

**WHATCOM COUNTY CONTRACT
INFORMATION SHEET**

Whatcom County Contract No.
202208023

Originating Department:	Public Works
Division/Program: (i.e. Dept. Division and Program)	Natural Resources - 907010
Contract or Grant Administrator:	Gary Stoyka
Contractor's / Agency Name:	S.S. Papadopulos & Associates, Inc.

Is this a New Contract? If not, is this an Amendment or Renewal to an Existing Contract? 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): _____

Is this contract the result of a RFP or Bid process? Yes No If yes, RFP and Bid number(s): 22-05 Contract Cost Center: 169121

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

If YES, indicate exclusion(s) below:

- Professional services agreement for certified/licensed professional.
- Contract work is for less than \$100,000.
- Contract work is for less than 120 days.
- Interlocal Agreement (between Governments).
- Contract for Commercial off the shelf items (COTS).
- Work related subcontract less than \$25,000.
- Public Works - Local Agency/Federally Funded FHWA.

Contract Amount:(sum of original contract amount and any prior amendments):
 \$ 286,016
 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:**

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.

Summary of Scope: The contractor will make improvements and upgrades to the Whatcom County Groundwater Model based on recommendations from a peer review of the model including compiling monthly data for a refined model and scenario development and visualization.

Term of Contract: _____ Expiration Date: ~~3/31/23~~ 4-30-23

- | | | |
|-------------------|--|------------------------|
| Contract Routing: | 1. Prepared by: <u>Gary S. Stoyka</u> | Date: <u>8/24/22</u> |
| | 2. Attorney signoff: <u>Christopher Quinn</u> | Date: <u>8/24/2022</u> |
| | 3. AS Finance reviewed: <u>M Caldwell</u> | Date: <u>8/24/22</u> |
| | 4. IT reviewed (if IT related): _____ | Date: _____ |
| | 5. Contractor signed: _____ | Date: _____ |
| | 6. Submitted to Exec.: _____ | Date: <u>9-13-22</u> |
| | 7. Council approved (if necessary) <u>Satpal Sidhu</u> <u>AB2022-476</u> | Date: <u>9/19/2022</u> |
| | 8. Executive signed: _____ | Date: _____ |
| | 9. Original to Council: _____ | Date: _____ |

DocuSigned by:
Satpal Sidhu
 1192G7C18B664E3

**WHATCOM COUNTY
PUBLIC WORKS DEPARTMENT**

**Jon Hutchings
Director**



NATURAL RESOURCES

322 N. Commercial, Suite 110
Bellingham, WA 98225
Telephone: (360) 778-6230
FAX: (360) 778-6231
www.whatcomcounty.us

MEMORANDUM

TO: The Honorable Satpal Singh Sidhu, Whatcom County Executive, and The Honorable Members of the Whatcom County Council, collectively serving in their capacity as the Whatcom County Flood Control Zone District Board of Supervisors.

THROUGH: Jon Hutchings, Public Works Director

FROM: Gary S. Stoyka, Natural Resources Manager

RE: Contract with S.S. Papadopoulos & Associates, Inc. to make refinements and upgrades to the Whatcom County Groundwater Model

DATE: August 24, 2022

Requested Action

Public Works respectfully requests that the County Executive, and the County Council, acting as the Flood Control Zone District Board of Supervisors, enter into a contract for the sum of \$286,016 with S.S. Papadopoulos & Associates, Inc., for the purpose of making refinements and improvements to the Whatcom County Groundwater Model.

Background and Purpose

The work in this contract includes refinements and improvements to the Whatcom County numerical Groundwater Model. The goal of the groundwater modeling project is to develop a model which will adequately assess the impacts to surface water flow from groundwater pumping and to inform the development of a water management plan that balances the needs of salmon and other aquatic resources with out-of-stream water needs. The model is envisioned to be a crucial tool in developing solutions that are necessary to resolve the long-standing water management issues in Whatcom County. The initial steady-state numerical model was completed in 2019 on behalf of WRIA 1 Watershed Management Board agencies and other partners (Whatcom County, Whatcom PUD, City of Bellingham, Nooksack Indian Tribe, Lummi Nation, Bertrand Watershed Improvement District, and Washington Department of Ecology), with the Whatcom County Flood Control Zone District acting as the contracting agent and project manager. Following completion of the initial numerical model, a peer review of the model was conducted to ensure it is scientifically sound and meets industry standards prior to conducting further modeling work. The peer review identified several refinements that would improve the performance of the model. Furthermore, it has been concluded that the current steady-state model will need to be converted to a transient model in order to adequately simulate the effects of groundwater pumping and other activities on stream flows. This contract implements the recommended refinements and initiates modifications necessary to develop the transient model for later use in running simulations.

Funding Amount and Source

The contract is not to exceed \$286,016. There are sufficient funds in the 2022 FCZD budget to fund this agreement.

Please contact Gary Stoyka at extension 6218 for any clarification or additional information on the agreement and the associated project.

Whatcom County Contract No.
_____202208023_____

CONTRACT FOR SERVICES
Between Whatcom County Flood Control Zone District and S.S. Papadopoulos & Associates, Inc.

S.S. Papadopoulos & Associates, Inc., hereinafter called **Contractor**, and Whatcom County Flood Control Zone District, hereinafter referred to as **County**, agree and contract as set forth in this Agreement, including:

- General Conditions, pp. 1 to 12,
- Exhibit A (Scope of Work), pp. 13 to 15,
- Exhibit B (Compensation), pp. 16 to 16,
- Exhibit C (Certificate of Insurance).

Copies of these items are attached hereto and incorporated herein by this reference as if fully set forth herein.

The term of this Agreement shall commence on the 19th day of September, 2022, and shall, unless terminated or renewed as elsewhere provided in the Agreement, terminate on the 30th day of April, 2023.

The general purpose or objective of this Agreement is to: make improvements and upgrades to the Whatcom County Groundwater Model, as more fully and definitively described in Exhibit A hereto. The language of Exhibit A controls in case of any conflict between it and that provided here.

The maximum consideration for the initial term of this agreement or for any renewal term shall not exceed \$286,016. The Contract Number, set forth above, shall be included on all billings or correspondence in connection therewith.


Contractor acknowledges and by signing this contract agrees that the Indemnification provisions set forth in Paragraphs 11.1, 21.1, 30.1, 31.2, 32.1, 34.2, and 34.3, if included, are totally and fully part of this contract and have been mutually negotiated by the parties.

IN WITNESS WHEREOF, the parties have executed this Agreement this 9/19/2022 day of _____, 20 _____.

Each signatory below to this Contract warrants that he/she is the authorized agent of the respective party; and that he/she has the authority to enter into the contract and to bind the party thereto.

CONTRACTOR:

S.S. Papadopoulos & Associates, Inc.

DocuSigned by:

 9/17/2022
 Signature _____
 2A9D7361204245B...

Gilbert Barth, Senior Associate
(Type in Name & Title of Signatory Authorized by Firm Bylaws, if applicable)

Address:
3100 Arapahoe Ave., Suite 203
Boulder, CO 80303-1050

Mailing Address:
same

WHATCOM COUNTY FLOOD CONTROL ZONE DISTRICT:

Recommended for Approval:

3359083010F845B
Jan Hutchings 9/19/2022
Department Director Date

Approved as to form:

EC48EEF5C88B4FD
Christopher Quinn 9/19/2022
Senior Deputy Prosecuting Attorney Date

Approved:

Accepted for Whatcom County Flood Control Zone District:

DocuSigned by:
Satpal Sidhu 9/19/2022
By: 1192C7C18B664E3
Satpal Singh Sidhu, Whatcom County Executive

GENERAL CONDITIONS

Series 00-09: Provisions Related to Scope and Nature of Services

0.1 Scope of Services:

The Contractor agrees to provide to the County services and any materials as set forth in the project narrative identified as Exhibit "A", during the agreement period. No material, labor, or facilities will be furnished by the County, unless otherwise provided for in the Agreement.

Series 10-19: Provisions Related to Term and Termination

10.1 Term:

Services provided by Contractor prior to or after the term of this contract shall be performed at the expense of Contractor and are not compensable under this contract unless both parties hereto agree to such provision in writing. The term of this Agreement may be extended by mutual agreement of the parties; provided, however, that the Agreement is in writing and signed by both parties.

10.2 Extension:

The duration of this Agreement may be extended by mutual written consent of the parties, for a period of up to one year, and for a total of no longer than three years.

11.1 Termination for Default:

If the Contractor defaults by failing to perform any of the obligations of the contract or becomes insolvent or is declared bankrupt or commits any act of bankruptcy or insolvency or makes an assignment for the benefit of creditors, the County may, by depositing written notice to the Contractor in the U.S. mail, first class postage prepaid, terminate the contract, and at the County's option, obtain performance of the work elsewhere. Termination shall be effective upon Contractor's receipt of the written notice, or within three (3) days of the mailing of the notice, whichever occurs first. If the contract is terminated for default, the Contractor shall not be entitled to receive any further payments under the contract until all work called for has been fully performed. Any extra cost or damage to the County resulting from such default(s) shall be deducted from any money due or coming due to the Contractor. The Contractor shall bear any extra expenses incurred by the County in completing the work, including all increased costs for completing the work, and all damage sustained, or which may be sustained by the County by reason of such default.

11.2 Termination for Reduction in Funding:

In the event that funding from State, Federal or other sources is withdrawn, reduced, or limited in any way after the effective date of this Agreement, and prior to its normal completion, the County may summarily terminate this Agreement as to the funds withdrawn, reduced, or limited, notwithstanding any other termination provisions of this Agreement. If the level of funding withdrawn, reduced or limited is so great that the County deems that the continuation of the programs covered by this Agreement is no longer in the best interest of the County, the County may summarily terminate this Agreement in whole, notwithstanding any other termination provisions of this Agreement. Termination under this section shall be effective upon receipt of written notice as specified herein, or within three days of the mailing of the notice, whichever occurs first.

11.3 Termination for Public Convenience:

The County may terminate the Agreement in whole or in part whenever the County determines, in its sole discretion, that such termination is in the interests of the County. Whenever the Agreement is terminated in accordance with this paragraph, the Contractor shall be entitled to payment for actual work performed at unit contract prices for completed items of work. An equitable adjustment in the contract price for partially completed items of work will be made, but such adjustment shall not include provision for loss of anticipated profit on deleted or uncompleted work. Termination of this Agreement by the County at any time during the term, whether for default or convenience, shall not constitute breach of contract by the County.

Series 20-29: Provisions Related to Consideration and Payments

20.1 Accounting and Payment for Contractor Services:

Payment to the Contractor for services rendered under this Agreement shall be as set forth in Exhibit "B." Where Exhibit "B" requires payments by the County, payment shall be based upon written claims supported, unless otherwise provided in Exhibit "B," by documentation of units of work actually performed and amounts earned, including, where appropriate, the actual number of days worked each month, total number of hours for the month, and the total dollar payment requested, so as to comply with municipal auditing requirements.

Unless specifically stated in Exhibit "B" or approved in writing in advance by the official executing this Agreement for the County or his designee (hereinafter referred to as the "Administrative Officer") the County will not reimburse the Contractor for any costs or expenses incurred by the Contractor in the performance of this contract. Where required, the County shall, upon receipt of appropriate documentation, compensate the Contractor, no more often than monthly, in accordance with the County's customary procedures, pursuant to the fee schedule set forth in Exhibit "B."

21.1 Taxes:

The Contractor understands and acknowledges that the County will not withhold Federal or State income taxes. Where required by State or Federal law, the Contractor authorizes the County to withhold for any taxes other than income taxes (i.e., Medicare). All compensation received by the Contractor will be reported to the Internal Revenue Service at the end of the calendar year in accordance with the applicable IRS regulations. It is the responsibility of the Contractor to make the necessary estimated tax payments throughout the year, if any, and the Contractor is solely liable for any tax obligation arising from the Contractor's performance of this Agreement. The Contractor hereby agrees to indemnify the County against any demand to pay taxes arising from the Contractor's failure to pay taxes on compensation earned pursuant to this Agreement.

The County will pay sales and use taxes imposed on goods or services acquired hereunder as required by law. The Contractor must pay all other taxes, including, but not limited to, Business and Occupation Tax, taxes based on the Contractor's gross or net income, or personal property to which the County does not hold title. The County is exempt from Federal Excise Tax.

22.1 Withholding Payment:

In the event the County's Administrative Officer determines that the Contractor has failed to perform any obligation under this Agreement within the times set forth in this Agreement, then the County may withhold from amounts otherwise due and payable to Contractor the amount determined by the County as necessary to cure the default, until the Administrative Officer determines that such failure to perform has been cured. Withholding under this clause shall not be deemed a breach entitling Contractor to termination or damages, provided that the County promptly gives notice in writing to the Contractor of the nature of the default or failure to perform, and in no case more than 10 days after it determines to withhold amounts otherwise due. A determination of the Administrative Officer set forth in a notice to the Contractor of the action required and/or the amount required to cure any alleged failure to perform shall be deemed conclusive, except to the extent that the Contractor acts within the times and in strict accord with the provisions of the Disputes clause of this Agreement. The County may act in accordance with any determination of the Administrative Officer which has become conclusive under this clause, without prejudice to any other remedy under the Agreement, to take all or any of the following actions: (1) cure any failure or default, (2) to pay any amount so required to be paid and to charge the same to the account of the Contractor, (3) to set off any amount so paid or incurred from amounts due or to become due the Contractor. In the event the Contractor obtains relief upon a claim under the Disputes clause, no penalty or damages shall accrue to Contractor by reason of good faith withholding by the County under this clause.

23.1 Labor Standards:

The Contractor agrees to comply with all applicable state and federal requirements, including but not limited to those pertaining to payment of wages and working conditions, in accordance with RCW 39.12.040, the Prevailing Wage Act; the Americans with Disabilities Act of 1990; the Davis-Bacon Act; and the Contract Work Hours and Safety Standards Act providing for weekly payment of prevailing wages, minimum overtime pay, and providing that no laborer or mechanic shall be required to work in surroundings or under conditions which are unsanitary, hazardous, or dangerous to health and safety as determined by regulations promulgated by the Federal Secretary of Labor and the State of Washington.

Series 30-39: Provisions Related to Administration of Agreement

30.1 Independent Contractor:

The Contractor's services shall be furnished by the Contractor as an independent contractor, and nothing herein contained shall be construed to create a relationship of employer-employee or master-servant, but all payments made hereunder and all services performed shall be made and performed pursuant to this Agreement by the Contractor as an independent contractor.

The Contractor acknowledges that the entire compensation for this Agreement is specified in Exhibit "B" and the Contractor is not entitled to any benefits including, but not limited to: vacation pay, holiday pay, sick leave pay, medical, dental, or other insurance benefits, or any other rights or privileges afforded to employees of the County. The Contractor represents that he/she/it maintains a separate place of business, serves clients other than the County, will report all income and expense accrued under this contract to the Internal Revenue Service, and has a tax account with the State of Washington Department of Revenue for payment of all sales and use and Business and Occupation taxes collected by the State of Washington.

Contractor will defend, indemnify and hold harmless the County, its officers, agents or employees from any loss or expense, including, but not limited to, settlements, judgments, setoffs, attorneys' fees or costs incurred by reason of claims or demands because of breach of the provisions of this paragraph

30.2 Assignment and Subcontracting:

The performance of all activities contemplated by this agreement shall be accomplished by the Contractor. No portion of this contract may be assigned or subcontracted to any other individual, firm or entity without the express and prior written approval of the County. The County approves Associated Earth Sciences, Inc. as a subcontractor for this contract.

30.3 No Guarantee of Employment:

The performance of all or part of this contract by the Contractor shall not operate to vest any employment rights whatsoever and shall not be deemed to guarantee any employment of the Contractor or any employee of the Contractor or any subcontractor or any employee of any subcontractor by the County at the present time or in the future.

31.1 Ownership of Items Produced and Public Records Act:

All writings, programs, data, public records or other materials prepared by the Contractor and/or its consultants or subcontractors, in connection with performance of this Agreement, shall be the sole and absolute property of the County. If the Contractor creates any copyrightable materials or invents any patentable property, the Contractor may copyright or patent the same, but the County retains a royalty-free, nonexclusive and irrevocable license to reproduce, publish, recover, or otherwise use the materials or property and to authorize other governments to use the same for state or local governmental purposes. Contractor further agrees to make research, notes, and other work products produced in the performance of this Agreement available to the County upon request.

Ownership. Any and all data, writings, programs, public records, reports, analyses, documents, photographs, pamphlets, plans, specifications, surveys, films or any other materials created, prepared, produced, constructed, assembled, made, performed or otherwise produced by the Contractor or the Contractor's subcontractors or consultants for delivery to the County under this Contract shall be the sole and absolute property of the County. Such property shall constitute "work made for hire" as defined by the U.S. Copyright Act of 1976, 17 U.S.C. § 101, and the ownership of the copyright and any other intellectual property rights in such property shall vest in the County at the time of its creation. Ownership of the intellectual property includes the right to copyright, patent, and register, and the ability to transfer these rights. Material which the Contractor uses to perform this Contract but is not created, prepared, constructed, assembled, made, performed or otherwise produced for or paid for by the County is owned by the Contractor and is not "work made for hire" within the terms of this Agreement.

Public Records Act. This Contract and all records associated with this Contract shall be available for inspection and copying by the public where required by the Public Records Act, Chapter 42.56 RCW (the "Act"). To the extent that public records then in the custody of the Contractor are needed for the County to respond to a request under the Act, as determined by the County, the Contractor agrees to make them promptly available to the County at no cost to the County. If the Contractor considers any portion of any record provided to the County under this Agreement, whether in electronic or hard copy form, to be protected from disclosure under law, the Contractor shall clearly identify any specific information that it claims to be confidential or proprietary. If the County receives a request under the Act to inspect or copy the information so identified by the Contractor and the County determines that release of the information is required by the Act or otherwise appropriate, the County's sole obligations shall be to notify the Contractor (a) of the request and (b) of the date that such information will be released to the requester unless the Contractor obtains a court order to enjoin that disclosure pursuant to RCW 42.56.540. If the Contractor fails to timely obtain a court order enjoining disclosure, the County will release the requested information on the date specified.

The County has, and by this section assumes, no obligation on behalf of the Contractor to claim any exemption from disclosure under the Act. The County shall not be liable to the Contractor for releasing records not clearly identified by the Contractor as confidential or proprietary. The County shall not be liable to the Contractor for any records that the County releases in compliance with this section or in compliance with an order of a court of competent jurisdiction.

The Contractor shall be liable to the requester for any and all fees, costs, penalties or damages imposed or alleged as a result of the Contractor's failure to provide adequate or timely records.

This provision and the obligations it establishes shall remain in effect after the expiration of this contract.

31.2 Patent/Copyright Infringement:

Contractor will defend and indemnify the County from any claimed action, cause or demand brought against the County, to the extent such action is based on the claim that information supplied by the Contractor infringes any patent or copyright. The Contractor will pay those costs and damages attributable to any such claims that are finally awarded against the County in any action. Such defense and payments are conditioned upon the following:

A. The Contractor shall be notified promptly in writing by the County of any notice of such claim.

B. Contractor shall have the right, hereunder, at its option and expense, to obtain for the County the right to continue using the information, in the event such claim of infringement, is made, provided no reduction in performance or loss results to the County.

32.1 Confidentiality:

The Contractor, its employees, subcontractors, and their employees shall maintain the confidentiality of all information provided by the County or acquired by the Contractor in performance of this Agreement, except upon the prior written consent of the County or an order entered by a court after having acquired jurisdiction over the County. Contractor shall immediately give to the County notice of any judicial proceeding seeking disclosure of such information. Contractor shall indemnify and hold harmless the County, its officials, agents or employees from all loss or expense, including, but not limited to, settlements, judgments, setoffs, attorneys' fees and costs resulting from Contractor's breach of this provision.

33.1 Right to Review:

This contract is subject to review by any Federal, State or County auditor. The County or its designee shall have the right to review and monitor the financial and service components of this program by whatever means are deemed expedient by the Administrative Officer or by the County Auditor's Office. Such review may occur with or without notice and may include, but is not limited to, on-site inspection by County agents or employees, inspection of all records or other materials which the County deems pertinent to the Agreement and its performance, and any and all communications with or evaluations by service recipients under this Agreement. The Contractor shall preserve and maintain all financial records and records relating to the performance of work under this Agreement for three (3) years after contract termination, and shall make them available for such review, within Whatcom County, State of Washington, upon request. Contractor also agrees to notify the Administrative Officer in advance of any inspections, audits, or program review by any individual, agency, or governmental unit whose purpose is to review the services provided within the terms of this Agreement. If no advance notice is given to the Contractor, then the Contractor agrees to notify the Administrative Officer as soon as it is practical.

34.1 Insurance

The Contractor shall, at its own expense, obtain and continuously maintain the following insurance coverage for the duration of this contract, which shall include insurance against claims for injuries to persons or damage to property which may arise from or in connection with the performance of the work hereunder by the Contractor, its agents, representatives, subcontractors or employees. All insurers providing such insurance shall have an A.M. Best Rating of not less than A- (or otherwise be acceptable to the County) and be licensed to do business in the State of Washington and admitted by the Washington State Insurance Commissioner. Coverage limits shall be the minimum limits identified in this Contract or the coverage limits provided or available under the policies maintained by the Contractor without regard to this Contract, whichever are greater.

2. Professional Liability

Professional Liability - \$1,000,000 per claim

- a. Obtain professional liability insurance covering the negligent acts, errors, or omissions of the professional in connection with the performance of services to the County. If any insurance policy or the professional liability insurance is written on a claims made form, its retroactive date, and that of all subsequent renewals, shall be no later than the effective date of this Contract. The policy shall state that coverage is claims made, and state the retroactive date. Claims-made form coverage shall be maintained by the Contractor for a minimum of 36 months following the Completion Date or earlier termination of this Contract, and the Contractor shall annually provide the Contracting Agency with proof of renewal. If renewal of the claims made form of coverage becomes unavailable, or economically prohibitive, the Contractor shall purchase an extended reporting period ("tail") or execute another form of guarantee acceptable to the Contracting Agency to assure financial responsibility for liability for services performed.

3. Business Automobile Liability

\$1,000,000.00 Minimum, per occurrence

\$2,000,000.00 Minimum, Annual Aggregate, which may be covered under umbrella coverage over Commercial Automobile maintained for the duration of the Contract.

Contractor shall provide auto liability coverage for owned, non-owned and hired autos using ISO Business Auto Coverage form CA 00 01 or the exact equivalent with a limit of no less than \$1,000,000 per accident. If Contractor owns no vehicles this requirement may be met through a non-owned auto Endorsement to the CGL policy.

4. Additional Insurance Requirements and Provisions

- a. All insurance policies shall provide coverage on an occurrence basis.
- b. Additional Insureds. Whatcom County, its departments, elected and appointed officials, employees, agents and volunteers shall be included as additional insureds on Contractor's and Contractor's subcontractors' insurance policies by way of

endorsement for the full available limits of insurance required in this contract or maintained by the Contractor and subcontractor, whichever is greater.

- c. **Primary and Non-contributory Insurance.** Contractor shall provide primary insurance coverage and the County's insurance shall be non-contributory. Any insurance, self-insured retention, deductible, risk retention or insurance pooling maintained or participated in by the County shall be excess and non-contributory to Contractor's insurance.
- d. **Waiver of Subrogation.** The insurance policy shall provide a waiver of subrogation with respect to each insurance policy maintained under this Contract. When required by an insurer, or if a policy condition does not permit Contractor to enter into a pre-loss agreement to waive subrogation without an endorsement, then Contractor agrees to notify the insurer and obtain such endorsement. This requirement shall not apply to any policy which includes a condition expressly prohibiting waiver of subrogation by the insured or which voids coverage should the Contractor enter into such a waiver of subrogation on a pre-loss basis.
- e. **Review of and Revision of Policy Provisions.** Upon request, the Contractor shall provide a full and complete certified copy of all requested insurance policies to the County. The County reserves the right, but not the obligation, to revise any insurance requirement, including but not limited to limits, coverages and endorsements, or to reject any insurance policies which fail to meet the requirements of this Contract. Additionally, the County reserves the right, but not the obligation, to review and reject any proposed insurer providing coverage based upon the insurer's financial condition or licensing status in Washington.
- f. **Verification of Coverage/Certificates and Endorsements.** The Contractor shall furnish the County with a certificate of insurance and endorsements required by this contract. The certificates and endorsements for each policy shall be signed by a person authorized by the insurer to bind coverage on its behalf. The certificate and endorsements for each insurance policy are to be on forms approved by the County prior to commencement of activities associated with the contract. The certificate and endorsements, and renewals thereof, shall be attached hereto as Exhibit "C". If Exhibit C is not attached, the Contractor must submit the certificate and endorsements required in this contract to the County prior to the commencement of any work on the contracted project. A certificate alone is insufficient proof of the required insurance; endorsements must be included with the certificate. The certificate of insurance must reflect the insurance required in this contract, including appropriate limits, insurance coverage dates, per occurrence, and in the description of operations, include the County project, Whatcom County, its departments, officials, employees, agents and volunteers as additional insureds, primary, non-contributory, and waiver of subrogation.
- g. The County must be notified immediately in writing of any cancellation of the policy, exhaustion of aggregate limits, notice of intent not to renew insurance coverage, expiration of policy or change in insurer carrier. Contractor shall always provide the County with a current copy of the certificate and endorsements throughout the duration of the contract.
- h. **No Limitation on Liability.** The insurance maintained under this Contract shall not in any manner limit the liability or qualify the liabilities or obligations of the Contractor to the coverage provided by such insurance, or otherwise limit the County's recourse to any remedy available at law or equity.
- i. **Payment Conditioned on Insurance and Failure to Maintain Insurance.** Compensation and/or payments due to the Contractor under this Contract are expressly conditioned upon the Contractor's compliance with all insurance requirements. Failure on the part of the Contractor to maintain the insurance as required shall constitute a material breach of contract. Payment to the Contractor may be suspended in the event of non-compliance, upon which the County may, after giving five business days' notice to the Contractor to correct the breach, immediately terminate the contract or, at its discretion, procure or renew such insurance and pay any and all premiums in connection therewith, with any sums so expended to be repaid to the County on demand or offset against funds due the Contractor. Upon receipt of evidence of Contractor's compliance, payments not otherwise subject to withholding or set-off will be released to the Contractor.

- j. Workers' Compensation. The Contractor shall maintain Workers' Compensation coverage as required under the Washington State Industrial Insurance Act, RCW Title 51, for all Contractors' employees, agents and volunteers eligible for such coverage under the Industrial Insurance Act.
- k. Failure of the Contractor to take out and/or maintain required insurance shall not relieve the Contractor or subcontractors from any liability under the contract, nor shall the insurance requirements be construed to conflict with or otherwise limit the obligations concerning indemnification. The County does not waive any insurance requirements even in the event the certificate or endorsements provided by the Contractor were insufficient or inadequate proof of coverage but not objected to by the County. The County's failure to confirm adequate proof of insurance requirements does not constitute a waiver of the Contractor's insurance requirements under this Contract.
- l. Availability of Contractor Limits. If the Contractor maintains higher insurance limits than the minimums shown above, the County shall be insured for the full available limits, including Excess or Umbrella liability maintained by the Contractor, irrespective of whether such limits maintained by the Contractor are greater than those required by this contract or whether any certificate furnished to the County evidences limits of liability lower than those maintained by the Contractor.
- m. Insurance for Subcontractors. If the Contractor subcontracts (if permitted in the contract) any portion of this Contract, the Contractor shall include all subcontractors as insureds under its policies or shall require separate certificates of insurance and policy endorsements from each subcontractor. Insurance coverages by subcontractors must comply with the insurance requirements of the Contractor in this contract and shall be subject to all of the requirements stated herein, including naming the County as additional insured.
- n. The Contractor agrees Contractor's insurance obligation shall survive the completion or termination of this Contract for a minimum period of three years.

34.3 Defense & Indemnity Agreement. To the fullest extent permitted by law, the Contractor agrees to indemnify and hold the County and its departments, elected and appointed officials, employees, agents and volunteers, harmless from and against claims, damages, losses and expenses, including but not limited to court costs, reasonable attorney's fees, and alternative dispute resolution costs, for any personal injury, for any bodily injury, or death and for any damage to or destruction of any property (including the loss of use resulting therefrom) which: 1) are caused in whole or in part by any error, act or omission, negligent or otherwise, of the Contractor, its employees, agents or volunteers or Contractor's subcontractors and their employees, agents or volunteers; or 2) directly or indirectly arise out of or occur in connection with performance of this Contract or 3) are based upon the Contractor's or its subcontractors' use of, presence upon, or proximity to the property of the County. This indemnification obligation of the Contractor shall not apply in the limited circumstance where the claim, damage, loss, or expense is caused by the sole negligence of the County.

Should a court of competent jurisdiction determine that this contract is subject to RCW 4.24.115, then in the event of concurrent negligence of the Contractor, its subcontractors, employees or agents, and the County, its employees or agents, this indemnification obligation of the Contractor shall be valid and enforceable only to the extent of the negligence of the Contractor, its subcontractors, employees, and agents. This indemnification obligation of the Contractor shall not be limited in any way by the Washington State Industrial Insurance Act, RCW Title 51, or by application of any other workmen's compensation act, disability benefit act or other employee benefit act.

It is further provided that no liability shall attach to the County by reason of entering into this contract, except as expressly provided herein. The parties specifically agree that this Contract is for the benefit of the parties only and this Contract shall create no rights in any third party. The County reserves the right, but not the obligation, to participate in the defense of any claim, damages, losses, or expenses, and such participation shall not constitute a waiver of Contractor's indemnity obligations under this Agreement.

In the event the Contractor enters into subcontracts to the extent allowed under this Contract, the Contractor's subcontractors shall indemnify the County on a basis equal to or exceeding Contractor's indemnity obligations to the County.

The Contractor agrees all Contractor's indemnity obligations shall survive the completion, expiration or termination of this Agreement. The foregoing indemnification obligations of the Contractor are a material inducement to County to enter into this Agreement and are

reflected in the Contractor's compensation.

By signing this contract, the Contractor acknowledges that it has freely negotiated and agreed to the indemnification requirements to defend, indemnify and hold harmless the County from all claims and suits including those brought against the County by the Contractor's own employees, arising from this contract.

35.1 Non-Discrimination in Employment: *(Must be included in every contract as per Ord. 2021-016)*

The County's policy is to provide equal opportunity in all terms, conditions and privileges of employment for all qualified applicants and employees without regard to race, color, creed, religion, national origin, sex, sexual orientation (including gender identity), age, marital status, disability, or veteran status. The Contractor shall comply with all laws prohibiting discrimination against any employee or applicant for employment on the grounds of race, color, creed, religion, national origin, sex, sexual orientation (including gender identity), age, marital status, disability, political affiliation, or veteran status, except where such constitutes a bona fide occupational qualification.

Furthermore, in those cases in which the Contractor is governed by such laws, the Contractor shall take affirmative action to insure that applicants are employed, and treated during employment, without regard to their race, color, creed, religion, national origin, sex, age, marital status, sexual orientation (including gender identity), disability, or veteran status, except where such constitutes a bona fide occupational qualification. Such action shall include, but not be limited to: advertising, hiring, promotions, layoffs or terminations, rate of pay or other forms of compensation benefits, selection for training including apprenticeship, and participation in recreational and educational activities. In all solicitations or advertisements for employees placed by them or on their behalf, the Contractor shall state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex or national origin.

The foregoing provisions shall also be binding upon any subcontractor, provided that the foregoing provision shall not apply to contracts or subcontractors for standard commercial supplies or raw materials, or to sole proprietorships with no employees.

35.2 Non-Discrimination in Client Services: *(Must be included in every contract as per Ord. 2021-016)*

The Contractor shall not discriminate on the grounds of race, color, creed, religion, national origin, sex, age, marital status, sexual orientation (including gender identity), disability, or veteran status; or deny an individual or business any service or benefits under this Agreement unless otherwise allowed by applicable law; or subject an individual or business to segregation or separate treatment in any manner related to his/her/its receipt any service or services or other benefits provided under this Agreement unless otherwise allowed by applicable law; or deny an individual or business an opportunity to participate in any program provided by this Agreement unless otherwise allowed by applicable law.

36.1 Waiver of Noncompetition:

Contractor irrevocably waives any existing rights which it may have, by contract or otherwise, to require another person or corporation to refrain from submitting a proposal to or performing work or providing supplies to the County, and contractor further promises that it will not in the future, directly or indirectly, induce or solicit any person or corporation to refrain from submitting a bid or proposal to or from performing work or providing supplies to the County.

36.2 Conflict of Interest:

If at any time prior to commencement of, or during the term of this Agreement, Contractor or any of its employees involved in the performance of this Agreement shall have or develop an interest in the subject matter of this Agreement that is potentially in conflict with the County's interest, then Contractor shall immediately notify the County of the same. The notification of the County shall be made with sufficient specificity to enable the County to make an informed judgment as to whether or not the County's interest may be compromised in any manner by the existence of the conflict, actual or potential. Thereafter, the County may require the Contractor to take reasonable steps to remove the conflict of interest. The County may also terminate this contract according to the provisions herein for termination.

37.1 Administration of Contract:

This Agreement shall be subject to all laws, rules, and regulations of the United States of America, the State of Washington, and political subdivisions of the State of Washington. The Contractor also agrees to comply with applicable federal, state, county or municipal standards for licensing, certification and operation of facilities and programs, and accreditation and licensing of individuals.

The County hereby appoints, and the Contractor hereby accepts, the Whatcom County Executive, and his or her designee, as the County's representative, hereinafter referred to as the Administrative Officer, for the purposes of administering the provisions of this Agreement, including the County's right to receive and act on all reports and documents, and any auditing performed by the County related to this Agreement. The Administrative Officer for purposes of this agreement is:

Insert here: Gary Stoyka, Natural Resources Program Manager, Public Works Department, 322 N. Commercial St., Bellingham, WA 98225

37.2 Notice:

Any notices or communications required or permitted to be given by this Contract must be (i) given in writing and (ii) personally delivered or mailed, by prepaid, certified mail or overnight courier, or transmitted by electronic mail transmission (including PDF), to the party to whom such notice or communication is directed, to the mailing address or regularly-monitored electronic mail address of such party as follows:

To: Whatcom County Public Works Department
322 N. Commercial St.
Bellingham, WA 98225
[Attention: Gary Stoyka]
Telephone: (360) 778-6218
Email: [gstoyka@co.whatcom.wa.us]

To: S.S. Papadopoulos & Associates, Inc.
3100 Arapahoe Ave, Suite 203
Boulder, CO 80303-1050
[Attention: Gilbert Barth]
Telephone: (720) 572-4670
Email: [gbarth@sspa.com]

Any such notice or communication shall be deemed to have been given on (i) the day such notice or communication is personally delivered, (ii) three (3) days after such notice or communication is mailed by prepaid certified or registered mail, (iii) one (1) working day after such notice or communication is sent by overnight courier, or (iv) the day such notice or communication is sent electronically, provided that the sender has received a confirmation of such electronic transmission. A party may, for purposes of this Agreement, change his, her or its address, email address or the person to whom a notice or other communication is marked to the attention of, by giving notice of such change to the other party pursuant to this Section.

37.3 If agreed by the parties, this Contract may be executed by Email transmission and PDF signature and Email transmission and PDF signature shall constitute an original for all purposes.

38.2 Certification Regarding Federal Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transactions:

If applicable, the Contractor further certifies, by executing this contract, that neither it nor its principles is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or Agency.

The Contractor also agrees that it shall not knowingly enter into any lower tier covered transactions (a transaction between the Contractor and any other person) with a person who is proposed for debarment, debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, and the Contractor agrees to include this clause titled "Certification Regarding Federal Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transaction" without modification, in all lower tier covered transactions and in all solicitations for lower tier transactions.

The "Excluded Parties List System in the System for Award Management (SAM) website is available to research this information at WWW.SAM.GOV. Contractor shall immediately notify Whatcom County if, during the term of this Contract, Contractor becomes debarred.

38.3 E-Verify:

The E-Verify contractor program for Whatcom County applies to contracts of \$100,000 or more and sub contracts for \$25,000 or more if the primary contract is for \$100,000 or more. If applicable, Contractor represents and warrants that it will, for at least the duration of this contract, register and participate in the status verification system for all newly hired employees. The term "employee" as used herein means any person that is hired to perform work for Whatcom County. As used herein, "status verification system" means the Illegal Immigration Reform and Immigration Responsibility Act of 1996 that is operated by the United States Department of Homeland Security, also known as the E-Verify Program, or any other successor electronic verification system replacing the E-Verify Program. Contractor/Seller agrees to maintain records of such compliance and, upon request of the County, to provide a copy of each such verification to the County. Contractor/Seller further represents and warrants that any person assigned to perform services hereunder meets the employment eligibility requirements of all immigration laws of the State of Washington. Contractor/Seller understands and agrees that any breach of these warranties may subject Contractor/Seller to the following: (a) termination of this Agreement and ineligibility for any Whatcom County contract for up to three (3) years, with notice of such cancellation/termination being made public. In the event of such termination/cancellation, Contractor/Seller would also be liable for any additional costs incurred by the County due to

contract cancellation or loss of license or permit." Contractor will review and enroll in the E-Verify program through this website: www.uscis.gov

Series 40-49: Provisions Related to Interpretation of Agreement and Resolution of Disputes

40.1 Modifications:

Either party may request changes in the Agreement. Any and all agreed modifications, to be valid and binding upon either party, shall be in writing and signed by both of the parties.

40.2 Contractor Commitments, Warranties and Representations:

Any written commitment received from the Contractor concerning this Agreement shall be binding upon the Contractor, unless otherwise specifically provided herein with reference to this paragraph. Failure of the Contractor to fulfill such a commitment shall render the Contractor liable for damages to the County. A commitment includes, but is not limited to, any representation made prior to execution of this Agreement, whether or not incorporated elsewhere herein by reference, as to performance of services or equipment, prices or options for future acquisition to remain in effect for a fixed period, or warranties.

41.1 Severability:

If any term or condition of this contract or the application thereof to any person(s) or circumstances is held invalid, such invalidity shall not affect other terms, conditions or applications which can be given effect without the invalid term, condition or application. To this end, the terms and conditions of this contract are declared severable.

41.2 Waiver:

Waiver of any breach or condition of this contract shall not be deemed a waiver of any prior or subsequent breach. No term or condition of this contract shall be held to be waived, modified or deleted except by an instrument, in writing, signed by the parties hereto. The failure of the County to insist upon strict performance of any of the covenants and agreements of this Agreement, or to exercise any option herein conferred in any one or more instances, shall not be construed to be a waiver or relinquishment of any such, or any other covenants or agreements, but the same shall be and remain in full force and effect.

42.1 Disputes:

a. General:

Differences between the Contractor and the County, arising under and by virtue of the Contract Documents, shall be brought to the attention of the County at the earliest possible time in order that such matters may be settled or other appropriate action promptly taken. Except for such objections as are made of record in the manner hereinafter specified and within the time limits stated, the records, orders, rulings, instructions, and decisions of the Administrative Officer shall be final and conclusive.

b. Notice of Potential Claims:

The Contractor shall not be entitled to additional compensation which otherwise may be payable, or to extension of time for (1) any act or failure to act by the Administrative Officer or the County, or (2) the happening of any event or occurrence, unless the Contractor has given the County a written Notice of Potential Claim within ten (10) days of the commencement of the act, failure, or event giving rise to the claim, and before final payment by the County. The written Notice of Potential Claim shall set forth the reasons for which the Contractor believes additional compensation or extension of time is due, the nature of the cost involved, and insofar as possible, the amount of the potential claim. Contractor shall keep full and complete daily records of the work performed, labor and material used, and all costs and additional time claimed to be additional.

c. Detailed Claim:

The Contractor shall not be entitled to claim any such additional compensation, or extension of time, unless within thirty (30) days of the accomplishment of the portion of the work from which the claim arose, and before final payment by the County, the Contractor has given the County a detailed written statement of each element of cost or other compensation requested and of all elements of additional time required, and copies of any supporting documents evidencing the amount or the extension of time claimed to be due.

d. Arbitration:

Other than claims for injunctive relief, temporary restraining order, or other provisional remedy to preserve the status quo or prevent irreparable harm, brought by a party hereto (which may be brought either in court or pursuant to this arbitration provision), and consistent with the provisions hereinabove, any claim, dispute or controversy between the parties under, arising out of, or related to this Contract or otherwise, including issues of specific performance, shall be determined by arbitration in Bellingham, Washington, under the applicable American Arbitration Association (AAA) rules in effect on the date hereof, as modified by this Agreement. There shall be one arbitrator selected by the parties within ten (10) days of the arbitration demand, or if not, by the AAA or any other group having similar credentials. Any issue about whether a claim is covered by this Contract shall be determined by the arbitrator. The arbitrator shall apply substantive

law and may award injunctive relief, equitable relief (including specific performance), or any other remedy available from a judge but shall not have the power to award punitive damages. Each Party shall pay all their own costs, attorney fees and expenses of arbitration and the parties shall share equally in the Arbitrator's fees and costs. The decision of the arbitrator shall be final and binding and an order confirming the award or judgment upon the award may be entered in any court having jurisdiction. The parties agree that the decision of the arbitrator shall be the sole and exclusive remedy between them regarding any dispute presented or pled before the arbitrator. At the request of either party made not later than forty-five (45) days after the arbitration demand, the parties agree to submit the dispute to nonbinding mediation, which shall not delay the arbitration hearing date; provided, that either party may decline to mediate and proceed with arbitration.

Any arbitration proceeding commenced to enforce or interpret this Contract shall be brought within six years after the initial occurrence giving rise to the claim, dispute, or issue for which arbitration is commenced, regardless of the date of discovery or whether the claim, dispute, or issue was continuing in nature. Claims, disputes, or issues arising more than six years prior to a written request or demand for arbitration issued under this Contract are not subject to arbitration.

- e. The parties may agree in writing signed by both parties that a claim or dispute may be brought in Whatcom County Superior Court rather than mediation or arbitration.

Unless otherwise specified herein, this Contract shall be governed by the laws of Whatcom County and the State of Washington.

43.1 Venue and Choice of Law:

In the event that any litigation should arise concerning the construction or interpretation of any of the terms of this Agreement, the venue of such action of litigation shall be in the courts of the State of Washington in and for the County of Whatcom. This Agreement shall be governed by the laws of the State of Washington.

44.1 Survival:

The provisions of paragraphs 11.1, 11.2, 11.3, 21.1, 22.1, 30.1, 31.1, 31.2, 32.1, 33.1, 34.2, 34.3, 36.1, 40.2, 41.2, 42.1, and 43.1, if utilized, shall survive, notwithstanding the termination or invalidity of this Agreement for any reason.

45.1 Entire Agreement:

This written Agreement, comprised of the writings signed or otherwise identified and attached hereto, represents the entire Agreement between the parties and supersedes any prior oral statements, discussions or understandings between the parties.

EXHIBIT "A"
(SCOPE OF WORK)

The Scope of Work is divided into three tracks which can be completed in parallel.

Track 1: Model Refinements

Model refinements consist of First Priority and Second Priority efforts. First Priority tasks are relatively simple refinements improving the model efficiency and functionality. Details of First Priority tasks are provided in the list below.

- Conversion of the modeling code from MODFLOW OWHM to MODFLOW NWT. This conversion will improve potential for reduced run times and provide greater flexibility with solver settings, supporting the objective of improved model convergence.
- Refining SFR and GHB settings to improve consistency with model layer representation and reduce conflicts in the specification of adjacent or coincident SFR and GHB features.
- Removing the LAK representation of lakes not connected to the stream network and developing replacements in the form of GHB features.
- Adjusting solver closure criteria to tighten convergence, reducing residuals from the numerical solution of groundwater flow in the model domain.
- Rerun the existing demonstration scenario, developed, and presented in the 2019 Whatcom Groundwater Model Report. Results will be evaluated to identify any improvement in predictions and consistency with the conceptual model of pumping generated stream depletion.

Completion of these refinements and a summary of their outcomes will be reported to the Whatcom County Project Manager (Gary Stoyka) by email correspondence.

Second Priority refinements include tasks of significantly more effort and incorporate updated hydrogeologic information. These tasks target improving shallow aquifer lateral flow across geologic transitions, numerical representation of lowered water table conditions, and refinement of the groundwater model's structural representation of the subsurface. Specifics of these tasks are provided in the list below.

- Layer 1 (the top layer) of the WGM will be extended so that it exists across the entire domain and assigned material properties associated with the surficial geology. Conversion to a contiguous layer 1 should improve potential for lateral flow in the shallow subsurface in a few areas where geologic transitions limit numerical representation in the current model. This effort includes revising any affected layer-1 boundary conditions including streams (SFR), lakes (LAK) and recharge (RCH).
- Layer 1 will be changed to a convertible layer. Mechanically this is a simple process of modifying a MODFLOW input file so that the transmissivity in layer 1 will become dependent on the simulated layer-1 water level. While there are many circumstances when a fixed transmissivity provides very accurate predictions, switching to water-level dependent transmissivity can improve the potential accuracy of predictions for situations when drawdown starts to become a significant portion of total aquifer thickness. The tradeoff, however, is that water-level dependent transmissivity can require significant additional computational effort and introduce numerical instabilities. The bulk of this task will be identifying potential issues with the conversion and working to address issues and maintain a robust numerical execution of the WGM.
- Updated hydrogeologic data became available after the WGM was first constructed. That data will be used to refine model geometry, improving the representation of the formations represented in the model. Updated data provided by AESI will be processed to adjust the existing model layers. This process requires recreation of model layer surfaces and adjustment of virtually all boundary conditions (pumping wells, observation wells, trans-basin fluxes, etc.) so that they reflect the updated layer geometry. The two primary areas of refinement are summarized in the following bullets.
 - Based on updated drill log information, bottom depth of the Possession Whidbey aquifer in the Ferndale area will be increased.
 - In the vicinity of Blaine, more recent information on Vashon-Olympia and Possession-Whidbey aquifers will be used to refine their geometry.
- The Layer-1 and hydrogeologic geometry refinement will warrant an update of the calibration. This update will rely on the existing observations, collected, and processed as part of the 2019 WGM report. Calibration will focus on refinement of hydraulic parameters such as lateral and vertical hydraulic conductivity and streambed conductance using both manual and automated (PEST) adjustments. Adjustments will be made in an effort to at least maintain, if not improve on the 2019 WGM's ability to simulate observed conditions.
- The final Second Priority task is rerunning the demonstration scenario. This simulation will be used to identify any improvements in predictions and their consistency with the conceptual model of pumping generated stream depletion.

Completion of the Second Priority refinements and a summary of their outcomes will also be reported to the Whatcom County Project Manager (Gary Stoyka) by email correspondence.

Track 2: Monthly Average Compilation and Processing

In preparation for development of a monthly average transient model, The Project Team will compile, develop, and process model data sets and any related spatial data on a monthly average basis. Monthly average data reflects typical conditions that can be expected for each calendar month in a typical year and does not reflect conditions for any particular month and year. This is the distinction between a monthly average transient and a fully historical transient simulation. Data sets will include:

- Pumping locations (agricultural and domestic/commercial/municipal/industrial, referenced as "DCMI"),
- Pumping amounts, (both agricultural and DCMI),
- Agricultural recharge (based on estimate of monthly crop consumption),
- Precipitation recharge,
- Monthly average surface water flows entering the domain (as model inputs),
- Other monthly stresses (e.g., mountain front recharge),
- Monthly average surface water flows within the domain (as calibration targets),
- Water levels reflecting monthly average conditions, and
- Other readily available data providing constraints on simulation results.

The outcome of these efforts will be the locations and the associated monthly average stresses as a series of streamlined ASCII or Excel workbooks, formatted conducive to processing for the development of monthly average model input files. In addition, this task will produce a series of tables and simple graphs summarizing the magnitudes and fluctuations of each of the model stresses. A byproduct of these summaries will be a brief synopsis of any data gaps identified in the compilation process.

Track 3 Post Processing, Visualization Development

The third track of Phase 1 develops tools for processing simulations, providing the working figures and tables conducive to the interpretation of management scenario simulations. This track will develop several forms of post-processed outputs.

- Time series graphs:
 - Change in monthly flow at critical gage (60 months)
 - Change in monthly flows at existing gauges (60 months)
 - Total sub-watershed changes in monthly SW seepage, or monthly totals using existing tributary breakout (60 months)
- Change in monthly sub-watershed water level maps (color flood, 60 months)
- Targeted aquifer change in potentiometric surface maps (60 months)
- Formatted files tabulating the graphed data, providing results for the working group to create any desired additional figures.

Track three will also finalize scenario development, solidifying details associated with each of the 5 scenarios that are identified below. Specifications for each scenario indicated in this scope of work will not be altered without identifying additional time and resources to offset the additional effort required to modify the specifications.

The scenarios each incorporate a management departure from the Baseline 60 month monthly average transient (BMAT) model, which will be developed in Phase 2. The five simulations (S#MAT) will be differenced with BMAT, providing estimates of predicted changes. Predictions from these simulations will be processed using the tools described above. For each scenario, the change implemented will be immediate and for the entire simulation duration. Efforts during this task will focus on the details required to transition the following five scenarios to explicit specifications reflecting actual locations, diversion rates, pumping rates, well configuration and other details.

- *Scenario 1: Convert surface water diversions to groundwater pumping (S1MAT)*
 - All within a single sub-watershed with a single primary target location (e.g., critical stream gage)
 - Up to 5 specified diversion location changes
 - 5 pumping locations (essentially 1 per shut-down surface water diversion) Pumping should be at least 440' from stream
- *Scenario 2: Aquifer storage and recovery, ASR (S2MAT)*
 - ASR specified as being the Mt. View Uplands
 - Does not include any hydrogeologic alterations
 - 3 - 5 Injection wells
 - 3 - 5 recovery wells (may be same)
- *Scenario 3: Shallow to deep aquifer groundwater diversion conversion (S3MAT)*
 - Within a single sub-watershed with a single primary target location (e.g., critical stream gage)

- 5 - 10 shallow wells to turn off 5 -10 deep wells to turn on
- Must be at a site that has information constraining vertical connectivity
- *Scenario 4: Moving groundwater pumping outside stream buffering (S4MAT)*
 - Within a single sub-watershed with a single primary target location (e.g., critical stream gage)
 - GIS selection of wells to shut down: wells that are less than the specified buffer distance from the stream
 - Simulate with wells shifted just to the buffer
 - Each well will retain its approximate upstream/downstream location
 - Well will pump with the same timing and rate as before
 - Predictions will provide a conservative estimate of improvement: minimum increase in lag and separation for the designated buffer distance
 - Assumptions
 - No change in recharge amount nor location
 - No transit losses routing water from well to original ag footprint
- *Scenario 5: Modifying agricultural drains (S5MAT)*
 - Within a single sub-watershed with a single primary target location (e.g., critical stream gage)
 - Turn off all drains (shut down conductance)

EXHIBIT "B"
(COMPENSATION)

As consideration for the services provided pursuant to Exhibit A. Scope of work, the County agrees to compensate the Contractor according to the hourly rates provided (below). Other reasonable expenses incurred in the course of performing the duties herein shall be reimbursed. Other expenditures such as printing, postage, telephone charges, and outreach supplies shall be reimbursed at actual cost. Charges for subconsultant (outside) services shall be reimbursed at actual cost.

Contractor will invoice monthly. Invoices will include hours work by employee by day together with tasks accomplished. Requests for reimbursement of expenses must be accompanied by copies of paid invoices itemizing costs incurred. Costs of alcoholic beverages are not eligible for reimbursement. **Compensation shall not exceed \$286,016.** Any work performed prior to the effective date of this contract or continuing after the completion date of the same unless otherwise agreed upon in writing, will be at the contractor's expense.

22-Aug-22

Table 1: S.S. Papadopoulos & Associates, Inc. - Phase 1, Whatcom Groundwater Model Refinement and Scenario Simulations Cost Estimate

STAFF CATEGORY	S/HR	Phase 1, Track 1: First Priority Refinements				Phase 1, Track 1: Second Priority Refinements				Phase 1, Track 2: Monthly Avg Completion/Proc.				Phase 1, Track 3: Processing/Visualization and Scenario Conceptual Development				SUBTOTALS (Across)	
		With CPU Charge		Dollars		With CPU Charge		Dollars		With CPU Charge		Dollars		With CPU Charge		Dollars		HOURS	DOLLARS
		Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost				
Principal	\$326.00																		
Senior Associate	\$257.00	16	\$4,112	68	\$17,476	30	\$7,710	64	\$16,448								178	\$45,746	
Associate	\$234.00																0	\$0	
Senior Hydrogeologist/Scientist	\$205.00	48	\$9,024	196	\$36,848	52	\$9,776	80	\$15,040								376	\$70,688	
Senior Project Hydrogeologist/Scientist	\$188.00																0	\$0	
Project Hydrogeologist/Scientist	\$179.00	8	\$1,288	96	\$15,456	48	\$7,728	64	\$10,304								216	\$34,776	
Senior Staff Hydrogeologist/Scientist	\$161.00	48	\$6,576	144	\$19,728	16	\$2,192	80	\$10,960								288	\$39,456	
Staff Hydrogeologist/Scientist	\$137.00																0	\$0	
Technician	\$104.00																0	\$0	
Support personal	\$95.00																0	\$0	
Field Supervisor	\$179.00																0	\$0	
Field Scientist	\$137.00																0	\$0	
Field Technician	\$95.00																0	\$0	
Labor Total		0	\$0	120	\$21,000	0	\$0	504	\$89,508	0	\$0	146	\$27,406	0	\$0	288	1058	\$190,666	
Task 1 total (Including GRT)			\$21,000.00		\$89,508.00		\$27,406.00		\$52,752.00									\$190,666.00	
GENERAL EXPENSES	EXPENSE																	Expense Total	
	TRAVEL - Per Diem (\$85 or \$135 per day)																	\$0	\$0.00
	TRAVEL - Airfare																	\$0	\$0.00
	TRAVEL - Vehicle rental																	\$0	\$0.00
	TRAVEL - Personal vehicle mileage																	\$0	\$0.00
	Telephone/fax																	\$0	\$0.00
	In-house copies																	\$0	\$0.00
	Supplies																	\$0	\$0.00
	Postage / courier																	\$0	\$0.00
	Equipment rental and supplies																	\$0	\$0.00
Computer Services																	\$0	\$0.00	
Temporary or other expenses																	\$0	\$0.00	
AESI - Subcontracting		\$0	\$0	\$0	\$24,640	\$24,640	\$0	\$0	\$16,990	\$16,990	\$0	\$0	\$16,990	\$16,990	\$0	\$0	\$95,350	\$95,350.00	
General Expense Total		\$0	\$0	\$24,640	\$24,640	\$0	\$0	\$53,720	\$53,720	\$0	\$0	\$53,720	\$53,720	\$16,990	\$16,990	\$0	\$95,350	\$95,350.00	
Task Expense Total (Including GRT)		\$0.00	\$0.00	\$24,640.00	\$24,640.00	\$0.00	\$0.00	\$53,720.00	\$53,720.00	\$0.00	\$0.00	\$53,720.00	\$53,720.00	\$16,990.00	\$16,990.00	\$0.00	\$95,350.00	\$95,350.00	
TOTAL LABOR, EXPENSES and GRT:		\$21,000.00	\$21,000.00	\$114,148.00	\$114,148.00	\$81,126.00	\$81,126.00	\$69,742.00	\$69,742.00	\$286,016.00	\$286,016.00	\$286,016.00	\$286,016.00	\$286,016.00	\$286,016.00	\$286,016.00	\$286,016.00	\$286,016.00	

Contract for Services
S.S. Papadopoulos & Associates, Inc.

