Ref: 24-8701

AGENDA

ENGINEERING COMMITTEE MEETING
LEUCADIA WASTEWATER DISTRICT
Wednesday, March 6, 2024 – 2:00 p.m.
1960 La Costa Avenue, Carlsbad, CA 92009

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1. **Call to Order**

2. **Roll Call**

3. **Public Comment**

4. **San Marcos Creek Crossing Diversion Project – Transfer of Capital Funds and Engineering Services.** (Pages 2 – 15)

   A. Authorize a Fiscal Year 2024 (FY 24) Capital Budget transfer of $200,000 from the FY 24 Gravity Rehabilitation Project account to the San Marcos Creek Crossing Diversion Project account.

   B. Authorize the General Manager to execute Task Order No. 6 with Water Works Engineers for final design services for the San Marcos Creek Crossing Diversion Project in an amount not to exceed $99,762.

5. **Information Items**

6. **Directors' Comments**

7. **General Manager's Comments**

8. **Adjournment**

Ref: 24-8708

MEMORANDUM

DATE: February 29, 2024

TO: Engineering Committee

FROM: Paul J. Bushee, General Manager

SUBJECT: **San Marcos Creek Crossing Diversion Project – Transfer of Capital Funds and Engineering Design Services**

RECOMMENDATION:

Staff requests that the Engineering Committee (EC) recommend that the Board of Directors:

1. Authorize a Fiscal Year 2024 (FY 24) Capital Budget transfer of $200,000 from the FY 24 Gravity Rehabilitation Project account to the San Marcos Creek Crossing Diversion Project account.
2. Authorize the General Manager to execute Task Order No. 6 with Water Works Engineers for final design services for the San Marcos Creek Crossing Diversion Project in an amount not to exceed $99,762.
3. Discuss and take other action as appropriate.

BACKGROUND:

Tactical Goal: Infrastructure and Technology / San Marcos Creek Crossing Diversion

This item is a follow-up to the emergency repair work that was recently completed for the San Marcos Creek pipeline crossing on the eastern edge of the Omni La Costa south golf course. During the repair, staff and the Board discussed the need to expedite the project defined in the FY 24 Tactical Plan that would permanently divert flow away from the pipeline in the creek and this recommendation reflects the Board's direction during that discussion.

DISCUSSION:

Recommendation 1:

In order to complete this work prior to the next rainy season, staff is recommending a $200,000 capital budget transfer from the FY 24 Gravity Pipeline Project account to the San Marcos Creek Crossing Repair account. This would allow the design work to begin immediately with the goal of starting construction in the July timeframe and completion of the project by mid to late fall 2024. The money is available in the FY 24 Gravity Pipeline Project because the bid price for the work came in significantly below the engineers estimate and budget for the project.

Recommendation 2:

This project generally entails intercepting flows at an upstream cul-de-sac on Avenida Valera and building a new pipeline to the east where it would connect to an existing LWD pipeline. This will allow existing flows to be diverted from the existing pipeline in San Marcos Creek, which then would be abandoned in place. Some preliminary design work was previously conducted for this project and, upon review, additional work was needed especially in the areas of refined pipeline alignment, geotechnical evaluation, easements and other site conditions, and surveying. To commence the design, staff requested a proposal from the District's as-needed design firm Water

Works Engineers. Staff has reviewed the proposal and believes it meets the objectives of the project. The proposal had been attached for your review and includes the following scope items:

- Task 1 – Project Management and Administration
  Water Works will attend three design/coordination meetings. Additional coordination will be addressed via e-mail and telephone.

- Task 2 – Design Phase – 75%, 100%, and Final Completion Level
  Water Works and District Staff will develop project design in a collaborative manner. There will be two iterations (75% and 100%) of plans, specifications, and opinion of probable construction cost. Water Works will prepare one bid package.

- Task 3 – Bid Documents and Bidding Support
  Water Works shall produce bid documents and provide bidding support.

Water Work's proposed fee for design services is $99,762 which includes support services, such as geotechnical investigation, utility location, and surveying. The preliminary construction cost estimate for the project is $950,000, therefore the proposed design fee represents a soft cost loading of 10.5% 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 FY 24 Capital Budget for the San Marcos Creek Crossing Project included $100,000 to evaluate project alternatives. This funding was subsequently utilized for the San Marcos Creek Emergency Repair Project which total approximately $101,400. As previously mentioned, funding is available in the FY 24 Gravity Pipeline due to a very favorable bid price. The $200,000 transfer is needed to fund the minor overage in the account and to commence design and bidding of the project. Staff plans to request additional funding as part of the FY 25 Capital Improvement Program budget as the project becomes better defined.

ier:PJB

Attachment

WATERWORKS ENGINEERS

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

RE: San Marcos Creek Crossing Diversion Project

Dear Mr. Riffel,

Water Works Engineers (Water Works) is pleased to submit to Leucadia Wastewater District (District) a proposal for Engineering Design Services for the abandonment of the existing gravity sewer crossing under the San Marcos Creek within Omni La Costa Golf Course and the diversion of the existing gravity sewer in Avenida Valera via a new gravity sewer pipeline to the southeast and into the existing gravity sewer in the access road.

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

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

Scope of Engineering Services

Water Works Engineers, LLC. and Leucadia Wastewater District

Engineer Services During Construction for Avenida Valera Creek Diversion Project Task Order No. 6

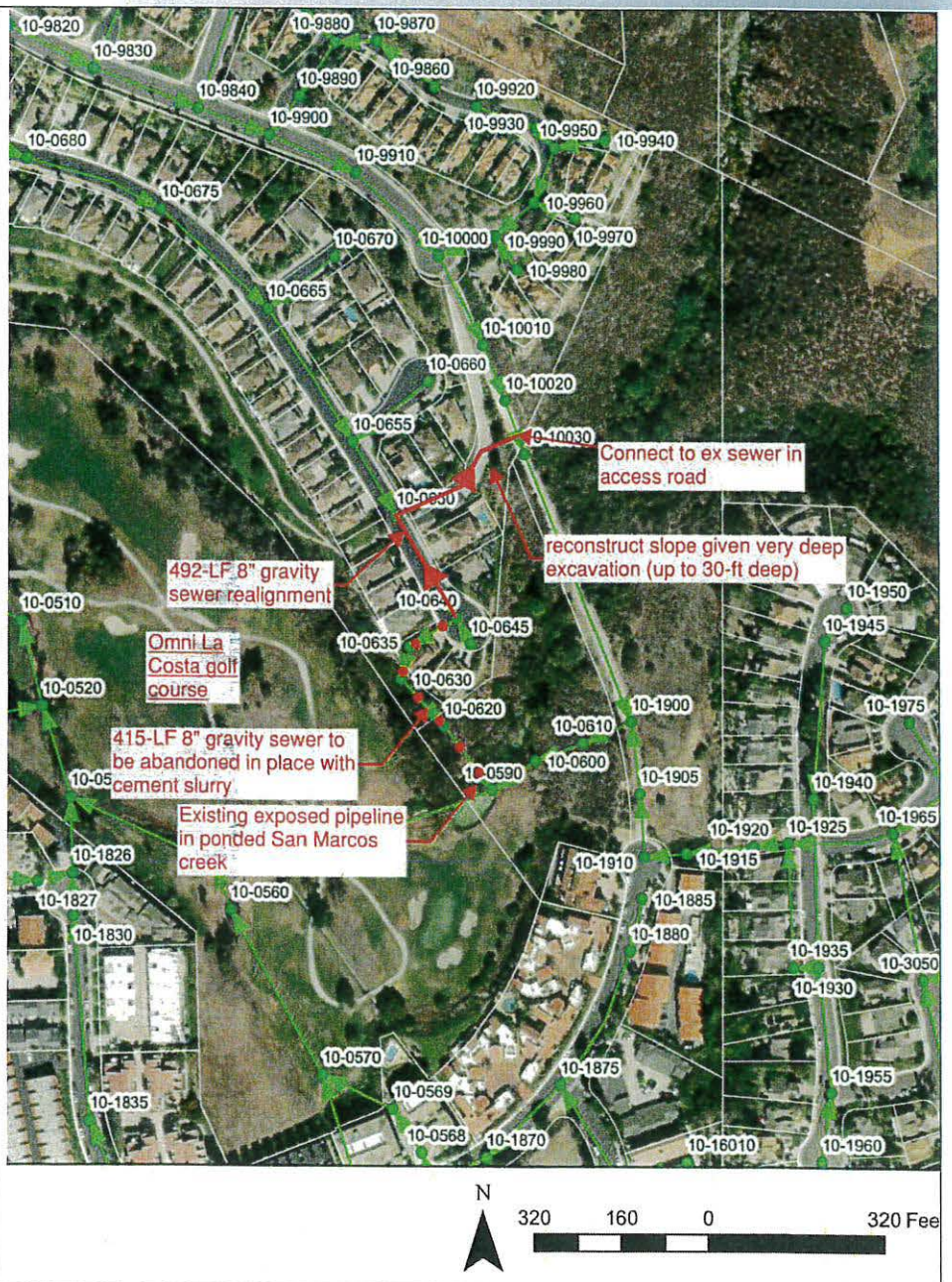
This Scope of Engineering Services is issued by Leucadia Wastewater District (herein referred to as CLIENT or District) and accepted by Water Works Engineers LLC (herein referred to as ENGINEER or WWE) pursuant to the mutual promises, covenants, and conditions contained in the most current As Needed 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	Avenida Valera Rd, Carlsbad, CA
Facilities	Existing 8" sanitary sewer gravity main
Project Objectives	1. Design 492-LF realignment of an existing 8" sanitary sewer gravity main and divert flows from an existing pipeline away from an exposed and at-risk crossing under San Marcos creek in the Omni La Coast Golf Course and into an existing gravity main down an access road. The resultant pipeline is moderate to substantially deep and in one location, may have 30-ft cover. 2. Abandon in place the existing 415-LF abandoned 8" sanitary sewer gravity main with abandonment media and stabilize it internally.
Existing Documentation	1. 2019 Survey 2. As-builts 3. Other data requested by ENGINEER identified in Scope of Services
Project Background	An existing sewer gravity main is exposed in the pooled inlet area of San Marcos Creek in the Omni La Costa Golf Course. The District recently implemented an emergency stabilization project after January 2024 storm damage. Even after this stabilization project, the pipeline is a significant long-term risk and liability to the District due to the potential for the pipe to be undermined and scoured by major storms and spilling into the creek. As such, the District has identified an alternative whereby the existing pipe can be abandoned and diverted upstream.

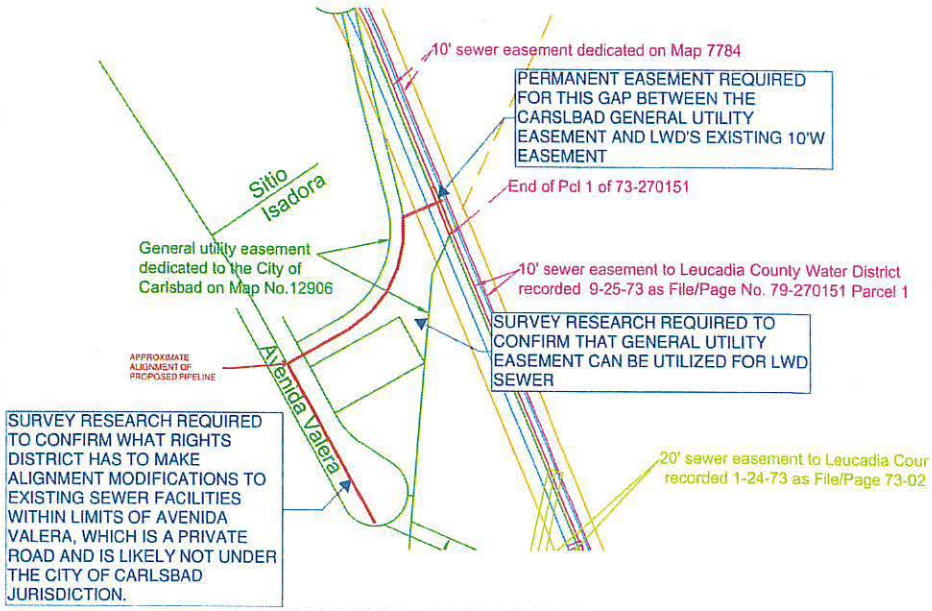
Improvements	• The pipeline will be diverted from sewer manhole 10-0640 to 10-10030 via 492-LF of new 8" gravity sewer main pipe. The pipeline will be moderately deep (~15ft) within Avenida Valera Rd but will deepen significantly as it traverses the private access road and under the slope berm (30ft deep excavation anticipated) which will require special design details and mitigation, including 1 potential tree removal and surface restoration/stabilization measures. Existing private irrigation may be impacted and shall be restored, along with fencing and other existing surface features. It is assumed that the HOA will require that the District mill and overlay the full width of Avenida Valera. It is assumed that full width concrete panels of existing concrete access roads will need to be replaced. • Potentially up to 7 sewer laterals will be steepened and reconnected into the realigned gravity main. • The existing sewer to be diverted shall be abandoned in place with a low-density cement slurry fill material that will be gravity tremied in from uphill. The existing pipeline under San Marcos Creek will be stabilized via this abandonment material from inside the pipe. Sewer plugs will be installed within SSMH 10-0590 and the concrete bench will be closed off and reformed. All work shall be inside the manhole structure (to the extent knowable and planned pursuant to this engineering services proposal) and no surface disturbing work shall occur within San Marcos Creek or around the manhole. Existing LWD facilities within San Marcos Creek, including gabbions, concrete encasement, and existing pipeline material that is stabilized and filled with cement slurry shall be left in place and not disturbed. It is assumed that this is acceptable to authorities having jurisdiction (US Army Corp of Engineers). This effort is not anticipated to relieve existing conditions around District's SSMH 10-0590, and it is recommended that the District continue to monitor the manhole and the San Marcos Creek bank limits.



Hydraulic Design Confirmation

The hydraulic capacity of the existing pipeline to accommodate diverted flows has been verified by District Engineer DWEI and is acceptable per District standards.

LWD BUILDOUT PWW MODELING UPDATE (140 gpd/EDU)						
Segment	Diameter	Slope, %	Current Max Flow, gpm	Current d/D	Future Max Flow, gpm	Futre d/D
10-0620_10-0590	10	0.3	40	0.18	0	0
10-10020_10-10030	10	23.44	70	0.08	110	0.11
10-10030_10-1900	10	0.4	70	0.23	110	0.29
10-1900_10-0610	15	1.26	400	0.24	440	0.27
10-0610_10-0600	15	0.5	400	0.3	440	0.32
10-0600_10-0590	15	0.5	400	0.3	440	0.32

Easements	Additional confirmation via Preliminary Title Report research is required for whether the District has rights to realign the pipeline within Avenida Valera limits (private road), and is able to utilize the City of Carlsbad general utility easement, particularly if the easement is exclusive. Lastly, there is a gap between the District's 10'W PE in the private access road and City of Carlsbads general utility easement that will likely require new Permanent Easement. 

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
4) Correspondence with Other Stakeholders
   a) Upon confirmation of rights to utilize the City of Carlsbad general utility easement, it is assumed that the District will notify the City of Carlsbad regarding the proposed project and there will likely be one meeting, including an additional site visit, that will require support from Water Works with figures and general information regarding the project.
   b) It is assumed that the District will initiate discussions with Fairways HOA Board and there will likely be two meetings, including an additional site visit, that will require support from Water Works with figures and general information regarding the project.
   c) It is assumed that the District will notify Omni La Costa Golf Course for any work on the existing sewer facilities within the golf course properties, and Water Works will support this effort with figures and general information as requested.

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 and verification that the existing survey from 2019 that is being utilized for the project accurately depicts existing conditions and surface features
- Open existing manholes and capture downhole conditions
- Verify sewer lateral connections in Avenida Valera via District's existing CCTV videos
- Submit standard APWA Utility "A" Letter to existing utilities and receive record drawings of existing utilities identified by USA/811

Geotechnical Field Work and Investigation (BAJADA)

A geotechnical field investigation and report will be produced by Water Works Engineer's Subconsultant Bajada Geosciences.

The proposed pipeline runs 8' and 30' deep which is considered very deep for open cut construction and is located in geologic materials mapped as undifferentiated metavolcanic and metasedimentary rock. We understand that the depth, consistency, and unconfined compressive strength of the rock materials are unknown and could adversely impact construction unless characterized during project design. This proposal provides services to assist in that characterization.

Prior to subsurface exploration, BAJADA will mark proposed drill hole locations and will contact Underground Service Alert (USA) to assist in identifying potential buried utility conflicts. If maps are available that show buried utility locations along the alignment, we assume they will be provided to BAJADA prior to initiation of this task.

BAJADA will obtain an encroachment permits from the City of Carlsbad on an as-needed basis.

We propose to advance one drill hole for this project. Soils will be sampled at depth increments of 5 feet. BAJADA personnel will log the soils and rocks exposed in the explorations, and will obtain samples for visual examination, classification, and laboratory testing. The drill holes will be backfilled to the ground surface with cement grout. Cuttings from drilling operations will be disposed off-site.

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

- Description and site plan of the project;
- 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 of Exploration depicting subsurface soil and groundwater conditions encountered at the drill hole 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
    - 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.
    - reuse of on-site soils as select backfill materials;
    - Allowable bearing pressures for appurtenant structures such as manholes,
- 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.

Utility Verification (C-Below)

A limited utility verification effort (potholing) shall be conducted by Water Works Engineer's Subconsultant C-Below. Given the criticality of assuring the connection point is not impacted by the depth of existing utilities, the water line, electric line, storm drain, and existing LWD 8"SS (if needed) will be potholed in the access road. Other crossing utilities are expected to be shallow and are assumed to not impact the proposed pipeline.

Surveying Services (Calvada)

In general, the only components from the original 2019 survey that can be reutilized is the topographical survey. Right of way and easement delineations are not verifiable and Water Works will work with Subconsultant Calvada (surveyor) to:

- Order 3x preliminary title reports
- Plot and research easements from title reports (verify Avenida Valera rights, General utility easement rights)
- Reestablish horizontal control and establish boundaries and survey monumentation.
- 1x plat and legal for new permanent easement

75% Design PS&E

- General Sheets (5x sheets)
- Civil and District General Notes (2x sheets)
- Horizontal control plan (1x sheets)
- Plan and Profiles Civil sheets (3x)
- Pipeline abandonment Civil sheets (1x)
- Draft civil details for slope protection and stabilization and deep excavation (1 sheet)
- Draft civil details for pipeline abandonment using cement slurry and reinforced concrete plugs. There shall be no disturbance of San Marcos Creek (1 sheet)
- Draft technical specifications
- 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)
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
  - Front Ends & Division "00" Documents (Bidding Requirements, Contract Forms, and Conditions of the Contract)
  - Engineering Services During Construction
  - City of Carlsbad Encroachment Permit or other permits
  - Printed hard copies of deliverables
  - Hydraulic modeling
  - Topographical survey services
  - 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 extended a short distance to another existing sewer facility; within a well-defined and contiguous area, and is occurring within paved roads and under a pre-disturbed and landscaped slope, 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)	March 14th, 2024
75% Design & Subconsultant Field Services	May 15th, 2024
100% Design & Final Geotech Report	June 15th, 2024
Bid Documents[2]	July 15th, 2024

[1] Assumes 10 day reviews by Client

[2] Assumes that District will procure permanent easement prior to issuance of Bid Documents. The schedule required to do so is unknown at this time, and the expected Bid Date may vary at the Districts discretion.

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	$2077
2	Final Design	$88,818
3	Bid Documents and Bidding Support	$8867
	Project Total Budget	**$99,762**

ATTACHMENTS

Attached to this Scope for reference are the following:

A	Fee Basis Spreadsheet
B	
C	

Water Works Engineers Fee Estimate

Client	Leucadia Wastewater District
Project	22-038 San Marcos Creek Crossing Diversion Project
Task Order No	#6
Prepared by	Tim Lewis, Project Manager
Date	2/28/2024

Hours and Fee

					Subtask 1		Subtask 2						Subtask 3			
				Year	2024		2024		2024		2024		2024		2024	
					Project Management and Administration		Field Work and Preliminary Engineering		75% Design		100% Design		Bidding Documents		Bidding Support	
Water Works Engineers			2024		hrs	fee	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				4	$590	40	$5,899	20	$2,949	10	$1,475	6	$885
E2	Associate Engineer		$180.35				4	$721	60	$10,821	25	$4,509	10	$1,804	10	$1,804
E3	Project Engineer		$202.63		5	$1,013	4	$811	16	$3,242	16	$3,242	8	$1,621	4	$811
E4	Senior Project Engineer / Manager		$234.46						2	$469	4	$938	2	$469		
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						20	$1,994	12	$1,197				
T2	CADD Tech 2		$133.67				8	$1,069	40	$5,347	4	$535				
T3	CADD Tech 3		$162.32						10	$1,623	2	$325				
Expenses																
	WWE Expenses							$500								
Subconsultants																
			Lump Sum													
	Bajada Geosciences (geotechnical)							$16,600								
	C-Below (potholing)							$7,470								
	Calvada (surveying and easement support)							$14,100								
Subconsultant/Expense Markup			10%			$0		$3,867		$0		$0		$0		$0
				Subtask Totals	*12*	*$2,077*	*20*	*$45,728*	*188*	*$29,395*	*83*	*$13,694*	*30*	*$5,368*	*20*	*$3,499*

Base Project Total	
Hours	Fee
353	$99,762

$88,818

$8,867