

**PROFESSIONAL SERVICES AGREEMENT
TILLAMOOK COUNTY AND ENVIRONMENTAL SCIENCE ASSOCIATES (ESA)
RENEKE CREEK CULVERT REPLACEMENT PRELIMINARY DESIGN**

This professional services agreement, hereafter "agreement" is entered into by and between ENVIRONMENTAL SCIENCE ASSOCIATES (ESA), hereafter "contractor" and TILLAMOOK COUNTY, a political subdivision of the State of Oregon, hereafter "county", pursuant to ORS 203.010. County and contractor intend to contract for RENEKE CREEK CULVERT REPLACEMENT PRELIMINARY DESIGN. The mutual promises of each are given in exchange and as consideration for, the promises of the other.

COUNTY AND CONTRACTOR MUTUALLY COVENANT AND AGREE AS FOLLOWS:

1. AGREEMENT

Contractor promises to provide, and county promises to pay for, the services described below according to the provisions of this agreement.

2. AGREEMENT PRICE AND AMOUNT

The price for the services provided by contractor shall be Eighty-Eight Thousand Seventeen and 00/100 Dollars (\$88,017.00).

3. AGREEMENT TERM

The term or period of this agreement shall begin February 22, 2023 and end June 30, 2023.

4. AGREEMENT DOCUMENTS

The following documents comprise the agreement and are incorporated herein by reference in their entirety.

- 4.1. This Agreement;
- 4.2. Public Contract Provisions; and
- 4.3. Scope of Work Dated February 7, 2023.

5. TERMINATION

5.1. WITHOUT NOTICE

This agreement shall terminate without any requirement of notice to either party when the first of the following events occurs:

- 5.1.1. The parties mutually consent to termination in writing.
- 5.1.2. The agreement term ends.
- 5.1.3. The moment prior to the contractor filing for the settlement of debts or any debt restructuring in any state, federal or other court of competent jurisdiction.
- 5.1.4. When contractor's proposed agreement price adjustments exceed agreement specifications.

**PROFESSIONAL SERVICES AGREEMENT
TILLAMOOK COUNTY AND ENVIRONMENTAL SCIENCE ASSOCIATES (ESA)
RENEKE CREEK CULVERT REPLACEMENT PRELIMINARY DESIGN**

5.2. WITH NOTICE

This agreement may also end and notice shall be served as required when:

- 5.2.1. Any party breaches any duty, term or condition of this agreement.
- 5.2.2. Either party commits a fraud or misrepresentation upon the other party.
- 5.2.3. Public funds are no longer available to support this agreement.
- 5.2.4. Either party gives thirty (30) days written notice.

GENERAL PROVISIONS

6. STATUS OF CONTRACTOR

The parties intend that contractor, in performing the services specified in this agreement, shall act as an independent contractor.

- 6.1. The compensation provided herein shall be exclusive and county shall neither pay nor provide contractor with any fringe benefits, including, but not limited to, retirement, health insurance, Workers' Compensation insurance, unemployment insurance or sick leave. No additional compensation or alternate form thereof shall be payable by county to contractor for any purpose whatsoever unless otherwise agreed in writing. Contractor shall be responsible for paying all income taxes, Social Security or self-employment taxes, or any other taxes or assessments imposed by any governmental body incurred by reason of county's payment of compensation hereunder to contractor. County will report the total amount of all payments to contractor, including any expense, in accordance with Federal Internal Revenue Service and State of Oregon Department of Revenue regulations.
- 6.2. This agreement is personal as to contractor and contractor may not subcontract any portion of the services to be performed hereunder without the prior written approval of county; provided nothing herein shall prohibit any other consultants employed by contractor or in a firm of which contractor shall be a member to assist contractor in carrying out the responsibilities herein.
- 6.3. This agreement is not a contract of employment. The parties intend that contractor, in performing the services specified herein, shall be and act as an independent contractor and shall have professional control of the work and the manner in which it is performed. Contractor shall have the sole authority to determine the manner and means of performing the services described herein and county shall not interfere with, control or direct the manner or method in which such services are performed; provided, county shall direct contractor as to the work to be assigned and shall have the right to direct the required results to the extent such direction may be

PROFESSIONAL SERVICES AGREEMENT
TILLAMOOK COUNTY AND ENVIRONMENTAL SCIENCE ASSOCIATES (ESA)
RENEKE CREEK CULVERT REPLACEMENT PRELIMINARY DESIGN

consistent with the nature of contractor's services. Except as otherwise expressly provided herein and except for the purposes of the Oregon Tort Claims Act, ORS 30.265, contractor shall not be considered an agent of county.

- 6.4. Contractor shall be responsible for and has obtained or shall obtain and maintain all necessary professional licenses and professional liability insurance, as required by law.
- 6.5. In the event contractor's labor or services shall be performed by contractor's employees, such employees shall be and at all times remain the employees of contractor, under the contractor's sole and exclusive control and shall not be deemed employees of county for any purpose.
- 6.6. Contractor is an independent contractor for purposes of the Workers' Compensation Law (ORS Chapter 656) and unemployment insurance.
 - 6.6.1. Contractor is solely liable for any Workers' Compensation coverage under this agreement. If contractor has the assistance of other persons in the performance of this agreement, contractor shall qualify and remain qualified for the term of the agreement as an insured employer under ORS 656.407. If contractor performs this agreement without the assistance of any other persons, contractor shall execute a Joint Declaration with county's Workers' Compensation carrier absolving county of any and all liability as provided in ORS 656.029.
 - 6.6.2. If contractor is a subject employee for Workers' Compensation or unemployment insurance purposes, contractor shall provide such Workers' Compensation and unemployment coverage benefits at contractor's sole cost and expense and shall provide proof of such insurance and benefits at county's request.
- 6.7. Contractor represents that contractor has filed federal and state income tax returns (a) in contractor's business name or (b) on a business Schedule C as part of contractor's personal income tax returns, if contractor provided consulting services as an independent contractor during the previous calendar year.
- 6.8. Contractor represents that contractor is customarily engaged in an independently established business. To that end, contractor represents that at least three (3) of the following apply to contractor's business (initial those that apply):
 - 6.8.1. _____ Contractor maintains a business location that is separate from the business or work location of the person for whom the services are provided or that is in a portion of contractor's residence and that portion is used primarily for the business.

**PROFESSIONAL SERVICES AGREEMENT
TILLAMOOK COUNTY AND ENVIRONMENTAL SCIENCE ASSOCIATES (ESA)
RENEKE CREEK CULVERT REPLACEMENT PRELIMINARY DESIGN**

- 6.8.2. _____ Contractor bears the risk of loss related to the business or the provision of services as shown by factors such as: Contractor enters into fixed price contracts; contractor is required to correct defective work; contractor warrants the services provided; or contractor negotiates indemnification agreements or purchases liability insurance, performance bonds or errors and omissions insurance.
- 6.8.3. _____ Contractor provides contracted services for two (2) or more different persons within a twelve (12) month period, or contractor routinely engages in business advertising solicitation or other marketing efforts reasonably calculated to obtain new contracts to provide similar services.
- 6.8.4. _____ Contractor makes a significant investment in the business, through means such as: purchasing tools or equipment necessary to provide the services; paying for the premises or facilities where the services are provided; or paying for licenses, certificates or specialized training required to provide the services.
- 6.8.5. _____ Contractor has the authority to hire other persons to provide or to assist in providing the services and has the authority to fire those persons.

7. NON-DISCRIMINATION

Contractor shall comply with all applicable federal, state and local laws, rules and regulations on non-discrimination in employment because of race, color, ancestry, national origin, religion, sex, marital status, age, medical condition or disability.

8. NOTICES

Any notice required or permitted under this agreement shall be in writing.

8.1. Notices shall be deemed given when:

- 8.1.1. Personally delivered, or
- 8.1.2. Three (3) days after deposit in United States certified mail, postage prepaid, addressed to the other party at their last known address.

8.2. Notices, bills and payments sent by mail should be addressed as follows:

COUNTY: Tillamook County Public Works
Attn: Chris Laity, PE
503 Marolf Loop Road
Tillamook, Oregon 97141
503-842-3419
pwinvoices@co.tillamook.or.us

PROFESSIONAL SERVICES AGREEMENT
TILLAMOOK COUNTY AND ENVIRONMENTAL SCIENCE ASSOCIATES (ESA)
RENEKE CREEK CULVERT REPLACEMENT PRELIMINARY DESIGN

CONTRACTOR: Environmental Science Associates (ESA)
Hunter White, PE
819 SE Morrison Street, Suite 310
Portland, Oregon 97214
971-295-5014
hwhite@esassoc.com

9. STATUTORY PUBLIC CONTRACT PROVISIONS

Contractor shall comply with the statutory public contract provisions as more particularly set forth herein.

10. CONFLICT OF INTEREST

Contractor covenants that contractor presently has no interest and shall not acquire any interest, direct or indirect, which would conflict in any manner or degree with the performance of contractor's services. Contractor further covenants that in the performance of this agreement no person having any such interest shall be employed.

11. RECORDS

Contractor shall create and maintain records in accordance with generally accepted standards of contractor's practice and the records requirements of county. The records shall remain the property of county and be made available to county upon request. Contractor shall exercise due care to maintain the confidentiality of client records in accordance with law.

12. CONSTRAINTS

This agreement is expressly subject to the debt limitations of the Oregon Constitution set forth in Article XI, Section 10 and is contingent upon funds being available and appropriated therefore. Any provisions of this agreement which would conflict with law are deemed inoperative to that extent.

13. INTEGRATION

This agreement supersedes all prior oral or written agreements between contractor and county regarding this project. It represents the entire agreement between the parties. Time is of the essence in all terms, provisions, covenants and conditions in this agreement.

14. SAVINGS

Should any clause or section of this agreement be declared by a court to be void or voidable, the remainder of this agreement shall remain in full force and effect.

15. WAIVER; MODIFICATION

Failure by county to enforce any provision of this agreement does not constitute county's continuing waiver of that provision, any other provision or of the entire agreement. The rights and duties under this agreement shall not be modified,

PROFESSIONAL SERVICES AGREEMENT
TILLAMOOK COUNTY AND ENVIRONMENTAL SCIENCE ASSOCIATES (ESA)
RENEKE CREEK CULVERT REPLACEMENT PRELIMINARY DESIGN

delegated, transferred or assigned, except upon the written, signed consent of both parties.

16. LIABILITY; INDEMNIFICATION

County has relied upon the professional ability, qualifications and training of contractor as a material inducement to enter into this agreement. Contractor warrants that all of contractor's services will be performed in accordance with generally accepted professional practices and standards as well as the requirements of applicable federal, state and local laws, it being understood that acceptance of contractor's work by county shall not operate as a waiver or release of any claim. Contractor shall defend, indemnify and hold harmless county, its officers, agents and employees from any claims, liabilities, demands, damages, actions or proceedings, arising from or relating to the professional negligence of contractor in connection with the performance of any services hereunder. **Minimum limits required for professional malpractice is \$1,000,000.** Notwithstanding the foregoing, where applicable, contractor shall be deemed an agent of county, for the sole purposes of a tort liability pursuant to the Oregon Tort Claims Act, ORS 30.265.

Such insurance shall be evidenced by a Certificate of Insurance provided to the county, indicating coverages, limits and effective dates, by an insurance company licensed to do business in the State of Oregon. The endorsement shall also contain a notice of cancellation provision.

17. JURISDICTION; LAW

This agreement is executed in the State of Oregon and is subject to Tillamook County and Oregon law and jurisdiction. Venue shall be in Tillamook County, Oregon, unless otherwise agreed by the parties.

18. LEGAL REPRESENTATION

In entering into this agreement, each party has relied solely upon the advice of their own attorney. Each party has had the opportunity to consult with counsel. Each party represents and warrants to the other that they are fully satisfied with the representation received from their respective attorneys.

19. ATTORNEYS' FEES

Attorneys' fees, costs and disbursements necessary to enforce this agreement through mediation, arbitration and/or litigation, including appeals, shall be awarded to the prevailing party, unless otherwise specified herein or agreed.

20. LANGUAGE

The headings of the agreement paragraphs are intended for information only and shall not be used to interpret paragraph contents. All masculine, feminine and neuter genders are interchangeable. All singular and plural nouns are interchangeable, unless the context requires otherwise.

PROFESSIONAL SERVICES AGREEMENT
TILLAMOOK COUNTY AND ENVIRONMENTAL SCIENCE ASSOCIATES (ESA)
RENEKE CREEK CULVERT REPLACEMENT PRELIMINARY DESIGN

21. SUBCONTRACTING

Any subcontract ad infinitum of this agreement shall express the GENERAL PROVISIONS section of this agreement or incorporate it by reference.

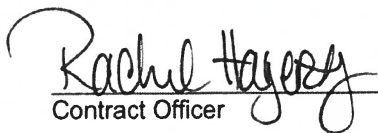
22. BREACH

Contractor agrees to immediately notify county of any potential unauthorized breach, use or disclosure of data or information, and to take all actions reasonably necessary to prevent further unauthorized use or disclosure thereof.

ACKNOWLEDGEMENT:

EACH PARTY REPRESENTS TO THE OTHER BY THEIR SIGNATURES BELOW THAT EACH HAS READ, UNDERSTANDS AND AGREES TO ALL COVENANTS, TERMS AND CONDITIONS OF THIS AGREEMENT. EACH PARTY REPRESENTS TO THE OTHER TO HAVE THE ACTUAL AND/OR APPARENT AUTHORITY TO BIND THEIR RESPECTIVE LEGAL PERSONS, CORPORATE OR OTHERWISE, IN CONTRACT.

Approved as to form and content this 8th day of February, 2023.


Contract Officer

Dated this 9th day of February, 2023.

CONTRACTOR: ENVIRONMENTAL SCIENCE ASSOCIATES (ESA)



Kevin Coulton, PE, CFM
819 SE Morrison Street, Suite 310
Portland, Oregon 97214
503-274-2010
kcoulton@esassoc.com

PROFESSIONAL SERVICES AGREEMENT
TILLAMOOK COUNTY AND ENVIRONMENTAL SCIENCE ASSOCIATES (ESA)
RENEKE CREEK CULVERT REPLACEMENT PRELIMINARY DESIGN

PUBLIC CONTRACT PROVISIONS

1. Contractor shall pay promptly, as due, all persons supplying labor or materials for the prosecution of the work provided for in the contract, and shall be responsible for such payment of all persons supplying such labor or material to any sub-contractor. If contractor fails, neglects or refuses to make prompt payment of any claim for labor or materials furnished to the contractor or a sub-contractor by any person in connection with the contract as such claim becomes due, the owner may pay such claim to the persons furnishing the labor or materials and charge the amount of payment against funds due or to become due contractor by reason of the contract. The payment of a claim in the manner authorized hereby shall not relieve the contractor or contractor's surety from contractor's or surety's obligation with respect to any unpaid claim. If the owner is unable to determine the validity of any claim for labor or materials furnished, the owner may withhold from any current payment due contractor an amount equal to said claim until its validity is determined and the claim, if valid, is paid.
2. Contractor shall promptly pay all contributions or amounts due the Industrial Accident Fund from such contractor or sub-contractor incurred in the performance of the contract, and shall be responsible that all sums due the State Unemployment Compensation Fund from contractor or any sub-contractor in connection with the performance of the contract shall promptly be paid.
3. Contractor shall not permit any lien or claim to be filed or prosecuted against the owner on account of any labor or materials furnished and agrees to assume responsibility for satisfaction of any such lien so filed or prosecuted.
4. Contractor and any sub-contractor shall pay to the Department of Revenue all sums withheld from employees pursuant to ORS 316.167.
5. If this contract involves lawn and landscape maintenance, contractor shall salvage, recycle, compost or mulch yard waste material at an approved site, if feasible and cost effective.
6. Contractor shall promptly, as due, make payment to any person, co-partnership, association, or corporation furnishing medical surgical and hospital care or other needed care and attention, incident to sickness or injury, to employees of such contractor, of all sums which the contractor agrees to pay for such services and all monies and sums which the contractor collected or deducted from the wages of employees pursuant to any law, contract or agreement for the purpose of providing or paying for such service.
7. Contractor shall employ no person for more than ten (10) hours in any one (1) day, or forty (40) in any one (1) week, except in cases of necessity, emergency or where public policy absolutely requires it.

PROFESSIONAL SERVICES AGREEMENT
TILLAMOOK COUNTY AND ENVIRONMENTAL SCIENCE ASSOCIATES (ESA)
RENEKE CREEK CULVERT REPLACEMENT PRELIMINARY DESIGN

Contractor's employees shall be paid at least time and one-half (1 and 1/2) for all overtime worked in excess of forty (40) hours in any one (1) week, except for individuals under Personal Services Contracts who are excluded under ORS 653.010 to 653.261 or under 29 USC 201 to 209 from receiving overtime.

Persons employed by contractor shall receive at least time and one-half (1 and 1/2) pay for work performed on legal holidays specified in a collective bargaining agreement or in ORS 279C.540(1)(b)(B) to (G) and for all time worked in excess of ten (10) hours in any one (1) day or in excess of forty (40) hours in any one (1) week, whichever is greater.

8. The contractor must give notice to employees who work on this contract in writing, either at the time of hire or before commencement of work on the contract, or by posting a notice in a location frequented by employees, of the number of hours per day and the days per week that the employees may be required to work.
9. Contractor must give notice to employees, in writing, that they cannot be discharged, demoted, or otherwise discriminated against as a reprisal for disclosing information that the employee reasonably believes is evidence of gross mismanagement of a federal contract or grant, a gross waste of federal funds, an abuse of authority relating to a federal contract or grant, a substantial and specific danger to public health or safety, or a violation of a law, rule, or regulation related to a federal contract or grant.
10. All employers working under the contract are either subject employers who will comply with ORS 656.017 or employers that are exempt under ORS 656.126.
11. The contract may be cancelled at the election of owner for any willful failure on the part of contractor to faithfully perform the contract according to its terms.

END OF PUBLIC CONTRACT PROVISIONS

memorandum

date February 7, 2023
to Chris Laity, Tillamook County Public Works (TCPW)
from Hunter White, PE, ESA
subject Reneke Creek Culvert Replacement – Preliminary Design – SCOPE OF WORK

INTRODUCTION

The following scope of work is for the ESA Team—Environmental Science Associates (ESA) and David Evans Associates (DEA) to provide preliminary design and engineering services for replacing the culvert at Reneke Creek and Sand Lake Road. The ESA Team is currently working on the Sitka Sedge Tidal Wetland (SSTW) restoration project under separate contract with Tillamook Estuaries Partnership, which is focused on modifications to the Beltz Dike to restore fish passage and connectivity to Beltz Marsh. While the SSTW project will consider the anticipated future replacement of the Reneke Creek/Sand Lake Road culvert, the SSTW project scope of work does not include detailed analysis or design related to the Reneke Creek/Sand Lake Road crossing structure, associated potential channel realignment, and associated roadway improvements.

Reneke Creek has become a high priority replacement for TCPW due to frequent overtopping that occurs at the crossing. TCPW has requested for the ESA Design Team to perform preliminary engineering and design services to determine the appropriate Type, Size, and Location (TS&L) for the culvert replacement. This effort would take advantage of the 2D HEC-RAS modeling and hydrologic analysis, topographic survey and base mapping, and field data collection associated with the separate SSTW project.

ESA Team Roles and Responsibilities:

ESA will be the prime consultant leading the TS&L study and will provide a hydraulic and geomorphic assessment and lead the preliminary stream and fish passage design. DEA will provide bridge and roadway design services to prepare a TS&L report for replacing the existing culvert.

ESA will be responsible for the following tasks:

1. Conducting a hydraulic and geomorphic assessment including field reconnaissance, desktop review of LiDAR data, hydrology data, and geomorphic features, and summarizing the assessment in recommendations for the Reneke Creek stream alignment, crossing location, and dimensions.
2. Evaluate potential changes to the watershed and flows under the new bridge based on potential realignment of Reneke Creek.
3. Develop base mapping of the road/stream crossing area using LiDAR, topographic survey, and aerial photo data collected as part of the SSTW project.

4. Evaluate peak flow performance of a new crossing structure and provide recommended channel dimensions and peak water surface elevations at the crossing for freeboard, sediment, and debris passage.
5. Coordinate with ODFW and develop a preliminary fish passage plan for the crossing.
6. Review available geotechnical engineering data and reports associated with the Reneke Creek Crossing and provide data to DEA.
7. Identify necessary permits for proposed bridge replacement work.
8. Preparing and combining all project specifications for contracting and other administrative issues.
9. Lead production of a preliminary design plan set (30% Design) and TS&L Report, with support from DEA.

DEA will provide design and related services for the development of the TS&L Report as follows:

1. Evaluate up to two bridge alternatives for replacement of the existing culvert.
 - a. Due to poor bearing capacities and scour potential of existing soils, the bridge is assumed to be supported by pile foundations. No final geotechnical report is available for the preparation of the TS&L report, therefore assumptions will be made regarding the depth and quantity of piling.
 - b. Realignment of Reneke Creek away from the current roadside ditch will require wingwalls to protect the roadway at each bridge corner.
2. Establish the preliminary horizontal and vertical roadway alignment to raise the road above the 100-year flood elevation.
 - a. Increase in roadway elevation is assumed to be 3-4 feet.
 - b. Roadway design will extend back far enough on each side of the bridge to tie in the raised roadway portion to the existing road.
3. Support ESA in the preparation of a preliminary design plan set and TS&L report discussing the findings of the bridge alternatives evaluation and recommended roadway and bridge design.

SCOPE OF WORK –

Task 1 – Project Management, Meetings, and Coordination

1.1 – Project Management

ESA Team will perform routine project management activities: accounting setup, tracking budget and schedule, invoicing.

Monthly invoices will be prepared to document progress and expenditures to date. Potential issues will be identified as well as potential solutions and impacts to the project schedule, all of which will be brought to the client's attention by email, phone, or in-person correspondence. Design schedule will be reviewed by and mutually agreed to by ESA, DEA, and TCPW.

1.2 – Meetings

ESA Team will prepare for and attend design coordination meetings including a design kickoff meeting and one progress review meeting to discuss the TS&L Report deliverables.

DEA and ESA will participate in a kickoff meeting with TCPW to discuss the project background, scope, concepts, schedule, and management, and coordinate the collection of necessary information that has not been previously obtained. The meeting will be held virtually. An on-site meeting has already been conducted with ESA, DEA and TCPW to inform this scope of work.

ESA and DEA will work together to schedule and attend meetings, prepare agenda items, and compile project meeting summaries for distribution.

1.3 – Project Coordination

ESA and DEA will coordinate on the development of a topographic map of the project site based on LiDAR and survey data collected as part of the SSTW project. We will work to verify the extents of available data and determine if additional survey data is needed. Additional data collected by ESA will be incorporated into the base mapping.

ESA will coordinate with DEA regarding the impacts of the hydraulic study on the bridge size requirements, establish right of way needs, or other interdisciplinary coordination as needed for a typical transportation project.

1.4 – Geotechnical Information Review and Recommendations

ESA and DEA will review existing geotechnical information and assess its suitability for its use in the development of preliminary foundation design assumptions. DEA will provide recommendations to ESA regarding the type of additional geotechnical design information necessary for final design. Recommendations will be provided through a project design memo delivered via email.

Assumptions:

- The meetings will be attended by two ESA staff and one DEA staff.
- The two meetings will be up to one hour in duration and held virtually.
- This scope is expected to take approximately 4 months to complete, in coordination with the SSTW project timeline.
- The available geotechnical engineering report from Hart Crowser, along with available geotechnical data from the Whalen Island bridge will be sufficient for this preliminary design phase of work, but additional geotechnical data, analysis, and recommendations will likely be required for final design.
- LiDAR and survey data collected as part of the SSTW project will be sufficient for preliminary design of the Reneke Creek culvert replacement and potential channel realignment.

Deliverables:

- Monthly invoices and brief progress reports.
- Emailed meeting summaries briefly capturing key points and decisions made.

Task 2 – Hydraulic and Geomorphic Analysis

2.1 – Review Existing Info, Field Investigations and Geomorphic Assessments – ESA geomorphologists and engineers will review available desktop data and perform additional field investigations along Reneke Creek and the Sand Lake Road crossing, to evaluate and characterize site conditions related replacing the existing culvert and potentially realigning a portion of Reneke Creek. to the roadway, stream, and construction logistics. We will analyze LiDAR data terrain surfaces to characterize the current and historical alignments of Reneke Creek, including analysis of the alluvial fan where Reneke Creek leaves the forested hillside through the flatter valley towards Sand Lake. The purpose of this assessment is to recommend the appropriate alignment of Reneke Creek and determine the location for a new crossing structure to convey Reneke Creek beneath Sand Lake Road.

ESA will perform limited hydraulic and geomorphic field assessments of each stream to inform the fish passage design and scour analysis, including characterization of the upstream and downstream channel reaches, measuring streambed substrate to characterize the D_{50} and D_{100} grain size.

ESA will also conduct Active Channel Width (ACW) measurements at Reneke Creek, in accordance with ODFW methodology described in footnote “e” of the *ODFW Fish Passage Plan for a Road-Stream Crossing* form.

Assumptions:

- TCPW will obtain permissions to enter the adjacent private properties for field investigations upstream on Reneke Creek. OPRD owns the land upstream and downstream of the Tillamook County right of way.
- 2 ESA staff will conduct the field portion of the geomorphic assessment.

Deliverables:

- None. Information collected will be incorporated into subsequent deliverables.

2.2 – Base Mapping/Survey Data Compilation – ESA will compile base mapping for the Reneke Creek/Sand Lake Road crossing and potential channel realignment area utilizing survey data collected for the SSTW project. These include 2009 LiDAR elevation data, 2022 LiDAR data, and topographic survey data collected by OPRD, Statewide Land Surveying, and ESA. ESA will compile the data into a comprehensive base map for use by the design team.

Assumptions:

- The survey will be prepared to the US State Plane, Oregon North Zone horizontal datum and NAVD88 vertical datum.
- No boundary survey will be completed for this phase of work.
- Data already collected for the SSTW will be sufficient for this phase of work.

Deliverables:

- Base Mapping - PDF sheet, DWG, ASCII points files, and LAND XML Surface files.

2.3 – Hydrologic, Hydraulic, and Scour Analysis and Fish Passage Coordination –

ESA will perform hydrologic and hydraulic analyses to inform the stream crossing design, including structure hydraulic capacity, stream channel dimensions, and streambed characteristics. At this stage we will also begin coordination with ODFW’s local biologists and state fish passage staff to develop a design strategy for the replacement structures and stream channels to comply with NMFS and ODFW standards, guidelines, and fish passage design criteria.

ESA will develop hydrology estimates and design flows utilizing USGS Streamstats, verified by a watershed scaling of the nearest gaged stream comparable to the project creeks (USGS 14303200, Tucua Creek near Blaine, OR). If high-water mark surveys or photo documentation is available, we will review these materials for consideration in hydraulic design.

ESA will utilize the 2D HEC-RAS existing conditions model being developed for the SSTW project, adding detail needed to evaluate culvert replacement at Reneke Creek. We will utilize the model to evaluate crossing dimensions (rise and span) required to provide hydraulic capacity and freeboard for safe passage of peak flows, including the 100-year peak flow and considerations flow increases due to climate change.

Following the FHWA's guidance in HEC-18 and HEC-23, ESA will perform a bridge scour analysis to identify needed countermeasures and minimum foundation depths. We will summarize efforts under this task in a Hydraulic Analysis and Scour Evaluation Memorandum. We will evaluate the potential for changes in water surface conditions or geomorphic adjustments to the channel form upstream and downstream of the crossing.

Assumptions:

- The Reneke Creek/Sand Lake Rd crossing is outside of the FEMA mapped 100-year floodplains, and a formal no-rise certification or floodplain development permit are not required. A LOMR/CLOMR will not be required as part of the culvert replacement design project. If No-rise or LOMR/CLOMR is needed, these will be part of the final design phase.
- ODFW coordination will include a 1-hour video conference attended by 2 ESA staff, with additional follow-up coordination (approximately 2 phone calls and 2 emails).

Deliverables:

- Hydraulic Analysis and Scour Evaluation Memorandum.

Task 3 – Preliminary Design (30% Design)

3.1 – 30% Design Drawings – The ESA design team will prepare 30%-level preliminary design drawings for the stream, roadway, and structure improvements for replacing the Reneke Creek culvert. ESA will lead production of the plan set and prepare all general site plans, and sheets related to the stream realignment and stream crossing, including plan and profile sheets for the Reneke Creek realignment and road crossing.

DEA will prepare plan sheets related to the structures and roadway improvements in accordance with Tillamook County Public Works and AASHTO HL93 design standards and requirements.

DRAFT SHEET LIST		LEAD FIRM
G1.0	COVER SHEET	ESA
G1.1	GENERAL NOTES AND ABBREVIATIONS	ESA
G1.2	SITE PLAN AND OVERVIEW	ESA
G1.3	EXISTING CONDITIONS / SITE SURVEY AND CONTROL	ESA
C2.1/2.2	STREAM GRADING PLAN AND PROFILE	ESA
C2.3	STREAM CHANNEL CROSS SECTIONS	ESA
R1.2	ROADWAY ALIGNMENT PLAN AND PROFILE	DEA
R1.3	ROADWAY SECTIONS & DETAILS	DEA
S1.2	STRUCTURAL – BRIDGE PLAN AND ELEVATION	DEA

Erosion and Sediment Control, stream diversion, traffic bypass/traffic control, demolition/site protection, site restoration/revegetation, stream bed/grade control details, and other plans will not be included in the 30% Design Plans.

Stream and Fish Passage Design

ESA will develop a proposed channel alignment and profile for Reneke Creek. The creek is expected to be realigned away from the roadside ditch it currently occupies, with a likely realignment through the pasture upstream/north of the Sand Lake Road crossing. We will consider maintaining the existing roadside drainage

ditch while providing scour protection at the proposed bridge abutments. ESA will develop plan, profile, and stream cross section views for use in coordinating the structure design and facilitating fish passage review. We anticipate providing a stream simulation fish passage design in accordance with ODFW fish passage requirements.

Roadway Alignment & Profile

DEA will develop a preliminary horizontal and vertical alignment for Sand Lake Road. The new roadway is anticipated to be raised 3-4 feet relative to the existing profile, with the horizontal alignment matching existing. DEA will also consider potential bypass or detour alternatives needed to facilitate construction of the new bridge on the existing alignment. The horizontal and vertical alignment information and construction bypass alternatives will be developed in AutoCAD Civil3D software and will be accompanied by a concise design narrative as part of the TS&L report documenting key decisions resulting in the chosen design.

Roadway design will be prepared in accordance with following AASHTO and Oregon publications:

- A Policy on Geometric Design of Highways and Streets, AASHTO (Sixth Edition, 2011)
- ODOT Highway Design Manual (HDM) (2023)
- ODOT Contract Plans Development Guide (2016)

Bridge Design

Once the Basis of Design has been completed, DEA will prepare a Plan and Elevation (P&E) sheet for the new bridge that will include plan and elevation views and a cross section of the superstructure to illustrate the proposed bridge design. The development of this plan sheet will occur after the hydraulic study has been completed and the final elevation of the bridges has been established. Based on previous discussions with the County, the preferred bridge type has been established as a precast concrete slab bridge on pile supported foundations. Impacts of potential construction staging solutions and potential bridge lengths will be evaluated as part of the preliminary bridge design. Up to two different bridge lengths will be evaluated. Evaluated construction staging alternatives will include: replacement under full closure, in-line replacement with a temporary detour bridge provided during construction, and staged construction.

Due to the potential for high flows in the current roadside ditches, bridge design will include evaluation of approximate wingwall lengths to protect bridge abutments and road approaches from erosion. Bridge concepts will not consider liquefaction and lateral spread during seismic events. Mitigation for those effects will require further geotechnical study during a future phase of the project.

3.2 – Type, Size, and Location Report

Since the bridge type has already been determined, an abbreviated Type, Size & Location (TS&L) Report will be prepared that will include the following:

- Design narrative describing up to two alternatives considered for bridge and road elements. This will include, at a minimum, an evaluation of the appropriate bridge length, location, and construction staging impacts of potential design solutions.
- Rationale for and design criteria for the proposed alignment of Reneke Creek and the location of the creek/roadway crossing structure.
- Summary of hydraulic and geomorphic assessment and fish passage design criteria and parameters.
- Plan and Elevation drawings for the precast slab bridge that will include plan, elevation, and section views showing the bridge location and overall footprint.
- Estimated quantities and construction cost estimate for the bridge, walls, roadway, and stream work.

- Description of the design Roadway alignment.
- Identification of affected utilities.

ESA will lead the production of the TS&L Report with support from DEA. This TS&L Report will become the basis of the final design for the project.

Deliverables:

- 30% Design Drawings – PDF format for review
- Type, Size, and Location Report – PDF Format for review
- CAD Files available upon request.

General Assumptions:

- The level of effort for these tasks is limited to the staff hours shown in the budget estimate and as limited by the assumptions herein. Should additional time be required, ESA will notify TCPW and a revised level of effort will be negotiated.
- No traffic studies will be performed as part of this contract.
- No wetland delineation will be performed as part of this contract. Any permitting services will be part of a future final design phase, or combined with the SSTW project.
- Structures replacing the existing culverts will be designed to meet the requirements of AASHTO Bridge Design Specifications, 8th Edition.
- ODOT Standard Plans, Details and Drawings will be used as much as practicable to streamline plans development.

SCHEDULE

The following is an approximate schedule intended to align with the SSTW project timeline and associated field data collection and hydraulic modeling effort.

- NTP – February 22, 2023
- Virtual Kickoff Meeting – Feb 27, 2023 (approximate)
- Hydraulic and Geomorphic Assessment – February-March 2023
- Roadway and Structural Design – March-April 2023
- 30% Design and TS&L Report – June 30, 2023

BUDGET ESTIMATE

A budget of \$88,017 is estimated to accomplish this scope of work (Attachment B). Estimated task levels of effort (hours) and costs are outlined by staff, billing rates, and associated hours. The budget estimate reflects the time and materials estimated to accomplish the work. A general assumption guiding the budget estimate is that the scope of work tasks will be performed for the level of effort (hours) indicated given our current knowledge of the project objectives, site conditions, available data, and current staff billing rates. Should more, or less, effort be required, ESA will notify the TCPW promptly and modifications to the budget will be made by mutual agreement following provisions of the Contract for Services.

EXHIBIT B - DETAILED BUDGET SPREADSHEET

Reneke Creek - Preliminary Design (30%, TS&L)		ESA										DEA										Sub-Task Totals	
TASK		Project Director		Prime Contractor, Civil and Water Resources Engineering		ESA		Engineering		Structural and Roadway		DEA		Hour		Labor Subtotals		ESA Expenses		Sub-Task Totals		Labor + Expenses	
		Kevin C. PE	Hunter W. PE	Sr. Engineer	Manager & Principal	Modeling Lead	Design Lead	Hydraulic Engineer	Support	Admin	Manager/QC	Bridge Design	QC	Paul T.	Project Coordinator	Hour							
1.1	Project Management	4	12	8	4	4	1	8	4	8	4	4	4	4	4	40	\$7,024.00					\$7,024.00	
1.2	Meetings		8	4	4	4	2	4	4		6	4	4	4	2	28	\$5,264.00					\$5,264.00	
1.3	Structural Project Coordination (Survey and Hydraulic Report)		2	2	2	2	1	2	2		4	4	4	4		16	\$2,832.00					\$2,832.00	
1.4	Geotechnical Info Review and Recommendations		1	1	1	1	1	1	1		4	4	4	4		11	\$1,821.00					\$1,821.00	
Task Sub-Total																95	\$16,729.00					\$16,729.00	
2.1	Review Exist Site Info, Field Investigations, Geomorphic Assess.	2	8	6	12	16	12	12	12							56	\$11,108.00	\$450.00				\$11,558.00	
2.2	Base Mapping/Survey Data Compilation		2	4	4	4	4	4	4		10					10	\$1,838.00					\$1,838.00	
2.3	H&H, Scour Analysis, and Fish Passage Coordination	2	6	4	8	48	48	48	48							118	\$21,218.00					\$21,218.00	
Task Sub-Total																184	\$34,164.00					\$34,164.00	
3.1	30% Design Drawings	1	12	2	2	32	24	24	8		8	32	24	4	24	163	\$25,561.00					\$25,561.00	
3.2	TS&L Report	1	4	2	2	16	8	8	8		8	16	4	4		67	\$11,113.00					\$11,113.00	
Task Sub-Total																230	\$36,674.00					\$36,674.00	
Grand Total																509.0	\$87,567.00	\$450.00				\$88,017.00	
Billable Hourly Labor Rates		10	57	10	259.00	\$23,086.00	\$11,913.00	\$119.00	\$146.00	\$136.00	\$196.00	\$122.00	\$125.00	\$202.00	\$141.00								
Total Fee per Staff		\$2,590.00	\$2,590.00	\$2,590.00	\$2,590.00	\$6,688.00	\$6,688.00	\$23,086.00	\$16,206.00	\$1,088.00	\$6,664.00	\$6,832.00	\$4,250.00	\$1,616.00	\$3,384.00								






ProSA ESA - Reneke Creek Culvert Replacement Design exp 2023-06-30 (002)

Final Audit Report

2023-02-09

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By:	Sarah Christopherson (schristopherson@esassoc.com)
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