



November 6, 2025

BCC Agenda Date/Item: _____

Board of County Commissioners
Acting as the governing body of Water Environment Services
Clackamas County

Approval of a Contract Amendment with Jacobs Engineering Group for updated hydraulic modeling. Amendment Value is \$132,248 and no time increase. Total Contract Value is \$605,009 for 3 years. Funding is through WES Sanitary Sewer Construction Fund. No County General Funds are involved.

Previous Board Action/Review	Original Contract Approved – August 11, 2022. Amendment #1 Approved – May 23, 2024.		
Performance Clackamas	1. Strategically plan and execute capital projects to meet the growth, reliability, and regulatory needs of our service area at the lowest life cycle cost. 2. This project supports the County's Strategic Priority of Strong Infrastructure.		
Counsel Review	Yes	Procurement Review	Yes
Contact Person	Jeff Stallard	Contact Phone	503-742-4694

EXECUTIVE SUMMARY: WES utilizes a hydraulic model that was built and calibrated in 2016 for master plans and CIP development. The hydraulic model is a tool used to predict future flows and determine the need for capacity upgrades within the sanitary sewer collection system. It is also used to track Inflow & Infiltration rates within the collection system which helps determine the effectiveness of I&I removal projects.

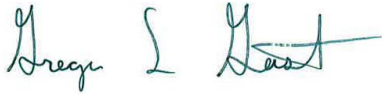
WES has an existing contract with Jacobs previously approved in 2022. The contract has allowed for the hydraulic model to be updated and calibrated on regular intervals to ensure that the model reflects current conditions in the sanitary sewer collection system and accurately predicts future conditions. An area of need in WES's collection system is the Bolton Force Main. Recently, results from infrastructure assessments have shown the need to define improvement options for the force main. This amendment will allow for hydraulic modeling and analysis to evaluate combinations of improvement options, including the potential use of other pump stations serving West Linn.

RECOMMENDATION: Staff recommends that the Board of County Commissioners of Clackamas County, acting as the

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governing body of Water Environment Services, approve Amendment #2 for Contract #6837 with Jacobs Engineering Group, Inc. for updated hydraulic modeling.

Respectfully submitted,

A handwritten signature in blue ink, appearing to read "Greg Geist", with a long horizontal flourish extending to the right.

Greg Geist
Director, WES

Attachment: Amendment #2 for Contract #6837 with Jacobs Engineering Group, Inc.

AMENDMENT #2
TO THE CONTRACT DOCUMENTS WITH JACOBS ENGINEERING GROUP, INC. FOR
HYDRAULIC MODEL UPDATE
Contract #6837

This Amendment #2 is entered into between **Jacobs Engineering Group Inc.** ("Contractor") and Water Environment Services ("District") and shall become part of the Contract documents entered into between both parties on **August 11, 2022** ("Contract").

The Purpose of this Amendment #2 is to make the following changes to the Contract:

1. ARTICLE I, Section 2. **Scope of Work** is hereby amended as follows:
District has authorized an increase to the Scope of Work for Contractor to provide additional modeling and alternatives analysis support to determine a preferred alternative to address the failing Bolton Force Main and provide service to the City of West Linn. The additional Scope of Work is included as Exhibit "A" to this Amendment #2 and is hereby attached and included by reference.
2. ARTICLE I, Section 3. **Consideration** is hereby amended as follows:
In consideration for Contractor performing the additional work described in Exhibit A, District agrees to increase compensation to Contractor by an amount not to exceed \$132,248.00. Consideration rates are on a time and materials basis in accordance with the rates and costs specified in Exhibit A. The total Contract compensation shall next exceed \$605,009.00.

ORIGINAL CONTRACT	\$ 299,636.00
AMENDMENT #1	\$ 173,125.00
<u>AMENDMENT #2</u>	<u>\$ 132,248.00</u>
TOTAL AMENDED CONTRACT	\$ 605,009.00

Except as expressly amended above, all other terms and conditions of the Contract shall remain in full force and effect. By signature below, the parties agree to this Amendment #2, effective upon the date of the last signature below.

Jacobs Engineering Group Inc.

 10/21/25

Authorized Signature Date

Alan Chang, Designated Manager

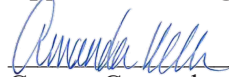
Printed Name

Water Environment Services

Chair Date

Recording Secretary

Approved for Legal Sufficiency:

 10/21/2025

County Counsel Date

Exhibit A
Scope of Work Increase

**EXHIBIT A
PERSONAL SERVICES CONTRACT FOR**

**2nd AMENDMENT TO ENGINEERING SERVICES FOR
HYDRAULIC MODEL UPDATES AND ANNUAL SANITARY SEWER CAPITAL PROGRAM REVIEW
(CLACKAMAS WES SANITARY SEWER MASTER PLAN ADDENDUM)**

SCOPE OF WORK

BACKGROUND

Clackamas Water Environment Services (WES) completed a Sanitary Sewer System Master Plan (SSMP) assisted by Jacobs (Consultant). Currently Jacobs is contracted to provide hydraulic modeling support and sanitary sewer capital program review on an annual basis. The contract for hydraulic modeling is now being amended to include additional modeling and alternatives analysis support for routing, pump station, and pipeline alternatives serving the City of West Linn, Oregon.

WES owns and operates pump stations and force mains which pump under and over the Willamette River to convey flow from the City of West Linn to the Willamette Interceptor and the TriCity Water Resource Recovery Facility (WRRF). Recent condition assessment work has shown that the Bolton Force Main has a 10th of an inch of wall thickness remaining in several critical sections. WES is considering options for force main replacement. This scope of work includes an analysis of potential routing alternatives for the force main replacement, pump station service area adjustments (re-routing) associated sizing and system hydraulics (based on hydraulic modeling), cost analysis, and planning level feasibility review of each alternative.

SCOPE OF SERVICES

TASK 1 – Project Management (Existing Task Amended)

Objectives: Provide management and communication required to prepare and deliver the West Linn Alternatives Analysis. Consultant will complete the following:

- Conduct project kick-off meeting for the West Linn alternatives analysis.
- Additional project management for increased scope.
- Oversee, coordinate, and provide direction to the Project team to meet schedule requirements.
- Monitor staff availability and workload and adjust as necessary to assure availability.
- Track and forecast Project costs to remain within the budget. Track out of scope work requests.
- Prepare monthly progress reports and invoices (single invoice for contract).
- Participate in regular coordination meetings with District Project Manager (single coordination meeting monthly for contract).
- Coordinate quality assurance and quality control (QA/QC) activities.

Deliverables: Monthly invoices and progress reports (up to 8 months, single invoice for contract) and project schedule.

Assumptions: One coordination meeting per month (up to 8 virtual meetings of one-hour duration, single

coordination for contract). One in-person or virtual kick-off meeting, per District preference. Level of effort has been limited acknowledging that invoicing and project coordination meetings will be combined for the entire contract including the amended tasks documented in this scope of work.

TASK 10 – Develop Improvement Options for the Alternatives Analysis

Objectives: Define improvement options for the force main replacement, routing, and pump station service area realignment. Consultant will complete the following:

- Review documentation for force main condition assessment (previous work performed by Consultant).
- Identify improvement options in the categories below and refine options with WES staff.
 - Re-routing of West Linn services to multiple pump stations based on remaining and improved capacity of each pump station including the Willamette, Bolton, and River Street Pump Stations. Re-routing will consider options to adjust existing passive diversions and also understand if new diversions are feasible to minimize or maximize flow to each pump station and to the Arch Bridge and Willamette Interceptor.
 - Force Main replacement routing options to cross the Willamette River including three alignments (existing, route through Gladstone, and a third option to be determined).
 - Pump station capacity options (operational efficiencies with existing pump or pump replacements) to minimize cost and operational requirements to serve West Linn and Gladstone (Gladstone routing option).
 - Varied discharge locations into the Willamette Interceptor based on updated available capacity in the interceptor due to rainfall derived infiltration and inflow (RDI/I) reduction work in the City of Oregon City and the City of West Linn.
 - For comparison, rehabilitation option for the force main assuming reduced capacity for the Bolton Pump Station and reliance on greater opportunities for re-routing/diversion.
 - Sensitivity of options and cost to targeted RDI/I reduction from the SSMP or limited additional RDI/I reduction.
- Pre-screen options with WES staff including analysis to define:
 - Feasibility of each force main route (trenchless construction).
 - Excess capacity available in each pump station.
 - Diversion opportunities.
 - Remaining excess capacity in the West Linn Interceptor, Arch Bridge Crossing, and Willamette Interceptor for existing updated conditions and range of RDI/I impacts.

Assumptions: Conduct up to two (2) meetings (1 virtual, 1 in-person) to discuss and vet improvement options.

Deliverables: PowerPoint presentations from meetings with meeting notes.

TASK 11 – Perform Alternatives Analysis and Select Preferred Alternative

Objectives: Perform the alternatives analysis using hydraulic modeling software and optimization engine. The analysis will consider combinations of improvement options from Task 10 that will be combined into dozens of unique alternatives in Task 11. Consultant will complete the following:

- Identify criteria for selecting preferred improvements from the options including cost and non-cost factors.
 - Non-cost factors will focus on operations and maintenance (O&M) trade-offs, resiliency and reliability, construction feasibility and risk (river crossing specific), easement and property coordination, environmental permitting requirements, agency coordination for highway or rail crossing, beneficial opportunities with other infrastructure projects, and any phasing/sequencing benefits.
 - Cost criteria will include capital cost analysis and associated phasing of improvement options (cost distribution over time if applicable).
 - Cost criteria will also include life cycle cost analysis which considers the replacement cycle of assets based on varied life spans, annual O&M costs, and annual energy costs.
- Generate non-cost scoring of options to assemble into alternatives (combination of multiple options).
- Apply unit costs for calculating capital and life cycle costs to improvement options (Class 5 cost estimates).
- Integrate discounts for remaining useful life into unit costs for aging and failing infrastructure.
- Program improvement options into the hydraulic model/optimization software.
- Run optimization with multiple objectives including low capital costs, low life cycle costs, and max non-cost scoring.
- Present results of multi-objective optimization and facilitate preferred alternative selection where alternatives represent high non-cost scoring objective and low to moderate cost objective. Discuss trade-offs during the facilitation between cost and non-cost factors to support preferred alternative selection.

Assumptions: Conduct up to three (3) meetings (1 virtual, 2 in person) to generate improvement options scoring, present results of analysis, and facilitate selection of a preferred alternative.

Deliverables: PowerPoint presentations from meetings with meeting notes. Draft and final technical memorandum documenting the improvement analysis, preferred alternative selection, and recommendations.

EXHIBIT B – BUDGET - DETAIL

Task/Subtask		Project Manager, Technical Lead	Conveyance Engineer/Modeling	Conveyance Engineer/Modeling	Conveyance Engineer/Condition (Advisor)	Total Labor Hours	2025	2026	Total Labor Hours	Total Labor \$	Expense Detail	Total Expenses \$	Total Fee (Labor + Subcontractor + Expense) \$
1	1												
Task 1 - Project Management													
1	1	Project Kick-off											
1	1		Shad Roundy	Sven MacAller	Ezekiel Harrison	Dan Buonadonna	8.0	0.0		\$1,704			\$1,704
1	1	Project Management, Coordination, Staffing, Invoices	16				6.0	10.0		\$4,160			\$4,160
1	1	QA/QC Management	4				1.5	2.5		\$1,040			\$1,040
Task10 - Develop Improvement Options for the Alternative Analysis													
10	10	Review force main condition assessment work	2	4			6.0	0.0		\$1,250			\$1,250
10	10	Develop improvement options (multiple categories)	8	32	32	8	80.0	0.0		\$14,776			\$14,776
10	10	Pre-screen options	16	36	36	8	96.0	0.0		\$18,183			\$18,183
10	10	Conduct option review meetings	8	8	8	4	14.0	14.0		\$5,814	1	\$20	\$5,834
Task 11 - Perform Alternatives Analysis and Select Preferred Alternative													
11	11	Identify criteria for non-cost scoring	4	8			0.0	12.0		\$2,544			\$2,544
11	11	Facilitate non-cost options scoring/develop matrix	8	24	16		0.0	48.0		\$9,051			\$9,051
11	11	Develop cost basis	4	8	8		0.0	20.0		\$3,774			\$3,774
11	11	Program improvement options (to model)	8	36	36		0.0	80.0		\$14,381			\$14,381
11	11	Evaluate improvement alternatives (optimization of options)	16	36	36		0.0	88.0		\$16,461			\$16,461
11	11	Refine improvement alternatives	8	24	24		0.0	56.0		\$10,281			\$10,281
11	11	Present alternatives, facilitate decision	8	8			0.0	16.0		\$3,584			\$3,584
11	11	Conduct meetings	8	8		8	0.0	24.0		\$5,664	2	\$40	\$5,704
11	11	Draft Technical Memorandum	8	40	40		0.0	88.0		\$15,748			\$15,748
11	11	Final Technical Memorandum	4	8	8		0.0	20.0		\$3,774			\$3,774
Total Hours or Cost			132	282	246	30	212	479		\$132,188		\$60	\$132,248

[illegible]