

WHATCOM COUNTY CONTRACT INFORMATION SHEET

Whatcom County Contract No.
202504024

Originating Department:	Public Works
Division/Program: (i.e. Dept. Division and Program)	River & Flood / 907550 (Flood Hazard Reduction)
Contract or Grant Administrator:	Julie Anderson, River & Flood Manager
Contractor's / Agency Name:	University of Washington

Is this a New Contract? If not, is this an Amendment or Renewal to an Existing Contract? Yes ☐ No ☒ Yes ☐ No ☒
 Yes ☒ No ☐ If Amendment or Renewal, (per WCC 3.08.100 (a)) Original Contract #: _____

Does contract require Council Approval? Yes ☒ No ☐ If No, include WCC: _____
 Already approved? Council Approved Date: _____ (Exclusions see: Whatcom County Codes 3.06.010, 3.08.090 and 3.08.100)

Is this a grant agreement? Yes ☐ No ☒ If yes, grantor agency contract number(s): _____ CFDA#: _____

Is this contract grant funded? Yes ☒ No ☐ If yes, Whatcom County grant contract number(s): '23-25 Proviso

Is this contract the result of a RFP or Bid process? Contract
 Yes ☐ No ☒ If yes, RFP and Bid number(s): _____ Cost Center: 19082247

Is this agreement excluded from E-Verify? No ☐ Yes ☒ If no, include Attachment D Contractor Declaration form.

If YES, indicate exclusion(s) below:

<input type="checkbox"/> Professional services agreement for certified/licensed professional.	<input type="checkbox"/> Goods and services provided due to an emergency
<input type="checkbox"/> Contract work is for less than \$100,000.	<input type="checkbox"/> Contract for Commercial off the shelf items (COTS).
<input type="checkbox"/> Contract work is for less than 120 days.	<input type="checkbox"/> Work related subcontract less than \$25,000.
<input checked="" type="checkbox"/> Interlocal Agreement (between Governments).	<input type="checkbox"/> Public Works - Local Agency/Federally Funded FHWA.

Contract Amount:(sum of original contract amount and any prior amendments): \$ 114,000 This Amendment Amount: \$ _____ Total Amended Amount: \$ _____	Council approval required for; all property leases, contracts or bid awards exceeding \$40,000 , and professional service contract amendments that have an increase greater than \$10,000 or 10% of contract amount, whichever is greater, except when: <ol style="list-style-type: none"> 1. Exercising an option contained in a contract previously approved by the council. 2. Contract is for design, construction, r-o-w acquisition, prof. services, or other capital costs approved by council in a capital budget appropriation ordinance. 3. Bid or award is for supplies. 4. Equipment is included in Exhibit "B" of the Budget Ordinance. 5. Contract is for manufacturer's technical support and hardware maintenance of electronic systems and/or technical support and software maintenance from the developer of proprietary software currently used by Whatcom County.
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Summary of Scope:

The University of Washington to provide a morphodynamic model of the Nooksack River to support the ongoing sediment work underway in the FLIP process.

Term of Contract: Not to exceed	Expiration Date: 6/30/2025
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Contract Routing:	1. Prepared by: Julie Anderson	Date: 4/1/2025
	2. Attorney signoff: Christopher Quinn	Date: 4/5/2025
	3. AS Finance reviewed: bbennett	Date: 4/9/2025
	4. IT reviewed (if IT related):	Date: _____
	5. Contractor signed:	Date: _____
	6. Executive contract review: <i>J. Anderson</i>	Date: 4.30.25
	7. Council approved, if necessary: AB2025-327	Date: 4/29/25
	8. Executive signed: <i>S. J. Anderson</i>	Date: 4.30.25
	9. Original to Council:	Date: _____

**WHATCOM COUNTY
PUBLIC WORKS DEPARTMENT**

**ELIZABETH KOSA
DIRECTOR**



River and Flood Division
322 N Commercial St.
Bellingham, WA 98225
Phone: 360-778-6230

MEMORANDUM

TO: The Honorable Members of the Whatcom County Flood Control Zone District Board of Supervisors

THROUGH: Elizabeth Kosa, Public Works Director *Eak*

FROM: Julie Anderson, River and Flood Manager *JMA*
Gary Stoyka, Natural Resources Manager *GS*

RE: University of Washington Interlocal Agreement for DELFT Sediment Modeling

DATE: April 1, 2025

Enclosed are two (2) originals of an Interlocal agreement (ILA) between the Whatcom County Flood Control Zone District (FCZD) and the University of Washington (UW) for your review and signature.

Requested Action

Public Works respectfully requests that the County Council, acting as the FCZD Board of Supervisors, enter into an interlocal agreement with the UW to assess the Nooksack River's morphodynamic response to potential channel and floodplain modifications, to better understand the sensitivity of the river's response to discharge magnitude and to support ongoing sediment work underway in the FLIP process.

Background and Purpose

Whatcom County is leading the Floodplain Integrated Planning (FLIP) Project to identify mitigation measures and update the 1999 Lower Nooksack River Comprehensive Flood Hazard Management Plan. Because sediment transport has been changing the dynamics of the flow split at Everson, the FCZD has retained consultants to evaluate the impacts to sediment movement associated with potential mitigation options. Some of the mitigation options being considered are focused on trying to restore a more natural flow of sediment near Everson to reduce the variability of the flows going to the Everson-Sumas overflow corridor and downstream to Bellingham Bay.

The state-of-the-art models used in the consulting practice are limited and only partially represent the natural process associated with sediment transport in gravel-bed rivers. The UW has developed a more sophisticated morphodynamic model of the Nooksack River that can represent river processes more comprehensively, but requires the use of supercomputers that limit the simulation timeframes. The FCZD requests assistance from the UW to utilize their model of the Nooksack to support the ongoing sediment work underway on the FLIP team.

Funding and Source

The proposed contract amount is \$114,000. The 2025 FCZD Budget has adequate budget authority for this work. This work is being funded through the current State Proviso through the Department of Ecology that supports the FLIP work.

Please contact Julie Anderson at extension 6258, if you have any questions or concerns regarding the terms of this Contract.

**2025 INTERLOCAL AGREEMENT BETWEEN
WHATCOM COUNTY FLOOD CONTROL ZONE DISTRICT AND
UNIVERSITY OF WASHINGTON FOR
DELFT-FM MODEL ASSESSMENT OF MORPHODYNAMIC RIVER RESPONSE**

This Interlocal AGREEMENT ("AGREEMENT") is between the University of Washington ("UW") and the Whatcom County Flood Control Zone District ("FCZD") as public agencies pursuant to the Interlocal Cooperation Act (RCW 39.34) for assessing the Nooksack River's morphodynamic response to potential channel and floodplain modifications and gain a better understanding of the sensitivity of the river's geomorphic response to discharge magnitude.

WHEREAS, Whatcom County is leading the Floodplain Integrated Planning (FLIP) Project to identify mitigation measures and update the 1999 Lower Nooksack River Comprehensive Flood Hazard Management Plan; and,

WHEREAS, ongoing sedimentation and sediment transport has been changing the dynamics of the flow split at Everson during significant flood events; and,

WHEREAS, some of the mitigation options being considered in the FLIP process are focused on trying to restore a more natural flow of sediment near Everson to reduce the variability of the flows going to the Everson-Sumas overflow corridor and downstream to Bellingham Bay; and

WHEREAS, the FCZD has retained consultants to assist in evaluating the anticipated impacts to sediment movement associated with potential mitigation options; and

WHEREAS, the state-of-the-art models used in the consulting practice are limited by their underlying assumptions and can only partially represent the natural process associated with sediment transport in gravel-bed rivers; and

WHEREAS, the UW has developed a more sophisticated morphodynamic model of the Nooksack River that can represent river processes more comprehensively but is very computation-heavy requiring use of supercomputers which limits the simulation timeframes; and

WHEREAS, the FCZD requests assistance from the UW in using their morphodynamic model of the Nooksack to support the ongoing sediment work underway in the FLIP process; and,

WHEREAS, the FCZD has the authority to utilize the services and expertise of other agencies to further efforts beneficial to the residents and citizens of Whatcom County; and,

WHEREAS, UW desires to provide such services to the FCZD.

NOW, THEREFORE, UW and the FCZD agree as follows:

- I. *Purpose:* The purpose of this AGREEMENT is to set the terms whereby the FCZD will make available funds to UW to implement a numerical model (Delft-FM) to assess the morphological response to potential changes, as described in Exhibit A attached hereto.
- II. *Administration:* No new or separate legal or administrative entity is created to administer the provisions of this AGREEMENT.
- III. *University of Washington Responsibilities:* UW hereby agrees to conduct the work described in Exhibit A attached hereto.
- IV. *FCZD Responsibilities:* The FCZD hereby agrees to reimburse UW, not to exceed the total budget amount allocated to UW as shown in Exhibit B attached hereto, for the costs of providing and performing the services stated.
- V. *Payment:* UW shall submit itemized invoices in a format approved by the FCZD in accordance with the requirements of Exhibit B. The FCZD will compensate UW for services rendered within thirty (30) days following receipt of an approved invoice, provided all other terms and conditions of the contract have been met and are certified as such by the Contract Administrator.
- VI. *Term:* This AGREEMENT shall be effective for services performed from January 1, 2025 through June 30, 2025.
- VII. *Responsible Persons:* The persons responsible for administration of this AGREEMENT shall be the Whatcom County Public Works (WCPW) Department Director and UW College of the Engineering Dean or their respective designees.
- VIII. *Treatment of Assets and Property:* No fixed assets or personal or real property will be jointly or cooperatively acquired, held, used, or disposed of pursuant to this AGREEMENT.
- IX. *Indemnification:* Each party agrees to be responsible and assume liability for its own wrongful and/or negligent acts or omissions or those of their officials, officers, agents, or employees to the fullest extent required by law, and further agree to save, indemnify, and hold the other party harmless from any such liability. It is further provided that no liability shall attach to the Parties by reason of entering into this AGREEMENT except as expressly provided herein.
- X. *Modifications:* This AGREEMENT may be changed, modified, amended or waived only by written AGREEMENT executed by the Parties hereto. Waiver or breach of any term or condition of this AGREEMENT shall not be considered a waiver of any prior or subsequent breach.
- XI. *Applicable Law:* In the performance of this AGREEMENT, it is mutually understood and agreed upon by the Parties hereto that this AGREEMENT shall be governed by the laws and regulations of the State of Washington and the federal government, both as to interpretation and performance. The venue of any action arising herefrom shall be in the Superior Court of the State of Washington in and for Whatcom County.

- XII. *Severability:* In the event any term or condition of this AGREEMENT or application thereof to any person or circumstance is held invalid, such invalidity shall not affect other terms, conditions, or applications of this AGREEMENT that can be given effect without the invalid term, condition, or application. To this end, the terms and conditions of this AGREEMENT are declared severable.
- XIII. *Entire Agreement:* This Agreement contains all the terms and conditions agreed upon by the Parties. All items incorporated herein by reference are attached. No other understandings, oral or otherwise, regarding the subject matter of this Agreement shall be deemed to exist or to bind any of the Parties hereto.
- XIV. *Performance:* The parties agree to satisfy all aspects of this AGREEMENT in a timely and professional manner. The UW shall notify the FCZD as soon as problems, delays, or adverse conditions become known that will materially impair its ability to meet the deliverables described in Exhibit A.
- XV. *Audit and Inspection:* The FCZD and UW shall maintain records pursuant to this AGREEMENT in accordance with generally accepted accounting principles and practices consistently applied. Records shall be subject at all reasonable times to inspection and audit and State auditor. The FCZD and UW shall preserve and make such records available to said parties until expiration of three (3) years from the date of final payment under this AGREEMENT.
- XVI. *Dispute Resolution:* The parties to this AGREEMENT shall first attempt to resolve disputes informally at the staff level. In the event that the dispute cannot be resolved at the staff level then representatives of each party with full settlement authority shall meet at a mutually agreeable time and place in Seattle, Washington within ten (10) business days of the date of the initial notice in order to exchange relevant information and perspectives, and attempt in good faith to resolve the dispute. If the dispute is not resolved by these negotiations, the matter will be submitted to a mutually agreeable and recognized nonbinding mediation service prior to initiating legal action. Any such mediation shall be conducted in Seattle, Washington and the cost of the mediation service shall be shared equally by the parties.
- XVII. *Rights and Remedies:* In no event shall a making by the FCZD of any payment to the UW constitute or be construed as a waiver by the FCZD of any breach of covenant or any default that may then exist on the part of the UW. The making of any such payment by the FCZD while any such breach or default shall exist shall in no way impair or prejudice any of the FCZD's rights, which are hereby expressly recognized, to recover payments or portions thereof, to which the UW has not entitled under this AGREEMENT, or where any payments were made by mistake, or to pursue any other remedy available to the FCZD in respect to breach or default of this AGREEMENT.

This AGREEMENT shall not relieve the FCZD or the UW of any obligation or responsibility imposed by law except that performance pursuant to this AGREEMENT may, where appropriate, be offered in satisfaction of an obligation or responsibility conveyed to the FCZD or the UW by law.

- XVIII. *Insurance Requirements: UW Self-Insurance.* UW hereby notifies the FCZD that as an agency of the State of Washington and in accordance with Washington law, UW maintains a self-insurance program pursuant to RCW§§28B.20.250, 28B.20.253, and 28B.20.255. Upon FCZD's request, UW will provide FCZD proof of insurance or loss coverage.

- XIX. *Miscellaneous:* No obligation in this AGREEMENT shall limit the UW in fulfilling its responsibilities otherwise defined by law. No obligation in this AGREEMENT shall limit the FCZD in fulfilling its responsibilities otherwise defined by law.
- XX. *Signatures:* The undersigned representatives accept the provisions of this AGREEMENT. This AGREEMENT shall be in effect when signed by both parties.

IN WITNESS WHEREOF, the parties have signed this Agreement this 30th day of April, 2025.

UNIVERSITY OF WASHINGTON

Carol Baker Digitally signed by Carol Baker
Date: 2025.03.28 13:21:46 -07'00' Carol Baker Grant and Contract Analyst March 28, 2028

Date

University of Washington
4333 Brooklyn Ave, NE Box 359472
Seattle, WA 98195

WHATCOM COUNTY FLOOD CONTROL ZONE DISTRICT

Recommended for Approval:

 4/30/2025
Elizabeth Kosa, Public Works Director Date

Approved as to form:

1s/ Christopher Quinn by K. Polka 4-29-25
Christopher Quinn, Chief Civil Deputy Prosecuting Attorney Date

Approved:

Accepted for Flood Control Zone District:

By: Satpal Singh Sidhu 4-30-25
Satpal Singh Sidhu, Whatcom County Executive Date

STATE OF WASHINGTON)
) ss
COUNTY OF WHATCOM)



On this 30th day of April, 2025, before me personally appeared Satpal Singh Sidhu, to me known to be the Executive of Whatcom County, who executed the above instrument and who acknowledged to me the act of signing and sealing thereof.


NOTARY PUBLIC in and for the State of Washington, residing at

Bellingham My commission expires 9-10-28

EXHIBIT A - SCOPE OF WORK

Objectives

The following outlines a scope of work for UW participation in sediment transport, morphodynamics and flood modeling in the Nooksack River. The central objectives of the work are to:

- Provide a calibrated Delft-FM modeling platform capable of predicting morphodynamic changes and their impacts on and response to flooding events in the Everson corridor of the Nooksack River.
- Improve integration of the Delft-FM model with other SWAG modeling efforts (HECRAS and MAST1D)
- Evaluate morphological change and morphological impacts on flooding for current conditions and proposed floodplain alterations

The work necessary to fully address the objectives above falls into two categories, which will be addressed in two phases. Phase 1 is the focus of the current scope of work. Phase 2 outlines future tasks that are considered to be important for this work, but are beyond the current scope and left for future work. They are included here for completeness.

Phase 1

Task 1: Model improvement and calibration. This task may include some or all of the following subtasks.

- Apply spatially variable erodibility and roughness to floodplain to improve prediction of morphological changes there.
- Validate using land use maps and 2015/2022 and 2022/2024 lidar differencing as guidance.
- Use 2021 high water marks and HECRAS2D simulated flood extent to refine roughness and bathymetry/topography.
- Compare along channel sediment transport patterns from event scale modeling to long term changes inferred from observations and MAST1D

Task 2: Scenarios testing. This task may include some or all of the following subtasks.

- Implement scenario-based approach focused on sensitivity to discharge magnitude.
- Conduct runs with example levee setback configurations
- Quantify morphodynamic change and changes to flooding in these scenarios

Task 3: Presentation and integration

- Initial presentation of results, discussion and feedback from SWAG and/or FLIP Steering Committee.

Phase 2:

- Field measurements and testing to quantify erodibility of floodplain and incorporation of this information into the Delft-FM model.
- Test with 2013/2015, 2022 and 2024 topobathy to evaluate sensitivity of results to morphological configuration.
- Conduct simulations of single and back-to-back potential events.
- Analyze model results to assess avulsion potential (initially quantified in terms of the fraction of Nooksack discharge diverted toward Sumas at Everson).

EXHIBIT B – COMPENSATION
DELFT –FM Model Assessment of Morphodynamic Response to Levee Setback

As consideration for services provided in Exhibit A, Scope of Work, the County agrees to compensate the contractor \$114,000.

Start Date: January 1, 2025

End date: June 30, 2025

Project duration is 6 months:

Compensation was determined as follows

- 6 months of postdoc salary (Wuming Ni)
- 1 month of faculty salary (Alex Horner-Devine)
- UW supercomputer resources (HYAK)

Funds will be dispersed in two increments of \$57,000 at the end of April and \$57,000 at the end of the county funded project.

Note: UW intends to leverage 3 months of postdoc salary from National Science Foundation project and a Coop agreement with the USGS to bring the total postdoc support of DELFT-FM Model Assessment of Morphodynamic Response to Levee Setback in the Nooksack River Basin to 9 months.