Ref: 24-8812

AGENDA

ENGINEERING COMMITTEE MEETING
LEUCADIA WASTEWATER DISTRICT
Monday, July 1, 2024 – 2:15 p.m.
1960 La Costa Avenue, Carlsbad, CA 92009

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1. **Call to Order**

2. **Roll Call**

3. **Public Comment**

4. **FY2025 Gravity Pipeline Rehabilitation Project – Final Design Services**

   Authorize the General Manager to execute Task Order No. 8 to the Engineering Design Services Agreement with Water Works Engineers for final design services for the FY2025 Gravity Pipeline Rehabilitation Project in an amount not to exceed $89,621. (Page 2 - 16)

5. **Information Items**

   Batiquitos Pump Station Emergency Basin Lining Project (Verbal)

6. **Directors' Comments**

7. **General Manager's Comments**

8. **Adjournment**

Ref: 24-8808

MEMORANDUM

DATE: June 27, 2024

TO: Engineering Committee

FROM: Paul J. Bushee, General Manager

SUBJECT: **FY2025 Gravity Pipeline Rehabilitation Project – Final Design Services**

RECOMMENDATION:

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

1. Authorize the General Manager to execute Task Order No. 8 to the Engineering Design Services Agreement with Water Works Engineers for final design services for the FY2025 Gravity Pipeline Rehabilitation Project in an amount not to exceed $89,621.

2. Discuss and take other action as appropriate.

BACKGROUND:

Tactical Goal: Infrastructure & Technology / FY2025 Gravity Rehabilitation Project

In April 2023, the Board adopted the District's 2023 Asset Management Plan (AMP) Update which recommended, among other things, that the District continue to implement its Annual Gravity Pipeline and Manhole Rehabilitation Projects in order to keep the District's pipelines and manholes in excellent working order. Staff uses a Repair Priority List, populated and prioritized using Closed-Circuit Television inspections, to maintain a priority listing of gravity sewer pipeline and manhole defects requiring upgrade. These defects are then grouped based on the repair approach into either an open trench construction, Cured-In-Place Pipe (CIPP) Lining, or Cured-In-Place Manhole (CIPM) Lining project.

DISCUSSION:

The goal of the FY2025 Gravity Pipeline Rehabilitation Project (FY2025 Project) is to repair or replace sewer pipelines that require the open trench method of construction. The FY2025 Project will consist of open trench construction to correct three (3) gravity sewer lines that have historical structural defects. The work involves replacement of a deep sewer line on Piraeus Avenue and in a utility road behind Discount Tire on El Camino Real.

To commence the design, staff requested a proposal from the District's as-needed design firm Water Works Engineers (Water Works). Staff has negotiated the scope of work and believes it meets the objectives of the project. The proposal had been attached for your review and includes all design related services through project bidding.

Water Work's proposed fee for design services is $89,621 which includes project design up to the bid phase and geotechnical investigation and survey which accounts for approximately 48% of the fee. The preliminary construction cost estimate for the project is $703,000, therefore the proposed design fee represents a soft cost loading of 12.7% of construction. This fee is well within industry standards and, based on the complexity of the project, staff believes it is fair and reasonable.

FISCAL IMPACT:

The FY2025 Capital Budget for the FY2025 Project includes $110K for design. Therefore, the Capital Budget contains sufficient funds to complete the final design services to be provided under this task order. Staff has appropriated $605K for project construction and plans to advertise this project for bid later this year. At that time when construction bids are received, staff will determine if additional funding is necessary.

ier:PJB

Attachment

Mr. Ian Riffel
Leucadia Wastewater District
1960 La Costa Avenue
Carlsbad, CA 92009

RE: FY 25 Gravity Replacement Project

Dear Mr. Riffel,

Water Works Engineers (Water Works) is pleased to submit to Leucadia Wastewater District (District) a proposal for Engineering Design. Major improvements in this Project include the rehabilitation of gravity sewer pipeline segments and sewer manholes selected by the District from the Repair Priority List (RPL). The RPL is continuously updated and informed by Closed Circuit Television (CCTV) inspections performed by District Operations & Maintenance staff. For FY2025, the District has identified 3 gravity sewer pipeline segments locations that require repair and replacement (1x in Encinitas Village and 2x in Piraeus Street) in the City of Encinitas

The Scope of Services describes the specific tasks and deliverables that Water Works will perform for this Project. Please contact me at 619-919-3880 should you have any questions or need further information.

Sincerely,

Tim Lewis, PE
Project Manager

7777 Alvarado Rd, Ste 300, La Mesa, CA 91942
619-833-6955 (Direct Office)
619-919-3880 (Cell)
timl@wwengineers.com / www.wwengineers.com

WATERWORKS ENGINEERS

Scope of Engineering Services

Water Works Engineers, LLC. and Leucadia Wastewater District

Engineer Services During Construction for FY 25 Gravity Replacement Project

Tak Order No. 8

This Scope of Engineering Services is issued by Leucadia Wastewater District (herein referred to as CLIENT or District) and accepted by Water Works Engineers LLC (herein referred to as ENGINEER or WWE) pursuant to the mutual promises, covenants, and conditions contained in the most current As Needed Engineering Design Services Agreement between Leucadia Wastewater District and Water Works Engineers LLC.

Project Description

The project description and specifics are defined in the following table:

Location	Encinitas, CA
Facilities	Existing gravity sewer mains
Project Objectives	1. Pireaus Street: Open cut replacement of 2 segments (642-ft tot length) existing 1960s 8" VCP sewer with severe sag defects that is 10 to 27 feet deep. Located in Encinitas Right of Way (paved). 2. Encinitas Village: 2 point repairs (open cut replacement of several sticks of pipe, or worst case, up to 50-lf of pipe) o fexisting 1980s 8" PVC sewer with severe structural failure/deformation. Located in paved area within existing 10-ft sewer easement working in close proximity to existing large commercial businesses in the loading zones near trees, hardscaping, landscaping, and block walls.
Existing Documentation	1. Record Drawings 2. CCTV Data 3. Other data requested by ENGINEER identified in Scope of Services
Project Background	Pursuant to the District's Sanitary Sewer Management Plan (SSMP), the District is committed to reducing Sanitary Sewer Overflows (SSOs) in its sanitary sewer collection and conveyance systems by maintaining, repairing, and rehabilitating assets via a programmatic data-based asset management approach as documented in its Asset Management Plan (AMP). The District continuously inspects its collection system via Closed Circuit Television (CCTV) and identifies defects in assets. Defects with a severity of 3 (out of 4) trigger the asset being placed on the Repair Priority List (RPL) for near-term repair, replacement, or rehabilitation.

	For FY2025, the District has identified two gravity sewer pipeline segments requiring repair and open cut replacement improvements.
Supplemental Cost Estimate	After reviewing the site, record drawings, and initial geotechnical information, Water Works prepared a recommended conceptual construction cost estimate.

WATERWORKS ENGINEERS

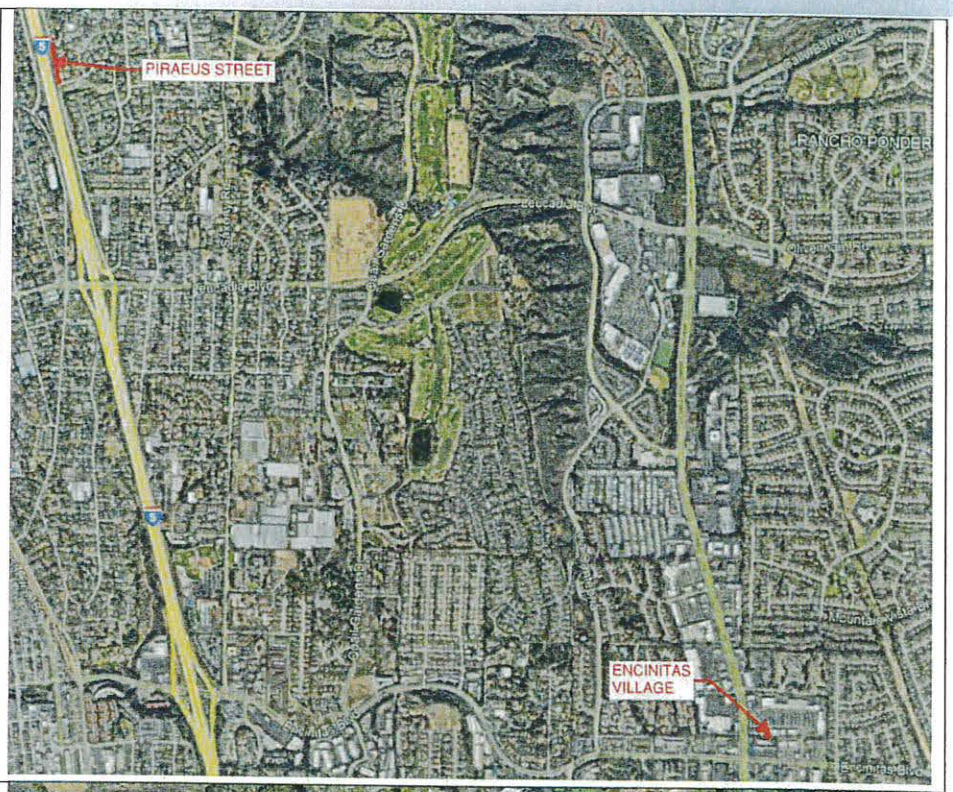
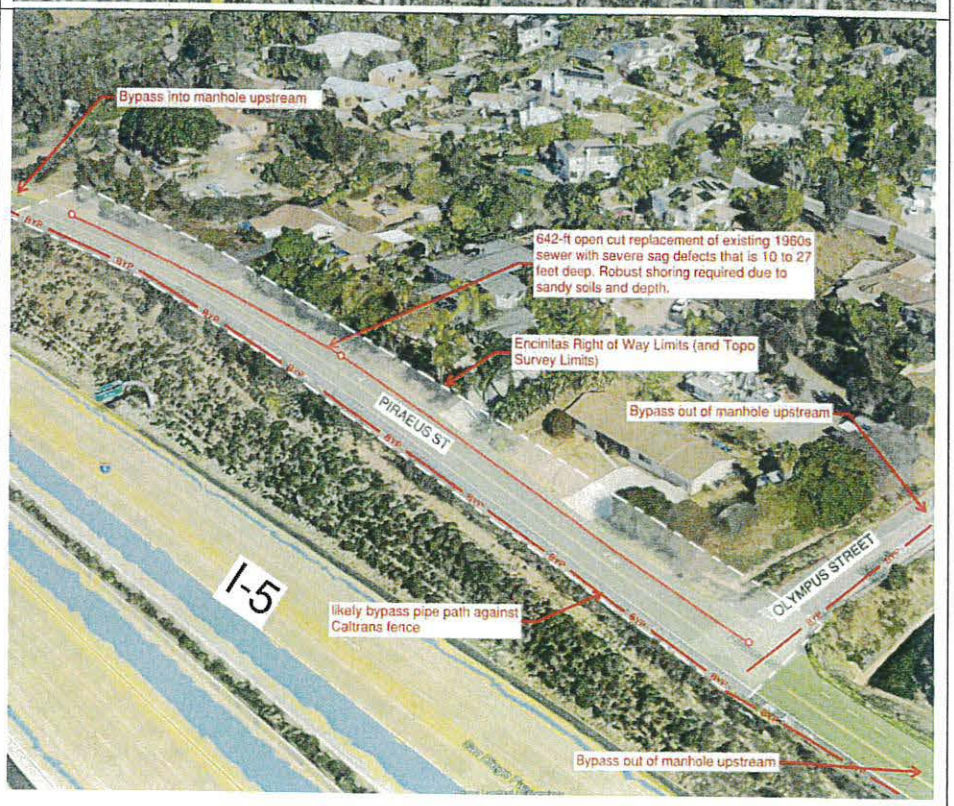
FY25 Open Gravity Replacement Project
Conceptual Cost Estimate

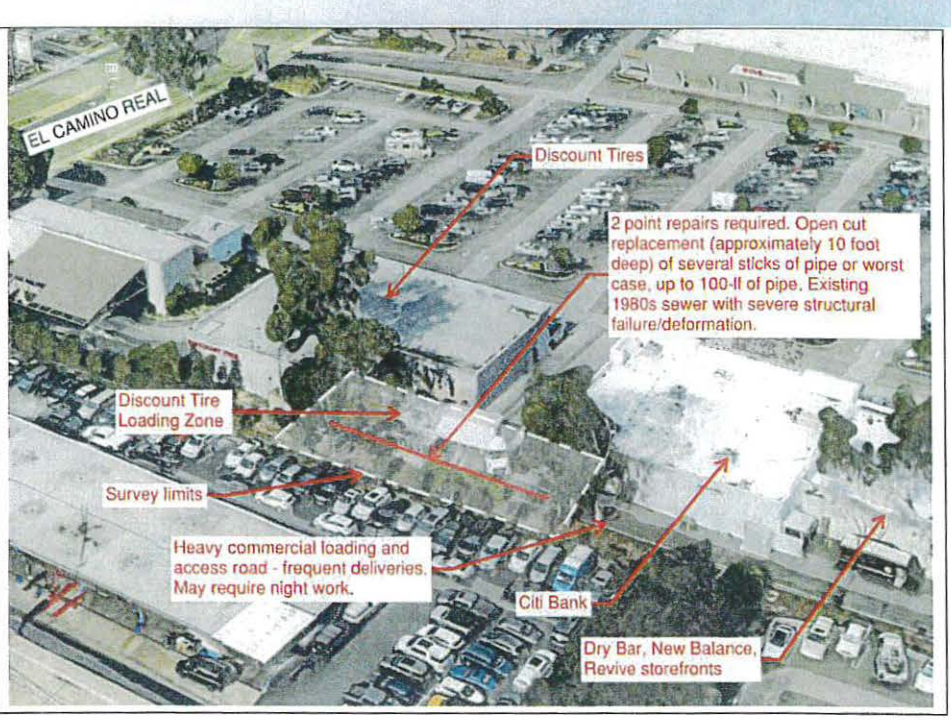
Date: 06/28/24

Item No.	Description	Unit	Estimated Quantity	Eng. Est. Unit Price	Eng. Est. Construction Cost
1	Mobilization & Demobilization	LS	1	$ 30,000	$ 30,000
2	Special Constraints, Work Plans, General Requirements, Special Inspection and Permits	LS	1	$ 15,000	$ 15,000
3	Traffic Control	LF	800	$ 25	$ 20,000
4	SWPPP	LF	694	$ 13	$ 8,675
5	Unpaved Surface Restor.	SF	9,630	$ 4	$ 36,113
6	Sewer Bypassing	DAY	35	$ 3,750	$ 131,250
7	Reinstate Laterals	EA	4	$ 3,125	$ 12,500
8	8"SS (10'D) + Pavement	LF	202	$ 391	$ 79,053
9	8"SS (20'D) + Pavement	LF	150	$ 545	$ 81,786
10	8"SS (25'D) + Pavement	LF	340	$ 682	$ 231,943
11	Protect in Place & Reinstate Ex Manhole	EA	2	$ 6,250	$ 12,500
12	30' Deep Sewer Manhole	EA	1	$ 43,750	$ 43,750
	Cost Estimate (AACE Class 4)[1,2]				**$ 703,000**

(1) Rounded to nearest $1000
(2) Includes 25% Contingency

Approach	Site specific design considerations and constraints are depicted in the following figures.

Overview Map	
Piraeus St Area and Major Design Constraints	

Encinitas Village Area and Major Design Constraints	

Scope of Services

ENGINEER will provide engineering design services to meet the Project objectives. Services will be split into the following tasks.

Subtasks	Title
1	Project Management and Administration
2	Final Design
3	Bid Documents & Bidding Support

Subtask 1: Project Management and Administration

Under this subtask, ENGINEER shall monitor and track the project budget and schedule to ensure that all deadlines are met and that the project budget is not exceeded. ENGINEER will coordinate with the project team to address items such as project schedule, project budget, and current issues of concern. ENGINEER shall also monitor progress and coordinate the activities being performed by all sub-consultants associated with the project and submit monthly progress reports to the CLIENT. The following will be performed under this subtask:

1) Project Kickoff Meeting (to be conducted in person))
   a) ENGINEER introductions to CLIENT staff
   b) Familiarize ENGINEER with all project facilities
   c) Gather operational data
   d) Agree on Project Objectives
   e) Agree on Project Components
2) Project Communication and Control

a) Coordination of all project team activities
b) Communication of project progress and issues to CLIENT staff
c) Project schedule maintenance and control of project tasks to keep project schedule on track
d) Cost tracking of all engineering activities and active cost control of fees.

3) Quality Assurance/Quality Control
   a) Plan and implement Quality Assurance/ Quality Control Policy with the entire project team
   b) Ensure QA/QC procedures are being followed at each step in the design process

Meetings	• Project Kickoff Meeting (in-person)
Deliverables	• Kickoff Meeting Notes (Elec.; .pdf) • Monthly Progress Reports (via email)

Subtask 2: Final Design

Under this subtask ENGINEER shall produce plans, technical specifications, and cost estimates (PS&E) for the improvements listed in the project description via the following subtasks.

Preliminary Engineering

Site recon and existing conditions verification:

- Conduct site recon.
- Open existing manholes and capture downhole conditions.
- Review CCTV data.
- Take site photos.
- Submit standard APWA Utility "A" Letter to existing utilities and receive record drawings of existing utilities identified by USA/811.

Piraeus Geotechnical Field Work and Investigation (BAJADA)

A geotechnical field investigation and report will be produced by Water Works Engineer's Subconsultant Bajada Geosciences for the Piraeus St segment. The Encinitas Village point repairs will likely not require geotechnical field investigation work because they are significantly shallower and excavation will be reduced.

The proposed Pireaus pipeline work is located in geologic materials mapped as undifferentiated, very old, paralic (terrace deposits) sediments. The severe sagging that occurred on the original pipe may point to the need for an a-typical engineered fill pipe zone and backfill material. Based on nearby Caltrans Logs of Test Borings, those sediments consist predominantly of medium dense to dense sand with gravel. The Torrey Sandstone underlies the terrace deposits in the region. Procuring enough information to inform a robust shoring system, any dewatering needs, and backfill materials is critical for this project and informs the geotechnical investigation approach presented herein.

Task 1 – Pre-Exploration

Prior to subsurface exploration, BAJADA will have proposed drill hole locations marked and will contact Underground Service Alert (USA) to assist in identifying potential buried utility conflicts.

BAJADA will obtain an encroachment permit from the City of Encinitas for exploration within Piraeus Street.

Task 2 – Subsurface Exploration

BAJADA will advance two (2) drill holes for this project. The drill holes will be advanced using 8.25-inch diameter hollow-stem-auger drilling methods to depths of up to about 20 feet below the proposed invert depths. Thus, drill holes could be as deep as 50 feet. Soils will be sampled at depth increments of 5 feet or less using a California modified split spoon (CM) or Standard Penetration Test (SPT) sampler. CM and SPT samplers will be driven using a 140-pound auto trip hammer in accordance with standard test method ASTM D1586-11. SPT samples will be collected in sample bags, labeled, and transported to our laboratory for testing. California modified split-spoon samples will be collected in 2.5-inch diameter by 6-inch-long brass or stainless-steel sleeves. Those sleeves will be capped, labeled, and transported to our office for assignment of laboratory testing.

BAJADA personnel will log the soils and rocks exposed in the explorations, as well as the observed thicknesses of pavement and base materials, and will obtain samples for visual examination, classification, and laboratory testing. Logging of soils will be performed using the Unified Soil Classification System (USCS). We will estimate exploration locations using a compass and tape measure from known geographic control points along the alignment and by the use of a handheld Global Position System (GPS) receiver. The drill holes will be backfilled to the ground surface with cement grout. Cuttings from drilling operations will be disposed off-site. Asphaltic concrete (AC) disturbed during drilling will be patched using a cold-patch AC or quickset concrete dyed black. Traffic control consisting of a lane closure will be provided during exploration.

Task 3 – Laboratory Testing

Soil samples obtained during Task 2 will be delivered to a laboratory for testing. The actual types and numbers of tests that will be performed will be determined after the field exploration has been performed.

Task 4 – Geotechnical Analyses & Reporting

Results of the field investigation, laboratory tests, and engineering analyses will be summarized and concluded in a geotechnical report prepared for the project. Those reports will contain, at a minimum, the following:

> A description of the proposed project including a site plan showing the approximate locations of the explorations advanced for this study; A description of select, existing, available data collected, reviewed, and utilized during this study; A description of the site surface and subsurface conditions encountered at each drill hole location at the time of our field investigation; A geologic map showing the distribution of earth materials across the project site; A log depicting subsurface soil and groundwater conditions encountered at the drill holes advanced during this study; 2019/2022 CBC seismic design parameters; Recommendations related to geotechnical aspects of: Site grading and drainage, including compaction criteria and potential reuse of on-site soils as select backfill materials; Allowable bearing pressures for appurtenant structures such as manholes, vaults, etc.; Lateral earth pressures (active, at-rest, and passive) under static

and dynamic conditions for buried structures; Coefficients of friction for soil materials; Modulus of soil reaction (E') for pipeline design; and Temporary excavations and shoring. An appendix presenting a summary of the field investigation including the exploration log denoting sampling intervals and laboratory test results; An appendix presenting the results of our laboratory testing.

Surveying Services (Calvada)

A design level Topographic Survey will be provided for the likely construction work limits for Pireaus St. The boundary component of the survey will include a field boundary verification denoting current street right of ways. The items to be included are as follows:

Survey Control

1. The vertical control will be based on the North American Vertical Datum of 1988 (NAVD 88). A local municipal benchmark will be used.

2. The horizontal control will be based on the California State Plane Coordinate System of 1983 (NAD 83).

Topographic Survey Features

1. Survey observations will be taken on a 25-foot finish surface grid and 25-foot street cross sections to create 1-foot contour intervals. Spot elevations will be at back of sidewalks, top of curbs, flow lines, gutter edges, street crowns, high/low points, top and toe of slopes, grade breaks, finish floors, driveway aprons, local depressions, and handicap ramps.

2. Spot elevations to determine the water flow of adjacent streets and catch basins that terminate or commence offsite and flow within the Site.

3. Location of signing and striping within the Site.

4. Location of trees over 6 feet in height, regardless of caliper, within the Site.

Utilities

1. Location, elevation, size, and type of visible above ground utilities within the Site.

2. Flow line invert elevations and sizes of drain inlets, storm drain manholes, and sanitary sewer manholes within the Site, unless bolted down.

75% Design PS&E

- Cover
- General Sheets (5x sheets)
- Civil and District General Notes (2x sheets)
- Key Map (1x sheet)
- Horizontal Control Plan (1x sheet)
- Plan and Profiles Civil sheets (3x)
    - The plan and profile sheet for the point repairs for Encinitas Village shall be produced without topographical survey and will rely up on record drawings, CCTV images, and site photos.
- Draft Civil Details (2x)

- Draft Tech Specs
- Construction Cost Estimate

100% Design PS&E

- Nearly bid-ready set of drawings and technical specifications that incorporates comments from District staff on the 75% submittal as well as the results of Water Works internal QA/QC reviews, final geotechnical investigation recommendations, and final detailing. All technical specifications will be complete and the construction cost estimate will be updated.
- Technical Specifications (assume ENGINEER, District, and Greenbook)
- Standard Details/Drawings

Meetings	• 75% Design Review Meeting (in-person or teleconference) • 100% Design Review Meeting (in-person or teleconference) • Survey • Geotech Findings/Reports
Deliverables	• 75% PS&E (Elec.; pdf) • 100% PS&E (Elec.; pdf)

Subtask 3: Bid Documents and Bidding Support

Under this subtask ENGINEER shall produce bid documents and provide bidding support per the following tasks:

Bid Documents

- Responding to District comment and questions to the 100% Design
- Assisting with Bid Package development
- Incorporating final review comments from District and prepare final Bid Documents (Plans, Specs, Bid Schedule, Project Description)

Bidding Support

- Prepare agenda and attend bid meeting in field (assumed 4 hours total)
- Answer bidder questions (assumed quantity of 20, 0.5 hour to prepare each)
- Provide design clarifications and addendums (assumed quantity of 3, 4 hours to prepare each)
- Review submitted bids and assess them against the contract documents and submit an opinion on the bidders qualifications and recommend award to District (assumed 16 hours)

Meetings	• Pre-bid meeting (in person)
Deliverables	• Bid Documents (Elec.; pdf) • Award Recommendation (Elec.; pdf)

ASSUMPTIONS

Additional Task Orders would be required in order to perform any of the work which is not listed in this scope or has been specifically identified as out of scope in the assumptions.

- CLIENT review periods of submittals: 10-working days
- Not in Scope:
  - Survey field work shall be per prevailing wage requirements and require the District provide a PW project number.
  - Front Ends & Division "00" Documents (Bidding Requirements, Contract Forms, and Conditions of the Contract)
  - Engineering Services During Construction
  - City of Encinitas Encroachment Permit or other permits for design.
  - Printed hard copies of deliverables
  - Hydraulic modeling
  - Department of Drinking Water Sewer-Water Separation Waivers
  - Traffic Control Plans
  - Water Quality analysis and/or Testing
  - Right of Way / Easement procurement
  - Funding Procurement Assistance and/or Investigation
  - Public Outreach
  - Landscaping Design
  - Renderings
  - Permitting (including consultations or discussions with USACE, USEPA, CA CFDW, CA SHPPO, CA RWQCB)
  - Trenchless Alternatives or Construction (likely infeasible for this project or likely not providing any benefit to the District).
  - Environmental Engineering Services and/or Studies (CEQA)
    - It is our understanding that the District assumes this project qualifies for Class 2(c) Categorical Exemption at a minimum with the District as lead agency because an existing sewer utility facility is being replaced and excavations will likely occur occurring within paved roads and under a pre-disturbed and landscaped surfaces, and it is not a growth inducing project. Verification of this assumption is not covered in this scope of services and would likely require professional environmental services and potentially field studies.

SCHEDULE

Estimated Schedule[1]	
Description	**Estimated Date**
Notice to Proceed (Executed Agreement)	July 19th, 2024
75% Design	September 6th, 2024
100% Design	November 15th, 2024
Bid Documents	December 6th, 2024
Bidding Period	December 2024
Award to Contractor	January 2025
Notice to Proceed	February 2025

Submittals/Preparation	March 2025
Construction	April 1st to June 30th, 2025

[1] Assumes 10 day reviews by Client

PAYMENT

Payment will be on a Time and Expense, Not-to-Exceed basis and invoiced in accordance with the Hourly Wage Rates in the following table, per the most current As Needed Engineering Services Agreement.

Hourly Rates and Fees

Billing Categories				
Classification	Title	2023	2024	2025
AA1	Administrative Assistant	$81.37	$83.81	$86.33
AA2	Senior Administrative Assistant	$114.33	$117.76	$121.29
E0	Engineering Assistant	$114.33	$117.76	$121.29
E1	Staff Engineer	$143.17	$147.47	$151.89
E2	Associate Engineer	$175.10	$180.35	$185.76
E3	Project Engineer	$196.73	$202.63	$208.71
E4	Senior PE / Project Manager	$227.63	$234.46	$241.49
E5	Principal Engineer	$263.68	$271.59	$279.74
I1	Field Inspector	$153.47	$158.07	$162.82
I2	Senior Inspector	$172.01	$177.17	$182.49
I3	Supervising Inspector	$190.55	$196.27	$202.15
T1	CADD Tech 1 (Drafter/Jr. Technician)	$96.82	$99.72	$102.72
T2	CADD Tech 2 (Designer/Sr. Technician)	$129.78	$133.67	$137.68
T3	CADD Tech 3 (Senior Designer)	$157.59	$162.32	$167.19

Notes:

1. A markup of 10% will be applied to all project related Direct Costs and Expenses
2. An additional premium of 25% will be added to the above rates for Expert Witness and Testimony Services.
3. Rate effective through December 31st of each respective year, a 3% increase will be added for any services performed in each year thereafter, pursuant to the Master Engineering Services Agreement

Total Budget for each subtask will be as follows and is detailed in Attachment 1.

Subtask	Title	Budget
1	Project Management and Administration	$2,077
2	75% Design	$64,320
	100% Design	$14,043
3	Bid Documents	$8,867
	Bidding Support	$3,604
	Project Total Budget	**$89,621**

ATTACHMENTS

Attached to this Scope for reference are the following:

1	Fee Basis Spreadsheet
2	
3	

Attachment 1: Water Works Engineers Fee Estimate

Client	Leucadia Wastewater District
Project	22-038 FY Gravity Replacement Project
Task Order No	#8
Prepared by	Tim Lewis, Project Manager
Date	5/28/2024

WATERWORKS ENGINEERS

Hours and Fee

				Subtask 1		Subtask 2						Subtask 3	
			Year	2024		2024		2024		2024		2025	
				Project Management and Administration		75% Design		100%		Bidding Documents		Bidding Support	
Water Works Engineers		**2024**		hrs	fee	hrs	fee	hrs	fee	hrs	fee	hrs	fee
Classification	**Title**	**Hourly Rate**											
AA1	Administrative	$83.81		2	$168								
AA2	Senior Administrative	$117.76		3	$353								
E0	Jr Engineer / Jr Field Engineer	$117.76											
E1	Staff Engineer	$147.47				60	$8,848	40	$5,899	8	$1,180	6	$911
E2	Associate Engineer	$180.35								8	$1,443	10	$1,858
E3	Project Engineer	$202.63		5	$1,013	24	$4,863	16	$3,242	8	$1,621	4	$835
E4	Senior Project Engineer / Manager	$234.46				1	$234	1	$234				
E5	Principal Engineer	$271.59		2	$543								
I1	Field Inspector	$158.07											
I2	Senior Inspector	$177.17											
I3	Supervising Inspector	$196.27											
T1	CADD Tech 1	$99.72				30	$2,992	20	$1,994	8	$798		
T2	CADD Tech 2	$133.67				30	$4,010	20	$2,673	4	$535		
T3	CADD Tech 3	$162.32											
Expenses													
	WWE Expenses						$500						
Subconsultants													
			Lump Sum										
	Bajada Geosciences (Geotechnical)						$30,100						
	Calvada (Surveying)						$8,830						
Subconsultant/Expense Markup		10%			$0		$3,943		$0		$0		$0
			Subtask Totals	*12*	*$2,077*	*145*	*$64,320*	*97*	*$14,043*	*36*	*$5,576*	*20*	*$3,604*

Base Project Total	
Hours	**Fee**
310	**$89,621**