INFORMATIONAL MEMORANDUM

TO: **Transportation and Infrastructure Services Committee**

FROM: **Pete Mayer, Public Works Director**

BY: **Adib Altallal, Utilities Engineer**

CC: **Mayor Thomas McLeod**

DATE: **February 21, 2025**

SUBJECT: **Water Fund – Ryan Hill Water System Connection**
Project No. 92540103 – Design Contract

ISSUE

Approve a design contract with Carollo Engineers to provide design services for the Ryan Hill Water System Connection project in the amount of $601,505.00.

BACKGROUND

The Ryan Hill neighborhood, comprising the Lower and Upper Ryan Hill Zones, is not connected to the City's main water distribution system. It currently relies on a single water supply station with a set contractual flow rate and an emergency intertie with Seattle Public Utilities. Future projections indicate that in the next 20 years, water demand will exceed the available supply, and the lack of dedicated water storage leaves the area vulnerable during peak demands, fire flow events, and emergencies. To address these challenges, the City intends to construct a new water main to connect Ryan Hill to the rest of the City's system. This connection will enhance system reliability, improve efficiency by providing access to City water storage, and support community growth, including housing expansion and job opportunities. The project consists of a trenchless crossing and an open cut installation. The trenchless component will involve installing an 18-inch water main using advanced trenchless technologies beneath Interstate 5 (I-5) and the BNSF railroad tracks. The open cut component will extend from the eastern end of the trenchless crossing to the Ryan Hill neighborhood using traditional trenching methods. Carollo Engineers will provide the design, permitting support, and easement acquisition assistance required for the project. The design phase is expected to take approximately two years, with construction planned for 2027.

DISCUSSION

The design contract includes project management, alternatives analysis, preliminary (30%) design, coordination with agencies and utilities, permitting initiation, and easement acquisition support. Carollo will evaluate multiple alignment alternatives to determine the most feasible route. The northern alignment follows South Boeing Access Road from East Marginal Way to the east side of I-5. The middle alignment follows the Seattle City Light transmission corridor from East Marginal Way to Martin Luther King Jr. Way. The southern alignment extends from 44th Avenue South and 44th Place South to the east side of Martin Luther King Jr. Way. The design will focus on optimizing constructability while ensuring compliance with permitting requirements.

FINANCIAL IMPACT

Carollo's design fee will be fully funded by the water fund.

	Consultant Fee	2025 Design Budget
Carollo Design Contract	$601,505.00	$1,025,000.00

RECOMMENDATION

The Mayor is being asked to approve the design contract with Carollo Engineers in the amount of $601,505.00 and to consider this item on the Consent Agenda at the March 3, 2025 Regular Council Meeting

Attachments: CIP Sheet - Ryan Hill Water System Connection
Carollo Scope & Fee

CITY OF TUKWILA CAPITAL PROJECT SUMMARY
2025 to 2030

PROJECT:	**Ryan Hill Water Infrastructure Upgrade: Connect & Expand**	**Project #**	**92540103**
Project Manager	Adib Altallal	**Department**	Water
DESCRIPTION:	The project will see the Ryan Hill neighborhood connected to the rest of the City's water system to create resiliency system-wide. Boring under train tracks and a state highway will be required, as well as upgrading several critical, undersized water mains within the neighborhood.		
JUSTIFICATION:	The Department of Health is requiring the City to provide storage, which Ryan Hill currently does not have access to.		
STATUS:	Project design scheduled for 2025		
MAINTENANCE IMPACT:	N/A		
COMMENT:	Improving and expanding the infrastructure in the neighborhood will likely encourage the development of many lots currently sitting vacant.		

FINANCIAL (in thousands)	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**Beyond**	**TOTAL**
Project Costs								
Project Mgmt (Staff Time/Cost)	$ 25	$ 25	$ -	$ -	$ -	$ -	$ -	$ 50
Design	$ 1,000	$ 1,000	$ -	$ -	$ -	$ -	$ -	$ 2,000
Total Project Costs	**$ 1,025**	**$ 1,025**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 2,050**
Project Funding								
Utility Revenues	$ 1,025	$ 1,025	$ -	$ -	$ -	$ -	$ -	$ 2,050
Total Project Funding	**$ 1,025**	**$ 1,025**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 2,050**

SCOPE OF WORK

ENGINEERING SERVICES FOR THE CITY OF TUKWILA

CONNECT RYAN HILL TO REST OF SYSTEM (TRENCHLESS)

INTRODUCTION

The City of Tukwila, referred to as "City", wants to connect the Ryan Hill neighborhood to the rest of the City's water system. The connection will consist of two components:

- A trenchless component crossing underneath Interstate 5 (I-5) and BNSF railroad tracks.
- An open cut component from the east end of the trenchless crossings to Ryan Hill neighborhood.

The trenchless component, Connect Ryan Hill to Rest of System (Project), will include an 18-inch water main to be installed using advanced trenchless technologies crossing underneath I-5 and multiple BNSF railroad tracks. The Project is expected to take approximately 2 years to complete design, permitting, and easement acquisition activities. The construction of the project is aimed at occurring in 2027.

BACKGROUND

The Ryan Hill neighborhood, comprising the Lower and Upper Ryan Hill Zones, is not connected to the City's main water distribution system. It relies on a single supply station (SS 169) with a contractual flow rate of 70 gallons per minute (gpm) and an emergency intertie with Seattle. Projections show that in 20 years, water demand will exceed the contractual flow. The area also lacks water storage, making it reliant on the supply station and emergency intertie for peak demands, fire flow requirements, and emergencies.

Connecting Ryan Hill to the City's main water system will enhance reliability by adding a source supply and improving efficiency through access to City storage which is vital for meeting the Washington State Department of Health (DOH) storage requirements. This project will also have significant benefits to the communities by supporting neighborhood growth, facilitating housing expansion and job opportunities.

The Project location is near the north end of the City in the general area of South Boeing Access Road and Interstate 5. There are three alternatives for alignment corridors under consideration:

- The northern alignment alternative along South Boeing Access Road from East Marginal Way to the east side of Interstate 5.
- The middle alignment alternative along the Seattle City Light power transmission corridor from East Marginal Way to the east side of Martin Luther King Jr Way.
- The northern alignment alternative from 44th Avenue South and 44th Place South to the east side of Martin Luther King Jr Way.

PROJECT TEAM

Carollo Engineers, Inc., (Consultant) will serve as the Prime Consultant for the Project, utilizing the following key persons:

Key Staff	Role
Erik Waligorski	Project Manager
Wolfe Lang	Project Engineer

Aurelie Nabonnand	Planning Liaison
Cheyenne Thompson	Permitting Lead

The following Subconsultant firms will support Consultant:

Subconsultant	**Key Staff**	**Role**
Staheli Trenchless Consultants	Kim Staheli	Agencies Coordination Lead
	Jake Andresen	Trenchless Design Lead
Confluence Environmental Company	Lisa Adolfson	Environmental Assessment/Permitting Lead
PRR, Inc.	Maria Buchanan	Community Engagement
Delve Underground	James Struthers	Geotechnical Lead
Equinox Research and Consulting International, Inc.	Kelly Bush	Cultural Resources
KPG/Psomas	Mike Bowen	Surveying
	Bryce Corrigan	Roadway Restoration/Design

CITY-PROVIDED SERVICES

- City will furnish available studies, reports, and other data pertinent to the Project.
- City will arrange for access to, and make provisions for, the Consultant to enter upon public and private property.
- City will provide current "front-end" (Division 0) documents to be used in developing the contract documents.
- City will provide current AutoCAD standards to be used in the development of the contract plans.
- City will provide one combined set of document/plan review comments for project deliverables.
- City will locate City-owned facilities along the proposed pipeline alignments prior to survey being completed by the Consultant.
- City will lead all right-of-entry and easement acquisition negotiations, acquire and pay for title reports, and handle closing and payment for easements.

GENERAL ASSUMPTIONS

- Carollo Engineers and its subconsultants will be referred to as "Consultant" in this document.
- The City of Tukwila and its staff will be referred to as "City" in this document.
- Deliverables shall be provided in electronic PDF format, unless otherwise indicated. Final deliverables will be "wet" signed and/or digitally signed in accordance with the Washington Administrative Codes (WAC).
- Consultant shall complete the services required hereunder in accordance with the prevailing engineering standard of care by exercising the skill and ability ordinarily required of engineers performing the same or similar services, under the same or similar circumstances, in the State of Washington.
- The City will furnish the Consultant available studies, reports and other data pertinent to the Consultant's services; obtain or authorize the Consultant to obtain or provide additional reports and data as required; furnish to the Consultant services of others required for the performance of the Consultant's services hereunder, and the Consultant shall be entitled to use and rely upon all such information and services provided by the City or others in performing the Consultant's services under this Agreement.

- Opinions of probably costs will be based on the level of project definition and expected accuracy range as defined by the American Association of Cost Engineers (AACE) International.
- In providing opinions of cost, financial analyses, economic feasibility projections, and schedules of potential projects, the Consultant has no control over cost or price of labor and materials; unknown or latent conditions of existing equipment or structures that may affect operation and maintenance costs; competitive bidding procedures and market conditions; time or quality performance of third parties; quality, type, management, or direction of operating personnel; and other economic and operational factors that may materially affect the ultimate project cost or schedule. Therefore, the Consultant makes no warranty that the City's actual project costs, financial aspects, economic feasibility, or schedules will not vary from the Consultant's opinions, analyses, projections, or estimates.
- The City will arrange for access to and make all provisions for the Consultant to enter upon public and private property as required for the Consultant to perform services hereunder.
- The project will use Consultant standard, CSI formatted specifications (6-digit, 50-division system) for technical specifications.
- Durations for meetings, workshops, and site visits in this Scope of Services are based on estimated time on-site. Allowances for travel time, as appropriate, are accounted for in the budget in Exhibit B.
- Meetings/workshops will be conducted at City facilities, virtually, or at a City approved location.
- The Consultant shall not be responsible for warranties, guarantees, fitness for a particular purpose, breach of fiduciary duty, loss of anticipated profits or for economic, incidental or consequential damages to the City or any third party arising out of breach of contract, termination, or for any other reason whatsoever. Additionally, the Consultant shall not be responsible for acts and decisions of third parties, including governmental agencies, other than the Consultant's subconsultants, that impact project completion and/or success.
- The services to be performed by the Consultant are intended solely for the benefit of the City. No person or entity not a signatory to this Agreement shall be entitled to rely on the Consultant's performance of its services hereunder, and no right to assert a claim against the Consultant by assignment of indemnity rights or otherwise shall accrue to a third party as a result of this Agreement or the performance of the Consultant's services hereunder.

SCOPE OF WORK SUMMARY

The Project will be completed in three phases:

- Phase 1 – Alternatives Analysis and 30% Design, Initial Permitting, Easement Acquisition Documents
- Phase 2 – Prepare 60%, 90%, 100% and Bid Documents, Temporary Construction Easement Acquisition, Permitting and Bid Services (future)
- Phase 3 – Engineering Services During Construction (future)

This Scope of Work provides for Phase 1 – Alternatives analysis and 30% Design, Initial Permitting, Easement Acquisition Documents and is divided into the following tasks:

TASK 100	PROJECT MANAGEMENT
TASK 200	ALTERNATIVES ANALYSIS
TASK 300	PRELIMINARY (30%) DESIGN
TASK 400	COORDINATION w/OTHER AGENCIES and UTILITIES
TASK 500	PERMITTING INITIATION
TASK 600	EASEMENT AQUSITION INITIATION

Phase 2 – Prepare 60%, 90%, 100% and Bid Documents, Temporary Construction Easement Acquisition, Permitting, and Bid Services will be scoped and completed when the 30% design has been completed for the preferred alternative.

Phase 3 – Engineering Services During Construction will be scoped and completed when the design efforts have been completed during Phase 2 and a Contractor has been selected.

PHASE 1 SCOPE OF WORK DETAIL

TASK 100 – PROJECT MANAGEMENT

The purpose of this task is to manage and coordinate engineering and related services required for Phase 1 Project completion in accordance with the schedule, budget, and quality expectations that are established. Task 100 includes the following subtasks:

Subtask 110 – Project Management Plan

1. Prepare a Project Management Plan (PMP) that describes project roles and responsibilities, lists contact information for the project team, describes communication protocols, quality management, and includes the scope of work, schedule, and budget. Project schedule will be reviewed on a monthly basis throughout the project to reflect current progress.

Subtask 120 – Project Monitoring and Reporting

1. Manage the Project team to track time and budget, work elements accomplished, work items planned for the next period, level of effort, scope changes, time and budget needed to complete this Scope of Work.
2. Prepare monthly project status reports that compare work accomplished with schedule activities and compare expenditures with task budgets and submit reports to the City's Project Manager with monthly invoices. Document expenditures on a task basis and show hours by project personnel and other direct expenses related to work. Reports and invoicing will be formatted in a manner that is acceptable to the City. With each monthly progress report, provide corrective action plans to address schedule/budget deviations from baseline projections, if required.
3. Develop and maintain a Decision Log to record key decisions made by the City and others during the project to document the evolution of the design.

Subtask 120 Assumptions:

1. Phase 1 duration is assumed to be six (6) months.

Subtask 130 – Project Management Meetings

1. Schedule and conduct 30-minute, bi-weekly Project Management calls throughout the duration of the Project. Attendees will include Consultant Project Manager and Project Engineer at a minimum. Additional staff will be invited as needed throughout the project to discuss project status.

Subtask 130 Assumptions:

1. Bi-weekly Project Management calls will be virtual.
2. Consultant's Project Manager will lead all meetings and calls.
3. Consultant's Project Manager and Project Engineer will attend all Project Management calls. In addition, other staff will be asked to join the calls to address the status of specific project related tasks. For the purposes of this scope of work it is assume that three (3) Consultant's will attend the bi-weekly calls on average.
4. No agenda or meeting minutes are anticipated for the bi-weekly project management calls. Decisions made during the calls will be entered into the Decision Log.

Task 100 Deliverables:

1. Project Management Plan.
2. Six (6) monthly Invoices and Progress Reports.
3. Decision Log submitted at major milestones (Alternative Analysis and 30%)

TASK 200 – ALTERNATIVES ANALYSIS

The purpose of this task is to complete an alternative analysis on trenchless crossing alternatives to select the preferred alignment, layout concepts and technologies. Alternatives will be developed for the following:

- North Alignment Alternative: Airport Way South and ramps, BNSF railroad tracks, I-5 and ramps.
- Middel Alignment Alternative: BNSF railroad tracks and I-5.
- South Alignment Alternative: BNSF railroad tracks, I-5 and Martin Luther King Jr. Way South.

Task 200 includes the following subtasks:

Subtask 210 – Kickoff Meeting and Site Visit

1. Kickoff Meeting: All key members of Consultant's team will attend this meeting. Review scope, schedule, budget, project goals, and interim milestones. Establish City's preferred project communications and special invoicing requests.
2. Site Visit: Attend a site visit with City's staff to review/discuss the existing water transmission system, alignment alternative areas and associated facilities potentially impacted by this Project.

Subtask 210 Assumptions:

1. Kickoff Meeting will be held at City's office and will be attended by a minimum of one (1) representative from each firm supporting Consultant on the project.
2. Site visit will occur immediately following the Kickoff Meeting.

Subtask 220 – Data Collection and Review

1. Data Requests: Submit data request(s) for available project documentation to support defining existing conditions. Documentation may include but is not limited to related reports and analyses, record drawings, geotechnical investigations, utility and franchise data, standard operating procedures (SOPs) and other operation and maintenance records.
2. Consultant shall complete review of existing data to identify gaps in information required for the completion of Phase 1 of the Project.

Subtask 230 – Preliminary Right of Way, Topography and Utility Review

1. Perform public records research of assessors maps, King County Survey Records, WSDOT Records, and Railroad Records for the purposes of right-of-way retracement. Assess site topographic features using published LiDAR information.
2. Conduct utility research for project area.
3. Produce preliminary base map for alternative concepts development and evaluation.

Subtask 240 – Preliminary Geotechnical Study

1. Review available geologic and geotechnical information for the project area including published geologic soil/bedrock maps and previous geotechnical study reports for WSDOT, Seattle Public Utility and other available information. Conduct a geologic site reconnaissance for the proposed

alignment alternatives to identify site conditions and geologic features.
2. Assess the potential seismic hazards in the Project area and potential impacts for the trenchless crossings and interties.
3. Develop a preliminary geotechnical assessment memorandum.

Subtask 250 – Preliminary Cultural Resources Risk Assessment

1. Conduct archival and background research to identify potential cultural resources impacts that could affect the construction of the proposed improvement
2. Make recommendations for further cultural resources review and study.
3. Develop a preliminary cultural resources assessment memorandum.

Subtask 260 – Preliminary Environmental Assessments

1. Conduct a desk-top and field reconnaissance level assessment of wetlands, streams, sensitive species, and natural resources within the project area to support the selection of preferred alignments and to refine the study area boundary.
2. Review available government records for potential hazardous materials in soil and shallow groundwater in the project area to determine the need for Phase I and Phase II Environmental Site Assessments (ESA).
3. Develop a preliminary environmental assessment memorandum.

Subtask 260 Assumptions:

1. Should critical areas or their buffers be identified and potentially impacted by construction activities, a Critical Areas report will be prepared as part of Phase 2 efforts.

Subtask 270 – Trenchless Crossing Alternative Evaluation

1. Develop a list of technically feasible alternatives to be considered, including up to three (3) alignment alternatives (north, middle and south alignments) and up to four (4) technology alternatives (microtunnel, auger-bore, pipe ramming and horizontal directional drilling).
2. Conduct a workshop with the City to present the proposed alternatives and to identify criteria and weighting factors to be used as part of the alternatives analysis and selection of a preferred alternative. City staff shall assist in development of the criteria and weighting factors before being applied to alternatives.
3. Evaluation of alignment alternatives will be presented in a Trenchless Technical Memorandum (TM). The evaluation will include development of construction concepts and sequences for the considered alternatives to allow a comparative analysis between alignments and technology. Based upon this comparison of key decision criteria (feasibility, practical application, cost, risk profile, schedule, available contractor pool, and others determined in the course of the evaluation). A chapter within the Basis of Design Report (BODR) will summarize the trenchless TM conclusions, workshop results, describe design methodology, subsurface conditions and risks, and quantitative analysis comparing impacts to existing buried and overhead utilities, surface connections to existing header pipes, site reconstruction costs, restrictions & permitting requirements associated with WSDOT, BNSF and other agencies, traffic impacts, environmental and culture resources impacts, as well as construction costs and permitting time.
4. Determine planning level costs for each alternative to be used in the selection process.
5. Complete alternatives analysis chapter within BODR and prepare a presentation of the findings for the City.
6. Conduct an alternatives selection workshop.

Subtask 270 Assumptions:

2. No alternatives beyond those identified above will be considered as part of the preliminary design.
3. No field survey works will be conducted at this stage.
4. No geotechnical field explorations will be conducted at this stage.
5. The alternatives analysis will be summarized as a chapter in in the BODR. No technical memorandum will be generated as part of this task, only presentations which will be used for City workshops. Notes and decisions shall be summarized following all presentations through formal meeting minutes.

Task 200 Deliverables:

1. Meeting Materials, Agendas, and Minutes
2. Data Request (Subtask 220)
3. Preliminary Survey Base Map (Subtask 230)
4. Preliminary Geotechnical Memorandum (Subtask 240)
5. Preliminary Cultural Resources Assessment Memorandum (Subtask 250)
6. Preliminary Environmental Assessment Memorandum (Subtask 260)
7. Trenchless Technical Memorandum (Subtask 270)
8. Alternatives Criteria Presentation (Subtask 270)
9. Alternatives Selection Presentation (Subtask 270)

TASK 300 – PRELIMINARY (30%) DESIGN

The purpose of this task is to establish the final project design criteria and identify the general construction conditions for the preferred alternative identified in Task 200. This task will develop construction bidding documents to the 30 percent completion level. Task 300 includes the following subtasks:

Subtask 310 – Surveying and Utility Locating for Preferred Alignment

1. Obtain right-of-entry for accessing the Preferred Alignment for survey field works.
2. Establish a survey control network.
3. Conduct detailed utility research for project area.
4. Conduct locates of all readily available buried utilities within project area.
5. Map trees 6" diameter and larger, map wetland flagging within the proposed corridor as identified in Task 270.
6. Perform public records research for the purposes of right-of-way retracement.
7. Using information obtained through public records research, recover existing survey monuments and perform right-of-way retracement and documentation of easements along pipeline corridor.
8. Complete a topographic survey in International Foot Units for the project area. As appropriate, for various portions of the project area, the survey may be conducted via a combination of aerial methods, mobile laser scanning, and ground survey and will include orthorectified photos and LiDAR data collection. Ground survey will include utility locate paint, invert elevations of storm and sanitary structures and mapping of obscured areas to locate critical features not visible in the aerial survey.

9. Produce base map with all gathered survey data in AutoCAD Civil3D with one foot contours.
10. In support of property/easement acquisition needs, prepare legal descriptions and exhibits.

Subtask 310 Assumptions:

1. Traffic control requirements to be utilized during field investigations and data collection are included in this task including railroad flagging in and around the BNSF railroad.
2. For the purposes of this scope of work, the survey limits are assumed to be 50 feet on either sides of the preferred alignment.
3. Utility locating will be completed by a private locating company, except for City facilities. This work assumes that the City will locate all City owned facilities along the proposed pipeline alignment. No potholing will be conducted during this phase of the project.
4. Title reports cost and acquisition is not included in Tasks 300 and 600.

Subtask 320 – Basis of Design Report (30% Design)

The purpose of this subtask is to summarize the data collected and analysis completed into a Basis of Design Report (BODR) and to prepare the 30% level plans and a specifications table of contents.

1. Summarize the preliminary analysis findings in a Draft BODR, including hydraulic verification, 30% level plans, alternatives analysis, and specifications table of contents.
2. Verify hydraulic modeling and confirm sizing and hydraulic performance of the proposed crossing.
3. Develop a list of critical facilities to be further researched during the Phase 2 Design of the Project.
4. Develop a proposed construction schedule for the required improvements, including permitting timelines identified in Task 500, and recommendations for construction sequencing.
5. Identify critical utility crossings and develop a potholing plan to be executed during Phase 2 Design of the Project.
6. Prepare an Opinion of Probable Construction Cost (OPCC) based on 30% design documents.
7. Conduct internal QA/QC of the BODR per Task 900
8. Conduct internal QA/QC of the 30% plans per Task 900.
9. Submit the Draft BODR/30% Design to the City for review.
10. Conduct a BODR/30% Design review meeting with City staff.
11. Incorporate comments and produce a Final BODR.

Subtask 320 Assumptions:

1. The BODR will include a project schedule developed in conjunction with Task 500.
2. The 30% specifications will be limited to a table of contents of required specifications.
3. Modifications to the 30% plans and specifications table of contents will be addressed during Phase 2 Design of the project.
4. Any transportation related reporting, including but not limited WSDOT intersection control evaluation, basis of design report, channelization plans, construction permit documentation, design memorandums, and other associated/required documents as a result of the selected alternative will be furnished as part of Phase 2.
5. Opinions of probable costs will be based on the level of project definition and expected accuracy range as defined by the American Association of Cost Engineers (AACE) International.

6. The OPCC generated during 30% shall be a Class 4 estimate based on AACE standards.
7. In providing opinions of cost, financial analyses, economic feasibility projections, and schedules for potential projects, the Consultant has no control over cost or price of labor and material; unknown or latent conditions of existing equipment or structures that may affect operation and maintenance costs; competitive bidding procedures and market conditions; time or quality of performance of third parties; quality, type, management, or direction of operating personnel; and other economic and operational factors that may materially affect the ultimate project cost or schedule. Therefore, the Consultant makes no warranty that the City's actual project costs, financial aspects, economic feasibility, or schedules will not vary from the Consultant's opinions, analyses, projections, or estimates.

Task 300 Deliverables:

1. Survey Base Map (Subtask 310)
2. Property/Easement acquisition document preparation and review including development of legal descriptions and exhibits (Subtask 310)
3. BODR (Subtask 330)
4. 30% Plans and Specification TOC (Subtask 330)
5. Critical Utility Crossings and Potholing Requirements

TASK 400 – INITIAL COORDINATION WITH AGENCIES AND UTILITIES

The purpose of this task is to conduct initial coordination with other agencies and utilities directly impacted by the proposed project improvements. Task 400 includes the following:

1. Roadway/Traffic Control meetings
    a. One (1) virtual design coordination meeting with WSDOT
2. Permitting Meetings
    a. One (1) meeting (in-person) with WSDOT to discuss easement requirements.
    b. One (1) meeting (virtual) with BNSF to discuss permitting requirements.
    c. One (1) meeting (in-person) with Seattle City Light to discuss easement requirements.
    d. One (1) meeting (in-person) with Seattle Public Utilities to discuss easement requirements
    e. One (1) virtual meeting1 with Sound Transit to discuss easement requirements.
    f. Two (2) meetings (virtual) with the City of Tukwila and King County to discuss land use requirements.

Task 400 Assumptions:

1. Up to two (2) consulting team members will attend each meeting.

Task 400 Deliverables:

1. Meeting agenda, coordination materials, and minutes.

TASK 500 – PERMITTING INITIATION

The purpose of this task is to identify the permits required to complete the proposed project improvements and initiate coordination with the corresponding agencies. Task 500 includes the following:

1. *Environmental Permitting Strategy.* Consultant shall prepare an environmental permitting strategy document to identify environmental permitting requirements for the Project. The strategy shall incorporate the natural resource information to inform the permitting process, propose a schedule

for permit application submittal and approval, and identify critical path elements and risks associated with permitting the proposed Project. Consultant shall coordinate with the project design team on the proposed project improvements and develop a matrix of anticipated permits required for construction. This task will include review of anticipated means of construction, environmental impacts, and potential mitigation measures. The strategy will be based on current permitting requirements and conversations with the relevant resource agencies to confirm permit requirements and approach. The environmental permitting strategy shall include the following elements, as necessary:

a. List of required permits.
b. Permitting schedule, including critical path permit tasks.
c. Anticipated information needs necessary to complete the permit application process.
d. Coordination strategy for key stakeholders.
e. Key milestones and decision points throughout the permitting process.
f. Permitting issues and requirements associated with alternative design options.
g. Anticipated permitting costs and approval timelines.
h. General mitigation requirements and opportunities.
i. Proposed permitting approach for each of the required natural resource permits.

2. *Land Use Permitting Strategy.* Consultant shall prepare a land use permitting strategy document to clarify the land use permit requirements and process for the Project. The document will summarize the major land use standards, criteria and submittal requirements for each permit and outline the land use approval process(es), including public notice and public hearing requirements, identify the decision makers, and describe the optimal timing of land use decisions based on construction schedule. In addition, the land use permitting strategy will identify and describe the potential risk and proposed approach for mitigating risks associated with land use permitting. The strategy will outline other local government permits including, as applicable, erosion control and grading, tree removal, and County roadway use. Consultant shall work closely with the design team to incorporate environmental findings into the design efforts and will update the environmental and land use strategies based on design modifications.
3. Initiate agency check-in based on alternative analysis results to refine permitting and mitigation strategies.

Task 500 Assumptions:

1. The City will take the lead role in coordinating with permitting agencies with support from the Consultant.
2. No permit applications will be submitted as part of this Phase of the project. Applications and associated material developed during this phase will be refined and submitted during Phase 2 of the project.
3. Consultant shall evaluate natural resource-related considerations associated with different design options; however, a formal environmental/permitting alternatives analysis will not be prepared for this task.
4. An evaluation of the potential climate change impacts associated with the Project will not be conducted.
5. Wetland and/or stream mitigation design will not be developed during this phase of the project; however, potential mitigation needs will be identified and high-level cost estimates developed.

Task 500 Deliverables:

1. Environmental and Land Use Permitting Strategy.
2. Preparation of a permitting acquisition schedule.

TASK 600 – EASEMENT ACQUISITION INITIATION

The purpose of this Task is to identify required permanent or temporary easements required for the construction of the proposed improvements. Task 600 includes the following:

1. Research project alignment and identify potential permanent and temporary easements required for the construction of the proposed improvements.
2. Prepare programming estimate.

Task 600 Assumptions:

1. The Project will not require any land use applications/actions.
2. City will pay for all title reports.

Task 600 Deliverables:

1. Easement and Property Acquisition Requirement Memorandum.

	TASK / DESCRIPTION	PM Waligorski	QM Avon	PE Lang	Planning Nabbonand	Permitting Thompson	DP Mattox	CAD/GIS Varies	Staff Eng Nasser	Total Carollo Hours	Carollo Labor Cost	Sub Fee	OTHER DIRECT COSTS Sub Markup	OTHER DIRECT COSTS PECE	OTHER DIRECT COSTS Expenses	TOTAL COST
	Total Labor Rate	$ 330.00	$ 360.00	$ 290.00	$ 260.00	$ 260.00	$ 150.00	$ 160.00	$ 175.00				10%	$15.00		
Task 100 - Project Management																
110	*Project Management*	12		16		8	8			44	$ 11,880	$ 3,310	$ 331	$ 660		$ 16,181
120	*Project Monitoring and Reporting*	24		12		12	6			54	$ 15,420	$ 4,859	$ 486	$ 810		$ 21,575
130	*Project Management Meetings*	6		12	3	3				24	$ 7,020	$ 10,041	$ 1,004	$ 360	$ 500	$ 18,925
	Task 100	**42**	**0**	**40**	**3**	**23**	**14**	**0**	**0**	**122**	**$ 34,320.00**	**$ 18,209.87**	**$ 1,820.99**	**$ 1,830.00**	**$ 500.00**	**$ 56,680.86**
Task 200 - Alternatives Analysis																
210	*Kickoff Meeting and Site Visit*	4		8	4	4				20	$ 5,720	$ 9,423	$ 942	$ 300	$ 500	$ 16,885
220	*Data Collection and Review*	2		16	8		2		8	36	$ 9,080	$ 10,315	$ 1,031	$ 540		$ 20,966
230	*Preliminary ROW, Topography, & Utility Review*	2		8			2		16	28	$ 6,080	$ 11,296	$ 1,130	$ 420		$ 18,926
240	*Preliminary Geotechnical Study*			8			2		8	18	$ 4,020	$ 17,860	$ 1,786	$ 270		$ 23,936
250	*Preliminary Cultural Resources Risk Assessment*			4		8				12	$ 3,240	$ 5,601	$ 560	$ 180		$ 9,581
260	*Preliminary Environmental Assessments*			4		8				12	$ 3,240	$ 6,770	$ 677	$ 180		$ 10,867
270	*Trenchless Crossing Alternative Evaluation*	24	16	40	8	24	12	80	24	228	$ 52,400	$ 29,204	$ 2,920	$ 3,420	$ 1,000	$ 88,944
	Task 200	**32**	**16**	**88**	**20**	**44**	**18**	**80**	**56**	**354**	**$ 83,780.00**	**$ 90,468.25**	**$ 9,046.83**	**$ 5,310.00**	**$ 1,500.00**	**$ 190,105.08**
Task 300 - Preliminary (30%) Design																
310	*Surveying & Utility Locate (Preferred Alignment)*	4		16			2		8	30	$ 7,660	$ 74,608	$ 7,461	$ 450		$ 90,179
320	*Basis of Design Report (30% Design)*	40	24	120		60	24	300	120	688	$ 144,840	$ 15,826	$ 1,583	$ 10,320	$ 1,000	$ 173,569
	Task 300	**44**	**24**	**136**	**0**	**60**	**26**	**300**	**128**	**718**	**$ 152,500.00**	**$ 90,434.17**	**$ 9,043.42**	**$ 10,770.00**	**$ 1,000.00**	**$ 263,747.59**
Task 400 - Coordination w/ Agencies & Utilities																
	Roadway/Traffic Control Meetings	2		8			2		4	16	$ 3,980	$ -	$ -	$ 240	$ 500	$ 4,720
	Permitting Meetings	12		28		40	8		8	96	$ 25,080	$ 12,137	$ 1,214	$ 1,440		$ 39,871
	Task 400	**14**	**0**	**36**	**0**	**40**	**10**	**0**	**12**	**112**	**$ 29,060.00**	**$ 12,137.12**	**$ 1,213.71**	**$ 1,680.00**	**$ 500.00**	**$ 44,590.83**
Task 500 - Permitting Initiation																
	Environmental Permitting Strategy	2		8		12				22	$ 6,100	$ 4,710	$ 471	$ 330		$ 11,611
	Land Use Permitting Strategy	2		8		24	2		8	44	$ 10,920	$ -	$ -	$ 660		$ 11,580
	Task 500	**4**	**0**	**16**	**0**	**36**	**2**	**0**	**8**	**66**	**$ 17,020.00**	**$ 4,710.00**	**$ 471.00**	**$ 990.00**	**$ -**	**$ 23,191.00**
Task 600 - Easement Acquisition Initiation																
	Easement Identification	2		8		8			16	34	$ 7,860	$ -	$ -	$ 510		$ 8,370
	Programming Estimate	4		8		40				52	$ 14,040	$ -	$ -	$ 780		$ 14,820
	Task 600	**6**	**0**	**16**	**0**	**48**	**0**	**0**	**16**	**86**	**$ 21,900.00**	**$ -**	**$ -**	**$ 1,290.00**	**$ -**	**$ 23,190.00**
															Total	**$ 601,505**

	TASK / DESCRIPTION	Role	Role	Role	Role	Total Hours	Labor Cost	Expenses	TOTAL COST
		Jake Andresen	Kimberlie Staheli	Pradip Kandel	Heidi Howard				
	Total Labor Rate	$ 245.00	$ 325.00	$ 190.00	$ 150.00				
Task 100 - Project Management									
110	*Project Management*					0	$ -		$ -
120	*Project Monitoring and Reporting*					0	$ -		$ -
130	*Project Management Meetings*	8	8			16	$ 4,560		$ 4,560
	Task 100	**8**	**8**	**0**	**0**	**16**	**$ 4,560.00**	**$ -**	**$ 4,560.00**
Task 200 - Alternatives Analysis									
210	*Kickoff Meeting and Site Visit*	4	4			8	$ 2,280	$ 80	$ 2,360
220	*Data Collection and Review*					0	$ -		$ -
230	*Preliminary ROW, Topography, & Utility Review*					0	$ -		$ -
240	*Preliminary Geotechnical Study*					0	$ -		$ -
250	*Preliminary Cultural Resources Risk Assessment*					0	$ -		$ -
260	*Preliminary Environmental Assessments*					0	$ -		$ -
270	*Trenchless Crossing Alternative Evaluation*	40	22	18	6	86	$ 21,270		$ 21,270
	Task 200	**44**	**26**	**18**	**6**	**94**	**$ 23,550.00**	**$ 80.00**	**$ 23,630.00**
Task 300 - Preliminary (30%) Design									
310	*Surveying & Utility Locate (Preferred Alignment)*					0	$ -		$ -
320	*Basis of Design Report (30% Design)*	24	4	6		34	$ 8,320		$ 8,320
	Task 300	**24**	**4**	**6**	**0**	**34**	**$ 8,320.00**	**$ -**	**$ 8,320.00**
Task 400 - Coordination w/ Agencies & Utilities									
	Roadway/Traffic Control Meetings					0	$ -		$ -
	Permitting Meetings	4	10			14	$ 4,230	$ 160	$ 4,390
	Task 400	**4**	**10**	**0**	**0**	**14**	**$ 4,230.00**	**$ 160.00**	**$ 4,390.00**
Task 500 - Permitting Initiation									
	Environmental Permitting Strategy					0	$ -		$ -
	Land Use Permitting Strategy					0	$ -		$ -
	Task 500	**0**	**0**	**0**	**0**	**0**	**$ -**	**$ -**	**$ -**
Task 600 - Easement Acquisition Initiation									
	Easement Identification					0	$ -		$ -
	Programming Estimate					0	$ -		$ -
	Task 600	**0**	**0**	**0**	**0**	**0**	**$ -**	**$ -**	**$ -**
								Total	**$ 40,900**

Confluence Environmental

	TASK / DESCRIPTION	Sr. Permitting Lead Adolfson	Sr. Biologist McArthur	Planner Duffy	Staff Scientist Wolf	GIS Huynh	Editor Hoff	Accounting Burton	Total Hours	Labor Cost	Expenses	TOTAL COST
	Total Labor Rate	$ 285.00	$ 205.00	$ 175.00	$ 105.00	$ 165.00	$ 120.00	$ 150.00				
Task 100 - Project Management												
110	*Project Management*								0	$ -		$ -
120	*Project Monitoring and Reporting*	6						7	13	$ 2,760		$ 2,760
130	*Project Management Meetings*	5							5	$ 1,425		$ 1,425
	Task 100	**11**	**0**	**0**	**0**	**0**	**0**	**7**	**18**	**$ 4,185.00**	**$ -**	**$ 4,185.00**
Task 200 - Alternatives Analysis												
210	*Kickoff Meeting and Site Visit*	6							6	$ 1,710		$ 1,710
220	*Data Collection and Review*	2	2	8		8			20	$ 3,700		$ 3,700
230	*Preliminary ROW, Topography, & Utility Review*								0	$ -		$ -
240	*Preliminary Geotechnical Study*								0	$ -		$ -
250	*Preliminary Cultural Resources Risk Assessment*								0	$ -		$ -
260	*Preliminary Environmental Assessments*	2	12	8	20		2		44	$ 6,770		$ 6,770
270	*Trenchless Crossing Alternative Evaluation*	6							6	$ 1,710		$ 1,710
	Task 200	**16**	**14**	**16**	**20**	**8**	**2**	**0**	**76**	**$ 13,890.00**	**$ -**	**$ 13,890.00**
Task 300 - Preliminary (30%) Design												
310	*Surveying & Utility Locate (Preferred Alignment)*								0	$ -		$ -
320	*Basis of Design Report (30% Design)*								0	$ -		$ -
	Task 300	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**$ -**	**$ -**	**$ -**
Task 400 - Coordination w/ Agencies & Utilities												
	Roadway/Traffic Control Meetings								0	$ -		$ -
	Permitting Meetings	2	2						4	$ 980		$ 980
	Task 400	**2**	**2**	**0**	**0**	**0**	**0**	**0**	**4**	**$ 980.00**	**$ -**	**$ 980.00**
Task 500 - Permitting Initiation												
	Environmental Permitting Strategy	2	4	8	16		2		32	$ 4,710		$ 4,710
	Land Use Permitting Strategy								0	$ -		$ -
	Task 500	**2**	**4**	**8**	**16**	**0**	**2**	**0**	**32**	**$ 4,710.00**	**$ -**	**$ 4,710.00**
Task 600 - Easement Acquisition Initiation												
	Easement Identification								0	$ -		$ -
	Programming Estimate								0	$ -		$ -
	Task 600	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**$ -**	**$ -**	**$ -**
											Total	**$ 23,765**

	TASK / DESCRIPTION	Principal Struthers	Principal Duvel	Associate Cordes	Associate Pinske	Project Dayley	Role Admin	Total Hours	Labor Cost	Expenses	TOTAL COST
	Total Labor Rate	$ 284.31	$ 271.93	$ 190.34	$ 213.52	$ 143.06	$ 105.00				
Task 100 - Project Management											
110	*Project Management*	8						8	$ 2,274		$ 2,274
120	*Project Monitoring and Reporting*	3					2	5	$ 1,063		$ 1,063
130	*Project Management Meetings*	6				2		8	$ 1,992		$ 1,992
	Task 100	**17**	**0**	**0**	**0**	**2**	**2**	**21**	**$ 5,329.39**	**$ -**	**$ 5,329.39**
Task 200 - Alternatives Analysis											
210	*Kickoff Meeting and Site Visit*	4						4	$ 1,137	$ 80	$ 1,217
220	*Data Collection and Review*	4		8	4	12		28	$ 5,231		$ 5,231
230	*Preliminary ROW, Topography, & Utility Review*							0	$ -		$ -
240	*Preliminary Geotechnical Study*	13		21	11	52	3	100	$ 17,796	$ 64	$ 17,860
250	*Preliminary Cultural Resources Risk Assessment*							0	$ -		$ -
260	*Preliminary Environmental Assessments*							0	$ -		$ -
270	*Trenchless Crossing Alternative Evaluation*	6	2		4			12	$ 3,104		$ 3,104
	Task 200	**27**	**2**	**29**	**19**	**64**	**3**	**144**	**$ 27,267.81**	**$ 144.00**	**$ 27,411.81**
Task 300 - Preliminary (30%) Design											
310	*Surveying & Utility Locate (Preferred Alignment)*							0	$ -		$ -
320	*Basis of Design Report (30% Design)*	3		1	5	5		14	$ 2,826		$ 2,826
	Task 300	**3**	**0**	**1**	**5**	**5**	**0**	**14**	**$ 2,826.17**	**$ -**	**$ 2,826.17**
Task 400 - Coordination w/ Agencies & Utilities											
	Roadway/Traffic Control Meetings							0	$ -		$ -
	Permitting Meetings	8			8	8		24	$ 5,127	$ 80	$ 5,207
	Task 400	**8**	**0**	**0**	**8**	**8**	**0**	**24**	**$ 5,127.12**	**$ 80.00**	**$ 5,207.12**
Task 500 - Permitting Initiation											
	Environmental Permitting Strategy							0	$ -		$ -
	Land Use Permitting Strategy							0	$ -		$ -
	Task 500	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**$ -**	**$ -**	**$ -**
Task 600 - Easement Acquisition Initiation											
	Easement Identification							0	$ -		$ -
	Programming Estimate							0	$ -		$ -
	Task 600	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**$ -**	**$ -**	**$ -**
										Total	**$ 40,774**

	TASK / DESCRIPTION	Role Name	Role Name	Role Name	Role Name	Role Name	Role Name	Role Name	Total Hours	Labor Cost	Expenses	TOTAL COST
	Total Labor Rate	$ 139.87	$ 83.92	$ 74.60	$ 68.38	$ -	$ -	$ -				
Task 100 - Project Management												
110	*Project Management*	2							2	$ 280		$ 280
120	*Project Monitoring and Reporting*	2							2	$ 280		$ 280
130	*Project Management Meetings*								0	$ -		$ -
	Task 100	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**$ 559.48**	**$ -**	**$ 559.48**
Task 200 - Alternatives Analysis												
210	*Kickoff Meeting and Site Visit*	4							4	$ 559		$ 559
220	*Data Collection and Review*								0	$ -		$ -
230	*Preliminary ROW, Topography, & Utility Review*								0	$ -		$ -
240	*Preliminary Geotechnical Study*								0	$ -		$ -
250	*Preliminary Cultural Resources Risk Assessment*	8	30	8	20				66	$ 5,601		$ 5,601
260	*Preliminary Environmental Assessments*								0	$ -		$ -
270	*Trenchless Crossing Alternative Evaluation*								0	$ -		$ -
	Task 200	**12**	**30**	**8**	**20**	**0**	**0**	**0**	**70**	**$ 6,160.44**	**$ -**	**$ 6,160.44**
Task 300 - Preliminary (30%) Design												
310	*Surveying & Utility Locate (Preferred Alignment)*								0	$ -		$ -
320	*Basis of Design Report (30% Design)*								0	$ -		$ -
	Task 300	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**$ -**	**$ -**	**$ -**
Task 400 - Coordination w/ Agencies & Utilities												
	Roadway/Traffic Control Meetings								0	$ -		$ -
	Permitting Meetings								0	$ -		$ -
	Task 400	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**$ -**	**$ -**	**$ -**
Task 500 - Permitting Initiation												
	Environmental Permitting Strategy								0	$ -		$ -
	Land Use Permitting Strategy								0	$ -		$ -
	Task 500	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**$ -**	**$ -**	**$ -**
Task 600 - Easement Acquisition Initiation												
	Easement Identification								0	$ -		$ -
	Programming Estimate								0	$ -		$ -
	Task 600	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**$ -**	**$ -**	**$ -**
											Total	**$ 6,719.92**

KPG - Psomas

TASK / DESCRIPTION		Survey Manager Mike Bowen	Transpotation Engineer Bryce Corrigan	Project Surveyor II Ron Reichel	Surveyor III Chris Johnson	Survey Crew II TBD	Survey Crew I TBD	Total Hours	Labor Cost	Expenses	TOTAL COST
Total Labor Rate		$ 252.00	$ 195.00	$ 173.00	$ 144.00	$ 272.00	$ 214.00				
Task 100 - Project Management											
110	*Project Management*	3						3	$ 756		$ 756
120	*Project Monitoring and Reporting*	3						3	$ 756		$ 756
130	*Project Management Meetings*	2	8					10	$ 2,064		$ 2,064
	Task 100	**8**	**8**	**0**	**0**	**0**	**0**	**16**	**$ 3,576.00**	**$ -**	**$ 3,576.00**
Task 200 - Alternatives Analysis											
210	*Kickoff Meeting and Site Visit*	8	8					16	$ 3,576		$ 3,576
220	*Data Collection and Review*			8				8	$ 1,384		$ 1,384
230	*Preliminary ROW, Topography, & Utility Review*			32	40			72	$ 11,296		$ 11,296
240	*Preliminary Geotechnical Study*							0	$ -		$ -
250	*Preliminary Cultural Resources Risk Assessment*							0	$ -		$ -
260	*Preliminary Environmental Assessments*							0	$ -		$ -
270	*Trenchless Crossing Alternative Evaluation*		16					16	$ 3,120		$ 3,120
	Task 200	**8**	**24**	**40**	**40**	**0**	**0**	**112**	**$ 19,376.00**	**$ -**	**$ 19,376.00**
Task 300 - Preliminary (30%) Design											
310	*Surveying & Utility Locate (Preferred Alignment)*	24		80	100	80	40	324	$ 64,608	$ 10,000	$ 74,608
320	*Basis of Design Report (30% Design)*		24					24	$ 4,680		$ 4,680
	Task 300	**24**	**24**	**80**	**100**	**80**	**40**	**348**	**$ 69,288.00**	**$ 10,000.00**	**$ 79,288.00**
Task 400 - Coordination w/ Agencies & Utilities											
	Roadway/Traffic Control Meetings							0	$ -		$ -
	Permitting Meetings		8					8	$ 1,560		$ 1,560
	Task 400	**0**	**8**	**0**	**0**	**0**	**0**	**8**	**$ 1,560.00**	**$ -**	**$ 1,560.00**
Task 500 - Permitting Initiation											
	Environmental Permitting Strategy							0	$ -		$ -
	Land Use Permitting Strategy							0	$ -		$ -
	Task 500	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**$ -**	**$ -**	**$ -**
Task 600 - Easement Acquisition Initiation											
	Easement Identification							0	$ -		$ -
	Programming Estimate							0	$ -		$ -
	Task 600	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**$ -**	**$ -**	**$ -**
									Total		**$ 103,800**