



OLYMPIC VALLEY PUBLIC SERVICE DISTRICT



Sewer System Rehabilitation Project

DATE: January 26, 2021
TO: District Board Members
FROM: Dave Hunt, District Engineer
SUBJECT: Sewer System Rehabilitation Project – Engineering Professional Services Farr West Engineering

BACKGROUND: The District is in the midst of completing the most comprehensive condition evaluation of the sewer system in years. The process included a condition and risk assessment performed by District engineering staff and will culminate with the preparation of a Basis of Design Report (BDR) by Farr West Engineering (FWE) that will memorialize the condition and risk assessment, as well as identify a capital replacement project(s) for sewer system rehabilitation/replacement. This evaluation includes the entire sewer system, including pipelines, manholes, and District-owned sewer laterals.

District engineering staff has performed a lion's share of the work on this project to date, including the condition assessment and risk evaluation. The condition assessment included review of closed-circuit television inspection (CCTV) data from 2013-2020. The CCTV work was performed by Mountain Pipeline and Hoffman Southwest Corp. in accordance with National Association of Sewer Service Companies (NASSCO) Pipeline Assessment and Certification Program (PACP) and Lateral Assessment Certification Program (LACP) standards. In 2018, the District sent our Junior Engineer to a week-long NASSCO training class to become certified in the assessment of sanitary sewer pipelines, laterals, and manholes. Staff reviewed hundreds of CCTV video inspections and condition rating reports and compiled the results in a database that reflected accurate overall condition scores on every sewer main and lateral that had CCTV data. Staff and our GIS consultant worked to reconcile GIS data on our sewer assets and to update the GIS database to include the CCTV records and condition scores.

Staff also initiated a manhole inspection program in 2018 to assess the condition of critical manholes in the system. Using NASSCO Manhole Assessment and Certification Program (MACP) standards, engineering staff, with assistance from the Operations Department, identified key manholes in the system for inspection. More than 115 manholes were inspected by the Junior Engineer in

2018, and a condition evaluation of these manholes was performed in 2019. This data was subsequently integrated into the GIS database.

Following completion of the condition assessment, engineering staff performed a risk assessment, developing risk categories and a risk scoring system. The risk assessment utilizes the likelihood and consequence of failure of assets. Likelihood relates to the potential for failure, while consequence relates to the resulting impact of failure.

The next step in the process will be preparation of a BDR, incorporating the condition and risk assessment performed by engineering staff to facilitate development of necessary rehabilitation and/or replacement needs for the District's sewer assets. The BDR will ultimately define a capital replacement project(s) and accurately inform our 10-year Sewer Capital Replacement Plan budget.

DISCUSSION: Staff is proposing to execute a Professional Service Agreement with FWE to prepare the BDR and subsequent design documents for the recommended project(s). We are recommending FWE as they have recent and relevant experience in sewer system condition evaluations and design, including completing projects very similar to the District's project for Tahoe City Public Utilities District and Lyon County Utilities.

The BDR will provide a written summary of the condition and risk assessments performed by District staff and identify sewer mains, laterals, and manholes that require rehabilitation or replacement, based on evaluation of that data. The BDR will also provide a discussion of rehabilitation and replacement techniques and the criteria to be used to determine which techniques will be used for the capital replacement project(s). It is anticipated that the construction work will primarily consist of in-situ rehabilitation using some form of cured in place pipe liner (CIPP) for sewer mains and laterals. Open excavation will likely be limited to addressing substantial sags in sewer mains. Manhole treatment options will likely include in-situ rehabilitation using cementitious and/or epoxy-based techniques, with open excavation required for only those manholes that require complete replacement. The BDR will also include cost estimates for the proposed project(s) as well as a recommended schedule for the improvements.

After completing the BDR, FWE will prepare ready-to-bid design plans and specifications for the project(s) and assist during bidding.

The proposal prepared by FWE also includes a task entitled Owner Directed Service, which serves as a contingency to address unforeseen work not outlined in the proposal. This is primarily to address potential additional design costs based on the outcome of the BDR and recommended project(s). For instance, if the BDR identifies a significant amount of open excavation replacements for sewer mains and manholes, then additional design drawings and specifications may be required.

- ALTERNATIVES:**
1. Approve the proposal from Farr West Engineering for professional engineering services for the Sewer System Rehabilitation Project in an amount not to exceed \$58,200.
 2. Do not approve the proposal from Farr West Engineering for professional engineering services for the Sewer System Rehabilitation Project.

FISCAL/RESOURCE IMPACTS: The Sewer System Rehabilitation Project will be funded through the Sewer FARF. Based on preliminary evaluations, the total project cost is estimated to be approximately \$1,250,000, which includes construction costs and consultant costs associated with planning, design, and support during construction.

RECOMMENDATIONS: Staff recommends approval of the proposal from Farr West Engineering for professional engineering services and recommends the General Manager be authorized to execute a Professional Services Agreement with Farr West Engineering in an amount not to exceed \$58,200.

ATTACHMENTS: Farr West Engineering – Scope of Work Sewer System Rehabilitation Project Basis of Design Report and Design Documents (January 2021)

DATE PREPARED: January 20, 2021

EXHIBIT A SCOPE OF WORK

Olympic Valley Public Service District Sewer System Rehabilitation Project Basis of Design Report and Design Documents

INTRODUCTION

Olympic Valley Public Service District (the District) has requested Farr West Engineering (Farr West) to provide a scope of work (SOW) to prepare a Basis of Design Memorandum, design plans, and specifications for the Project. District staff recently completed a comprehensive condition and risk assessment of the entire sewer collection system based on CCTV and field inspection data. Farr West will utilize the efforts performed by the District to prepare a summary Basis of Design Report to present the current state of the sewer collection system. Through this Basis of Design Report, a recommended rehabilitation project will be identified and recommended, which Farr West will then prepare a detailed design and assist the District through project bidding for construction to occur in Fiscal Year 22.

The phase and task breakdown for the project is designated as follows:

Design Services

- Task 1 – Project Management
- Task 2 – Basis of Design Report
- Task 3 – Detailed Design
- Task 4 – Bidding Support
- Task 5 – Owner Directed Services

DESIGN SERVICES

Task 1 – Project Management

Objective

To plan, organize, direct, control, and communicate all relevant activities set forth in this Scope of Work within the approved budget and schedule.

Approach

Farr West will routinely review project progress and communicate project status on a regular basis. Communication will be through email and telephone between the District and Farr West staff. This task will include the following activities:

- Project administration includes cost control, monthly invoicing, filing, resource allocation, and routine communications.
- Team coordination, including conference calls and internal meetings.
- Monitoring changes to the scope, budget, or schedule and developing change management strategies with the District.

Deliverables

The following deliverables will be submitted under this task:

- Project schedule
- Monthly invoices

Assumptions

The following assumptions apply:

- Project-related issues will be identified, communicated, and resolved.

Task 2 – Basis of Design Report

Objective

Utilize the condition and risk assessment performed by District staff to identify necessary rehabilitation/replacement of District owned sewer pipes and manholes. The BDR will include a summary of the condition and risk assessment, and recommended project, including mapping, cost estimates, and scheduling recommendations for the proposed project.

Approach

This task will include the following activities:

- Condition Assessment
 - Provide a written summary, with associated exhibits, of the condition and risk assessment performed by the District. Also focused review of inspection data to determine mitigation measures for pipelines with sags and other structural failures and manholes with structural deficiencies.
 - Collect and perform a quality control review of the PACP scoring of the sewer main CCTV and MACP scoring of the sewer manholes, performed by the District.
 - Perform subsequent, focused review of all sewer mains experiencing sags to determine mitigation measures, and manholes to determine mitigation and minor structural mitigation measures.
 - Update existing GIS mapping based on additional review of condition data.
 - Collect information from District staff performed tasks: sewer lateral reviews, summary of results, VSVSP impacts and changes to the District's CRP.
- Risk Assessment
 - Summarize the risk assessment conducted by the District and includes appropriate exhibits.
 - Organize and summarize the consequence and likelihood categories and weighting factors provided by the District.
- Recommended Project
 - Develop a recommended rehabilitation project based on the condition and risk assessments, and further evaluation of inspection data.

- Prepare a draft Basis of Design Report. The BDR will include details of the condition and risk assessments, evaluation of condition and risk data to define the mains and manholes that require attention, discussion of rehabilitation/replacement techniques, inclusion of criteria to determine which techniques will be used for the design project, provide exhibits showing the spatial location of improvements, planning level opinion of probable costs, and recommended schedule of improvements.
- Hold a meeting with the District to review draft review comments.
- Prepare a final draft Basis of Design Report.

Deliverables

The following deliverables will be submitted under this task:

- Draft Basis of Design Report
- Final Basis of Design Report

Assumptions

The following assumptions apply:

- One (1) meeting will be held at Farr West’s office, or virtually, with the District staff to review the draft Basis of Design Report.

Task 3 – Detailed Design

Objective

Assemble detailed design plans and specifications for the sewer collection system rehabilitation project identified in the Basis of Design Report.

Approach

This task will include the following activities:

- Preparation of 90% design plans, specifications, and opinion of probable cost.
- Design review meeting with the District Staff.
- Preparation of 100% design plans, specifications, and opinion of probable cost.

Deliverables

The following deliverables will be submitted under this task:

- 90% design plans, specifications, and opinion of probable cost, via electronic submission.
- 100% design plans, specifications, and opinion of probable cost, via electronic submission.

Assumptions

The following assumptions apply:

- Proposed project design assumes rehabilitation methods (CIPP of mains, and coating of manholes), two (2) manhole replacements, and four (4) plan and profile sheets for open excavation design. Associated details will also be included.
- One (1) design review meeting with District Staff via virtual platform or at Farr West’s office.
- Specifications will be in EJCDC and CSI format. The District will complete Division 0 contract (“front-end”) components of specifications.
- Not included within this scope of work:
 - All permitting related efforts and fees to be completed by the District.
 - Hydraulic modeling and analysis.
 - Design elements not previously outlined in assumptions.
- One (1) meeting will be held at Farr West’s office, or virtually, with the District staff to review the draft Basis of Design Report.

Task 4 – Bidding Support

Objective

This task will include related responsibilities to be performed during the bidding phase to support the District.

Approach

This task will include the following activities:

- Identify all applicable dates required for advertisement, bidding, and award of the Project’s contract.
- Farr West will advertise the Project for bidding electronically through its online Bid Room, put notices in local plan rooms, and maintain a plan holders list. Plans and specifications will be available electronically only.
- The District will provide a Project advertisement to local newspapers, any other mandated advertisement requirement, and be responsible for all associated fees.
- Farr West will organize and conduct the pre-bid conference performed virtually.
- We will assist the District in answering contractors’ questions, RFIs, and phone calls regarding the Project.
- Bid opening will occur at the District’s office. The District will provide Farr West bid information.
- Farr West will prepare bid tabulation and will make a recommendation to the District to award the contract to the lowest responsible and responsive bidder.
- Attend District Board Meeting to support bid recommendation for award.

Deliverables

The following deliverables will be submitted under this task:

- Bid tabulation.

Assumptions

The following assumptions apply:

- The District to provide bid solicitation requirements and associated fees.
- Two (2) addenda
- Farr West to organize pre-bid meeting via virtual platform.
- Bid opening performed at the District's office without Farr West attendance.
- Bid awarding, pre-construction, and construction efforts are not included in this scope of work.

Task 5 – Owner Directed Services

Objective

Owner Directed Services task will account for project work items that are unforeseen, nor outlined within this scope of work. Specifically, it will address contingency for additional design plans based on the outcome of the Basis of Design Report and allow the District to incorporate additional design elements. Labor efforts will not be charged to this task unless authorized in writing by the District.

**EXHIBIT B
SCHEDULE**

Notice to Proceed: **January 2021**

Basis of Design Report: **March 2021**

Detailed Design: **March 2021**

Bidding: **April 2021**

**EXHIBIT C
BUDGET**

Task 1	Project Management	\$2,620
Task 2	Basis of Design Report	\$27,807
Task 3	Detailed Design	\$16,816
Task 4	Bidding Support	\$3,378
Task 5	Owner Directed Services	\$7,500
	TOTAL:	\$58,121

**EXHIBIT D
ENGINEER'S RATE SCHEDULE**

Title	Hourly Rate	Title	Hourly Rate
Principal Engineer	\$172	Building Inspector II	\$70
Senior Engineer II	\$165	Building Inspector I	\$65
Senior Engineer	\$150	Designer III	\$120
Engineer IV	\$140	Designer II	\$110
Engineer III	\$130	Designer I	\$100
Engineer II	\$120	GIS Analyst II	\$140
Engineer I	\$110	GIS Analyst I	\$120
Electrical Engineer in Training II	\$110	GIS Specialist	\$100
Engineer in Training II	\$100	GIS Technician	\$87
Engineer in Training I	\$93	Water Rights Specialist III	\$150
Senior Hydrogeologist	\$160	Water Rights Specialist II	\$130
Hydrogeologist II	\$115	Water Rights Specialist I	\$110
Hydrogeologist I	\$100	Water Rights Technician III	\$105
Electrical Engineer	\$150	Water Rights Technician II	\$95
Construction Inspector III	\$115	Water Rights Technician I	\$75
Construction Inspector II	\$110	Regulatory & Env. Specialist	\$100
Construction Inspector I	\$95	Professional Surveyor	\$140
Project Assistant	\$93	Survey Technician III	\$115
Admin IV	\$100	Survey Technician II	\$100
Admin III	\$90	Survey Technician I	\$80
Admin II	\$80	1 Man Survey Crew	\$140
Admin I	\$65	2 Man Survey Crew	\$220
Intern	\$45	Utility Operator	\$120

Other Fees and Charges:

1. All direct project expenses, including subconsultants, will be billed at actual cost plus 15%.
2. An overtime surcharge of 25% will be applied to the hourly rates of non-salaried employees for authorized overtime work.
3. Different survey and construction inspection labor rates will apply on prevailing wage projects. Rates for prevailing wage projects will be provided on a case-by-case basis.

**Olympic Valley PSD
Sewer System Rehabilitation Project Basis of Design Report and Design Documents
Engineering Fee Estimate**

	Principal Civil Engineer	Engineer III -	EIT II	Project Assistant	Administrator II -	GIS Analyst II -	Total Labor		TOTAL
2021 Rate (\$/hr)	\$172	\$130	\$100	\$93	\$80	\$140	Hours	(\$)	(\$)
1.0 Project Management									
Project Coordination and Management	4	2			4		10	\$1,268	\$1,268
Monthly Reports/Progress Billings	4				4		8	\$1,008	\$1,008
Attend January 26, 2021 Board Meeting (Virtually)	2						2	\$344	\$344
Subtotal	10	2			8		20	\$2,620	\$2,620
2.0 Basis of Design Report									
Condition and Risk Assessment									
Draft Preparation of Condition and Risk Assessments, Spreadsheets, and Exhibits	2	58				10	70	\$9,198	\$9,198
Draft Preparation of BDR, Exhibits, and Presentation to OVPSD	2	8			2	10	22	\$2,879	\$2,879
Draft Deliverable, Review Meeting with OVPSD, and Conclusion Revisions	4	30				2	36	\$4,798	\$4,798
Basis of Design Report Completion									
Video Review of Pipes with Sags and Identify Rehab Methods	2	8					10	\$1,384	\$1,384
Review Manhole Field Inspections and Identify Rehab Methods	2	8					10	\$1,384	\$1,384
Revise Draft Basis of Design Report	4	16				8	28	\$3,888	\$3,888
Opinion of Probable Cost and Schedule Development	1	2					3	\$432	\$432
Correspondence with the District (Virtually)	1	2					3	\$432	\$432
Final Basis of Design Report and Proposed Rehabilitation Project	4	10				4	18	\$2,548	\$2,548
District Staff Efforts (a)									
Sewer Lateral Video Review and Prepare Summary of Results	1	2					3	\$432	\$432
Identify Village Specific Potential Projects and Impact/Changes to OVPSD CRP	1	2					3	\$432	\$432
Field Staff to Provide Comment to Proposed Project									
Subtotal	24	146			2	34	205	\$27,807	\$27,807
3.0 Detailed Design									
90% Design Plans, Specifications, and Opinion of Probable Cost	4	48	54				106	\$12,328	\$12,328
Review Meeting with District Staff to Review Comments (Virtually)	2	4					6	\$864	\$864
100% Design Plans, Specifications, and Opinion of Probable Cost	2	16	12				30	\$3,624	\$3,624
Subtotal	8	68	66				142	\$16,816	\$16,816
4.0 Bidding Support									
Organize and Conduct Pre-Bid Meeting	2	6		2			10	\$1,310	\$1,310
RFI's, Questions During Bidding, Addendum (b)	2	4		2			8	\$1,050	\$1,050
Bid Opening (District to perform)		1					1	\$130	\$130
Bid Review, Tabulation, and Recommendation	1			4			5	\$544	\$544
Attend one (1) Board Meeting with Project Recommendations on Agenda	2						2	\$344	\$344
Subtotal	7	11		8			26	\$3,378	\$3,378
5.0 Owner Directed Services									
Owner Directed Services									\$7,500
Subtotal									\$7,500
TOTAL	49	227	66	8	10	34	393	\$50,621	\$58,121

(a) Indicates effort completed by District Staff and provided to Farr West

(b) Assumes two (2) addendum