batiquitos Pump Station	6/29/2017

Additional Training:

19. Flagger Safety (Every 2 years)
20. Gafner Water Reclamation Plant SWPPP
21. CPR/First Aid Training (Every 2 Years)

Leucadia Wastewater District

Standard Operating Procedures Training Schedule FY-18

Date Completed:

1. **Collection System Maintenance Duties**
2. **Video Inspection Duties**
3. **Easement Inspection Duties**
4. **By pass pumping Avocado & Diana Response Plan**
5. **Standby Duty Operator (On Call) Duties**
6. **Pump Station Operator Duties**
7. **Pump Station Odor Control**
8. **Switching Force Main Lines**
9. **District Pipeline Location and Mark Out**
10. **Pump Station Alarm Response**
11. **SCADA Alarms**
12. **Overflow Emergency Response Plan**
13. **Reporting SSO's**
14. **Posting and Sampling Waters Impacted by an SSO**
15. **Traffic Control Procedures**
16. **Emergency Procedures for Air Release Valves**
17. **Rating and Repair of Manholes and Mainlines**
18. **Emergency By-Pass Pumping for Batiquitos Pump Station**
19. **Chemical Delivery**
20. **Lock Out / Tag out**

Additional Training:

21. **Flagger Safety (Every 2 years)**
22. **Gafner Water Reclamation Plant SWPPP**
23. **CPR/First Aid Training (Every 2 Years)**

ATTACHMENT E

FIELD SERVICES SOPs

List of SOPs Available on CD:

1. Collection System Maintenance Duties
2. Video Inspection Duties
3. Easement Inspection Duties
4. By Pass Pumping For Avocado & Diana Pump Stations Using #135 With 4" Suction and Discharge Hoses
5. Standby Duty Operator (On Call)
6. Pump Station Operator Duties
7. Pump Station Odor Control
8. Switching Force Main Lines
9. District Pipeline Location and Mark Out
10. Pump Station Alarm Response
11. SCADA Alarms and Cellular Calls/Texts
12. Procedure For Emergency Response to Sanitary Sewage Overflows (SSOs)
13. Reporting SSOs
14. Posting and Sampling Waters Impacted by an SSO
15. Traffic Control
16. Emergency Procedures for Air Release Valves For the Leucadia, Batiquitos, & Saxony Pump Station Force Mains and the Secondary Influent B1
17. Rating Repair Lines/Manholes
18. Emergency By-Pass Pumping for Batiquitos Pump Station With Portable By-Pass Pump
19. Chemical Deliveries
20. Hazardous Energy Control Lock Out / Tag out
21. Flagger Safety (Every Two Years)
22. Stormwater Pollution Prevention Plan (SWPPP) Gafner Water Reclamation Plant (Every Two Years)
23. First Aid/CPR Training and Confined Space Rescue (Every Two Years)

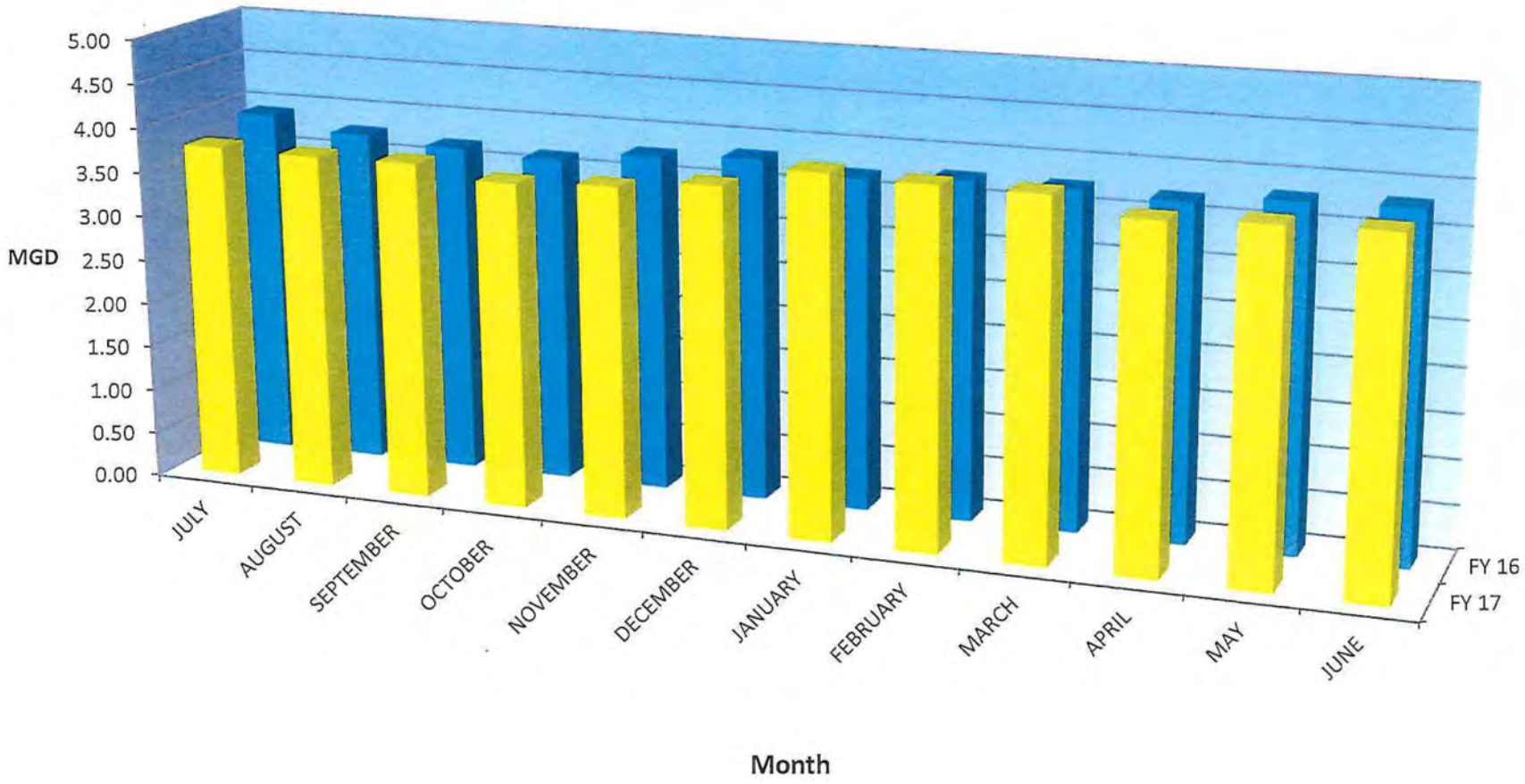
ATTACHMENT F

DISTRICT FLOW COMPARISON FY16 TO FY17

LEUCADIA WASTEWATER DISTRICT
OPERATIONS REPORT
FISCAL YEAR 2017 (July 2016 - June 2017)

CURRENT MONTH - June 2017								FY 2015-2016
Period	Total Rain Inches	Total Flow MG	Added EDU's 28,560.21	LWD ADF (MGD)	GPD/EDU	RECLAIMED Total (ac-ft/mo)		LWD ADF (MGD)
JULY	0.00	116.87	1.00	3.77	132	54.07		3.92
YTD			28,561.21					
AUGUST	0.00	116.25	1.50	3.75	131	44.02		3.77
YTD			28,562.71					
SEPTEMBER	0.24	112.80	2.00	3.76	132	47.41		3.70
YTD			28,564.71					
OCTOBER	0.33	112.53	4.50	3.63	127	18.32		3.65
YTD			28,569.21					
NOVEMBER	1.01	110.40	7.36	3.68	129	14.25		3.77
YTD			28,576.57					
DECEMBER	3.81	117.18	-2.11	3.78	132	0.00		3.83
YTD			28,574.46					
JANUARY	4.17	124.31	6.14	4.01	140	0.00		3.71
YTD			28,580.60					
FEBRUARY	4.16	111.16	3.41	3.97	139	0.00		3.77
YTD			28,584.01					
MARCH	0.06	122.76	3.00	3.96	139	5.29		3.76
YTD			28,587.01					
APRIL	0.02	113.40	1.58	3.78	132	42.73		3.72
YTD			28,588.59					
MAY	1.27	118.73	0.37	3.83	134	31.24		3.81
YTD			28,588.96					
JUNE	0.05	115.50	-118.15	3.85	135	40.72		3.83
YTD			28,470.81					
YTD Totals	15.12	1391.89	-89.40			298.05		
Mo Average	1.26	115.99	-7.45	3.81	133.51	24.84		3.77

Leucadia Wastewater District
Flow Comparison FY 16 to FY 17



ATTACHMENT G

LWD SPILL SUMMARY THROUGH JUNE 30, 2017

Leucadia Wastewater District | 1960 La Costa Avenue, Carlsbad, CA 92026 (760) 753-0155

date	time	volume in gallons	duration in minutes	location of spill	City in California	type of structure	destination of spill	beach posted	cause of spill	steps taken to mitigate effects of spill	OES #	Lat	Long	CIWQS #
8/17/2009	1240	5	35	7238 Babilonia St	Carlsbad	private cleanout	captured all in curb & gutter	no	Main line blockage roots thru joint	cleared line, CCTV inspection	Cat 2	33.0986N	117.2411W	743177
11/3/2009	0900	500	54	7408 Calle Madero	Carlsbad	manhole # 10-1330	storm drain/San Marcos Creek	no	Main line blockage roots in manhole	cleared line, CCTV inspection	09-7433	33.0842N	117.2488W	746458
12/3/2009	1101	800	40	1400 Piraeus Street	Encinitas	manhole # 04-0320	storm drain	no	Main line blockage roots thru joint	cleared line, CCTV inspection	09-8081	33.0734N	117.2943W	747303
1/9/2010	1532	1,300	65	2310 La Costa Avenue	Carlsbad	manhole # 10-0210	storm drain	no	Main line blockage, inflatable sewer plug	cleared line, CCTV inspection	10-0179	33.05296N	117.15644W	748252
5/3/2010	1900	10,000	60	2017 N Coast Hwy (101)	Carlsbad	B2 forcemain	contained off road, captured all	no	Galvanic corrosion in 24" DIP	cutout damaged section, replaced with PVC	10-2774	33.08611N	117.31163W	752170
8/29/2010	1253	100	167	2410 #H Altisma way	Carlsbad	private cleanout	captured portion/ storm drain	no	root intrusion	contractor cleared lateral	PVT Cat2	33.27278N	117.324167W	756468
11/19/2010	0:00	69,780	330	2017 N Coast Hwy (101)	Carlsbad	Pump Station	Batiquitos Lagoon/ Ponto Beach	yes	Operator failed to respond to alarm	installed smart cover in overflow wetwell	106274	33.08699N	117.31189W	757877
1/16/2011	1110	5	60	2429 La Costa Ave	Carlsbad	private lateral HOA	captured all	no	unknown	contractor cleared line	PVT Cat2	33.32306N	117.436111W	761336
2/4/2011	1240	40	14	800 Calle Accero	Carlsbad	private manhole	storm drain	no	roots in private manhole thru joints	contractor cleaned out roots in manhole	110770	33.23056N	117.344167W	762509
2/28/2011	1515	20	20	207 Country Haven Road	Encinitas	private cleanout	storm drain	no	unknown	contractor cleaned lateral	111233	33.04726N	117.24442W	763876
4/4/2011	1243	1	14	120 North El Camino Real suite/apt.120	Encinitas	private grease interceptor	captured all	no	grease in lateral	contractor cleaned lateral & interceptor	PVT Cat2	33.26611N	117.41916W	765085
4/27/2011	826	4,600	23	2017 N Coast Hwy (101)	Carlsbad	air release valve (air vac)	Batiquitos Lagoon	yes	Air Release PVC flange cracked	air release valve shut off	11-2727	33.08226N	117.30844W	765846
10/1/2011	1530	120	75	2419 Unicornio	Carlsbad	manhole #11-6020	captured portion/dirt bankment	no	cracked mainline, roots	cleared line, CCTV inspection, install smartcover	Cat 1			NA
1/19/2012	8:15	<5	5	1439 Encinitas Blvd	Encinitas	private cleanout	captured all	no	grease/ roots in lateral	contractor cleaned lateral	Cat 2	33.04551	117.2583	NA
8/29/2012	1653	10	70	137 El Camino Real	Encinitas	private manhole	captured all	no	Roots in private manhole	LWD cleared roots from MH / contractor cleared MH	Cat 2	33.02931N	117.15469	NA
9/3/2012	1029	15	51	285 Aspenwood Lane	Encinitas	private lateral HOA	storm drain	no	unknown	LWD Vactored until contractor cleared lateral	Cat 1	33.03172	117.14886	NA
12/10/2012	17:14	10	21	2866 Luciernaga	Carlsbad	private lateral HOA	storm drain	no	roots	LWD contained spill until plumber cleared lateral	Cat 1	33.06473	117.14558	127551
1/5/2013	18:25	1	60	3200 Sello Lane	Carlsbad	private Manhole HOA	captured all	no	Roots in private manhole	LWD contained spill until plumber cleared lateral	Cat 2	33.10947	117.23695	NA
2/2/2013	5:35	22,000	11	6500 Ponto Drive	Carlsbad	Force main	captured portion / dirt bankment	yes	Galvanic corrosion in 24" DIP	cutout damaged section, replaced 80 ' pipe with PVC	13-0684	33.636	117 1918	791067
5/10/2013	8:49	3	3	3543 East Calle Gavanzo	Carlsbad	private lateral	storm drain	no	unknown / lateral	plumbing contractor cleaned lateral	Cat 2	33.04763	117.13691	NA
5/14/2013	14:26	20	13	2431 La Costa Ave	Carlsbad	private lateral	captured all	no	unknown / lateral	plumbing contractor cleaned lateral	Cat 2	33.05212	117.1558	NA
5/28/2013	14:15	3	15	2512 La Costa Ave	Carlsbad	private lateral	dirt	no	unknown / upper lateral	plumbing contractor cleaned lateral	Cat 2	33.05256	117.15287	NA
6/25/2013	13:00	1	13.01	2504 La Costa Ave	Carlsbad	private lateral	captured all	no	unknown / lateral	plumbing contractor cleaned lateral	PLSD	33.051988	117.151885	NA
9/2/2013	12:26	15	45	335 Leucadia Blvd	Encinitas	private lateral	captured portion / storm drain	no	roots in private lateral	plumbing contractor cleaned lateral	PLSD	33.0888	117.17947	NA
12/8/2013	11:40	20	50	662 Nardino	Encinitas	private lateral	captured all in curb & gutter	no	unknown / lateral	plumbing contractor cleaned lateral	PLSD	33.04021	117.15559	NA
4/7/2014	12:15	10	10	281 Aspenwood Lane	Encinitas	private lateral	captured portion / storm drain	no	roots in private lateral	plumbing contractor cleaned lateral	PLSD	33.060814	117.24793	NA
7/13/2014	7:37	500	108	2903 Candil Place	Carlsbad	manhole # 10-9550	homeowners back yard	no	unknown, believed cause from lateral	LWD cleared roots from mainline	Cat 3	33.544	117.144	NA
10/22/2014	15:40	5	2	1237 Hermes Ave	Encinitas	private lateral	homeowners front yard	no	unknow /roots	plumbing contractor cleaned lateral	PLSD	33.416	117.189	NA
10/31/2014	17:30	15	30	318 B N. El Camino Real	Encinitas	private lateral	parking lot	no	roots	LWD Vactored until contractor cleared lateral	PLSD	33.315	117.1546	NA
12/2/2014	6:50	1200	38	1336 Via Terrassa		manhole # 09-1135	captured portion / storm drain	no	roots in bottom of manhole thru joint	cleared line, CCTV inspection	Cat 1	33.251	117.155	146823
2/27/2015	8:05	3	22	7221 Almaden Lane	Carlsbad	private lateral	homeowners back yard clean out	no	roots in private lateral	homeowner cleared lateral	PLSD	33.412278	117.45166	NA
3/21/2015	18:06	16	34	2746 Galicia Way	Carlsbad	private lateral	captured portion / storm drain	no	roots in private lateral	plumbing contractor cleaned lateral	PLSD	33.05243	117.17409	NA
4/12/2015	9:30	20	45	529 Hermes	Encinitas	private lateral	curb & gutter	no	roots in private lateral	plumbing contractor cleaned lateral	PLSD	33.05243	117.17409	NA
4/13/2015	14:50	5	20	7352 Altiva Place	Carlsbad	private lateral	storm drain	no	unknown/ lateral	plumbing contractor cleaned lateral	PLSD	33.054456	117.151109	NA
5/5/2015	7:07	8	24	50 feet West of Carlsbad Blvd	Carlsbad	Blow Off Valve	dirt/ captured portion	no	contractor left valve open	LWD vactored spill / removed dirt	Cat 3	33.0555.38	117.19021	NA
10/14/2015	0,791667	10	67	480 S. El Camino Real	Encinitas	private lateral	captured all	no	roots in private lateral	LWD contained spill until plumber cleared lateral	PLSD	33.03856	117.259605	NA
2/2/2016	0:30	2250		7556 Gibraltar Street	Carlsbad	private lateral	captured portion / storm drain	no	grit build up in private lateral	LWD contained spill until plumber cleared lateral	PLSD	33.08609	117.24682	NA
4/29/2016	11:38	10	67	7331 Bolero Street	Carlsbad	private lateral	spill absorbed into dirt	no	roots in private lateral	LWD contained spill until plumber cleared lateral	PLSD	33.0554	117.1454	NA
8/5/2016	13:32	700	28	911 Elmview Drive	Encinitas	manhole # 05-0730	captured all / storm drain / detention pond	no	heavy grit	LWD Vactored out stormdrain detention pond	Cat 3	33.02079	117.15456	NA
8/25/2016	10:50	10	15	1540 Coudor St	Encinitas	private manhole	spill absorbed into dirt	no	unknown/private lateral	LWD Vactored out private manhole	PLSD	33.04629	117.17511	NA
9/10/2016	10:12	60	68	137 El Camino Real	Encinitas	private manhole	private road /captured all	no	roots 100' downstream of private manhole	LWD Vactored MH until County arrived / washed down	PLSD	33.02931N	117.15469	NA
3/11/2017	14:36	2000	64	1190 Encinitas Blvd	Encinitas	private clean out	captured portion / dirt area	no	roots in clean out	LWD Vactored out private cleanout until plummer arrived	PLSD	33.259444	117.48666	NA
3/30/2017	16:15	15	30	179 N El Camino Real	Encinitas	private manhole	private road /captured all	no	roots 100' downstream of private manhole	LWD Vactored MH until County arrived / washed down	PLSD	33.04956	117.25706	NA
4/5/2017	14:00	10	25	781 Garden View Court	Encinitas	private lateral	paved parking lot / dirt area	no	roots in private clean out	LWD Vactored private Clean out until plummer arrived	PLSD	33.06047	117.26007	NA
5/12/2017	10:40	UK	80	1786 1/2 N. Coast Highway 101	Encinitas	private lateral	spill absorbed into dirt / seepage pit	no	septic tank uninstalled or removed	private company cleaned out and de-contaminated pit	PLSD	33.07993	117.3078	NA
5/31/2017	17:52	20	37	7551 Romeria St.	Carlsbad	private lateral	captured portion / curb & gutter	no	unknown / roots	LWD contained spill until plumber cleared lateral	PLSD	33.0863	117.24523	NA

FY 2011-2012
FY 2012-2013
FY 2013-2014
FY 2014-2015
FY 2015-2016
FY 2016-2017

ATTACHMENT H

SSMP REVISIONS
(REVISED ON SEPTEMBER 26, 2017)

Corrective Action.

The second main component of the District's operations and maintenance activities is the prompt scheduling and execution of corrective action work orders. These work orders are typically initiated due to visual inspection of a problem during preventative maintenance activities which could not be immediately resolved. These include evidence of roots in a sewer line, where a Root Saw/Rodder Work Order would be issued. A work order to video inspect the line would follow. If the corrective action requires a repair, rehabilitation, or replacement the pipeline segment or manhole will be placed on the Repair Priority list per the District's Rating Repair Lines/Manholes SOP. Any repairs deemed necessary would either be placed on a priority list for subsequent repair as part of a capital improvement project or repaired immediately by using the miscellaneous pipeline and manhole repair funds (e.g., sliplining, dig and replace, or manhole coating).

The District rehabilitates 10-20 manholes per year and maintains a prioritized list of manholes if deterioration or inflow and infiltration is suspected/observed or if other damage to the manhole lining is observed.

Proactive/Customer Response.

The last major component of the District's operation and maintenance activities is the action associated with responding to customer service calls. In response to a customer service call of slow drain or odors, the District verifies if there is a blockage in the main line. If roots are detected, follow up video inspection will be used to assess the problem. If the problem is found to be on the customer side, the customer will be notified along with a request for notifying the District when the plumber takes corrective action. Additionally, the District will notify the resident of its lateral reimbursement program which was developed to assist residents repair their laterals when it is necessary. The District's reimbursement program, up to $3,000 per residence, for lateral replacement and backflow preventer installation has been determined to be an effective and efficient way to enhance public health and safety and for environmental protection.

If roots in the private lateral are the problem, the District will be on hand during cleaning by the property owner's plumber/contractor to catch the root ball to reduce the likelihood of a downstream blockage. The cleaned segment and manholes will remain within their routine hydrocleaning schedule. Additionally, Paragraphs 4.6 and 4.7 of the District's Wastewater Ordinance outline responsibilities between public and private sewer facilities.

Deleted:

Rehabilitation and Replacement Plans

The District has reached approximately 92.5 percent of buildout and has transitioned its capital improvement program from growth-based projects to replacement-based projects. Capacity-related improvement projects were identified in the 1999 Master Plan. All of the collection system projects identified were addressed.

To address the timely and appropriate replacement of assets as the end of their useful life approaches, the District developed in 2008 an asset management based master plan to guide the District with a replacement-based capital program. This plan was subsequently updated

5.0 PREPARATION

A. Field Services Supervisor

1) Will periodically spot check that Vactors and OnCall Vehicle have all required materials to properly respond to and contain a sanitary sewer overflow. This will include at a minimum:
   a. Tough book laptop and Thomas Brothers guide
   b. tarps
   c. shovel
   d. disposable camera/digital camera
   e. hand-held GPS device (with spare batteries)
   f. applicable forms (complete OERP) and copies of Ordinance 128
   g. Operators assigned an operable cell phone with important phone numbers pre-programmed in memory
   h. materials and supplies required to properly post signs warning of water contamination
   i. sample bottles and chain of custody forms to conduct water sampling

B. Stand By Duty Operator

Preparation for Sanitary Sewer Overflows is part of the Standard Operating Procedure for Stand By Duty Operators. See the SOP for specific requirements.

ATTACHMENTS

The list of attachments to this plan are as follows:

a. Work Order/Service Request
b. Employee Phone Card
c. List of Frequently Called Numbers
d. Estimation of SSO Spill Volume
e. Emergency Action Report
f. SSO Response Form
g. Emergency Contractors Contact List
h. SDRWQCB Flow Chart
i. SOP – Reporting Sanitary Sewer Overflows
j. SOP – Posting and Sampling (includes SSO Water Quality Monitoring Program)
k. Spill Review Checklist
l. LWD SSO to Creek Protocol Logic Flow Chart

LEUCADIA WASTEWATER DISTRICT
2014 SEWER SYSTEM MANAGEMENT PLAN
CHANGE LOG

Date	SSMP Element/ Section	Description of Change/Revision Made	Change* Authorized By:
8/26/2016	Executive Summary	The Waste Discharger Identification (WDID) number added in the introduction	GM
8/26/2016	Section II	Organizational Chart Updated for FY 2017	GM
8/26/2016	Section IV	Corrective Action Section Revised	GM
8/26/2016	Appendices	Addition of Appendix A, Formal Document Adopting 2014 SSMP	GM
8/26/2016	Appendices	Addition of Appendix B, SSMP Change Log	GM
8/26/2016	Appendices	Replacement of Appendix C with 2014 SSMP Audits	GM
11/14/2017	Section IV	More detailed description of the District's lateral reimbursement program	GM
11/14/2017	OERP	Field Services protocols were amended for SSOs that reach surface water	GM

*See attached email from District LRO/General Manager.

Steven Henderson

From: Paul Bushee <PBushee@lwwd.org>
Sent: Tuesday, November 14, 2017 4:26 PM
To: Steven Henderson
Cc: Jeff Stecker; Robin Morishita; Marvin Gonzalez
Subject: RE: SSMP Edits for GM to Approve (FY17 Audit)

Steven:

Thanks for update. Please let this email serve as my approval and acceptance of the proposed changes. Please do not hesitate to contact me if you have any further questions.

Best regards,

Paul

Paul J. Bushee
General Manager
Leucadia Wastewater District
1960 La Costa Avenue
Carlsbad, CA 92009
Ph: (760) 753-0155
Fax: (760) 753-3094
Email: pbushee@lwwd.org
Web: www.lwwd.org

From: Steven Henderson [mailto:Steven@dwilsoneng.com]
Sent: Tuesday, November 14, 2017 1:25 PM
To: Paul Bushee <PBushee@lwwd.org>
Subject: SSMP Edits for GM to Approve (FY17 Audit)

Hi Paul,

As I mentioned last week at the SSMP audit meeting there are a coupe minor changes being made to the SSMP. There is no need for formal re-adoption; only LRO (GM) approval that documents the changes. The attachment contains the proposed changes and is what will be in the SSMP audit. After the confirmation e-mail accepting the changes we will be good to go and we can update the counter copy and website SSMP. Feel free to give me a call with any questions.

Thanks,

Steven Henderson, P.E.
Dexter Wilson Engineering, Inc.
Office: 760-438-4422
Cell: 760-542-5910

ATTACHMENT I

LETTER-REPORT TO LWD GENERAL MANAGER REGARDING AMP IMPLEMENTATION

DEXTER WILSON ENGINEERING, INC.

WATER • WASTEWATER • RECYCLED WATER

CONSULTING ENGINEERS

Leucadia Wastewater District
Fiscal Year 2017
Asset Management Plan
Implementation & Capital Projects

November 21, 2017

2234 FARADAY AVENUE • CARLSBAD, CA • (760) 438-4422

LEUCADIA WASTEWATER DISTRICT
FISCAL YEAR 2017
ASSET MANAGEMENT PLAN
IMPLEMENTATION & CAPITAL PROJECTS

November 21, 2017

Prepared by:
Dexter Wilson Engineering, Inc.
2234 Faraday Avenue
Carlsbad, CA 92008
760-438-4422

Job No. 103-015/7

DEXTER WILSON ENGINEERING, INC.

DEXTER S. WILSON, P.E.
ANDREW M. OVEN, P.E.
STEPHEN M. NIELSEN, P.E.
NATALIE J. FRASCHETTI, P.E.
STEVEN J. HENDERSON, P.E.

November 21, 2017 103-015/7

Leucadia Wastewater District
1960 La Costa Avenue
Carlsbad, CA 92009

Attention: Paul Bushee, General Manager

Subject: Leucadia Wastewater District Fiscal Year 2017 Asset Management Plan Implementation and Capital Projects

The purpose of this letter-report is to summarize the Leucadia Wastewater District's (District) Asset Management Plan Implementation activities and capital projects. The compilation of these efforts summarizes the District's management of its sanitary sewer system assets for the Fiscal Year 2017 (FY17).

This document will assist in the District's FY17 Sewer System Management Plan (SSMP) Audit.

BACKGROUND

With no substantial changes to the service area since the 2008 Asset Management Master Plan, and an estimation that the District is presently at 95 percent of buildout, the focus of the District's January 2013 Asset Management Plan (AMP) remained on the repair, rehabilitation, and replacement of existing assets as compared to funding of growth-related projects.

The AMP provided recommended inspection schedules for each asset class as well as general recommendations for asset management plan implementation (AMPI).

The AMP is planned to be updated in FY18. Next fiscal year's AMPI Memo will reflect the recommendations and conclusions from the updated AMP.

AMP IMPLEMENTATION ACTIVITIES

The following section discusses the AMPI Activities which took place over FY17.

January 2013 Asset Management Plan Recommendations

Within the AMP, recommendations were made within each asset category with respect to operation and maintenance activities (as appropriate) and CIP projects. The following section seeks to track the status of each operation and maintenance recommendation provided in the AMP. The order presented below generally follows the order in which the recommendation occurred within the AMP. Those completed in FY16 (or prior), as documented in the FY16 Audit, have been removed from the list.

Summary of LWD AMP Implementation Activities (Revised June 30, 2017)	
Remaining January 2013 Asset Management Plan Recommendations	
Recommendation	**FY17 Status**
Continue to monitor scale-impacted Alga Hills area.	Six month schedule for hydrocleaning and regular CCTV inspections. The District continues to monitor (and address as necessary) the presence of scale in the Alga Hills area. The area was most recently CCTV inspected in FY17. Results of CCTV inspections are incorporated into the District's Repair Priority List.

Summary of LWD AMP Implementation Activities (Revised June 30, 2017)	
Remaining January 2013 Asset Management Plan Recommendations	
Recommendation	**FY17 Status**
Hydroclean and CCTV of difficult to access areas.	Exhibit C-1 in the Audit has been updated.
Develop CCTV progress figure after completion of each zone.	Exhibit C-2 in the Audit has been updated.
Continue with Leucadia and Batiquitos Force Main cathodic protection improvements.	Inspections of L1, L2, and B3 were performed. The recommendations are that the District replace the existing anodes at CTS 070 and CTS 140 on the L2 force main within the next year due to declining anode current outputs, locate (uncover) CTS 030 on the B3 force main and test, and repair or replace the non-functioning anodes at CTS 060 and CTS 070 on the B3 force main.
Per IEC's 2011 evaluations, plan for B3 replacement in FY2025.	To be planned as necessary.
Plan for L1 replacement in FY16/FY17.	Allocation in CIP was made in FY15 for project design of repair to the western section. The construction costs were appropriated in FY17. Repair of western section began construction March 2017 with a completion date of July 2017. In FY17 the Leucadia Scenic CIPP lining was shifted from the 2016 Gravity Pipeline Rehabilitation Project to the L1 Force Main Project in order to be covered by a single CALTRANS Right of Way Permit. The Leucadia Scenic CIPP lining project was completed in May 2017 and the L1 West Section replacement was completed in August 2017. A change order was issued to CIPP line the section (128 ft.) of 18-inch DIP on the railroad bridge.
Annual cathodic protection testing on L1, L2, B2, and B3.	Cathodic testing was performed on the L1, L2, and B3 force mains in FY17 and is planned to continue on an annual basis.
FY17 ultrasonic inspection of L1, B2, and B3.	L1 (west) to be replaced, B2 replaced June 2015, and B3 is slated to be replaced in the 2025 timeframe.

Summary of LWD AMP Implementation Activities (Revised June 30, 2017)	
Remaining January 2013 Asset Management Plan Recommendations	
Recommendation	**FY17 Status**
Generate work order every five years for hydrocleaning and CCTV inspection of Lanikai Gravity Sewer per Attachment C in this memo.	Lanikai and Occidental were hydrocleaned in the fall of 2016. Occidental still needs to be CCTV'd.
Conduct condition assessment of Gafner WRP facilities.	Completed in April 2016. Improvements to be implemented include replacing handrails, replace fail safe valves and actuators, replace the mixers, replace the turbidity and conductivity meters, and rehabilitate the influent well. The contract for project construction was awarded in April 2017. In FY17 the procurement of material and equipment began to have materials on hand at start of construction. Gafner to be shut down and turned over to Stanek Constructors, Inc. on December 15, 2017. Construction to be done and Gafner to be back on line by March 31, 2018.

FY17 Capital Improvements

Summary of LWWD AMP Implementation Activities (Revised June 30, 2017)	
Capital Improvements	
Project	**FY17 Status**
North SD County Regional Recycled Water Project	The District continued to participate in the regional project to increase recycled water use. District received a reimbursement of $338,000 in State Prop 84 funding for the replacement of a section of the B1 Secondary Effluent Force Main in Highway 101. District completed the Preliminary Design for an Onsite Recycled Water Pump Station for distribution of recycled water to Olivenhain Municipal Water District – submitted for $66,540 of State Prop 84 grant funding.

Summary of LWWD AMP Implementation Activities (Revised June 30, 2017)	
Capital Improvements	
Project	**FY17 Status**
Leucadia Force Main (L1) West Section Replacement	Allocation in CIP was made in FY15 for project design of repair to the western section. The construction costs were appropriated in FY17. Repair of western section began construction March 2017 with a completion date of July 2017. In FY17 the Leucadia Scenic CIPP lining was shifted from the 2016 Gravity Pipeline Rehabilitation Project to the L1 Force Main Project in order to be covered by a single CALTRANS Right of Way Permit. The Leucadia Scenic CIPP lining project was completed in May 2017 and the L1 West Section replacement was completed in August 2017. A change order was issued to CIPP line the section (128 ft.) of 18-inch DIP on the railroad bridge.
Gravity Pipeline Rehabilitation	District to rehabilitate deficient segments of ACP and VCP gravity pipelines. The District has implemented its Repair Priority List procedure to perform its gravity pipeline rehabilitation/replacement program.
Saxony Pump Station Rehabilitation	The 2013 AMP recommended that a pump station condition assessment be completed to evaluate all components of all District pump stations. IEC recommended replacing the submersible pumps, replacing check and isolation valves, installing a new automatic transfer switch, installing a new uninterruptible power supply, installing a stairway and platform in the wet well and replacing the wet well lining. The Saxony Pump Station Rehabilitation Project was completed in June 2017.
Leucadia Pump Station Rehabilitation	Per the IEC recommendations, replacement and/or assessment of potentially deficient areas of the pump station are to be completed. An appropriation was made and design began in FY17. Project scope has been modified to resolve an issue of high levels of H2S at the discharge end of both L1 and L2 Force Mains; IEC is currently working on the preliminary design report.
Village Park No. 5 Pump Station Replacement	Per the IEC recommendations, the Smith and Loveless packaged pump station is being replaced with a submersible pump station. The project was under construction in FY17 and was completed on October 12, 2017.
La Costa Golf Course Gravity Line Improvements	During the design phase for the 2016 Gravity Pipeline Rehabilitation Project, it was noted that a section of the La Costa Golf Course gravity line that was designated for repair was exposed where it crossed San Marcos Creek. Emergency Cured-In-Place Pipe (CIPP) lining of the exposed section was completed in November 2015 as a temporary structural reinforcement of the pipeline in anticipation of the predicted El Nino weather pattern. Due to the complexity involved with the permanent repair of the San Marcos Creek crossing and the remaining section of the gravity line in the golf course, other repair or pipeline realignment options

Summary of LWWD AMP Implementation Activities (Revised June 30, 2017)	
Capital Improvements	
Project	**FY17 Status**
	were evaluated, and it was decided to separate the rehabilitation of this line into its own project. Project design is complete and a new easement has been obtained from Omni La Costa Resort & Spa for new gravity line. The project bid in July 2017. Only 1 bid received and bid price was significantly higher than estimated cost. The bid was rejected and is planning to rebid project in FY18.

Leucadia and Batiquitos Pump Station Force Main Work

The evaluation of the Leucadia and Batiquitos Pump Station Force Mains has been ongoing since 2009 with Dexter Wilson Engineering, Inc.'s development of a formal evaluation plan.

In FY11, the following tasks were completed regarding these force mains as a result of the 2009 plan, subsequent evaluations, and the May 2010 break in B2 near the bridge crossing.

- In early 2011, the IEC "Batiquitos Force Main Repair Project" replaced, in place, approximately 1,100 feet each of B1(failsafe), B2, and B3 from the Batiquitos Pump Station to the San Marcos Creek Bridge and approximately 400 feet each of B1, B2, and B3 from the northern end of the San Marcos Creek Bridge to the north. B1 was replaced with 14-inch PVC. B2 and B3, both 24-inch ductile iron pipe, were replaced with 24-inch DR18 C905 PVC.
- Sections of B2, B3, and the Fail Safe line (B1) were inspected.
- The estimated remaining useful life of B2 is 12 years and B3 is 14 years.
- The cathodic protection improvements identified in RF Yeager's May 2010 report were recommended to be implemented. Ultrasonic testing was recommended to be conducted in the future.

In FY12, a contract was executed with RFYeager for the design of the force main cathodic protection project. The project was bid in August 2012 and completed on February 12, 2013.

In FY13, the 2010 RFYeager recommendations were implemented. Specifically, cathodic test stations were repaired and/or replaced on L2, B2, and B3 (the L1 test stations were located subsequent to the initial inspection). With these improvements, the District has the ability to conduct cathodic protection surveys of the four force mains on an annual basis (August or September) as recommended by RFYeager.

In FY13, the discharge end of B2 failed when it was connected to the B1 (failsafe) to bypass the Lanikai Gravity Sewer. The bypass was required to CIPP line the Lanikai pipeline. The B2 Force Main Replacement Project commenced on October 20, 2014 and included the CIPP lining of the Lanikai Line. The project was completed on November 3, 2015. Also in FY13, the District completed the coupon testing of L1. The final recommendations from IEC and RFYeager as a result of this testing were received in FY14. This will drive future integrity testing as well as scheduling the replacement of L1.

Future Cathodic Protection improvements with respect to these force mains as described in IEC's May 2011 technical memo are summarized in Table 1.

TABLE 1
CATHODIC PROTECTION IMPROVEMENTS (*status*)

Year	Phase	Activity	Estimated Cost
2011	1	Ultrasonic Testing of L1 to establish baseline corrosion (*pending results of FY13 coupon testing*)	$27,000
		Locate and/or repair missing and damaged test stations on L1, L2, B2, and B3 (*complete FY13*)	$16,500
		L2 supplemental cathodic protection (*complete*)	$30,000
		B2 cathodic protection (*complete*)	$40,000
		B3 cathodic protection (*complete*)	$40,000
		TOTAL	$153,500
2015	2	Ultrasonic Testing of L1, B2, and B3 *(complete)*	$90,000
2015	3	Replacement of B2 (8,463 ft) *(complete)*	$2,700,000
2017	3	Replacement of L1 West Section *(complete)*	$1,700,000
2025	4	Replacement of B3 (8,332 ft)	$2,600,000
Ongoing (post Ph. 1)		Annual Cathodic Protection Surveys (to begin after Phase 1 is complete)	$500 per year

In FY14, the L1 Force Main was sampled and evaluated for internal and external corrosion. The field survey data for L1 was indicative of a DIP without cathodic protection. Design of the B1 and B2 replacement was completed.

In FY15, design activities on L1 began to replace only the section west of Interstate 5 not including the railroad bridge. L1 will return to standby status with L2 being primary. L2 due to its construction of high quality PVC and excellent current condition, was not slated for any repairs or replacement.

Also in FY15, due to the ongoing project of replacing B2, the District began design and construction of the replacement of B1 (failsafe). This was understood to be a unique opportunity for the replacement due to the fact that B1 can be placed in the same trench as B2, significantly reducing construction costs compared to replacing B1 as a separate project. The replacement of B1 (failsafe) and B2 was completed in June 2015.

In FY16, the design of the replacement for the western segment of L1 was completed. For the eastern portion of L1 (El Camino Real to I-5), based on review of the pipeline profile, the District has reasonable assurance that the section remains full when not in use (thus preventing internal corrosion from air pockets). Additionally, when destructive testing was conducted on the western portion of L1 for corrosion evaluation by removing a coupon, the wrapping of L1 was intact (thus protecting it from external corrosion). Removal of the wrapping confirmed that the external portion of the force main showed no visible signs of external corrosion. Work commenced on the L1 western portion on March 3, 2017 and was completed on August 8, 2017

In FY17, during construction of the western section of L1, a leak was found in the above-grade railroad bridge. A change order was issued to CIPP line the railroad bridge section and construction is nearing completion.

Closeout of the L1 western section replacement and repair projects in FY17 and FY18 will complete the near-term CIP projects related to the Leucadia and Batiquitos Pump Station force mains. The next planned CIP project related to these force mains shall be replacement of B3 in the 2025 timeframe.

COLLECTION SYSTEM IMPROVEMENTS

The list of collection system improvements for FY17 are provided in Attachment B. Note that the FY17 Gravity Pipeline Rehabilitation Project was not performed. The District combined the FY17 Gravity Pipeline Rehabilitation Project with the La Costa Gravity Pipeline Re-Alignment Project. The bid for the project came in high and was rejected. The FY17 and FY18 Gravity Pipeline Rehabilitation projects will be combined and bid as one project in FY18.

PUMP STATION IMPROVEMENTS

Pump station improvements at all District pump stations are tracked in Attachment C in this letter-report.

CAPITAL ACQUISITIONS

The purpose of this section is to summarize the District's FY17 capital acquisitions as related to operation and maintenance.

FY17 Capital Acquisitions

- CCTV Van
- Replace CCTV Equipment
- Critical Inventory (Domes/Rings/Couplings)
- Replace Generator Emergency Plugs
- Replace Surge Tank Compressor at Leucadia Pump Station
- Replace Ozone Monitor
- Replace Check Valves and Valve Handwheels at Rancho Verde Pump Station
- Replace ADS Meters (7)
- Milltronics Units (3)
- New Portable Bypass Pump for all District satellite pump stations

We recommend this letter-report be filed with all of the District's AMPI documents and referred to as the AMPI activities continue. We appreciate the opportunity to have worked with you on the District's ongoing asset management planning. Please contact us with any questions.

Dexter Wilson Engineering, Inc.

Natalie J. Fraschetti, P.E.

NJF:SH:ps

Attachment(s)

A – Lanikai and Occidental O&M Tracking

B – Miscellaneous Sewer Line and Manhole Repairs

C – Pump Station Tracking

ATTACHMENT A

LANIKAI AND OCCIDENTAL O&M TRACKING

LANIKAI GRAVITY SEWER ASSET TRACKING (District is Lead Agency)		
Date	**Activity Type**	**Description**
Dec-10	O&M	Hydroclean and CCTV Inspection by Affordable Pipeline Services. Resulted in recommendation to CIPP line eastern portion from Franciscan Rd to Occidental Line.
		Design Complete
		Contract Issued
		Construction Begins
		Abandoned due to B2 break
FY13		CIPP Project still on hold due to B2 break
		Metallic manhole rings and cover were replaced with composite rings and covers
FY14/15		The portion from Franciscan to the Occidental manhole was lined as part of the B2 Replacement (approx. 385 ft).
2015	O&M	Hydrocleaned and CCTV Inspected
FY17	O&M	Hydrocleaned in Fall of 2016
2020/2021	*O&M*	*Planned Hydrocleaning and CCTV Inspection (every 5 years)*

Items in Italics are Planned

Updated: September 2017

OCCIDENTAL SEWER ASSET TRACKING (Carlsbad is Lead Agency)		
Date	**Activity Type**	**Description**
Dec-10	O&M	Hydroclean and CCTV Inspection (as possible) by Affordable Pipeline Services and confined space entry MH inspection by V&A. Resulted in rehab recommendations. Also, V&A recommended 5 year inspection.
Nov-11	Repair	Carlsbad bid and subsequent award to Charles King Company.
Dec-12	Repair	7 of the 8 manholes were rehabilitated by the Charles King Company. Section CIPP lined.
	Repair	8th manhole (at Lanikai) to be rehabilitated when Lanikai Lining Project resumes
FY14	Repair	The junction manhole was lined by Carlsbad
FY17	O&M	Hydrolcelaned in Fall of 2016 by Carlsbad
FY18-	*O&M*	*Planned Hydroclean and CCTV Inspection every 5 years*

Items in Italics are Planned

Updated: November 2017

ATTACHMENT B

MISCELLANEOUS SEWER LINE AND MANHOLE REPAIRS

Misc. Sewer Line and Manhole Repairs
FY17

Line Segment/ Manhole	Completion Date	Location	Comments	Completed By
01-0132	Aug-16	Leucadia Wastewater Dist.	Manhole Frame & Cover Replacement - Composite	Ayala Engineering
03-0965	Aug-16	La Costa Ave./Hwy 101	Manhole Frame & Cover Replacement - Composite	Ayala Engineering
01-1600	Aug-16	Leucadia Blvd.	Manhole Frame & Cover Replacement - Composite	Ayala Engineering
01-1070	Aug-16	Vulcan Avenue	Manhole Frame & Cover Replacement - Metal	Ayala Engineering
10-0320_10-0310	Oct-16	La Costa Ave. Easement	Install 3 short liners	Ayala Engineering
08-1160	Oct-16	La Selva Way	Rehab interior coating of manhole	Ayala Engineering
11-1691_11-1690	Dec-16	Acuna Court Easement	Spot repair	Piperin Corp.
11-1675_11-1670	Dec-16	Acuna Court Easement	Spot repair	Piperin Corp.

Line Segments with Root Control
FY17

Line Segment	Completion Date	Location	Comments	Length in Feet	Completed By
01-0730 to 01-0740	FY17	Hermes	-	270	Duke's Root Control
11-1995 to 11-1950	FY17	Babilonia	-	182	Duke's Root Control
11-1945 to 11-1950	FY17	Babilonia	-	198	Duke's Root Control
11-1960 to 11-1950	FY17	Babilonia	Easement	213	Duke's Root Control
11-1945 to 11-1890	FY17	Babilonia	Easement/SMA	237	Duke's Root Control
10-1385 to 10-1380	FY17	Galleon Way	SMA	239	Duke's Root Control
04-2810 to 04-2820	FY17	Andrew Ave	Easement	139	Duke's Root Control
04-2810 to 04-2770	FY17	Andrew Ave	Easement	244	Duke's Root Control
11-0810 to 11-0805	FY17	Mar Azul	Easement	306	Duke's Root Control
11-0805 to 11-0765	FY17	Mar Azul	Easement	150	Duke's Root Control
10-1800 to 10-1795	FY17	La Costa Avenue	Easement	55	Duke's Root Control

ATTACHMENT C

PUMP STATION TRACKING

I.E.C. SUMMARY OF PUMP STATION DEFECTS
AND
RECOMMENDATIONS DETAILED CHARTS

Pump Station: Batiquitos Pump Station

Improvement Recommendation/ Existing Defect		**District Action FY17**
VFDs have intermittent issues and are not well supported by manufacturer. 2013 Pump Stations Assessment Site Visit Replace VFDs per recommended schedule in Section 2.6.		3 VFD's Replaced FY-2015
Replace fluorescent lighting with new LED lighting.	Recommend consideration during next assessment period.	

Pump Station: Leucadia Pump Station

Improvement Recommendation/ Existing Defect	**2014 Assessment Recommendation**	**District Action FY17**
Replace control system, electrical facilities and mechanical systems at 10 years of age.	Control system addressed in System wide Controls Upgrade Project. Per the electrical assessment, this station is relatively new and has no known need for electrical improvements, except VFDs as noted below. Improvements to the mechanical system are addressed in the Leucadia Pump Station Improvements Project. Further improvements to the mechanical system should be addressed in the next assessment period.	The SCADA system was replaced in FY15
Install suction piping in emergency overflow wet well for by-pass pumping	Include in Leucadia Pump Station Improvement Project.	Included as part of the Rehabilitation Project
Scrubber fan housing and fan are exposed to heavy concentrations of sulfides and ozone causing heavy rust and corrosion of metal components.	Replace fan and housing with new FRP fan and housing. Include in Leucadia Pump Station Improvement Project.	Included as part of the Rehabilitation Project
Install new weather tight door and seal to pump station building. Seal around rain gutter area above door.	Include in Leucadia Pump Station Improvement Project.	Included as part of the Rehabilitation Project

The fresh air fan and duct from roof draws in a lot of moisture and is corroding the duct work in side storage near the AC unit.	Replace with new FRP fan and duct. Include in Leucadia Pump Station Improvement Project.	Included as part of the Rehabilitation Project
VFDs have issues from time to time (most recent issue is a suspected back HOA switch on the number 4) and are not well supported by the manufacturer.	Replace VFDs per recommended schedule in Section 2.6.	2 VFD's Replaced in FY16
Pressure gauges are loose at the taps. Retap with a larger tap and a reducer?	Replace all pressure gauges. Include in Leucadia Pump Station Improvement Project.	Included as part of the Rehabilitation Project
Check valve switches are too sensitive	Coordinate with ValMatic to determine if there is a retrofit option or replace check valves. Include in Leucadia Pump Station Improvement Project.	Included as part of the Rehabilitation Project
Relocated pressure gauge on discharge header to an outside vault? It is corroding and is difficult to access.	Replace pressure gauge in place. Install facing upwards so it can be read from stairs without platform. Include in Leucadia Pump Station Improvement Project.	Included as part of the Rehabilitation Project
Straps on the air conditioning unit in the dry well are in conflict with the overhead crane.	Replace with new FRP ductwork. Install new supports out of way from overhead crane. Include in Leucadia Pump Station Improvement Project.	Included as part of the Rehabilitation Project
The floor sounds hollow in places	Remove paint and assess for spalling. Leucadia Pump Station Dry Well Structural Assessment Project.	Included as part of the Rehabilitation Project
Pump 3 makes noises on shutdown (stuttering) and motor needs overhaul.	Continue with District internal operations and maintenance activities. Recommended that District replace motor bearings and rewire. Reassess pump replacement at next pump station assessment.	
Pump 1 needs an overhaul: the shaft wobbles, the shaft bearings need replacement, the motor needs retrofit, the pump needs machining to stop leakage.	Continue with District internal operations and maintenance activities. Recommended that District replace motor bearings and rewire, and install stainless steel sleeve on pump housing for mechanical seal. Replace motor bearings Reassess pump replacement at next pump station assessment.	
All new diaphragms and pressure gauges.	Replace all pressure gauges. Include in Leucadia Pump Station Improvement Project.	Included as part of the Rehabilitation Project
Configuration of conduits at the underside of pumps is in the way.	Reconfigure conduits when pumps are replaced. To be reassessed during next pump station assessment.	
Interior scour on volutes at plug locations.	Continue with District internal operations and maintenance activities. Reassess pump replacement at next pump station assessment.	
Seal MH cover @ Vapex injection. When the flow is high the ozone smell leaks out.	Include in Leucadia Pump Station Improvement Project.	Included as part of the Rehabilitation Project
Change sump pump in valve vault. It has a screen that gets clogged with leaves	A new sump pump would still get clogged with leaves. Continue with normal operations and maintenance activities.	
Install 1" port prior to 4" valve on L1 drain to blow out sediment.	Install ports on both L1 and L2 drains. Include in Leucadia Pump Station Improvement Project.	Included as part of the Rehabilitation Project

The interior of the enclosure for the scrubber fan is corroded.	Replace enclosure for scrubber fan. Include in Leucadia Pump Station Improvement Project.	Included as part of the Rehabilitation Project
The drain to the surge tank is clogged.	Repair drain to surge tank. Include in Leucadia Pump Station Improvement Project.	Included as part of the Rehabilitation Project
There is a broken valve on the air piping and no unions to replace it.	Replace valve on air piping, install unions to aid in future disassembly for maintenance and operations activities.	Included as part of the Rehabilitation Project
Install an additional light on the northern side of the air conditioning room.	Recommend consideration during next assessment period. Install with future LED upgrades.	
Replace fluorescent lighting with new LED technology. This technology is rapidly overtaking fluorescent lighting but has some more development before implementation for tube type fixtures.	Recommend consideration during next assessment period.	
Replace PLC and OIT to match Batiquitos PS recent upgrade.	Include in Districtwide Controls Upgrade Project.	Completed FY-15
Perform routine touch up coating repairs over areas of chipped coating and rust bleed through. Prior to coating, affected areas should be power tool wire brushed to remove loose coating and corrosion product.	Complete field painting to be included in Leucadia Pump Station Improvement Project.	Included as part of the Rehabilitation Project
Remove and re-coat the corroded pipe stand bases. The surface corrosion product will need to be removed by abrasive blasting prior to coating.	Remove pipe stand bases and shop coat. Include in Leucadia Pump Station Improvement Project.	Included as part of the Rehabilitation Project
Wet well has some minor bubbling under liner.	Spot repair wet well lining. Include in Leucadia Pump Station Improvement Project.	Included as part of the Rehabilitation Project

Pump Station: La Costa Pump Station*

Improvement Recommendation/ Existing Defect	**2014 Assessment Recommendation**	**District Action FY16**
Replace wet well at 50 years of age.	The 2013 Assessment recommendation includes phasing out the deep dry well Smith and Loveless pump stations for new submersible pump stations. Timing of pump station replacements should be coordinated with needed mechanical and electrical upgrades to optimize return on investment. Since the pump station is currently undergoing a mechanical and electrical upgrade, IEC recommends the pump station wet well be assessed for a complete pump station replacement in the year 2033.	Rehab completed FY14. District will reassess the condition of the wet well in FY19.

*This pump station is currently undergoing a capital improvement project to replace the pumps and motors, electrical switchboard, transfer switch, and installing a new uninterrupted power supply. IEC did not perform a site assessment for this pump station.

Pump Station: Saxony Pump Station

Improvement Recommendation/ Existing Defect	2014 Assessment Recommendation	District Action FY16
Replace control system at 10 years of age.	Control system addressed in Districtwide Controls Upgrade Project.	Saxony Pump Station Rehab Completed June 2016
Replace electrical and mechanical at 20 years of age.	Saxony Pump Station Rehabilitation Project addresses limited mechanical and electrical upgrades.	Saxony Pump Station Rehab Completed June 2016
Paint cabinets.	Complete field painting included in Saxony Pump Station Rehabilitation.	Saxony Pump Station Rehab Completed June 2016
Install new Allen Bradley PLCs	Included in Districtwide Controls Upgrade	Saxony Pump Station Rehab Completed June 2016
Replace #2 check valve and discharge valve.	Replace all check valves and discharge valves in Saxony Pump Station Rehabilitation.	Saxony Pump Station Rehab Completed June 2016
Replace all pressure diaphragms and gauges	Replace all pressure diaphragms and gauges in Saxony Pump Station Rehabilitation.	Saxony Pump Station Rehab Completed June 2016
Install ships ladder in valve vault	Install ships ladder in valve vault in Saxony Pump Station Rehabilitation.	Saxony Pump Station Rehab Completed June 2016
Upgrade ATS panel, add shade canopy. Per Electrical summary, replace heat damaged automatic transfer switch with new dead front type and provide shade canopy	Replace damaged ATS with new and provide shade canopy. Saxony Pump Station Rehabilitation.	Saxony Pump Station Rehab Completed June 2016
Repair lining in wet well.	Replace lining. Included in Saxony Pump Station Rehabilitation.	Saxony Pump Station Rehab Completed June 2016
Install FRP ladder or stairway with platform	Include in Saxony Pump Station Rehabilitation.	Saxony Pump Station Rehab Completed June 2016
Install new safety chains with new SS chain and hardware	Include in Saxony Pump Station Rehabilitation.	Saxony Pump Station Rehab Completed June 2016
General painting	Include in Saxony Pump Station Rehabilitation.	Saxony Pump Station Rehab Completed June 2016

Upgrade lights to LED	Upgrade site lighting to LED. Include in Saxony Pump Station Rehabilitation.	Saxony Pump Station Rehab Completed June 2016
Replace all three submersible pumps (includes spare)	Include in Saxony Pump Station Rehabilitation.	Saxony Pump Station Rehab Completed June 2016
Replace springs on access hatches. Per corrosion summary, replace corroded collars on the wet well access cover springs	Include in Saxony Pump Station Rehabilitation.	Saxony Pump Station Rehab Completed June 2016
Filtering system on intake vents of generator gets accumulation from trees	Continue routine operations and maintenance activities.	Contractor installed Screens during PS-upgrade
Termites in wooden door of generator fencing (walls are CMU).	Replace gates around generator. Include in Saxony Pump Station Rehabilitation.	Saxony Pump Station Rehab Completed June 2016
Remove surface rust on various MCC and generator locations and repaint	Complete field painting to be included in Saxony Pump Station Rehabilitation.	Saxony Pump Station Rehab Completed June 2016
Power monitors are out of order and require replacement	Replace power monitors as part of Saxony Pump Station Rehabilitation.	Saxony Pump Station Rehab Completed June 2016
Replace the UPS	Replace UPS as part of Saxony Pump Station Rehabilitation.	Saxony Pump Station Rehab Completed June 2016
Replace the Modicon micro PLC with Allen Bradley PLC. Replace noisy exhaust fan	Replace PLC as part of Districtwide Controls Upgrade	Saxony Pump Station Rehab Completed June 2016

Pump Station: Avocado Pump Station

Improvement Recommendation/ Existing Defect	**2014 Assessment Recommendation**	**District Action FY16**
Replace control system at 10 years of age.	Include in Districtwide Controls Upgrade Project.	Scheduled for FY-2019
Evaluate main breaker condition.	Replace main breaker (at greater than 30 years of age). Avocado and Diana Main Breaker Replacement Project.	Scheduled for FY-2019
Upgrade PLC's to Allen Bradley	Include in Districtwide Controls Upgrade Project.	Scheduled for FY-2019

*This pump station was replaced in 2010. IEC did not perform a site assessment for this pump station.
Moraes/Pham & Associates performed a limited site visit to assess the condition of the main breaker.

Pump Station: Diana Pump Station*

Improvement Recommendation/ Existing Defect	2014 Assessment Recommendation	District Action FY16
Replace control system at 10 years of age.	Include in Districtwide Controls Upgrade Project.	Scheduled for FY-2019
Evaluate main service breaker condition	Replace main breaker (at greater than 30 years of age). Avocado and Diana Main Breaker Replacement Project.	Scheduled for FY-2019
Upgrade PLC's to Allen Bradley	Include in Districtwide Controls Upgrade Project.	Scheduled for FY-2019

*This pump station was replaced in 2010. IEC did not perform a site assessment for this pump station.
Moraes/Pham & Associates performed a limited site visit to assess the condition of the main breaker.

Pump Station: Encinitas Estates Pump Station

Improvement Recommendation/ Existing Defect	2014 Assessment Recommendation	District Action FY16
Replace wet well at 50 years of age.	IEC recommends the District phase out the deep dry well Smith and Loveless pump stations for new submersible pump stations in order to improve the safety of working conditions and improve maintenance and operations accessibility. Timing of pump station replacements should be coordinated with needed mechanical and electrical upgrades to optimize return on investment.	Pump Station scheduled for replacement with a submersible pump station in FY18.
Replace control system at 10 years of age.	Include in Encinitas Estates and Village Park 5 Replacement Project	Pump Station scheduled for replacement with a submersible pump station in FY18.
Replace electrical and mechanical at 20 years of age.	Encinitas Estates and Village Park 5 Replacement Project	Pump Station scheduled for replacement with a submersible pump station in FY18.
Wet well accumulates rags and grease in the corners of the wet well. Also, the influent line is flat which causes debris and grease to settle before entering wet well (in influent manhole)	Conduct assessment during preliminary design of Encinitas Estates and Village Park 5 Replacement Project.	Pump Station scheduled for replacement with a submersible pump station in FY18.

The manhole lid has worn abrasions into the transducer.	N/A Replace pump station as part of Encinitas Estates and Village Park 5 Replacement Project.	Pump Station scheduled for replacement with a submersible pump station in FY18.
Wet well floats are bad and need to be replaced	N/A Replace pump station as part of Encinitas Estates and Village Park 5 Replacement Project.	Pump Station scheduled for replacement with a submersible pump station in FY18.
Wet well manhole requires a safety barrier, prefer double hatch with safety chains for workers to protect against trips and falls	N/A Replace pump station as part of Encinitas Estates and Village Park 5 Replacement Project.	Pump Station scheduled for replacement with a submersible pump station in FY18.
Pumps and motors are original and last overhaul was 13 years ago	N/A Replace pump station as part of Encinitas Estates and Village Park 5 Replacement Project.	Pump Station scheduled for replacement with a submersible pump station in FY18.
Dehumidifier shelf interferes with the lifting of the #1 motor and pump.	N/A Replace pump station as part of Encinitas Estates and Village Park 5 Replacement Project.	Pump Station scheduled for replacement with a submersible pump station in FY18.
Lifting eye on the ceiling is not centered over the #1 motor	N/A Replace pump station as part of Encinitas Estates and Village Park 5 Replacement Project.	Pump Station scheduled for replacement with a submersible pump station in FY18.
Wet well needs all components, pumps, motors, valves, floor painted	N/A Replace pump station as part of Encinitas Estates and Village Park 5 Replacement Project.	Pump Station scheduled for replacement with a submersible pump station in FY18.
Install panel lights inside MCC control panel	N/A Replace pump station as part of Encinitas Estates and Village Park 5 Replacement Project.	Pump Station scheduled for replacement with a submersible pump station in FY18.
Soft starters have no vendor support and need to be replaced	N/A Replace pump station as part of Encinitas Estates and Village Park 5 Replacement Project.	Pump Station scheduled for replacement with a submersible pump station in FY18.
Replace PLC with Allen Bradley	N/A Replace pump station as part of Encinitas Estates and Village Park 5 Replacement Project.	Pump Station scheduled for replacement with a submersible pump station in FY18.
Bay City Electric Works claims generator is undersized	Generator is sized correctly.	
Can't use bypass connections installed with SPS project because of insufficient pump capacity	District is currently in the process of obtaining a new pump or making preparations to be able to quickly rent pump from a local distributor.	

Northern motor replaced Feb 2011, southern motor rebuilt nov 2010, mech seal replaced nov 2010. Currently southern motor has a broken (cracked impeller)	N/A Replace pump station as part of Encinitas Estates and Village Park 5 Replacement Project.	Pump Station scheduled for replacement with a submersible pump station in FY18.
Install bigger landing for pump station to allow them to set instruments down	N/A Replace pump station as part of Encinitas Estates and Village Park 5 Replacement Project.	Pump Station scheduled for replacement with a submersible pump station in FY18.
Rotate steps to allow space for larger generator?	N/A Replace pump station as part of Encinitas Estates and Village Park 5 Replacement Project.	Pump Station scheduled for replacement with a submersible pump station in FY18.
Exhaust from air vent is blocked with electrical box – could you put a louvered panel on elsewhere?	N/A Replace pump station as part of Encinitas Estates and Village Park 5 Replacement Project.	Pump Station scheduled for replacement with a submersible pump station in FY18.
Install odor seal wet well with stainless covers like at avocado/Diana	N/A Replace pump station as part of Encinitas Estates and Village Park 5 Replacement Project.	Pump Station scheduled for replacement with a submersible pump station in FY18.
General painting	N/A Replace pump station as part of Encinitas Estates and Village Park 5 Replacement Project.	Pump Station scheduled for replacement with a submersible pump station in FY18.
UT survey of station floor and shell	N/A Replace pump station as part of Encinitas Estates and Village Park 5 Replacement Project.	Pump Station scheduled for replacement with a submersible pump station in FY18.
Design and installation of an impressed current cathodic protection system	N/A Replace pump station as part of Encinitas Estates and Village Park 5 Replacement Project.	Pump Station scheduled for replacement with a submersible pump station in FY18.
Replace top wireway (corrosion). Replace wooden backboard with steel backboard.	N/A Replace pump station as part of Encinitas Estates and Village Park 5 Replacement Project.	Pump Station scheduled for replacement with a submersible pump station in FY18.
Remove and repaint generator surface rust. Generator size was checked. The 45 kw NG generator is properly sized for existing pumps.	Generator is sized correctly.	
Replace non-functioning backup floats in the wetwell	N/A Replace pump station as part of Encinitas Estates and Village Park 5 Replacement Project.	Pump Station scheduled for replacement with a submersible pump station in FY18.

Replace aging MCC and RTU (PLC). The existing soft starts have been replaced in the past but are reportedly, by staff, to be unsupported. The existing MCC does not have thermostatic heaters or switch vestibule lights.	N/A Replace pump station as part of Encinitas Estates and Village Park 5 Replacement Project.	Pump Station scheduled for replacement with a submersible pump station in FY18.
Yellow polyurethane liner. Missing and disbanded liner near the bottom of wet well, multiple areas with small bubbling. Missing section of liner near wet well penetration.	N/A Replace pump station as part of Encinitas Estates and Village Park 5 Replacement Project.	Pump Station scheduled for replacement with a submersible pump station in FY18.

Pump Station: Village Park 5 Pump Station

Improvement Recommendation/ Existing Defect	**2014 Assessment Recommendation**	**District Action FY16**
Replace wet well at 50 years of age.	IEC recommends the District phase out the deep dry well Smith and Loveless pump stations for new submersible pump stations in order to improve the safety of working conditions and improve maintenance and operations accessibility. Timing of pump station replacements should be coordinated with needed mechanical and electrical upgrades to optimize return on investment.	Replacing with Submersible Pump Station. Construction completed October 12, 2017.
Replace control system at 10 years of age.	Include in Encinitas Estates and Village Park 5 Replacement Project.	Contract Awarded to SCW Contracting (construction completed October 12, 2017).
Replace electrical and mechanical at 20 years of age.	Replace pump station as part of Encinitas Estates and Village Park 5 Replacement Project.	Replacing with Submersible Pump Station. Construction completed October 12, 2017.
Replace both pumps – original	N/A Replace pump station as part of Encinitas Estates and Village Park 5 Replacement Project.	Contract Awarded to SCW Contracting (construction completed October 12, 2017).
New check valves and discharge piping and elbows	N/A Replace pump station as part of Encinitas Estates and Village Park 5 Replacement Project.	Replacing with Submersible Pump Station. Construction completed October 12, 2017.
Discharge elbow is leaking and has a temporary patch. LWD has purchased this elbow with spacers	District should obtain bypass pump as necessary to take the station out of operation and install new elbow as soon as possible.	Contract Awarded to SCW Contracting (construction completed October 12, 2017).

Replace all valves and limit switches	N/A Replace pump station as part of Encinitas Estates and Village Park 5 Replacement Project.	Replacing with Submersible Pump Station. Construction completed October 12, 2017.
Sump pump drain pipe needs to be replaced into the wet well.	N/A Replace pump station as part of Encinitas Estates and Village Park 5 Replacement Project.	Contract Awarded to SCW Contracting (construction completed October 12, 2017).
The electrical outlet for the sump pump and ventilation needs to be relocated from under the bottom step.	N/A Replace pump station as part of Encinitas Estates and Village Park 5 Replacement Project.	Replacing with Submersible Pump Station. Construction completed October 12, 2017.
New shelf for dehumidifier upgrade needs to be installed.	N/A Replace pump station as part of Encinitas Estates and Village Park 5 Replacement Project.	Contract Awarded to SCW Contracting (construction completed October 12, 2017).
Light fixture needs to be replaced and a new switch at the top of the ladder installed.	N/A Replace pump station as part of Encinitas Estates and Village Park 5 Replacement Project.	Replacing with Submersible Pump Station. Construction completed October 12, 2017.
Dry well hatch needs to be replaced due to cracks	N/A Replace pump station as part of Encinitas Estates and Village Park 5 Replacement Project.	Contract Awarded to SCW Contracting (construction completed October 12, 2017).
General painting in dry well.	N/A Replace pump station as part of Encinitas Estates and Village Park 5 Replacement Project.	Replacing with Submersible Pump Station. Construction completed October 12, 2017.
Wet well manhole is a double ring and district staff is unable to free outer ring. Replace with a single hatch for easier cleaning and access.	N/A Replace pump station as part of Encinitas Estates and Village Park 5 Replacement Project.	Contract Awarded to SCW Contracting (construction completed October 12, 2017).
Float pole mounts need to be replaced with stainless steel mounting braces and hardware	N/A Replace pump station as part of Encinitas Estates and Village Park 5 Replacement Project.	Replacing with Submersible Pump Station. Construction completed October 12, 2017.
Replace PLC with new allen Bradley	N/A Replace pump station as part of Encinitas Estates and Village Park 5 Replacement Project.	Contract Awarded to SCW Contracting (construction completed October 12, 2017).
Install exterior lighting. Generator has been wired for emergency lights to be mounted on generator cabinet	N/A Replace pump station as part of Encinitas Estates and Village Park 5 Replacement Project.	Replacing with Submersible Pump Station. Construction completed October 12, 2017.
Would like submersible pump station next to entrance so trucks could back in to service – as it is they park through the gate and block the bike lane with truck rear bumper	N/A Replace pump station as part of Encinitas Estates and Village Park 5 Replacement Project.	Contract Awarded to SCW Contracting (construction completed October 12, 2017).

SDG&E meter got hit by a car	Meter is property of SDG&E. District should confirm with SDG&E that the meter is still deemed reliable.	No Action taken by District Staff
Low capacity wet well – that's why it has an emergency generator	N/A Replace pump station as part of Encinitas Estates and Village Park 5 Replacement Project.	Replacing with Submersible Pump Station. Construction completed October 12, 2017.
Need hand wash stations at stations that have water	N/A Replace pump station as part of Encinitas Estates and Village Park 5 Replacement Project.	Contract Awarded to SCW Contracting (construction completed October 12, 2017).
Concerned about branch breaking in storm and falling on emergency generator	O&M issue – landscape maintenance	Tree Branch Removed by landscaping contractor
No force main isolation valve – if they have to replace a discharge valve they have to drain the whole force main	N/A Replace pump station as part of Encinitas Estates and Village Park 5 Replacement Project.	Replacing with Submersible Pump Station. Construction completed October 12, 2017.
If relocating mcc to topside put a shelf for dehumidifier with drain to wet well	N/A Replace pump station as part of Encinitas Estates and Village Park 5 Replacement Project.	Contract Awarded to SCW Contracting (construction completed October 12, 2017).
Assessment of newly installed cathodic protection system	N/A Replace pump station as part of Encinitas Estates and Village Park 5 Replacement Project.	Replacing with Submersible Pump Station. Construction completed October 12, 2017.
Recoat floor and sump	N/A Replace pump station as part of Encinitas Estates and Village Park 5 Replacement Project.	Contract Awarded to SCW Contracting (construction completed October 12, 2017).
Add directional lights above canopy at the ATS location. Add a cover to the ATS display to prevent UV damage	N/A Replace pump station as part of Encinitas Estates and Village Park 5 Replacement Project.	Replacing with Submersible Pump Station. Construction completed October 12, 2017.
Replace main disconnect due to faulty door.	N/A Replace pump station as part of Encinitas Estates and Village Park 5 Replacement Project.	Contract Awarded to SCW Contracting (construction completed October 12, 2017).
Remove light and wiring from the drywell ladder structure and relocate. Replace lights in drywell.	N/A Replace pump station as part of Encinitas Estates and Village Park 5 Replacement Project.	Replacing with Submersible Pump Station. Construction completed October 12, 2017.
Relocate receptacle at base of ladder in the drywell.	N/A Replace pump station as part of Encinitas Estates and Village Park 5 Replacement Project.	Contract Awarded to SCW Contracting (construction completed October 12, 2017).

Existing wet well level cables do not have required explosion proof (XP) seals. Recommend adding a junction box with XP seals flush with grade	N/A Replace pump station as part of Encinitas Estates and Village Park 5 Replacement Project.	Replacing with Submersible Pump Station. Construction completed October 12, 2017.
The pump station electrical controls are down in the drywell and should be moved above grade for easy access and maintenance. It is recommended that a new MCC and PLC be installed above grade.	N/A Replace pump station as part of Encinitas Estates and Village Park 5 Replacement Project.	Contract Awarded to SCW Contracting (construction completed October 12, 2017).
Some small areas of bubbling. Small areas of disbanded missing liner at flow line	N/A Replace pump station as part of Encinitas Estates and Village Park 5 Replacement Project.	Replacing with Submersible Pump Station. Construction completed October 12, 2017.

Pump Station: Village Park 7 Pump Station

Improvement Recommendation/ Existing Defect	**2014 Assessment Recommendation**	**District Action FY16**
Replace wet well at 50 years of age.	IEC recommends the District phase out the deep dry well Smith and Loveless pump stations for new submersible pump stations in order to improve the safety of working conditions and improve maintenance and operations accessibility. Timing of pump station replacements should be coordinated with needed mechanical and electrical upgrades to optimize return on investment.	Scheduled for FY-2019
Replace control system at 10 years of age.	Included in Districtwide Controls Upgrade.	Scheduled for FY-2019
Replace electrical and mechanical at 20 years of age.	Perform complete overhaul in Village Park 7 Rehabilitation Project.	Scheduled for FY-2019
Replace #1 motor. (#2 was replaced in 2010)	Replace pumps and motors. Included in Village Park 7 Rehabilitation Project.	Scheduled for FY-2019
Replace check valves (original) and 2 way discharge elbow and header and both limit switches.	Replace valves and piping in pump station. Included in Village Park 7 Rehabilitation Project.	Scheduled for FY-2019
Replace all valves	Replaced valves. Included in Village Park 7 Rehabilitation Project.	Scheduled for FY-2019
Replace sump pump drain into wet well	Replace sump pump drain. Included in Village Park 7 Rehabilitation Project.	Scheduled for FY-2019

Replace sump pump and all check valves	Replace check valves. Included in Village Park 7 Rehabilitation Project.	Scheduled for FY-2019
Relocate electrical outlets from under the bottom step	Included in Village Park 7 Rehabilitation Project.	Scheduled for FY-2019
Replace ladder (bent rungs)	Included in Village Park 7 Rehabilitation Project.	Scheduled for FY-2019
Replace light switch at top of ladder and light fixture below.	Included in Village Park 7 Rehabilitation Project.	Scheduled for FY-2019
Install locking mechanism to hold access hatch open.	Included in Village Park 7 Rehabilitation Project.	Scheduled for FY-2019
Install new dehumidifier shelf	Included in Village Park 7 Rehabilitation Project.	Scheduled for FY-2019
General painting in dry well	Included in Village Park 7 Rehabilitation Project.	Scheduled for FY-2019
Move MCC controls to above ground	Included in Village Park 7 Rehabilitation Project.	Scheduled for FY-2019
Replace with Allen Bradley	Included in Districtwide Controls Upgrade.	Scheduled for FY-2019
Install new outside light fixture (LED) connected to both S2 and S2 power.	Included in Village Park 7 Rehabilitation Project.	Scheduled for FY-2019
Replace main service breaker	Included in Village Park 7 Rehabilitation Project.	Scheduled for FY-2019
Evaluate installing a new emergency generator	Included in Village Park 7 Rehabilitation Project.	Scheduled for FY-2019
Leak from mechanical seal housing on new pump, old stand #1	Replace pumps and motors. Included in Village Park 7 Rehabilitation Project.	Scheduled for FY-2019
Bottom step is rusted	Replace ladder. Included in Village Park 7 Rehabilitation Project.	Scheduled for FY-2019
Guides and seals are wearing out on pumps	Replace pumps and motors. Included in Village Park 7 Rehabilitation Project.	Scheduled for FY-2019
Broken handle on valve vault cover	Included in Village Park 7 Rehabilitation Project.	Scheduled for FY-2019

Would like actuators on valves to open and close	Replace valves. Included in Village Park 7 Rehabilitation Project.	Scheduled for FY-2019
Site drainage issues – when homeowner uphill of pump station waters the embankment it runs over the site.	Install brow ditch on west side of pump station site. Included in Village Park 7 Rehabilitation Project.	Scheduled for FY-2019
Assessment of the newly installed cathodic protection system	Village Park 7 Cathodic Protection Assessment.	Scheduled for FY-2019
Recoat floor and sump	Included in Village Park 7 Rehabilitation Project.	Scheduled for FY-2019
Replace site lighting with LED type.	Included in Village Park 7 Rehabilitation Project.	Scheduled for FY-2019
Replace all electrical equipment above grade with new MCC. Remove controls from the drywell and upgrade to Allen Bradley PLC	Included in Village Park 7 Rehabilitation Project.	Scheduled for FY-2019
Replace manual transfer switch.	Included in Village Park 7 Rehabilitation Project.	Scheduled for FY-2019
Convert station from 240 volt to 480 volt to improve pump efficiency.	Install new transformer. Replace all electrical and mechanical components. Included in Village Park 7 Rehabilitation Project.	Scheduled for FY-2019
Add 20 kw standby diesel generator	Included in Village Park 7 Rehabilitation Project.	Scheduled for FY-2019
Remove light and wiring from the drywell ladder structure and relocate.	Included in Village Park 7 Rehabilitation Project.	Scheduled for FY-2019
Relocate receptacle at base of ladder in the drywell.	Included in Village Park 7 Rehabilitation Project.	Scheduled for FY-2019
Existing wet well level cables do not have required explosion proof (XP) seals. Recommend adding a junction box with XP seals flush with grade. Repair conduit.	Included in Village Park 7 Rehabilitation Project.	Scheduled for FY-2019
Polyurethane liner cracked near high water line. Missing disbonded area around inlet sewer.	Repair wet well lining. Included in Village Park 7 Rehabilitation Project.	Scheduled for FY-2019

Pump Station: Rancho Verde Pump Station

Improvement Recommendation/ Existing Defect	2014 Assessment Recommendation	District Action FY16
Replace control system at 10 years of age.	Included in Districtwide Controls Upgrade Project.	Scheduled for FY-2019
Replace electrical and mechanical at 20 years of age.	Replace selected mechanical and electrical components as detailed below.	
Replace check valves, discharge valve and rusted pipe stands.	Included in Rancho Verde Pump Station Rehabilitation Project.	District Replaced Both Discharge valves 2015
Convert bioxide storage to bypass piping and valving for emergency pumping?	Included in Rancho Verde Pump Station Rehabilitation Project.	
Look at 240 to 480 conversion to improve pump efficiency.	Should be addressed at next major mechanical and electrical upgrade. Will include new transformer and replacement of all mechanical and electrical components.	
Install new air vac	Included in Rancho Verde Pump Station Rehabilitation Project.	
Install new air valve piping to force main	Included in Rancho Verde Pump Station Rehabilitation Project.	
Main control panel has very tight clearance over vault lids making it difficult to open at times.	Shim control panel enclosure up. Included in Rancho Verde Pump Station Rehabilitation Project.	
Level controller is not a milltronics and is difficult to program	Replace level controller. Included in Rancho Verde Pump Station Rehabilitation Project.	Replaced Level control FY-2015
Replace and install new pressure transducer	Included in Rancho Verde Pump Station Rehabilitation Project.	Replaced pressure transducer FY-2015
Pave around wet well and vaults	Included in Rancho Verde Pump Station Rehabilitation Project.	
Ventilation vents on the telemetry cabinets are broken, mounting studs or seized (?), replacement needed to keep filters clean	Replace vents. Included in Rancho Verde Pump Station Rehabilitation Project.	

Routine touch up coating repairs	Included in Rancho Verde Pump Station Rehabilitation Project.	
Shop coat pipe stand bases	Replace pipe stands with new stainless steel pipe stands. Included in Rancho Verde Pump Station Rehabilitation Project.	
This station electrical equipment is fairly new and in good condition and should last beyond 2015 with normal maintenance. The pedestal door interferes with the existing hatch. Add shims to raise the pedestal	Included in Rancho Verde Pump Station Rehabilitation Project.	
Replace the level controller with a Milltronics type to match other facilities. The existing submersible level transmitter will work with the Milltronics instrument.	Included in Rancho Verde Pump Station Rehabilitation Project.	
Existing PVC lining in good condition. Corroded discharge piping should be replaced in the wet well	Replace discharge piping. Included in Rancho Verde Pump Station Rehabilitation Project.	

Pump Station: Encina Effluent Pump Station

Improvement Recommendation/ Existing Defect	2014 Assessment Recommendation	District Action FY16
Pump 1 is not pumping	Replace both pumps. Included in Encina Effluent Pump Station Rehabilitation.	Pump Rehab FY-2015
Pump 2 has a lot of vibration	Replace both pumps. Included in Encina Effluent Pump Station Rehabilitation.	Pump Rehab Fy- 2016
Replace shut off valve on meter piping – has not been exercised	Replace valve on meter piping. Included in Encina Effluent Pump Station Rehabilitation.	Scheduled FY 2019
Replace check valves on discharge piping	Replace check valves on discharge piping. Included in Encina Effluent Pump Station Rehabilitation.	
General painting	Field paint all components. Included in Encina Effluent Pump Station Rehabilitation.	
Replace threaded coupling at the air vac connection on the 8 inch diameter discharge line	Replace coupling at AV connection. Included in Encina Effluent Pump Station Rehabilitation.	
Recoat above grade metallic components with failed coating. New coating should be suitable for long term exposure to marine environments. Some components can be recoated in the field. Other components, such as the pump housing, may require shop coating.	Field paint all components. Included in Encina Effluent Pump Station Rehabilitation.	
Replace lock-out stop switches at pedestal near motors.	Included in Encina Effluent Pump Station Rehabilitation.	
The radio (freewave) telemetry system has been reported by staff to be intermittent. Recommend changing to cellular modem.	Included in Encina Effluent Pump Station Rehabilitation.	Upgraded FY-15
Replace PLC with Allen Bradley	Included in Districtwide Controls Upgrade.	