

**AGENDA**

**ENGINEERING COMMITTEE MEETING  
LEUCADIA WASTEWATER DISTRICT**

Tuesday, April 7, 2015 – 8:30 a.m.  
1960 La Costa Avenue, Carlsbad, CA 92009

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**1. Call to Order**

**2. Roll Call**

**3. Public Comment**

**4. New Business**

- A. Authorize the General Manager to execute an Agreement with Burtech Pipeline Incorporated for construction services to complete the 2015 Gravity Pipeline Rehabilitation Project in an amount not to exceed \$669,946. (Pages 2 – 7)
- B. Receive and file the Saxony Pump Station Rehabilitation Preliminary Design Report completed by Infrastructure Engineering Corporation (IEC). (Pages 8 – 16)
- C. Authorize the General Manager to execute an agreement with Infrastructure Engineering Corporation (IEC) for engineering design services for the Saxony Pump Station Rehabilitation Project in an amount not to exceed \$72,266. (Pages 17 – 23)
- D. Authorize the General Manager to execute a two-year extension to the Infrastructure Engineering Corporation (IEC) contract for as needed engineering design services. (Page 24)

**5. Information Items**

- A. 2016 Repair Priority List. (Page 25)
- B. B1/B2 Force Mains Replacement Project update. (verbal)
- C. Leucadia Pump Station Generator Replacement update. (verbal)


**6. Directors' Comments**

**7. General Manager's Comments**

**8. Adjournment**

MEMORANDUM

Ref: 15-4453

DATE: April 2, 2015  
 TO: Engineering Committee  
 FROM: Paul J. Bushee, General Manager   
 SUBJECT: Award of the District's 2015 Gravity Pipeline Rehabilitation Project Construction Contract

RECOMMENDATION:

Staff requests that the Engineering Committee recommend that the Board of Directors:

1. Authorize the General Manager to execute an Agreement with Burtech Pipeline Incorporated for construction services to complete the 2015 Gravity Pipeline Rehabilitation Project in an amount not to exceed \$669,946.
2. Authorize an additional appropriation to the Fiscal Year 2015 budget in the amount of \$300,000 to cover the full cost of project construction.
3. Discuss and take other action as appropriate.

DISCUSSION:

The 2015 Gravity Pipeline Rehabilitation project is included as a goal under the Technology and Infrastructure Strategy in the Fiscal Year 2015 (FY15) Tactics & Action Plan.

In March 2015 the Board of Directors authorized the retroactive execution of an agreement with Infrastructure Engineering Corporation (IEC) to design the 2015 Gravity Pipeline Rehabilitation Project. The project consists of eighteen (18) gravity pipeline or manhole repairs of defects identified during staff's Closed Circuit Television (CCTV) inspections.

IEC commenced project design in July 2014. Project design was completed in February 2015 and advertised for bids. Bids were due on March 18, 2015. Three bids were received as follows:

<u>Construction Firm</u>	<u>Bid Submitted</u>
Burtech Pipeline	\$669,946
Piperin Corporation	\$737,000
Transtar Pipeline	\$764,000

The bids were reviewed by Robert Weber, Jamie Fagnant and Andrew Wiese at IEC. The bid review memorandum is attached for your review. Burtech Pipeline (Burtech) submitted the apparent low bid. Burtech's individual bid item amounts roughly correlated with those of the engineer's opinion of probable cost and the other bidders. However, two issues were noted:

- Bid Item 1, Mobilization, was listed as \$42,000, or 6% of the total bid. Contract documents limit the mobilization cost to 5% of the total project cost. As the proposed mobilization cost is not considered overly excessive, IEC recommends the District waive this requirement.
- Bid Item 13, consisting of an excavated repair and cured in place pipe lining was significantly lower than the engineer's opinion of probable cost and other bidder's estimates for that item.

IEC contacted Frank Durazo at Burtech regarding this. Burtech has no issues with performing the work in accordance with their given bid cost including Bid Item 13.

As a result of their evaluation, IEC has determined that Burtech has the ability to complete the work for the cost given and has determined Burtech to be responsive to the bid requirements and recommends that the District award the project to Burtech.

The low bid was approximately \$122,000 (22%) greater than the engineer's opinion of probable cost. IEC reviewed the three bids and found that the bid item amounts were similar between the three bidders and roughly correlated to the engineer's opinion. Specifically, Burtech's per bid item costs were within 15% of the average bid cost for nearly three quarters of the bid items. This indicates the Contractors were interpreting the contract documents in a similar fashion.

Several aspects of this project appear to have increased costs beyond the industry average cost for the construction of similar sewer improvements. These increases arise from physical conditions at the site and from good engineering practice:

- The Contract Documents identify stringent and quantifiable limits on the amount of chemical grout that may be left in place while grouting laterals.
- There is one known subcontractor available to place chemical grout in southern California. The lack of potential competition may result in increased bid prices.
- Several project locations provide limited site access for construction equipment, some only by foot, and some require trucked sewer by-passing during installation.
- The bid items requiring replacement in place of existing sewer mains with new polyvinyl chloride (PVC) pipe are for sites that have additional complicating factors including:
  - Installations in deep trenches (up to 18 feet deep).
  - Installations in high groundwater requiring dewatering.
  - Installation in areas with high traffic requiring extensive traffic control operations.

Additionally, IEC has observed a measureable increase in new construction and a corresponding increase in bidding costs. IEC noted that several recent bid results on similar public works projects have come in higher, and in some cases significantly, than the engineer's opinion of probable cost. It is IEC's opinion that the bid costs reflect the current market conditions and reasonably stringent installation guidelines and do not constitute grounds to reject the received bids.

Therefore, Staff recommends that the Board of Directors award the contract to Burtech as the lowest responsive and responsible bidder in an amount not to exceed \$669,946.

#### **FISCAL IMPACT:**

Staff appropriated \$500,000 in the FY15 Budget for project construction. An additional appropriation of \$300,000 is needed to cover the construction costs for the project and a 20% contingency. The cost of the project can be reduced by deleting individual project items. However, staff recommends completing the repair of all listed items as a proactive measure in response to the California River Watch settlement and to ensure the integrity and reliability of the collection system. Therefore, staff requests the Board approve an additional appropriation of \$300,000 to the FY15 Budget for project construction.

rym:PJB

Attachment



***BID REVIEW MEMORANDUM***

Date: March 27, 2015  
Subject: **FY15 Gravity Pipeline Rehabilitation Project**  
Prepared By: Andrew Wiese, E.I.T. and Jamie Fagnant, P.E.  
Reviewed By: Rob Weber, P.E.

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**PURPOSE**

This memorandum provides a summary of our evaluation of bid results and the responsiveness of the low bid for the subject project.

**BID RESULTS**

Three bids were received and opened on March 18, 2015. The bids are summarized on Table 1 - Bid Summary (see attached) and characteristics of the bids are as follows:

Low Bid:	\$669,946
Average Bid:	\$723,649
High Bid:	\$764,000
Engineer's Opinion of Probable Cost:	\$548,000

The low bid was approximately \$122k, or 22% greater than the engineer's opinion of probable cost. IEC reviewed the three bids and found that the bid item amounts were similar between the three bidders and roughly correlated to the engineer's opinion. Specifically, Burtech's per bid item costs were within 15% of the average bid cost for nearly three quarters of the bid items. This indicates the Contractors were interpreting the contract documents in a similar fashion.

Several aspects of this project appear to have increased costs beyond the industry average cost for the installation of similar sewer improvements. These requirements arise from physical conditions at the site and from good engineering practice:

- The Contract Documents identify stringent and quantifiable limits on the amount of chemical grout that may be left in place while grouting laterals.
- There is one known subcontractor available to place chemical grout in southern California. The lack of potential competition may result in increased bid prices.
- Several cured-in-place pipe lining installations require foot access only and some require trucked sewer by-passing during installation.
- The bid items requiring replacement in place of existing sewer mains with new polyvinyl choride (PVC) pipe are for sites that have additional complicating factors including:
  - Installations in deep trenches (up to 18 feet deep).
  - Installations in high groundwater requiring dewatering.
  - Installation in areas with high traffic requiring extensive traffic control operations.

In addition, IEC has been seeing a measureable increase in new construction and a corresponding increase in bidding costs. Although we make every attempt to account for market volatility in our engineer's opinion of probable cost, the bid results for this project appear to indicate a faster increase in market costs than expected. Several recent bid results on similar public works projects



we are aware of have come in high, and in some cases, significantly over the engineer's opinion of probable cost.

It is our opinion that the bid costs reflect the current market conditions and reasonably stringent installation guidelines and do not constitute grounds to reject the received bids.

**REVIEW OF LOW BIDDER**

Burtech Pipeline, Inc. (Burtech or Contractor), Encinitas, California submitted the apparent low bid. IEC has determined Burtech to be responsive to the bid requirements and recommends that the District award the project to Burtech. The following reviews have been completed:

**Contractor's License:** The Contractor holds the required Class A License (No. 718202). The license is current and active.

**Bid Bond:** A bid bond in the amount of ten percent (10%) of the bid amount was submitted with North America Specialty Insurance Company as surety. This surety company has a rating of A+15 with Best's Key Rating Guide.

**Signatures:** The Contractor's President and CEO, Dominic J. Burtech and Executive Vice-President and Secretary, Julie J. Burtech signed the Closing Statement. Dominic Burtech signed the Bidder's Bond, Non-Collusion Affidavit, and the Local Preference Certification.

**Addenda Acknowledged:** Addendum No 1 was acknowledged by Burtech. Dominic Burtech signed the Addendum Certification Form.

**Project Manager's Experience:** The Contractor has identified Frank Durazo as the project manager in a follow-up phone call from IEC on 3/24/2015. His resume has been enclosed as part of the bid documents.

**Approach to Work:** The Contractor addressed the anticipated project issues as required in the Approach to Work section of the Bid Documents as outlined below:

The Burtech Pipeline office is located near the project site. They therefore anticipate minimal onsite staging. The work in some locations may need to be performed at night due to high sewer flows, consequently minimizing public inconvenience.

**Worker's Compensation Insurance:** Policy is in affect through 9/3/2015. The most recent workers' compensation experience modification factor for Burtech is 1.12%.

**Experience Requirements:** The bid documents require the Contractor to submit three project references with installation of at least 300 linear feet of cured-in-place pipe and two-component, 100% solid, epoxy manhole coating. Burtech submitted three project references, and each one meets the requirements.

**References:** IEC contacted Burtech's listed references to perform an assessment of the Contractor's prior work. In all cases, Burtech was recommended as a good Contractor with no record of claims.

**Registration with the Department of Industrial Relations (DIR):**



As of 3/1/2015, contractors and their subcontractors are required to be registered with the DIR prior to bidding a public works project. The table below demonstrates that Burtech and each of its subcontractors have met this requirement.

Contractor Legal Name	Registration Number	Registration Date	Expiration Date
Burtech Pipeline, Inc.	1000006324	01/21/2015	06/30/2015
Oldcastle Precast	1000005884	01/16/2015	06/30/2015
National Plant Services, Inc.	1000002703	11/12/2014	06/30/2015
NuLine Technologies, LLC	1000003808	12/12/2014	06/30/2015
Ayala Engineering	1000005012	01/08/2015	06/30/2015

**Source:** <https://efiling.dir.ca.gov/PWCR/Search.action>

**Bid Item Review:** Burtech’s individual bid item amounts roughly correlate with those of the engineer’s opinion of probable cost and the other bidders. There were two issues with the bid item amounts:

- One bid item, item 13, consisting of an excavated repair and cured in place pipe lining was significantly lower than the engineer’s opinion of probable cost and other bidder’s estimates for that item. IEC contacted Frank Durazo at Burtech regarding this. Burtech has no issues with performing the work in accordance with their given bid cost including bid item 13.
- Bid item 1, mobilization, was listed as \$42,000, or 6% of the total bid. Contract documents limit the mobilization cost to 5% of the total project cost (Specification Section 01010 – Summary of Work). As the proposed mobilization cost is not considered overly excessive, IEC recommends the District waive this requirement.

At this time, IEC has no concern regarding the Contractor’s ability to complete the work for the cost given.

**RECOMMENDATION**

IEC recommends award of the contract to Burtech Pipeline Inc. based on their knowledge and experience record and responsiveness to the bidding requirements.

**Attachments**

Table 1 – Bid Summary

**Leucadia Wastewater District  
2015 Gravity Pipeline Rehabilitation Project  
Table 1 - Bid Summary**

Item	Description	Unit	Qty.	Engineer's Opinion of Probable Construction Cost	Burtech	Piperin	Transtar
1	Mobilization, Bonds, Permits, Cleanup and Demobilization	LS	1	\$24,000	\$42,000	\$30,000	\$50,000
2	Sheeting, Shoring and Bracing	LS	1	\$10,000	\$25,000	\$15,000	\$15,000
3	New 8" PVC	LS	1	\$46,480	\$75,900	\$73,000	\$60,000
4	New 8" PVC	LS	1	\$60,230	\$65,600	\$87,000	\$95,000
5	Install Cured-in-Place Manhole Liner (CIPML)	LS	1	\$12,000	\$18,500	\$15,000	\$16,000
6	Not Used	LS	1	\$0	\$0	\$0	\$0
7	Not Used	LS	1	\$0	\$0	\$0	\$0
8	Not Used	LS	1	\$0	\$0	\$0	\$0
9	Cured-in-Place Pipe Lining	LS	1	\$8,210	\$8,596	\$9,000	\$10,000
10	Cured-in-Place Pipe Lining	LS	1	\$19,000	\$24,730	\$21,000	\$23,000
11	New 8" PVC and Manholes	LS	1	\$88,820	\$147,600	\$192,000	\$240,000
12	New 6" PVC, Manhole, Manhole Chimney and Cover Replacement and Cured-in-Place Patch	LS	1	\$20,700	\$45,000	\$66,000	\$46,000
13	Excavated Spot Repair and Cured-in-Place Pipe Lining	LS	1	\$26,000	\$8,520	\$26,000	\$15,000
14	Rehabilitate Existing Manhole	LS	1	\$8,000	\$10,000	\$4,000	\$4,000
15	Cured-in-Place Pipe Lining and Chemical Grouting	LS	1	\$16,100	\$18,500	\$16,000	\$18,000
16	Grind Intruding Pipe, Cured-in-Place Pipe Lining Patch and Chemical Grouting	LS	1	\$13,500	\$14,000	\$14,000	\$14,000
17	Replace Existing Clean Out with New Plastic Manhole	LS	1	\$12,000	\$24,500	\$31,000	\$28,000
18	Excavated Spot Repair and Cured-in-Place Pipe Lining	LS	1	\$28,985	\$25,000	\$28,000	\$22,000
19	Cured-in-Place Lining and Chemical Grouting	LS	1	\$23,445	\$25,000	\$27,000	\$30,000
20	Cured-in-Place Pipe Lining and Chemical Grouting	LS	1	\$21,645	\$20,000	\$15,000	\$17,000
21	Replace Existing Clean Out with New Plastic Manhole	LS	1	\$15,000	\$24,500	\$20,000	\$21,000
22	Replace Existing Clean Out with New Plastic Manhole	LS	1	\$13,000	\$20,000	\$19,000	\$20,000
23	Excavated Spot Repair and Cured-in-Place Pipe Lining	LS	1	\$31,410	\$27,000	\$29,000	\$20,000

Subtotal: \$498,525  
Contingency: \$49,853

<b>Engineer's Opinion of Probable Construction Cost</b>
<b>\$548,000</b>

<b>Total:</b>	<b>\$548,378</b>	<b>\$669,946</b>	<b>\$737,000</b>	<b>\$764,000</b>
Check Total:		\$669,946	\$737,000	\$764,000
Amount in Words:		\$669,946	\$730,000	\$764,000

## MEMORANDUM

**DATE:** April 2, 2015  
**TO:** Engineering Committee  
**FROM:** Paul J. Bushee, General Manager   
**SUBJECT:** Saxony Pump Station Rehabilitation Project Preliminary Design Report Completion

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**RECOMMENDATION:**

Staff requests that the Engineering Committee recommend that the Board of Directors:

1. Receive and file the Saxony Pump Station Rehabilitation Preliminary Design Report completed by Infrastructure Engineering Corporation.
2. Discuss and take other action as appropriate.

**DISCUSSION:**

The Saxony Pump Station Rehabilitation Project is included as a goal under the Technology and Infrastructure Strategy in the Fiscal Year 2015 (FY15) Tactics & Action Plan.

In April 2014, Infrastructure Engineering Corporation (IEC) completed the District's pump stations assessment. As a result of the assessment, IEC recommended the rehabilitation of the Saxony Pump Station (Saxony) in Fiscal Year 2015 (FY15). Major items to be accomplished during the rehabilitation include:

- Mechanical:
  - Replace submersible pumps.
  - Replace check valves and isolation valves.
- Electrical:
  - Install new power monitors.
  - Install new automatic transfer switch.
  - Install new UPS.
- Pump station and site improvements:
  - Install FRP stairway and platform in wet well.
  - Field painting.
  - Replace wet well lining.

Subsequently, in October 2014, IEC was issued a task order to complete a Preliminary Design Report (PDR) for Saxony.

The scope of work included services to evaluate the scope of rehabilitation of the wet well, mechanical components and electrical/control components and site improvements. The PDR is complete and includes the following recommendations:

- replacement of the two existing submersible pumps with new submersible pumps and delivery of one spare pump to District offices
- replacement of piping and valves in the wet well and valve vault
- new Type 316 stainless steel safety chains on hatches
- installation of safety nets on access hatches
- replacement of wooden generator door with new fiberglass reinforced plastic (FRP) door and interior acoustic panels



- field painting including:
  - traffic bollards
  - Motor Control Center
  - generator enclosure
  - existing fence framing and replacement in place of vinyl coated chain link
- replacement of existing polyurethane wet well lining with epoxy
- installation of a drum type activated carbon scrubber and low flow fan on wet well vent
- rehabilitation of two (2) influent manholes
- new LED site lighting
- replacement of power monitors
- new automatic transfer switch and enclosure
- new uninterruptible power supply
- new Programmable Logic Control (PLC)
- replacement of emergency generator receptacle
- sealing of the driveway and pump station site asphalt

The executive summary is attached for your review. A copy of the PDR is available upon request.

It should be noted that pump station bypassing will be necessary to perform work in the pump station wet well including replacement of the wet well lining and piping replacement. Other work that is to be performed during bypassing is replacement of piping and valves in the valve vault, and replacement of the PLC.

Regarding environmental requirements, Section 7 of the PDR, Environmental Needs and Approaches, recommends the Project be constructed outside of the bird nesting season to minimize noise impacts on adjacent sensitive habitats. This would require construction from mid-September to mid-February. The project is not expected to trigger the need for a Coastal Development Permit.

Staff intends to execute an agreement with IEC for continued engineering services as the project transitions into the design/bidding phase of the project.

rym:PJB

Attachment

# SAXONY PUMP STATION REHABILITATION PRELIMINARY DESIGN REPORT

Prepared for:



Leucadia Wastewater District  
1960 La Costa Avenue  
Carlsbad, CA 92009

MARCH 2015



Prepared by:  
Infrastructure Engineering Corporation  
14271 Danielson Street  
Poway, CA 92064  
049.LWD.0047

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## EXECUTIVE SUMMARY

### 1.0 Introduction

The purpose of this preliminary design report is to define the scope of the proposed Saxony Pump Station Rehabilitation Project and advance recommendations to a preliminary design level. Improvements will take into account recommendations suggested by the 2013 Asset Management Master Plan (AMMP), the 2014 Pump Station Assessment Report, and District staff input during the preliminary design phase.

The Saxony Pump Station was built in 1963 and rehabilitated a number of times, most recently in 2000. Saxony Pump Station contains two 40 horsepower (hp) non-clog submersible pumps and motors that are reported to operate at 900 gallons per minute (gpm). Other major station components include a cast in place wet well, 10" and 15" diameter influent gravity sewer mains, an 8" diameter ductile iron force main, a cast in place valve vault and emergency connection vault, above grade electrical equipment and a 100 kilovolt (kV) emergency generator.

The Saxony Pump Station is located just north west of the intersection of Saxony Road and La Costa Avenue in the City of Carlsbad.

### 2.0 Pump Replacement

The existing pumps at Saxony pump station are recommended for replacement because they have reached the end of their design life. The pumps are reported to have a capacity of 900 gpm and to operate at approximately 40 pounds per square inch (psi). IEC developed a conceptual system curve(s) for the Saxony pump station system with which to finalize pump selection during final design. IEC recommends the following considerations be taken into account in finalizing the pump selection:

- IEC has requested one week of flow data from Leucadia Pump Station and level data from Saxony Pump Station. This data will be reviewed during the final design phase to verify current system curve and existing pump station operational parameters including pump run time, flow and operating pressure.
- Once current operating conditions are confirmed IEC recommends the following be re-evaluated as input to the final pump selection:
  - current and desired retention times in the wet well,
  - and, the maximum expected influent flow to the pump station.
- A chopper style pump could mitigate ragging issues currently seen at the pump station but should be considered in conjunction with the requirement that the overall horsepower of the station remain the same or decrease in order to avoid upsizing of the motor control center, the emergency generator, and possibly the electrical connection, meter, and transformer.

### 3.0 Valve Vault and Bypass Modifications

The valve vault mechanical equipment (check valves, plug valves, pressure gauges and flow meter) has reached the end of its useful life and is recommended for replacement. IEC recommends the District replace the piping in the valve vault in conjunction with the mechanical equipment. Proposed valve vault piping improvements are shown in Figures 3-6 (Appendix A).

IEC assessed the District's request to install a ship's ladder into the valve vault. Although space restrictions preclude the installation of a ship's ladder, IEC recommends the District install a new fiberglass reinforced plastic (FRP) ladder with a ladder up device.

Additionally, modifications to the emergency bypass connections are recommended to provide a 6" Victaulic blind flange to facilitate connection to a portable bypass pump.

### **3.0A Alternative Site Layout**

At the draft preliminary design report review meeting, a suggestion was made to evaluate replacement of the existing influent manhole on the western-most gravity inlet sewer with a new submersible lift station (SLS). Although not formally documented in past design reports, the existing wet well is generally considered oversized for peak flow operations and is considered to provide critical emergency storage capacity at this environmentally sensitive location. However, this larger wet well also tends to accumulate grit, an issue that District staff remedies by running the pumps in manual mode to pump down the wet well on a weekly basis. Although this procedure is not thought to be disruptive or unduly time or labor intensive, the concept of a new SLS that pumps out of the modified existing influent manhole with utilization of the existing wet well as an emergency overflow basin is intended to both mitigate the grit accumulation in the wet well and reduce operational retention time at the station.

Some key site and mechanical improvements required for this alternative are summarized below:

- New 12" and 15" PVC gravity sewer lines (approximately 65 total linear feet)
- New submersible lift station constructed as Cast-in-Place Concrete, Prefabricated manhole or fiberglass
- 2 new submersible pumps within the SLS
- 1 new submersible pump within the emergency wet well
- Piping to connect the SLS to piping within the existing valve vault

### **4.0 Wet Well Modifications**

The existing polyurethane lining on the wet well walls has reached the end of its useful life and is recommended for replacement with a new epoxy lining. The cast in place PVC lining on the ceiling appears to be in good condition. The existing piping in the wet well shows evidence of corrosion product and is recommended for replacement.

The District requested IEC evaluate the installation of a FRP stairway and access platform similar to that installed at Batiquitos Pump Station. However, a stairway would require a larger access hatch than currently exists. Due to the existing wet well slab reinforcement configuration, in order to install a larger access hatch, the entire roof slab would require replacement. This would entail a substantial increase in project scope. IEC recommends staff continue to access the existing floats and level detector through the existing access hatches.

### **5.0 Electrical and SCADA Modifications**

Several electrical components at the Saxony Pump Station have reached the end of their useful design life and are recommended for replacement including:

- pole mounted site lighting
- pump power monitors

- programmable logic card (PLC)
- automatic transfer switch (ATS)
- uninterruptible power supply (UPS)
- SCADA (supervisory control and data acquisition) radio
- the emergency generator connection

## 6.0 Miscellaneous Improvements

The force main was replaced in its entirety between the years 2000 and 2001. It is recommended that the force main replacement be scheduled on or about the time the design life is reached in approximately 2025 or as a part of any timely adjacent improvement project to the L1/L2 force main systems.

Other miscellaneous improvements to be addressed as a part of the Saxony Pump Station Rehabilitation Project are shown on Figures 1-2 (Appendix A) where applicable and include the following:

- a spare pump to be delivered to District offices
- safety netting and replacement of stainless steel safety chains on access hatch
- manhole rehabilitation of influent manholes (2)
- rerouting of the site sump to an influent manhole
- replacement of corroded springs on wet well access hatch
- replacement of the door to the generator enclosure with new FRP door and acoustical panels
- field painting of existing bollards, motor control center (MCC) enclosure, and existing generator enclosure
- installation of drain for the generator pad
- installation of a removeable screen on the generator intake
- installation of a carbon scrubber and low flow fan on the wet well vent

## 7.0 Environmental Needs and Approaches

This section evaluates needs and options for the project's environmental clearances. As a discretionary undertaking, the proposed rehabilitation is subject to the California Environmental Quality Act, and because it is located adjacent to sensitive habitat, it may have some potential to trigger regulatory permit requirements under the federal and/or California Endangered Species Acts (ESA/CESA).

However, as a rehabilitation of an existing facility, with no change in function or increase in capacity, the project should qualify for exemption from CEQA review, assuming there are no "unusual circumstances" creating the potential for significant impacts on the environment (CEQA Guidelines §15301).

We recommend the following best management practices to facilitate environmental clearances. Appropriate contractor-friendly language can be included as Special Technical Provisions in the project contract documents.

- Conduct mobilization, site preparation, rehabilitation, and demobilization outside the nesting season; if this not feasible, work should begin prior to the beginning of the nesting season, and should continue without interruption until complete.
- Restrict construction, staging, and access to the existing paved/disturbed footprint.
- Provide for temporary low-impact exclusion measures (orange construction fencing, pin flags, etc.) installed under qualified biologist supervision to prevent accidental incursions into sensitive habitat. Exclusion measures should be installed prior to contractor mobilization and should remain in place until demobilization is complete.
- Provide for “stop work, evaluate, and treat” precautions in the event of an unanticipated discovery of known or potential archaeological or fossil resources.

As immediate next steps to finalize the environmental clearance approach for the project, we recommend the following.

- Field-check and update the 1998 vegetation mapping for the area that will be crossed by the temporary bypass in order to (1) verify the habitat type and quality currently present in this area; and (2) determine whether the temporary piping can be connected without significant disturbance of sensitive vegetation.
- Our on-the-ground biological reconnaissance will also allow us to confirm our preliminary understanding that the pump station is outside state and federal jurisdictional limits.
- Conduct a reconnaissance evaluation of surrounding habitat within the noise disturbance radius to assess suitability for Least Bell’s Vireo, Southwestern Willow Flycatcher, and Coastal California Gnatcatcher nesting. As identified above, we assume that habitat will be found suitable for these species, but we recommend evaluating whether any of the species can be ruled out.
- If bypass piping can be restricted to areas of disturbed habitat, or the vegetative cover is open enough to allow bypass installation without disturbance, we anticipate that the project may qualify for exemption from CEQA. If removal, trimming, or other disturbance of sensitive vegetation would be required, CEQA review (presumed to be an IS/MND), and possibly also “indirect” take permitting triggered by habitat impacts, may be needed. In this case, IEC will follow up with resource agency staff to evaluate options and negotiate an approach; with a very small area of disturbance, it may be possible to obtain informal agency concurrence without the need for formal take permitting. If more than one option is available once constraints are more fully understood, we will present the options along with their pros and cons, and can then support the District in implementing the preferred approach.

#### **8.0 Proposed Project Summary, Engineer’s Opinion of Probable Construction Cost, Sewer Bypassing and Construction Phasing**

The preliminary engineer’s opinion of probable construction cost for the Proposed Project is \$580,000. This is approximately \$263,000 less than the preliminary engineer’s opinion of probable construction cost for the Alternative Site Layout described in section 3.0A.

Proposed project components include the following:

- replacement of the two existing submersible pumps with new submersible pumps and delivery of one spare pump to District offices
- replacement of piping and valves in the wet well and valve vault including the following mechanical equipment
  - 3 – 8” check valves
  - 4 – 8” plug valves
  - 1 – 4” check valve
  - 1 – 4 “ plug valve
  - 8” mag meter
  - Pressure gauge
- new Type 316 stainless steel safety chains on hatches
- installation of safety nets on access hatches
- replacement of springs on wet well access hatch with new Type 316 stainless steel springs
- replacement of wooden generator door with new FRP door and interior acoustic panels
- field painting including
  - traffic bollards
  - MCC
  - generator enclosure
  - existing fence framing and replacement in place of vinyl coated chain link
- replacement of existing polyurethane wet well lining with epoxy
- installation of screen on generator intake
- installation of activated carbon scrubber and low flow fan on wet well vent
- rehabilitation of influent manholes (2 manholes)
- re-routing of sump pump drainage to influent manhole
- generator pad drain
- new LED site lighting
- replacement of power monitors
- new automatic transfer switch and enclosure
- new uninterruptible power supply
- new PLC
- replacement of emergency generator receptacle
- replacement of MCC light with new LED light
- pump station bypassing
- sealing of the driveway and pump station site asphalt

Sewer bypassing will be necessary to perform work in the pump station wet well including replacement of the wet well lining, piping replacement and installation of the FRP ladder and platform. Other work that is to be performed during sewer bypassing is replacement of piping in the valve vault, and replacement of the PLC. A short shutdown during low flow conditions will be required to replace a section of piping in the valve vault between the discharge header and the bypass connection.

The Saxony Pump Station Rehabilitation was targeted for construction in 2015. However, section 7 of this preliminary design report, environmental needs and approaches, recommends the Project be constructed outside of bird nesting season to minimize noise impacts on adjacent sensitive habitats. This would limit construction mobilization to mid-September. Additionally, several of the equipment items have long lead times most notably the pumps (20 weeks), and valves (14 weeks). IEC recommends the District consider procuring long lead time items in advance of construction.

The Saxony Pump Station Rehabilitation Project is not expected to trigger the need for a Coastal Development Permit. IEC recommends the District prepare a technical memorandum during final design identifying the project as exempt from CDP for submittal to the City of Carlsbad.



**MEMORANDUM**

**DATE:** April 2, 2015  
**TO:** Engineering Committee  
**FROM:** Paul J. Bushee, General Manager   
**SUBJECT:** Saxony Pump Station Rehabilitation Project – Engineering Design Services

**RECOMMENDATION:**

Staff requests that the Engineering Committee recommend that the Board of Directors:

1. Authorize the General Manager to execute an agreement with Infrastructure Engineering Corporation (IEC) for engineering design services for the Saxony Pump Station Rehabilitation Project in an amount not to exceed \$72,266.
2. Discuss and take other action as appropriate.

**DISCUSSION:**

Previously, the Board of Directors received and filed the Saxony Pump Station Preliminary Design Report (PDR) completed by Infrastructure Engineering Corporation (IEC). As you may recall, the PDR recommended the following major project components:

- replacement of the two existing submersible pumps with new submersible pumps and delivery of one spare pump to District offices
- replacement of piping and valves in the wet well and valve vault including the following mechanical equipment
- replacement of existing polyurethane wet well lining with epoxy
- rehabilitation of influent manholes (2 manholes)
- replacement of power monitors
- new automatic transfer switch and enclosure
- new uninterruptible power supply
- new Programmable Logic Control (PLC)

The estimated construction cost with contingency is \$580,000.

The next phase of the project is the design phase. IEC has submitted a proposal, attached, to complete the design of the project. The Scope of work includes:

## I. Final Design Phase

- Design of project as identified in the Preliminary Design Report (PDR)
- Preparation of Plans, Specifications and Cost Estimates
- Project Management and Administration
  - Three submittals at the 90%, 100% and Final Contract Document levels.
  - Three meetings are included in the scope at the kickoff, 90% review and 100% review level.
  - Prepare a memorandum of CDP exemption for submittal to the City of Carlsbad.

IEC proposed fee for design services is \$72,266 which includes services to support project design, such as electrical engineering subcontractor services. This fee is 12.5% of the estimated construction cost. Staff believes the proposal is fair and reasonable. Therefore, staff recommends that the Board authorize the General Manager to execute an agreement with IEC for engineering design services for the Saxony Pump Station Rehabilitation Project.

**FISCAL IMPACT:**

Staff appropriated funds in the FY15 Budget for this project. The budget contains sufficient funds to cover the design services to be provided under this agreement.

rym:PJB

Attachment



March 27, 2015

Mr. Robin Morishita  
Technical Services Manager  
Leucadia Wastewater District  
1960 La Costa Avenue  
Carlsbad, CA 92009

**Reference: Saxony Pump Station Rehabilitation Project – Final Design**

Dear Mr. Morishita:

It has been our pleasure to assist the District with the Saxony Pump Station Rehabilitation Project. This letter summarizes the project budget and requests an amendment for additional services necessary to provide the District with engineering services to final design of the Saxony Pump Station Rehabilitation Project per the Saxony Pump Station Rehabilitation Preliminary Design Report. The services requested under this amendment supplement, and do not overlap with, services authorized under either the original task order or amendment 1.

**SCOPE OF WORK**

***Task 3 – Final Design***

The scope for the final design is as identified in the Saxony Pump Station Rehabilitation Preliminary Design Report (PDR) for the proposed rehabilitation project. The scope does not include the alternative site layout or additional environmental services. The project scope as identified in the PDR is as follows:

- Replacement of the two existing submersible pumps with new submersible chopper pumps and delivery of one spare pump to District offices.
- Replacement of piping and valves in the wet well and valve vault including the following mechanical equipment
  - 3 – 8" check valves
  - 4 – 8" plug valves
  - 1 – 4" check valve
  - 1 – 4 " plug valve
  - 8" mag meter
  - Pressure gauge, possibly with in-flange pressure gauge
- New FRP ladder and platform in wet well
- New Type 316 stainless steel safety chains on hatches
- Installation of safety nets on access hatches
- Replacement of springs on wet well access hatch with new Type 316 stainless steel springs.
- Replacement of wooden generator door with new FRP door and interior acoustic panels
- Field painting including
  - Traffic bollards
  - MCC

- Generator enclosure
- Existing fence framing and replacement in place of vinyl coated chain link
- Replacement of existing polyurethane wet well lining with epoxy lining
- Installation of screen on generator intake
- Installation of activated carbon scrubber and low flow fan on wet well vent
- Rehabilitation of influent manholes (2 manholes)
- Re-routing of sump pump drainage to influent manhole
- Generator pad drain
- New LED site lighting
- Replacement of power monitors
- New automatic transfer switch and enclosure
- New uninterruptible power supply
- New PLC
- Replacement of emergency generator receptacle
- Replacement of MCC light with new LED light
- Pump station bypassing
- Sealing of the driveway and pump station site asphalt

Contract documents will be comprised of plans, specifications and engineer's opinion of probable construction cost. Plans will be based on the previously provided CAD files from the 2001 Pump Station Rehabilitation Project. Plans are expected to be composed of the following sheets:

- (4) General Sheets - Title, general notes and pump curves
- (4) Civil Sheets – Site Layout and Demolition, Conceptual Bypass Plan
- (6) Mechanical Sheets – Mechanical Plans, Sections and Details
- (8) Electrical Sheets – Electrical Site Plan, Single Line Diagram, Conduit Schedules, P & ID and PLC details

This scope includes three submittals at the 90%, 100% and Final Contract Document levels. Three meetings are included in the scope at the kickoff, 90% review and 100% review level.

IEC will prepare a final pump selection memorandum to be appended to the preliminary design report to evaluate the existing system and serve as the basis of design for pump design and specification.

This project is expected to be exempt from the requirement of a Coastal Development Permit (CDP) as a repair and maintenance project. IEC will prepare a memorandum indicating the opinion of CDP exemption for submittal to the City of Carlsbad.

Mr. Robin Morishita  
Leucadia Wastewater District  
March 27, 2015  
Page 2 of 2

#### **SCHEDULE AND FEE**

A proposed project schedule is attached.

A breakdown of the scope and fee is attached.

We propose to complete this work on a time and materials basis at a total cost not to exceed **\$72,266**. This brings the total requested project budget to **\$97,866**.

Sincerely,

A handwritten signature in blue ink that reads "Robert Weber". The signature is written in a cursive, flowing style.

Robert S. Weber, P.E.  
Senior Project Manager

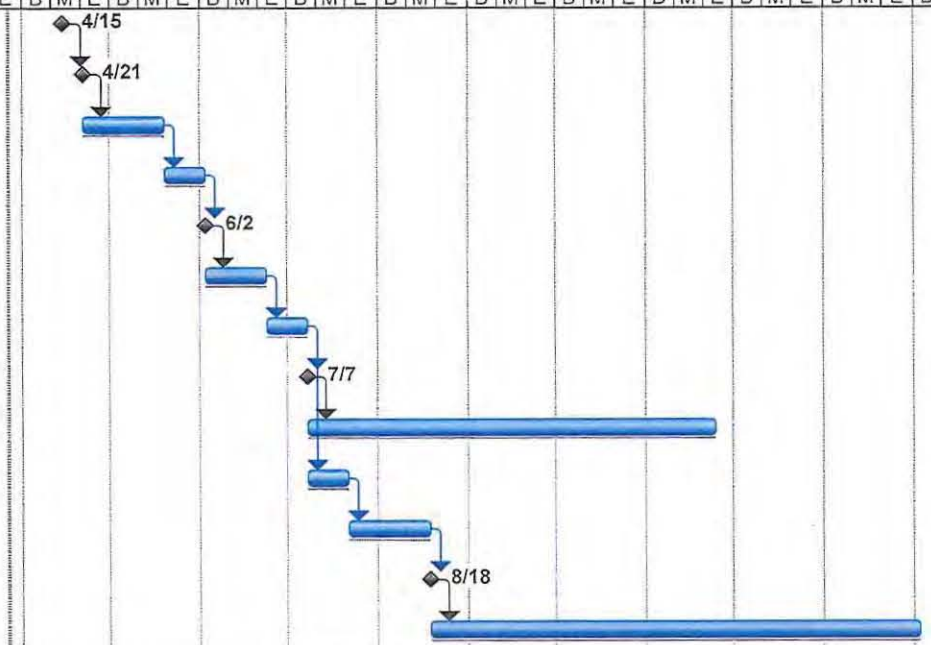
**FEE ESTIMATE  
LEUCADIA WASTEWATER DISTRICT  
Saxony Pump Station Final Design**

Task/ Subtask	Task/Subtask Description	<i>Sr. Project Manager (Rob Weber)</i>	<i>Project Manager (Jane Costello)</i>	<i>Project Manager (Dave Padilla)</i>	<i>Project Engineer (Jamie Fagnant)</i>	<i>Project Engineer/ Designer (Rich Goodman)</i>	<i>Engineer II/ CAD II Designer (Andrew Weise)</i>	<i>Word Processor (Annette Moore)</i>	Subtask Labor-Hours	Subtask Labor Cost	Direct Cost	Subcontract	Total Cost
		\$180.00	\$170.00	\$170.00	\$130.00	\$130.00	\$110.00	\$65.00					
<b>TASK 3</b>	<b>Final Design</b>												\$72,266
	Meetings (3)	6	6		9				21	\$3,270	\$150		\$3,420
	Final Pump Selection Memorandum		12				18		30	\$4,020	\$0		\$4,020
	90% Submittal	4	36	4	32	32	128	8	244	\$30,440	\$0		\$30,440
	Electrical Design		4						4	\$680	\$150	\$11,571	\$12,401
	100% Submittal	4	20	2	20	16	68	8	138	\$17,140	\$0		\$17,140
	Final Submittal	2	4	2	4	8	8	4	32	\$4,080	\$0		\$4,080
	CDP Exemption Memo	1			4			1	6	\$765	\$0		\$765
		17	82	8	69	56	222	21	475				
		\$3,060	\$13,940	\$1,360	\$8,970	\$7,280	\$24,420	\$1,365		\$60,395	\$300	\$11,571	<b>\$72,266</b>

**TOTAL NOT-TO-EXCEED FEE: \$72,266**

Saxony Pump Station Rehabilitation Project

ID	Task Name	Duration	Start	Finish	April		May		June		July		August		Septem		October		Novemb		Decemb		January		Fe
					E	B	M	E	B	M	E	B	M	E	B	M	E	B	M	E	B	M	E	B	M
1	NTP	0 days	Wed 4/15/15	Wed 4/15/15																					
2	Kick-off Meeting	0 days	Tue 4/21/15	Tue 4/21/15																					
3	90% Design	4 wks	Wed 4/22/15	Tue 5/19/15																					
4	District Review	2 wks	Wed 5/20/15	Tue 6/2/15																					
5	90% Review Meeting	0 days	Tue 6/2/15	Tue 6/2/15																					
6	100% Design	3 wks	Wed 6/3/15	Tue 6/23/15																					
7	District Review	2 wks	Wed 6/24/15	Tue 7/7/15																					
8	100% Review Meeting	0 days	Tue 7/7/15	Tue 7/7/15																					
9	Pump and Valve Procurement	20 wks	Wed 7/8/15	Tue 11/24/15																					
10	Final Submittal	2 wks	Wed 7/8/15	Tue 7/21/15																					
11	Bid	1 mon	Wed 7/22/15	Tue 8/18/15																					
12	Award	0 days	Tue 8/18/15	Tue 8/18/15																					
13	Construction	6 mons	Wed 8/19/15	Tue 2/2/16																					



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Project: Saxony Schedule  
Date: Fri 3/27/15

Task		Milestone		External Tasks	
Split		Summary		External Milestone	
Progress		Project Summary		Deadline	

**MEMORANDUM**

**DATE:** April 2, 2015  
**TO:** Engineering Committee  
**FROM:** Paul J. Bushee, General Manager   
**SUBJECT:** **Infrastructure Engineering Corporation Contract Extension for Engineering Design Services**

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**RECOMMENDATION:**

Staff requests that the Engineering Committee recommend that the Board of Directors:

1. Authorize the General Manager to execute a two-year extension to the Infrastructure Engineering Corporation (IEC) contract for as needed engineering design services.
2. Discuss and provide direction as appropriate.

**DISCUSSION:**

In March 2012, the District entered into a Professional Services Agreement with Infrastructure Engineering Corporation (IEC) for as needed engineering design services. The initial contract period was for 3 years with an option to extend the agreement for 2 additional years. These terms were selected for efficiency and to allow for continuity of service beyond the initial term should it be warranted by staff and IEC.

The initial three-year period of the IEC agreement expired in March 2015. Based on their performance and commitment to the District, staff is recommending that the option for a two-year contract extension be executed.

The amendment to the basic agreement will extend the engineering design services until March 2017. As is the case with the basic contract, this extension does not have a specific compensation amount associated with it. Each design project will be issued using task orders to the agreement containing a negotiated compensation amount. If the compensation amount of an individual task order exceeds the thresholds established in the District's Procurement Policy, the task order will require Board approval prior to execution.

Staff requests that the Engineering Committee recommend that the Board of Directors authorize the General Manager to execute a two-year extension to the Infrastructure Engineering Corporation (IEC) contract for as needed engineering design services and discuss and provide direction, as appropriate.

rym:PJB



**MEMORANDUM**

**DATE:** April 2, 2015  
**TO:** Engineering Committee  
**FROM:** Paul J. Bushee, General Manager  
**SUBJECT:** 2016 Repair Priority List



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**RECOMMENDATION:**

1. This item is presented for information purposes.

**DISCUSSION:**

The increase in Closed Circuit Television (CCTV) Inspections and enhanced CCTV evaluation expertise of the Field Services Staff enabled the development of a process to track and repair defects found in gravity pipelines and manholes. In May 2014, the Engineering Committee was briefed on this method that staff refers to as the Repair Priority List. Staff believes this method is an effective way to prioritize and systematically repair, rehabilitate or replace gravity pipelines and manholes in an efficient and cost conscience manner. The Repair Priority List is used to estimate the amount to be budgeted in a fiscal year for that year's gravity pipeline rehabilitation project. Staff will present the Repair Priority List used to determine the Fiscal Year 2016 budget appropriation and define the 2016 Gravity Pipeline Rehabilitation Project.

rym:PJB