

# **DEXTER WILSON ENGINEERING, INC.**

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CONSULTING ENGINEERS

## **LEUCADIA WASTEWATER DISTRICT SEWER SYSTEM MANAGEMENT PLAN FISCAL YEAR 2021 AUDIT**

**October 22, 2021**

**LEUCADIA WASTEWATER DISTRICT  
SEWER SYSTEM MANAGEMENT PLAN  
FISCAL YEAR 2021 AUDIT**

October 22, 2021

**Prepared by:  
Dexter Wilson Engineering, Inc.  
2234 Faraday Avenue  
Carlsbad, CA 92008**



Job No. 103-019/5

## DEXTER WILSON ENGINEERING, INC.

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DEXTER S. WILSON, P.E.  
ANDREW M. OVEN, P.E.  
NATALIE J. FRASCHETTI, P.E.  
STEVEN J. HENDERSON, P.E.  
FERNANDO FREGOSO, P.E.  
KATHLEEN L. HEITT, P.E.

October 22, 2021

103-019/5

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  
2021 Audit

The Leucadia Wastewater District's (District) Sewer System Management Plan (SSMP) was adopted by the District Board and certified by the General Manager in June 2019. The purpose of the SSMP is to memorialize and publicly present in a central document the programs and activities utilized by the District to effectively manage its wastewater collection system. The SSMP requires audits 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 2021 (FY21) Audit (the second audit of the 2019 readoption of the District's 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.

### **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, 2024 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 FY21 can be found in Attachment B.

### **Audit Discussion**

The following paragraphs highlight notable elements of the FY21 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 2019 SSMP. The statewide WDR which governs the SSMP is in the process of being revised. District staff have been active in this process toward reissuance of the WDR. There were no new field services staff hired in FY21.

**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 SSMP, the District strives to CCTV their entire system every three years. The District is on track to meet its goal of CCTV inspecting its 200 mile gravity sewer system within a three-year timeframe. However, in review of Exhibit C-2, there are select areas within the District which have not been CCTV inspected in the last three years. These areas will be CCTV inspected in FY22.

In FY20, the District's portable flow meters (Echo meters) were relocated to strategic gravity sewer locations which are difficult to clean and CCTV inspect. In addition to monitoring capacity, the meters have assisted in determining whether the frequency of the resource intensive cleaning and CCTV activities of these locations can be extended. These locations are also being further evaluated in terms of inflow and infiltration.

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. Eighteen additional line segments utilized foam treatment for root control in FY21.

In FY21, a mutual maintenance services and equipment agreement between the District and Olivenhain Municipal Water District (OMWD) was prepared. The agreement enables the District to have access to OMWD's hydraulic valve turning equipment services. These services will be utilized to exercise three large valves every six months at the major District pump stations. In return, the District will provide services to clean two of OMWD's pump station wet wells.

The District's Asset Management Plan (AMP) was revised in May 2018. Progress throughout FY21 with respect to the AMP (and other asset planning efforts) is summarized in the Attachment I letter-report at the end of the audit. The District's revised AMP is summarized as well in Attachment I.

The FY21 SOP training schedule can be found in Attachment D and all updated SOPs are included on a CD in Attachment E.

**Section VI (Overflow Emergency Response Plan).** No revisions were made to the OERP.

**Section VII (FOG Control Program).** Only one SSO has been attributable to FOG since FY11, continuing the District's SSMP determination that a formal FOG control program is not warranted at this time. The District continues to require BMP agreements for all new FSEs as well as further continuing its outreach via newsletters, door hangers, inspections,

etc. Additionally, the District is training field staff and conducting inspection of grease interceptors/traps in shopping plazas that show significant corrosion of manholes.

**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 in FY20 and is hydrocleaned as deemed necessary. Any defects discovered during the CCTV inspections are incorporated into the District's Repair Priority List.

Inflow domes have been installed in 2,414 of the District's 5,103 manholes to aid in reducing inflow. The District will continue to repair/replace inflow domes as it becomes necessary. Figure 1 shows the manhole locations where inflow domes have been installed throughout the District.

Smoke testing was performed on approximately 13,000 linear feet in FY21. A total of 59 defects were identified. A majority of the defects were found along private laterals and cleanouts.

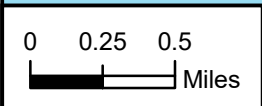
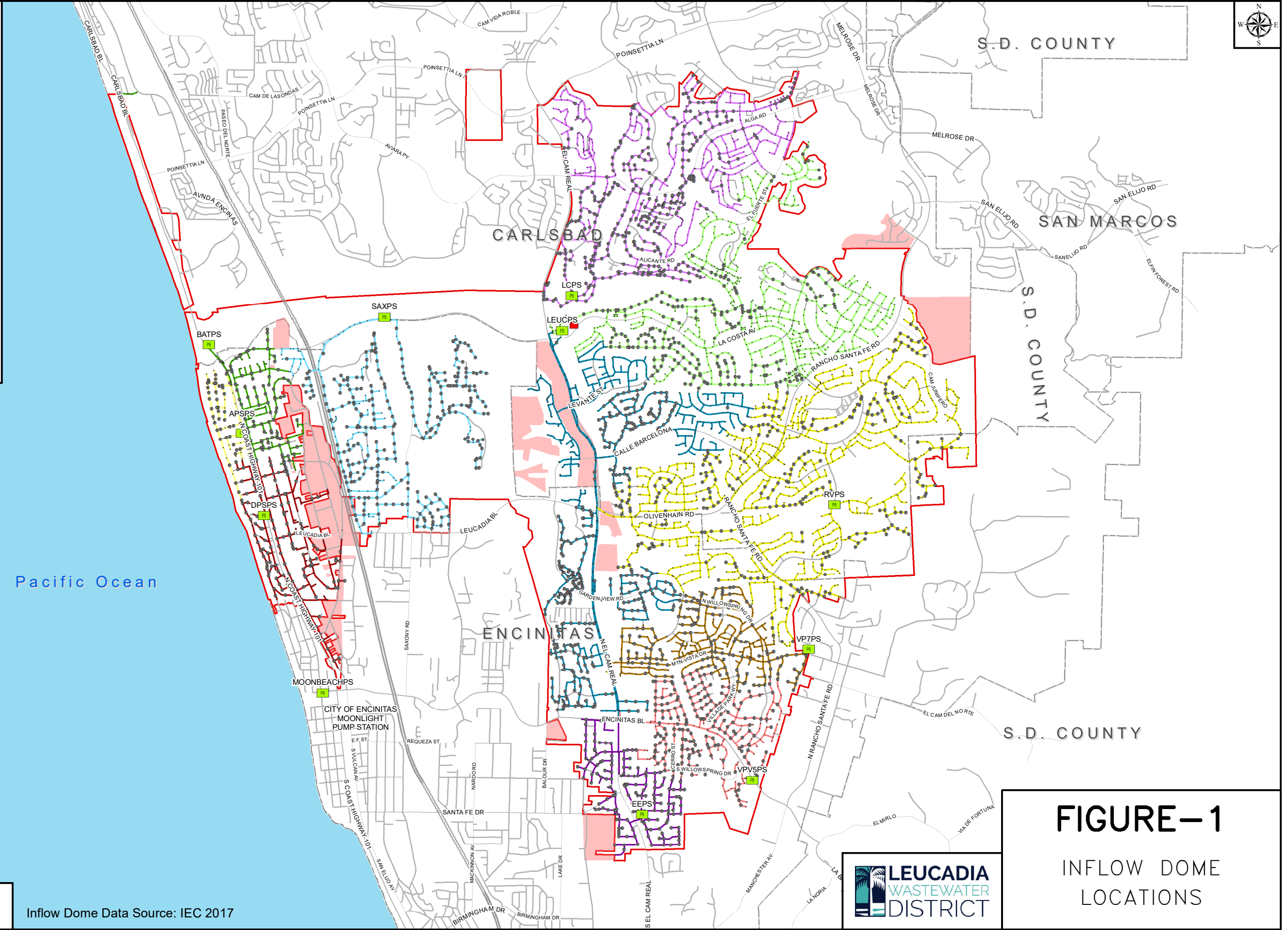
Flow analyses of the District were conducted as part of the District's 2008, 2013, and 2018 AMPs. All three documents concluded that estimates of average and peak ultimate flows are within the design values of the District and less than the flows utilized in the District's detailed capacity analyses conducted as part of the 1999 Wastewater Master Plan. There are no capacity-driven replacement projects currently identified for the District. For reference, the current buildout flows for the District are projected to be 4.7 mgd in comparison to the 1999 Master Plan where buildout flows were projected at 6.5 mgd.

The District's monthly flow comparison for FY20 and FY21 can be found in Attachment F. In comparison to FY20, average daily flows have slightly decreased in FY21.

Other FY21 system evaluation activities included the monitoring of COVID-19 impacts to wastewater flows as well as analyzing the FY20 relocation of select Echo meters within the District to better evaluate inflow and infiltration and cleaning frequency requirements.

**LEGEND**

- Inflow Dome Location
  - Manhole
  - 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



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CONSULTING ENGINEERS  
(760) 438-4422

Inflow Dome Data Source: IEC 2017



**FIGURE—1**

INFLOW DOME  
LOCATIONS

Date Saved: 10/6/2021 12:43:25 PM  
Document Path: \\eric\GIS\103019-5\2021\_Update\Final\Exhibits\Figure-1\_InflowDome\_2021-09\_11x17.mxd



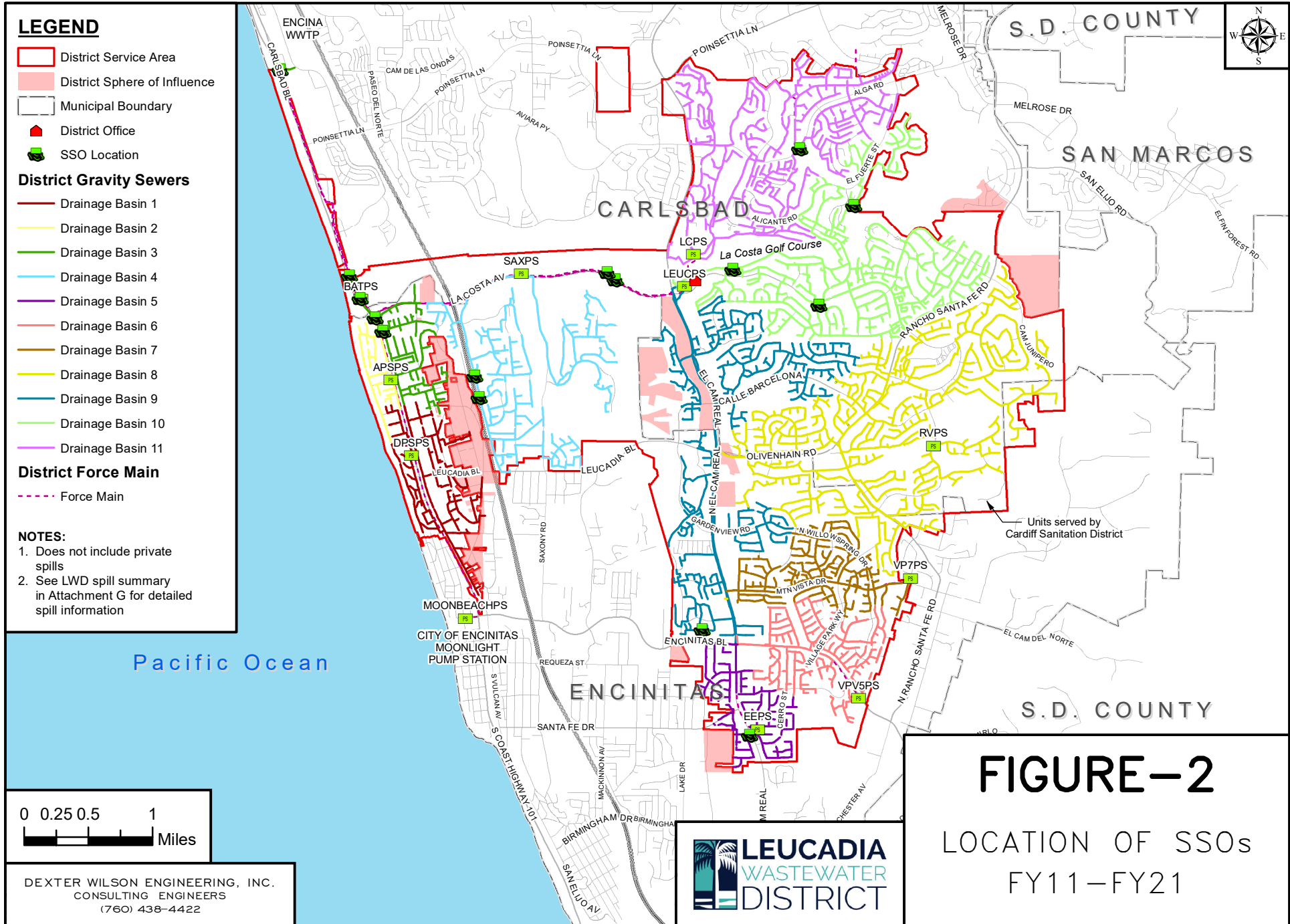
**Section IX (Monitoring, Measurement, and Program Modifications).** The District's Spill Summary through June 30, 2021 can be found in Attachment G. No spills occurred in FY21.

Spill review checklists for each SSO 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 ten years. There were four private lateral spills in FY21. Spill occurrence and volume continues to decline which demonstrates the District's successful preventative maintenance program.

**Section XI (Communication Program).** The District has made the 2019 SSMP and subsequent audits available on its website. The District also actively posts to Facebook to communicate generally with the public. Examples of Facebook posts by the District in FY21 included reminders about the problems that wipes cause in the sewer system, tips on how customers can better maintain their private sewer plumbing, keeping easements clear, and information on District activities such as smoke testing, routine maintenance work/traffic control, etc. Letters to homeowners and pool contractors were issued as well reminding them not to discharge plaster to sewer. Additionally, a formal SSMP presentation is provided to the Engineering Committee and Board of Directors and is part of those agendas and meeting packets.

### **Recommended SSMP Edits**

Attachment H to this audit document is a place holder for specific edits to the 2019 SSMP; there are no edits/change recommended to the SSMP based on the FY21 Audit. Future edits, if necessary, will be documented in the SSMP change log (Appendix B of the SSMP and Attachment H of subsequent audits). Future edits/revisions to the SSMP will be evaluated to determine whether or not they are significant enough to warrant re-adoption of the District's SSMP prior to the scheduled June 10, 2024 revision.



**Summary of Recommendations**

The following section summarizes recommended items as a result of the FY21 Audit:

- 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, specifically location 1, 4, 5, 6, and 11). The El Camino Real, La Costa Golf Course, and Rancho Santa Fe Road sewers are scheduled for CCTV inspection in FY22.
- Ensure that the planned O&M activities (e.g. hydroclean and CCTV inspect every 5 years) for the Lanikai and Occidental sewer lines are on track (see AMPI memorandum Attachment A). The Occidental sewer line is scheduled to be hydrocleaned by Carlsbad in FY22.
- Complete all applicable scheduled SOP trainings in FY22 (see Attachment D for reference).

**Next Steps**

This SSMP FY21 Audit should be received and filed by the District Board as well as retained for inclusion in the current District's 2019 SSMP. Please be sure to post this FY21 Audit on the District's website and include a hardcopy in the District's 2019 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. Frascchetti, P.E.

NJF:SH:ah

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 FY20 to FY21

G – LWD Spill Summary through June 30, 2021

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 FY2021**

**Date Evaluation Completed: August 19, 2021 - October 4, 2021**

*Last Date Checklist Revised: September 1, 2020*

Monitoring, Measurement, and Modification Question	Yes	No	Update Needed in SSMP? *	Date	Staff Inter-viewed	Actions and Notes
<b>Sections I, II, III (District Goals, Organization, Legal</b>						
1. Has there been an appreciable change in the Strategic Plan?		✓		8/19/21	TSM	
2. Was the current organizational chart included in the annual financial plan?	✓			10/4/21	RDD	
3. Were the District goals addressed in the annual Fiscal Year Tactics & Action Plan?	✓			10/4/21	RDD	
4. Has the District's Legal Authority been reviewed considering new regulations?		✓		8/19/21	TSM	A general WDR revision is still in progress with the State. The District's Legal Authority complies with current regulations.
5. If appropriate for three year review cycle, has the District's Standard Spec been reviewed for necessary changes?	✓			10/4/21	DE	
6. Was the staff size and organizational chain of command sufficient for implementation of the preventative maintenance programs and SSO spill response?	✓			8/19/21	FSS & DE	
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?		✓		8/19/21	FSS & DE	There were no spills in FY21.
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?	✓			8/19/21	FSS & DE	There were no spills in FY21.

**Leucadia Wastewater District SSMP Evaluation Checklist for FY2021**

**Date Evaluation Completed: August 19, 2021 - October 4, 2021**

*Last Date Checklist Revised: September 1, 2020*

Monitoring, Measurement, and Modification Question	Yes	No	Update Needed in SSMP? *	Date	Staff Interviewed	Actions and Notes
<b>Section IV (Preventative Maintenance Program)</b>						
1. Have all new construction or rehabilitation projects been entered into the GIS database?	✓			8/19/21	FSS	
2. Have the new pipelines, manholes, and updates from the field been included in CMMS?	✓			8/19/21	FSS	
3. Were all scheduled preventative maintenance activities in the CMMS completed as scheduled? If not, determine cause and if additional staff is necessary to complete required schedule.						
a. Hydrocleaning	✓			8/19/21	FSS	Was on target.
b. CCTV Video Inspection	✓			8/19/21	FSS	Was on target.
c. Release Valve Exercising	✓			8/19/21	FSS	Exercised every 6 months.
d. Isolation Valve Exercising	✓			8/19/21	FSS	Exercised every 3 months.
e. Pump Station Inspection	✓			8/19/21	FSS	Inspected every month.
f. Smoke Testing	✓			8/19/21	FSS	Was performed on approximately 13,000 linear feet in FY21. A total of 59 defects were identified. A majority of the defects were found along private laterals and cleanouts.
g. Foam Root Control	✓			8/19/21	FSS	Was performed on 18 line segments in FY 21 amounting to 3,918 LF.
h. Lateral Reimbursement Program	✓			8/19/21	FSP	Processed and approved 31 Lateral Reimbursement Applications in FY21 for a total of \$71k of \$100k budgeted.
4a. Are pipeline CCTV inspections on-track for complete system inspection every 3 years?	✓			10/4/21	FSS	CCTV inspection statistics the past 3 years show the District is meeting its 3 year goal of 200 total inspected miles. In FY22, the District will need to prioritize the gravity line segments highlighted in Exhibit C-2 to remain on track for the 3-year inspection interval.
4b. Are the "special" areas as identified in Attachment C on track to be CCTV inspected every 3 years?		✓		10/4/21	FSS	Primarily yes with the exception of RSF Road (Locations 1 & 11) and El Camino Real (Locations 4, 5, & 6). Locations 1 & 11 is scheduled for inspection in early FY22 and Locations 4, 5 & 6 is scheduled for inspection in late FY22.

**Leucadia Wastewater District SSMP Evaluation Checklist for FY2021**

**Date Evaluation Completed: August 19, 2021 - October 4, 2021**

*Last Date Checklist Revised: September 1, 2020*

Monitoring, Measurement, and Modification Question	Yes	No	Update Needed in SSMP? *	Date	Staff Inter-viewed	Actions and Notes
5. Is the pipeline and manhole Rehab Priority List up-to-date and being addressed?	✓			8/19/21	DE & FSP	
6. Have the annual Cathodic inspections been completed and recommendations implemented?	✓			8/19/21	TSM	As a result of the inspection completed in March 2020, two anodes were replaced at two Cathodic Test Stations (CTS) in FY21. One CTS on L1 and one CTS on L2 Force Mains.
7. Has the Pump Station Condition Assessment been completed and projects scheduled?	✓			8/19/21	TSM	IEC performed the pump station inspection in March 2020. Projects have been scheduled as appropriate.
8. Have the following standard operating procedures been reviewed and up-to-date?	✓			8/19/21	FSS	
a. SOP – Collection System Maintenance						
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 Satellite Pump Stations						
i. SOP – District Pipeline Location and Markout						
j. SOP – Traffic Control Procedures						
k. SOP – Emergency Procedures for						
l. SOP – Emergency By-pass Pumping for Batiquitos Pump Station						
9. Has the appropriate ongoing training for these SOPs been conducted and recorded?	✓			8/19/21	FSS	SOP training information was provided by District.
<b>Section V (Design and Performance Provisions)</b>						
1. Has the LWD Standard Spec been sufficient to address design and construction needs?	✓			8/19/21	DE	
2. Has the LWD Standard Spec been sufficient to address inspection and testing needs?	✓			8/19/21	DE	



**Leucadia Wastewater District SSMP Evaluation Checklist for FY2021**

**Date Evaluation Completed: August 19, 2021 - October 4, 2021**

*Last Date Checklist Revised: September 1, 2020*

Monitoring, Measurement, and Modification Question	Yes	No	Update Needed in SSMP? *	Date	Staff Inter-viewed	Actions and Notes
<b>Section VI (Overflow Emergency Response Plan)</b>						
1. Have the following standard operating procedures and the attachments been reviewed and up-to-date?						
a. SOP – Overflow Emergency Response Plan	✓			8/4/20	FSS & FSP	The revised SOP book was reviewed and amended as needed with the changes from FY21.
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?	✓			8/19/21	FSS	
3. Have the newly hired employees been provided with these procedures and trained on these procedures, as appropriate?	✓			8/19/21	FSS	No new field services employees were hired in FY21.
4. Has the LRO certified No Spill for each month (when applicable)?	✓			8/19/21	FSS	
5. Has the Collection System Questionnaire been updated in CIWQS?	✓			8/19/21	FSS	
<b>Section VII (FOG Control Program)</b>						
1. Were permits processed for new food establishments in the District?	✓			8/19/21	DE	
a. If so, is there a BMP agreement on file?	✓			8/19/21	DE	
2. In review of the SSO causes for the year, have any been attributable to FOG?		✓		8/19/21	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.		✓		8/19/21	FSS	
4. Were FOG outreach and prevention activities (newsletters, door hangers, inspections, samples) performed?	✓			8/19/21	FSS	
<b>Section VIII (System Evaluation &amp; Capacity Assurance)</b>						
1. Did the monthly board meeting agenda packets include the appropriate flow summary?	✓			8/19/21	FSS	
2. Have evaluations continued with respect to the inflow and infiltration?	✓			8/19/21	FSS	Smoke testing was performed in FY21.

**Leucadia Wastewater District SSMP Evaluation Checklist for FY2021**

**Date Evaluation Completed: August 19, 2021 - October 4, 2021**

*Last Date Checklist Revised: September 1, 2020*

Monitoring, Measurement, and Modification Question	Yes	No	Update Needed in SSMP? *	Date	Staff Inter-viewed	Actions and Notes
<b>Section IX (Monitoring, Measurement, &amp; Program Modifications)</b>						
1. Has the checklist evaluation been completed for the fiscal year?	✓			10/4/21	DE	
2. Are there changes that need to be made to the Spill Review Checklist?		✓		8/19/21	FSS	
3. Are there changes that need to be made to the evaluation checklist?		✓		8/19/21	DE	
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.	N/A			8/19/21	DE	
i. A substantial change in organization such that the chain of command for spill response or reporting are altered.	N/A			8/19/21	DE	
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.	N/A			8/19/21	DE	
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.	N/A			8/19/21	DE	
iv. Review SSO causes deems a formal FOG Control Program must be implemented.	N/A			8/19/21	DE	
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.	N/A			8/19/21	DE	

**Leucadia Wastewater District SSMP Evaluation Checklist for FY2021**

**Date Evaluation Completed: August 19, 2021 - October 4, 2021**

*Last Date Checklist Revised: September 1, 2020*

Monitoring, Measurement, and Modification Question	Yes	No	Update Needed in SSMP? *	Date	Staff Inter-viewed	Actions and Notes
4. Were there any Notice and Order letters issued by the District?	✓			8/19/21	FSP	39 defective private sewer lateral cleanout cap letters issued. Two administrative citations issued. Nine Notice and Orders issued.
a. If yes, are there any recommended changes to Legal Authority (ordinances, agreements, plan check process, etc.) which warrant revision as a result of issuing Notice and Orders?		✓		8/19/21	FSP	No changes necessary. The wastewater ordinance has been updated with improved enforcement language. The improvements allow for the collection of fines through property tax collection in addition to direct payment to the District.
<b>Section X Evaluation (SSMP Program Audits)</b>						
1. Has the SSMP Program Audit been completed for the fiscal year?	✓			10/4/21	DE	
2. Are there changes that need to be made to the Audit checklist?		✓		10/4/21	DE	
<b>Section XI Evaluation (Communication Program)</b>						
1. Is the SSMP section of the District website up-to-date? And has the SSMP status been relayed to the public?	✓			8/19/21	RDD	
2. Has the District continued to attend meetings with Encina Wastewater Authority, the City of Carlsbad, and the City of Encinitas as appropriate?	✓			8/19/21	DE	
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?		✓		8/19/21	FSS	There were no spills in FY21.
<b>* If an update is needed in the SSMP,</b>						
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						
2. describe the update needed						

NA- Not Applicable  
 DE - District Engineer  
 GM - General Manager  
 GC - General Counsel

RDD - Reviewed District Documents  
 TSM - Technical Services Manager  
 FSS - Field Services Superintendent or Supervisor  
 FSP - Field Services Specialist

**ATTACHMENT B**

**SSMP AUDIT CHECKLIST**

<b>Leucadia Wastewater District SSMP FY21 Audit Checklist</b>			
<b>Section</b>	<b>Requirement</b>	<b>SSMP Current</b>	<b>SSMP Implemented</b>
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**

FY-21

Production Chart

	July	August	September	October	November	December	January	February	March	April	May	June	Totals	Mothy AVGS
<b>CCTV Inspections (YTD 96.1 Miles)</b>	10.09	10.73	12.05	6.58	11.17	4.19	2.60	4.02	9.55	5.53	9.93	9.70	96.1	8.01
<b>Hydro Cleaning (YTD 213.4 Miles)</b>	37.49	18.88	16.76	17.29	15.24	13.59	11.21	12.42	21.91	15.88	14.68	18.02	213.4	17.78

Hydro cleaning & CCTV Statistics

	Hydro Cleaning	SMA's	Total Hydroclean	Total Hydroclean	CCTV	Total CCTV
	Footage (LF)	Footage (LF)	Footage (LF)	Footage (miles)	Footage (LF)	Footage (miles)
July	197,965	-	197,965	37.49	53,290	10.09
August	99,696	-	99,696	18.88	56,673	10.73
September	88,504	-	88,504	16.76	63,636	12.05
October	53,730	37,542	91,272	17.29	34,719	6.58
November	80,487	-	80,487	15.24	58,971	11.17
December	64,615	7,158	71,773	13.59	22,131	4.19
January	23,384	35,825	59,209	11.21	13,706	2.60
February	65,559	-	65,559	12.42	21,246	4.02
March	107,679	8,017	115,696	21.91	50,450	9.55
April	51,136	32,718	83,854	15.88	29,192	5.53
May	77,140	363	77,503	14.68	52,430	9.93
June	75,542	19,607	95,149	18.02	51,219	9.70
<b>Totals Per Year</b>	985,437	141,230	1,126,667	<b>213.38</b>	507,663	<b>96.15</b>
<b>Totals Per Month</b>	82,119.75	11,769.17	93,888.92	17.78	42,305.25	8.01

Target Goal For Line Cleaning per year is 180 Miles

15 Miles per Month  
79200 LF per month

Target Goal For CCTV inspection per year is 75 Miles

6.3 Miles per Month  
33000 LF per Month  
Every 2.66 years

## CCTV INSPECTIONS WITH ADDITIONAL REQUIREMENTS

Location #	Location	Additional Requirements Needed	Status	Clean/CCTV Frequency	FY Due Date
1	RSF Road - Camino De Los Coches to Avenida Aragon	Traffic Control	CCTV'd in FY18	3	FY21
2	RSF Road - Calle Acevo to Avenida Aragon	Traffic Control	CCTV'd in FY21	3	FY24
3	La Costa Ave - Piraeus St to Saxony PS	Traffic Control	CCTV'd in FY21	3	FY24
4	ECR - Enci Blvd to Leucadia Blvd	Night Work	CCTV'd in FY18	3	FY21
5	ECR - Leucadia Blvd to Levante (Green Valley )	Easement hydro-cleaning	CCTV'd in FY18	3	FY21
6	ECR - Levante to 300' north of La Costa Ave	Traffic Control	CCTV'd in FY18	3	FY21
7A	La Costa Golf Course (North Portion)	Coordination w/ golf course	CCTV'd in FY19	3	FY22
7B	La Costa Golf Course (East Portion)	Coordination w/ golf course	CCTV'd in FY19	3	FY22
9	Alga Road and El Camino Real	Traffic Control	CCTV'd in FY21	3	FY24
10	La Costa Ave	Traffic Control	CCTV'd in FY21	3	FY24
11	RSF Road - Paseo Lupino to La Costa Avenue	Traffic Control	CCTV'd in FY18	3	FY21
12	Scotts Valley Easement	Night Work	CCTV'd in FY21	3	FY24
13	Influent Gravity Line to Batiquitos PS	Night Work	CCTV'd in FY19	3	FY22

Last revised 10-04-2021



# LEGEND

Leucadia Wastewater District Boundary

## Existing Facilities

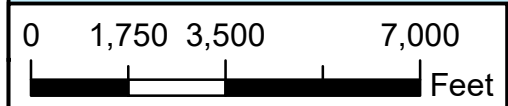
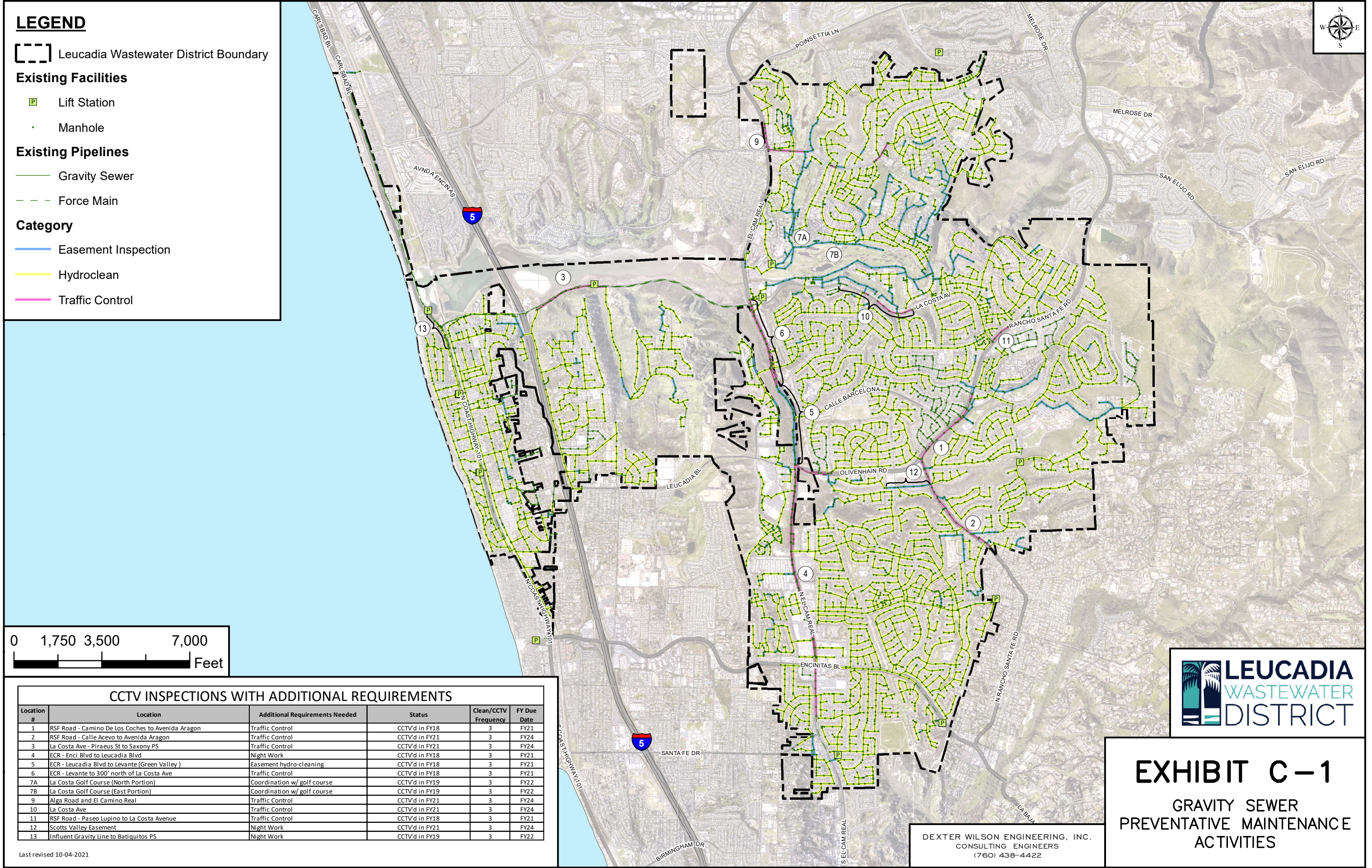
- Lift Station
- Manhole

## Existing Pipelines

- Gravity Sewer
- Force Main

## Category

- Easement Inspection
- Hydroclean
- Traffic Control



### CCTV INSPECTIONS WITH ADDITIONAL REQUIREMENTS

Location #	Location	Additional Requirements Needed	Status	Clean/CCTV Frequency	FY Due Date
1	RSF Road - Camino De Los Coches to Avenida Aragon	Traffic Control	CCTV'd in FY18	3	FY21
2	RSF Road - Calle Acevo to Avenida Aragon	Traffic Control	CCTV'd in FY21	3	FY24
3	La Costa Ave - Piraeus St to Saxony PS	Traffic Control	CCTV'd in FY21	3	FY24
4	ECR - Enci Blvd to Leucadia Blvd	Night Work	CCTV'd in FY18	3	FY21
5	ECR - Leucadia Blvd to Levante (Green Valley)	Easement hydro-cleaning	CCTV'd in FY18	3	FY21
6	ECR - Levante to 300' north of La Costa Ave	Traffic Control	CCTV'd in FY18	3	FY21
7A	La Costa Golf Course (North Portion)	Coordination w/ golf course	CCTV'd in FY19	3	FY22
7B	La Costa Golf Course (East Portion)	Coordination w/ golf course	CCTV'd in FY19	3	FY22
9	Alga Road and El Camino Real	Traffic Control	CCTV'd in FY21	3	FY24
10	La Costa Ave	Traffic Control	CCTV'd in FY21	3	FY24
11	RSF Road - Paseo Lupino to La Costa Avenue	Traffic Control	CCTV'd in FY18	3	FY21
12	Scotts Valley Easement	Night Work	CCTV'd in FY21	3	FY24
13	Influent Gravity Line to Batiquitos PS	Night Work	CCTV'd in FY19	3	FY22

Last revised 10-04-2021



# EXHIBIT C-1

## GRAVITY SEWER PREVENTATIVE MAINTENANCE ACTIVITIES

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

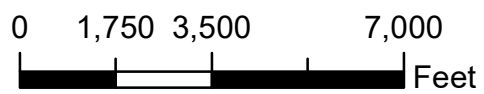
**LEGEND**

**CCTV Gravity Sewer Inspection by Date**

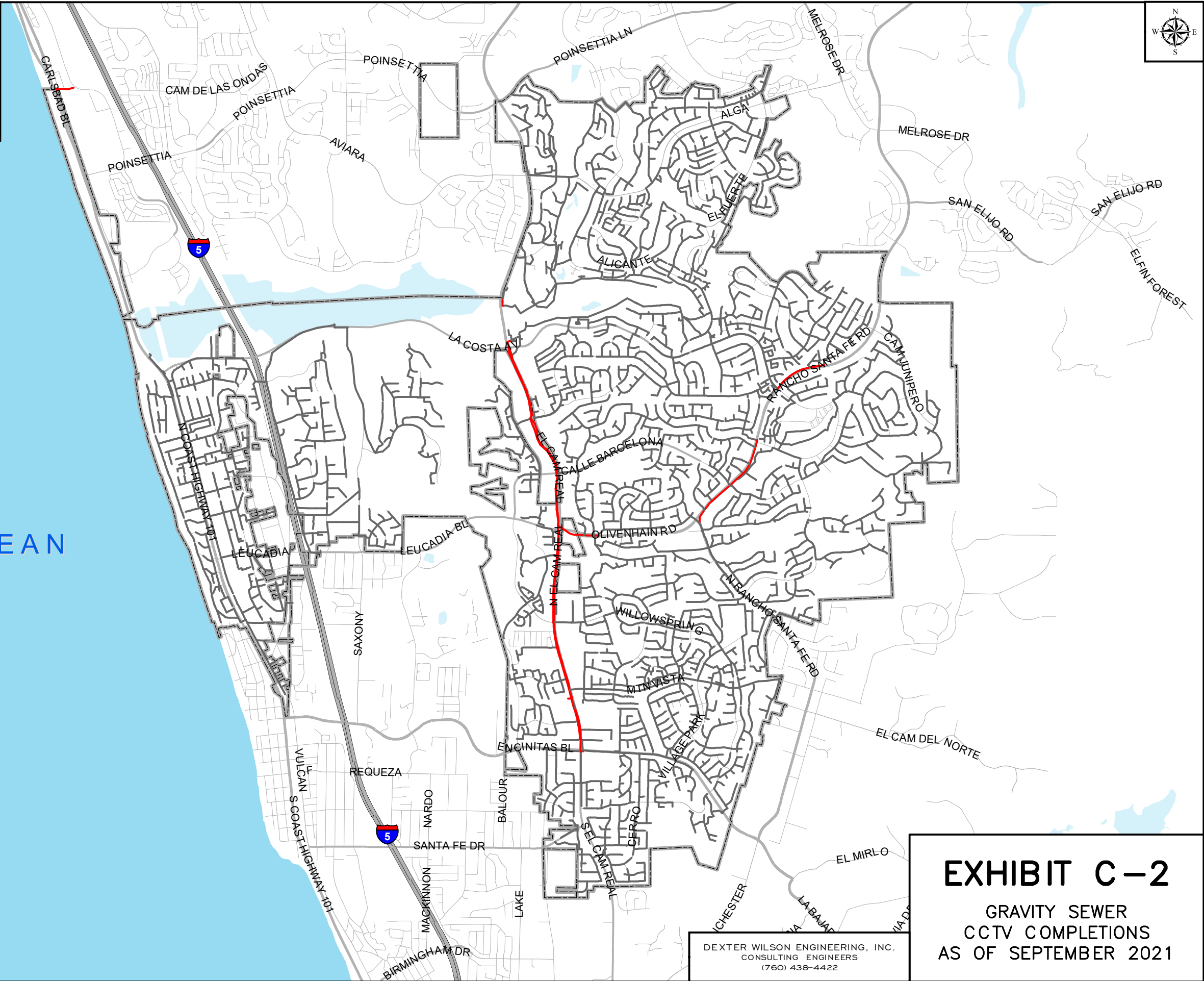
- 3 Years Since CCTV
- ▭ Leucadia Wastewater District Boundary



PACIFIC OCEAN



Date Saved: 10/21/2021 1:32:20 PM  
Document Path: \\Arlite\GIS\103019-5\2021\_Update\Final\Exhibits\Exhibit C-2\_LWWD\_3yr\_2021-09\_CCTV\_11x17.mxd



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

**EXHIBIT C-2**  
GRAVITY SEWER  
CCTV COMPLETIONS  
AS OF SEPTEMBER 2021

**ATTACHMENT D**

**SOP TRAINING SCHEDULE**

# Leucadia Wastewater District

## Standard Operating Procedures Training Schedule FY-21

---

### Date Completed:

1. Collection System Maintenance Duties	Jun. 2021
2. Video Inspection Duties	Nov. 2019
3. Easement Inspection Duties	Jun. 2021
4. By pass pumping Avocado & Diana Response Plan	May 2018
5. Standby Duty Operator (On Call) Duties	Sep. 2020
6. Pump Station Operator Duties	Sep. 2020
7. Pump Station Odor Control	Oct. 2020
8. Switching Force Main Lines	Nov. 2020
9. District Pipeline Location and Mark Out	Jun. 2021
10. Pump Station Alarm Response	Dec. 2020
11. SCADA Alarms	Apr. 2021
12. Overflow Emergency Response Plan	Feb. 2021
13. Reporting SSO's	Jun. 2019
14. Posting and Sampling Waters Impacted by an SSO	Dec. 2019
15. Traffic Control Procedures	Aug. 2020
16. Emergency Procedures for Air Release Valves	Nov. 2020
17. Rating and Repair of Manholes and Mainlines	Feb. 2021
18. Emergency By-Pass Pumping for Batiquitos Pump Station	Mar. 2021
19. Chemical Delivery	Jun. 2019
20. Lock Out / Tag out	Jun. 2021

### Additional Training:

21. Flagger Safety (Every 2 years)	Aug. 2020
22. Gafner Water Reclamation Plant SWPPP	Apr. 2021
23. Confined Space Training	Jun. 2021
24. Active Shooter Class	Oct. 2018

## ATTACHMENT E

### FIELD SERVICES SOPs

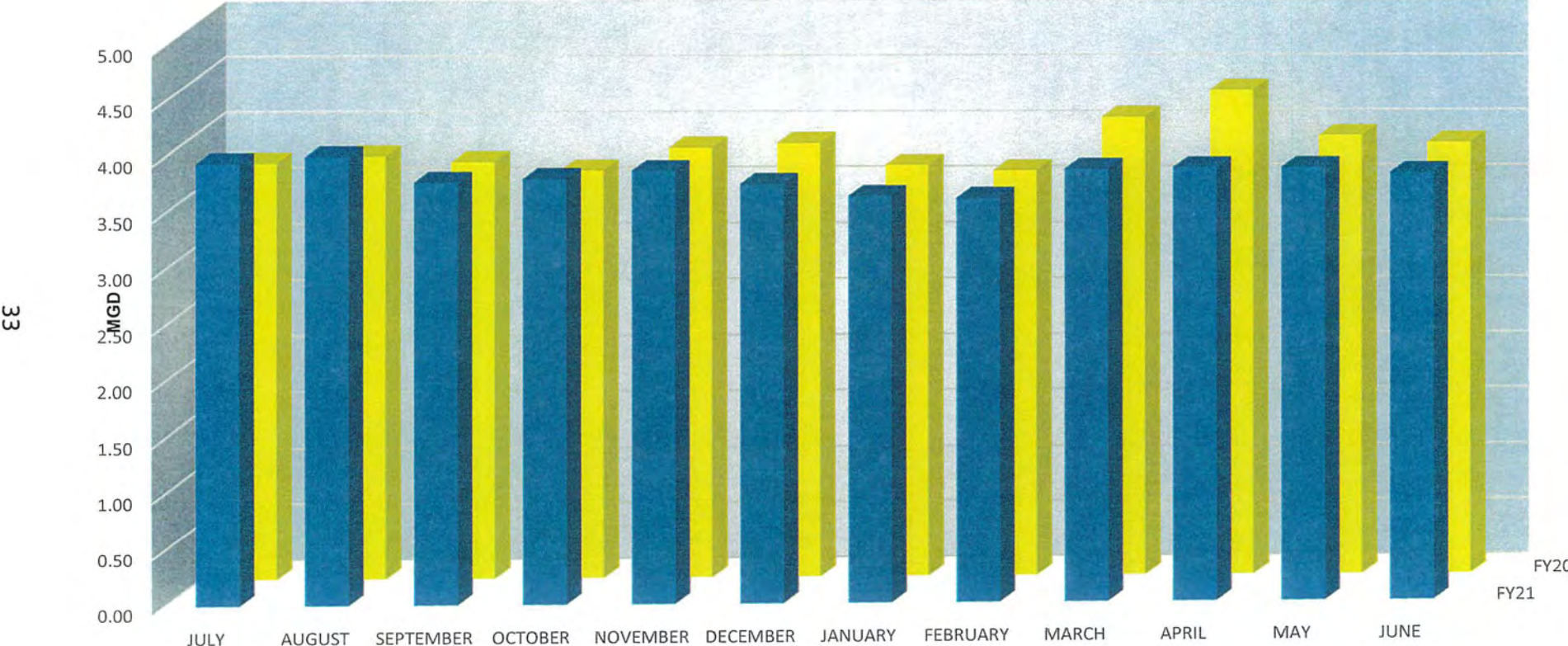
List of SOPs Available on CD:

1. Collection System Maintenance Duties
2. Video Inspection Duties
3. Easement Inspection Duties
4. By-Pass pumping Avocado & Diana Response Plan
5. Standby Duty Operator (On Call
6. Pump Station Operator Duties
7. Pump Station Odor Control
8. Switching Force Mains
9. District Pipeline Location and Mark Out
10. Pump Station Alarm Response
11. SCADA Alarms
12. Overflow Emergency Response Plan
13. Reporting SSOs
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
21. Flagger Safety
22. Gafner Water Reclamation Plant SWPPP
23. Confined Space Training
24. Active Shooter Class

**ATTACHMENT F**

**DISTRICT FLOW COMPARISON FY20 TO FY21**

# Leucadia Wastewater District Flow Comparison FY20 to FY21



**FY20 Avg. Daily Flow = 3.96 MGD**  
**FY21 Avg. Daily Flow = 3.88 MGD**

**ATTACHMENT G**

**LWD SPILL SUMMARY THROUGH JUNE 30, 2021**





**ATTACHMENT H**

**SSMP REVISIONS**

*(TO BE ADDED AS NECESSARY,  
NONE FOR FY21)*

**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 2021  
ASSET MANAGEMENT PLAN  
IMPLEMENTATION & CAPITAL PROJECTS**

October 22, 2021

**LEUCADIA WASTEWATER DISTRICT  
FISCAL YEAR 2021  
ASSET MANAGEMENT PLAN  
IMPLEMENTATION & CAPITAL PROJECTS**

October 22, 2021

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



Job No. 103-019/5

DEXTER S. WILSON, P.E.  
ANDREW M. OVEN, P.E.  
NATALIE J. FRASCHETTI, P.E.  
STEVEN J. HENDERSON, P.E.  
FERNANDO FREGOSO, P.E.  
KATHLEEN L. HEITT, P.E.

October 22, 2021

103-019/5

Leucadia Wastewater District  
1960 La Costa Avenue  
Carlsbad, CA 92009

Attention: Paul Bushee, General Manager

Subject: Leucadia Wastewater District Fiscal Year 2021 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 2021 (FY21).

This document will assist in the District's FY21 Sewer System Management Plan (SSMP) Audit.

## **BACKGROUND**

With no substantial changes to the service area and an estimation that the District is presently at 89 percent of buildout, the focus of the District's 2018 Asset Management Plan (AMP) remained on the repair, rehabilitation, and replacement of existing assets as compared to anticipation 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).

### AMP IMPLEMENTATION ACTIVITIES

The following section discusses the AMPI Activities which took place over FY21.

#### May 2018 Asset Management Plan Recommendations

The AMP was updated in May 2018. The following section seeks to track the status of each operation and maintenance recommendation provided in the May 2018 AMP. The order presented below generally follows the order in which the recommendation occurred within the AMP. This table will serve as a reference point into the future as a means of AMPI tracking until the AMP is updated once again in the 2023 timeframe.

<b>Summary of LWD            2018 AMP Implementation Activities            (Revised June 30, 2021)</b>	
May 2018 Asset Management Plan Recommendations	
<b>Recommendation</b>	<b>FY21 Status</b>
Track areas, frequency, and cost of where root foam is used as part of the SSMP process. Conduct financial evaluation comparing the cost of root foam treatment against lining these areas with top hats. Confirm if root foam areas are on Repair Priority List.	Foam root control continues to be implemented by the District as a means of I&I mitigation. Eighteen line segments (5,000 LF) were treated in FY21.
Consider submetering of Drainage Basin 2 to continue identifying the source of inflow and infiltration.	Echo meter relocated and smoke testing was performed in September 2020.
Add pipeline Install Date and Age columns to Repair Priority List.	Complete.
Add step to Rating Repair Lines/Manholes SOP to review previous repairs in the pipeline or manhole which is being added to Repair Priority List. Add "Yes/No" column to indicate whether the line has previously been repaired.	Will be incorporated. If yes, the details of repair(s) can be elaborated in the comments column.

<b>Summary of LWD                      2018 AMP Implementation Activities                      (Revised June 30, 2021)</b>	
May 2018 Asset Management Plan Recommendations	
<b>Recommendation</b>	<b>FY21 Status</b>
Track Repair Priority List Completions, Miscellaneous Line Repairs, and Capital Improvement Projects in GIS/Inframap to aid in decision making as to how best repair/replace an asset. This will provide field services staff with knowledge of linings, top hats, etc., to exercise caution when hydrocleaning. Additionally, it will provide staff with the ability to view previous repairs within a line segment to decide whether spot repairs should continue or a pipeline/manhole should be replaced.	Working to incorporate miscellaneous line repairs. Manholes will be inputted into GIS going forward.
Export CMMS repair data from Repair Priority List Completions and Miscellaneous Line Repairs to GIS.	
When lining a pipeline in an area with chronic root issues, the lateral joints should be addressed, via either a top hat, T-liner, or other means.	Is being considered on a case by case basis.
When possible, spot repairs of pipelines should be addressed by lining the entire pipe segment, particularly on pipes greater than 40 years in age.	IEC is tasked to evaluate whether a segment requires spot repair prior to lining the segment. If only a spot repair is necessary then the segment is not CIPP lined to reduce cost. All pipelines that were repaired in FY21 were CIPP lined over their entire length. Spot repairs will continue at select locations in FY22.
Consider repair of all Grade 2 and Grade 1 defects and/or programmatic VCP replacement in Drainage Basins 1, 2, 3, and 11. Repair/replacement of Grade 3 and Grade 4 defects discovered within the 5-year time frame would take precedence.	If funding is available to repair the Grade 1 and 2 defects after other priority CIP work is completed. In FY21 no Grade 1 or 2 repairs were completed due to budget constraints.
Procure mylar and electronic (PDF and DWG) record drawings for all CIP projects. AMP process identified the need for electronic record drawings for the FY16 Gravity Rehabilitation Project.	Will implement during CIP Projects. Electronic record drawings were procured for the FY16 Gravity Rehabilitation Project.



<b>Summary of LWD            2018 AMP Implementation Activities            (Revised June 30, 2021)</b>	
<b>May 2018 Asset Management Plan Recommendations</b>	
<b>Recommendation</b>	<b>FY21 Status</b>
<p>Historical bid results indicate significant unit cost savings when CIP projects include several thousand feet of lining.</p>	<p>Complete. Staff is alternating fiscal year gravity pipeline rehabilitation projects between open trench and trenchless technology to make project size bigger to take advantage of economy of scale.</p>
<p>Add the installation date and age to the Repair Priority List for each manhole to aid in facility planning.</p>	<p>Installation date and age are now incorporated in the Repair Priority List.</p>
<p>Consider an additional column on the Repair Priority List to note whether repairs have occurred previously within the manhole. Alternatively, revise the CMMS form to require completion of the lining field prior to closing the work order.</p>	<p>Column has been added. If yes, the details of repair(s) can be elaborated in the comments column.</p>
<p>Reevaluate pump size at each station based on actual flow generation rates and anticipated peak buildout flows.</p>	<p>Will occur as design project approaches for pump station. Completed for Leucadia PS and Encinitas Estates PS. Diana PS and Village Park No. 7 are in process of this evaluation.</p>
<p>Consider bypassing the Batiquitos Pump Station (for a portion of the District's flow) by pumping directly from the Leucadia Pump Station into one of the Batiquitos force mains.</p>	<p>Complete. Not intending to pursue at this time.</p>
<p>For pump stations, stagger future inspection efforts based on the previous inspection, age of the asset, needs identified by the District, and the projected date of project implementation.</p>	<p>IEC performed Pump Station inspections/evaluations based on this stagger approach in FY20.</p>
<p>The District should consider the preparation of a detailed checklist of component inspection for each station. The basis for this would be prior inspection reports by Infrastructure Engineering Corporation (IEC), and others, with additions by staff as appropriate.</p>	<p>Pump station inspections were completed by IEC in FY20. A pre-inspection input list was prepared by Field Services.</p>
<p>The District should also consider the maintenance of a pump station component tracking database. This would be used to track improvements and associated costs to better project future spending.</p>	<p>This will be an ongoing task started in Attachment C.</p>

<b>Summary of LWD            2018 AMP Implementation Activities            (Revised June 30, 2021)</b>	
<b>May 2018 Asset Management Plan Recommendations</b>	
<b>Recommendation</b>	<b>FY21 Status</b>
<p>The following replacement-based capital improvement projects are recommended or are planned by the District and are included in the District's 5-Year CIP:</p> <ol style="list-style-type: none"> <li>1. Force Main Corrosion Control</li> <li>2. Batiquitos (B3) Rehab/Replacement Project – Phase 1</li> <li>3. Leucadia (L1) West Section Replacement (completed)</li> <li>4. Leucadia (L1) Final Replacement</li> </ol>	<ol style="list-style-type: none"> <li>1. Annual assessment is complete (replaced 2 anodes).</li> <li>2. Project completed in FY20.</li> <li>3. Completed.</li> <li>4. Ongoing planning is occurring.</li> </ol>
<p>Recommendations regarding the Batiquitos Influent Sewer:</p> <ol style="list-style-type: none"> <li>1. Ensure that maintenance work orders are generated at the frequency that is necessary for this particular asset.</li> </ol>	<ol style="list-style-type: none"> <li>1. Completed.</li> </ol>
<p>Recommendations regarding the Lanikai Gravity Sewer</p> <ol style="list-style-type: none"> <li>1. Ensure that maintenance work orders are generated at the frequency that is necessary for the particular asset (in this case once every five years).</li> <li>2. Continue to maintain a chronological summary of operation/maintenance and repair/replacement tasks associated with this line as part of the District's annual SSMP audit.</li> <li>3. The following capital improvement projects are included in the District's 5-Year CIP (District's share of cost only): Poinsettia Station Gravity Pipeline.</li> </ol>	<ol style="list-style-type: none"> <li>1. Completed.</li> <li>2. Complete and tracked in Attachment A.</li> <li>3. Project complete.</li> </ol>
<p>Recommendations regarding the Occidental Sewer</p> <ul style="list-style-type: none"> <li>o Continue to maintain a chronological summary of operation/maintenance and repair/replacement tasks associated with this line and should confirm that Carlsbad is executing their maintenance schedule as planned</li> </ul>	<p>Completed and tracked in Attachment A. Will be hydrocleaned in FY22.</p>
<p>The District should inspect portions of the Encina Secondary Effluent Pump Station as part of the overall FY19 pump station condition assessment to confirm the project scope.</p>	<p>Will occur in a future IEC pump station inspection.</p>
<p>Continue coordinating with other North County agencies on the North San Diego Water Reuse Coalition (NSDWRC) Regional Recycled Water Project.</p>	<p>Work continued on this project in FY21.</p>

<b>Summary of LWD            2018 AMP Implementation Activities            (Revised June 30, 2021)</b>	
May 2018 Asset Management Plan Recommendations	
<b>Recommendation</b>	<b>FY21 Status</b>
The following capital improvement projects are included in the District's 5-Year CIP. <ol style="list-style-type: none"> <li>1. General Secondary Effluent Pump Station and Force Main Improvements</li> <li>2. Relocation of the portion of B1 within the Encina WPCF</li> <li>3. FY18 Gafner AWT Improvement Project</li> </ol>	<ol style="list-style-type: none"> <li>1. Force main design complete. Pump station not complete. Awaiting federal grant funding for the force main project.</li> <li>2. Design completed. Submitted for grant funding.</li> <li>3. Completed.</li> </ol>

**FY21 Capital Improvements**

The following table summarizes the capital projects which were implemented by the District in FY21.

<b>Summary of LWD            AMP Implementation Activities            (Revised June 30, 2021)</b>	
Capital Improvements	
<b>Project</b>	<b>FY21 Status</b>
North SD County Regional Recycled Water Project	The District continued to participate in the regional project to increase recycled water use. A lobbying contract was executed with BlueWater Strategies (formerly The Furman Group) to lobby for the Title XVI and WRDA funds.
Gravity Pipeline Rehabilitation	District to rehabilitate deficient segments of ACP and VCP gravity pipelines. The raising of manholes, as part of Carlsbad and Encinitas' annual street overlay projects, is paid through this account. The District has implemented its Repair Priority List procedure via the FY21 project to perform its gravity pipeline rehabilitation/replacement program.

<b>Summary of LWD            AMP Implementation Activities            (Revised June 30, 2021)</b>	
<b>Capital Improvements</b>	
<b>Project</b>	<b>FY21 Status</b>
Poinsettia Station	Work on the underground facilities is complete and District assets are in operation as of September 2019.
Leucadia Pump Station Rehabilitation	In FY20 design was completed and construction continued through FY21. Construction completion will occur early FY22.
Orchard Wood Road Line Repair Project	Due to constraints for construction in the environmentally sensitive area where the pipeline is installed, the estimated construction cost during project design to repair the sag in the line ranged from \$1.1 million to \$1.9 million. In lieu of this project an easement crawler was purchased to make maintenance less challenging.
Secondary Effluent Force Main (B1) – North Section Replacement	The design has been completed and the project is being submitted for grant funding as part of the North San Diego Water Reuse Coalition project.
Batiquitos (B3) Force Main – Discharge Section Replacement	Project completed in FY20.
Encinitas Estates Pump Station Replacement	Design completed. Contractor to be mobilized in early FY22.
Diana Pump Station Upgrade	The AMP recommended that an upgrade of the pump station be completed to include pump control upgrade, replacement of the main breaker and pump replacement. Currently, the pump station does not have an emergency generator for operation during a loss of power. The installation of an emergency generator will be accommodated around the acquisition of an easement across the street. The easement is expected to be acquired in early FY22. Construction is anticipated in FY23.
Village Park No. 5 Pump Station Pumps	Recently, the standard submersible pumps have been susceptible to clogging. This clogging issue was solved by making the overamp shutdown threshold less conservative.
Village Park No. 7 Pump Station Replacement	Design and bidding of this project is expected to occur during FY22.

### **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. A historical summary of previous force main activities is shown in Attachment D. A summary of the past fiscal year and planned future activities is discussed on the next page.

As of FY13, the District has been conducting cathodic protection surveys of the four force mains on an annual basis as recommended and performed by RFYeager. Cathodic Protection improvements with respect to these force mains as described in IEC's May 2011 technical memo are included within Attachment D.

The Batiquitos force main discharge section (B3) was pro-actively replaced in FY20 due to suspected internal corrosion stemming from exposure to air when the flow transitions from pressurized to gravity.

Ongoing planning is in place to address the replacement of certain portions of the Secondary Effluent Force Main (B1). A federal grant was awarded in August 2021 to the North San Diego Water Reuse Coalition via the Water Infrastructure Improvements for the Nation Act for this project.

### **MISCELLANEOUS COLLECTION SYSTEM IMPROVEMENTS**

The list of collection system improvements (outside of CIP projects) for FY21 are provided in Attachment B in this letter-report.

### **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 FY21 capital acquisitions as related to operation and maintenance.

### FY21 Capital Acquisitions

- New CCTV Truck
- New Pump Station Pickup Truck
- Two New Vapex Odor Control Machines
- Replacement of Effluent Discharge, Check Valves, and Irrigation Pumps at Gafner
- Vactor Truck Replacement
- Vactor Nozzle Kit
- Replacement of CCTV Equipment
- New Critical inventory (Domes/Rings/Couplings)
- Easement Machine

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. Frascchetti, P.E.

NJF:SH:ah

Paul Bushee  
October 22, 2021

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Attachment(s)

A – Lanikai and Occidental O&M Tracking

B – Miscellaneous Sewer Line and Manhole Repairs

C – Pump Station Tracking

D – Force Main 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
FY20	Repair	Poinsettia Station Project - Included casing extension under existing railroad, new steel casing in parallel with the existing 24-inch SDR 26 PVC pipeline
<i>2021/2022</i>	<i>O&amp;M</i>	<i>Planned Hydrocleaning and CCTV Inspection</i>

*Items in Italics are Planned*

Updated: September 2021

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	Hydrocleaned in Fall of 2016 by Carlsbad
FY21	O&M	CCTV Inspected in Spring of 2021 by Carlsbad
<i>FY22</i>	<i>O&amp;M</i>	<i>Planned Hydrocleaning in FY22 by Carlsbad</i>

*Items in Italics are Planned*

Updated: September 2021

**ATTACHMENT B**

**MISCELLANEOUS SEWER LINE AND MANHOLE REPAIRS**

## MISC. SEWER LINE AND MANHOLE REPAIRS

Date Found	Line Segment / Manhole	Location	Segment Footage	Defect(s)	Pipe Type	Repair Type	Repair Priority	Depth (in feet)	Pipe Size (inches)	Install Date	Age	Previous Repairs (YES/NO)	Comments	Repair Details
2/7/2018	08-10900_08-10890	Quebrada Court	128	Broken stub cap - c/o at street level	VCP	CIPP sock	3	8	8	1975	46		Install CIPP sock at end of cleanout	Repaired by Arrow Pipeline on 10/7/2020
2/23/2016	09-111251_09-111201	Quebrada Circle	110	Broken stub cap - c/o at street level	PVC	CIPP sock	3	8	8	1975	46		Install CIPP sock at end of cleanout	Repaired by Arrow Pipeline on 10/7/2020
2/10/2016	08-0870_08-0850	La Duela	94	Broken stub cap - c/o at street level	VCP	CIPP sock	3	7.5	8	1976	45		Install CIPP sock at end of cleanout	Repaired by Arrow Pipeline on 10/7/2020
2/16/2016	08-0990_08-0980	Amargosa Drive	175	Broken stub cap - c/o at street level	VCP	CIPP sock	3	8.5	8	1976	45		Install CIPP sock at end of cleanout	Repaired by Arrow Pipeline on 10/7/2020
2/17/2016	08-0640_08-0630	La Tinada Court	42	Broken stub cap - c/o at street level	VCP	CIPP sock	3	7	8	1974	47		Install CIPP sock at end of cleanout	Repaired by Arrow Pipeline on 10/7/2020
12/1/2020	MH 03-0110	North Vulcan	N/A	Damaged frame and cover	N/A	Replace Frame and Cover		8	N/A	1962	59			Repaired by Ayala Engineering on 4/19/2021
12/1/2020	MH 03-0200	North Vulcan	N/A	Damaged frame and cover	N/A	Replace Frame and Cover		9	N/A	1962	59			Repaired by Ayala Engineering on 4/19/2021
12/1/2020	MH 03-0210	North Vulcan	N/A	Damaged frame and cover	N/A	Replace Frame and Cover		9.5	N/A	1962	59			Repaired by Ayala Engineering on 4/19/2021
12/1/2020	MH 03-0115	North Vulcan	N/A	Damaged frame and cover	N/A	Replace Frame and Cover		8	N/A	2000	21			Repaired by Ayala Engineering on 4/20/2021
12/1/2020	MH 03-0120	North Vulcan	N/A	Damaged frame and cover	N/A	Replace Frame and Cover		8.5	N/A	1962	59			Repaired by Ayala Engineering on 4/20/2021
12/1/2020	MH 03-0190	North Vulcan	N/A	Damaged frame and cover	N/A	Replace Frame and Cover		7.5	N/A	1962	59			Repaired by Ayala Engineering on 4/21/2021
1/5/2021	MH 09-1355	Via Montoro	N/A	Damaged frame and cover, H2S damage	N/A	Replace Frame and Cover, install Liner		17	N/A	1980	41			Repaired by Ayala Engineering on 4/23/2021
	MH 11-0730	La Costa Resort Entrance	N/A	H2S damage	N/A	Install Liner		5	N/A	1964	57			Repaired by Ayala Engineering on 4/23/2021
4/20/2021	MH 03-0969	North Coast Highway	N/A	Damaged frame and cover	N/A	Replace Frame and Cover		16	N/A	2008	13			Repaired by Ayala Engineering on 4/20/2021

**ATTACHMENT C**

**PUMP STATION TRACKING**

**Summary of LWWD Pump Station Improvements and Recommendations** (revised June 30, 2021)

Pump Station	Improvement Category	FY 2021		FY 2022	
Batiquitos	Controls	None		None	
	Electrical			None	
	Mechanical			Installation of submersible pump in emergency basin	
	Structural			Relining of emergency basin	
	Regulations			None	
Leucadia	Controls	Continuation of Leucadia Pump Station Rehabilitation Project		Leucadia Pump Station Rehabilitation Project to be completed early FY2022	
	Electrical				
	Mechanical				
	Structural				
	Regulations				
La Costa	Controls	None		None	
	Electrical				
	Mechanical				
	Structural				
	Regulations				
Saxony	Controls	None		None	
	Electrical				
	Mechanical				
	Structural				
	Regulations				
Avocado	Controls	PLC replacement		None	
	Electrical	None			
	Mechanical	None			
	Structural	None			
	Regulations	None			
Diana	Controls	PLC replacement		PLC replacement	
	Electrical	Replacement of main breaker and addition of emergency generator		Replacement of main breaker and addition of emergency generator	
	Mechanical	Pump replacement		Pump replacement	
	Structural	Replace concrete in vaults to properly drain water		Replace concrete in vaults to properly drain water	
	Regulations	None		None	
Encinitas Estates	Controls	Design completed and existing lift station to be replaced with a submersible pump station		Smith and Loveless packaged pump station to be replaced with a submersible pump station (contractor to mobilize early FY2022)	
	Electrical				
	Mechanical				
	Structural				
	Regulations				

**Summary of LWWD Pump Station Improvements and Recommendations** (revised June 30, 2021)

Pump Station	Improvement Category		
		FY 2021	FY 2022
Village Park 5	Controls	None	None
	Electrical		
	Mechanical		
	Structural		
	Regulations		
Village Park 7	Controls	None	<i>Smith and Loveless packaged pump station to be replaced with a submersible pump station (design to be completed in early FY2022)</i>
	Electrical		
	Mechanical		
	Structural		
	Regulations		
Rancho Verde	Controls	PLC replacement	None
	Electrical	None	
	Mechanical	None	
	Structural	None	
	Regulations	None	

*Planned Improvements are in italics. PS Inspection does not include force mains (FMs on separate inspection schedule).*

**ATTACHMENT D**

**FORCE MAIN TRACKING**

Summary of LWWD Force Main Improvements and Recommendations (revised June 30, 2021)

Force Main	Improvement Summary											
	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	
L1	None	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.	Cathodic test stations were relocated.	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 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.	The design of the replacement for the western segment of L1 was completed.	Work commenced on the L1 western portion on March 3, 2017 and was completed on August 8, 2017. 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 completed the near-term CIP projects related to the Leucadia and Batiquitos Pump Station force mains.	None	Air-Vac valves were repaired.	Replacement of depleted sacrificial anode.	
L2	None		Cathodic test stations were repaired and/or replaced.	None	L2 due to its construction of high quality PVC and excellent current condition, was not slated for any repairs or replacement	None	None	None	None	Air-Vac valves were repaired.	Replacement of depleted sacrificial anode.	
B1 (Failsafe)	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.		None	None	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.	None	None	None	None	None	Grant approval for replacement of portions of B1.	
B2	- 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.		Cathodic test stations were repaired and/or replaced. The discharge end of B2 failed when it was connected to the B1 (failsafe) to bypass the Lanikai Gravity Sewer.	Design of the B1 and B2 replacement was completed.	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.	None	None	None	None	None	None	None
B3			Cathodic test stations were repaired and/or replaced.	None	None	None	None	None	None	None	Discharge section was replaced.	None

Planned Improvements are in italics.



<b>CATHODIC PROTECTION IMPROVEMENTS (<i>status</i>)</b>			
<b>Year</b>	<b>Phase</b>	<b>Activity</b>	<b>Estimated Cost</b>
2011	1	Ultrasonic Testing of L1 to establish baseline corrosion ( <i>pending results of FY13 coupon testing</i> )	\$27,000
		Locate and/or repair missing and damaged test stations on L1, L2, B2, and B3 ( <i>complete FY13</i> )	\$16,500
		L2 supplemental cathodic protection ( <i>complete</i> )	\$30,000
		B2 cathodic protection ( <i>complete</i> )	\$40,000
		B3 cathodic protection ( <i>complete</i> )	\$40,000
		TOTAL	\$153,500
2015	2	Ultrasonic Testing of L1, B2, and B3 ( <i>complete</i> )	\$90,000
2015	3	Replacement of B2 (8,463 ft) ( <i>complete</i> )	\$2,700,000
2017	3	Replacement of L1 West Section ( <i>complete</i> )	\$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)	\$5,000 per year