City of Sherwood Oregon

Home of the Tualatin River National Wildlife Refuge

URA RESOLUTION 2023-002

AUTHORIZING THE SHERWOOD URBAN RENEWAL AGENCY MANAGER TO SIGN A PROFESSIONAL SERVICES CONTRACT WITH KITTELSON & ASSOCIATES, INC. FOR THE FINAL DESIGN OF SW ICE AGE DRIVE

WHEREAS, the alignment for Ice Age Drive was initially studied with the Tonquin Employment Area Concept Plan, adopted by City Ordinance 2010-014, and was ultimately incorporated into the City's Transportation System Plan (TSP) as the Tonquin Employment Area East-West Collector (TSP Project D20); and

WHEREAS, private site development projects are already underway within the Tonquin Employment Area along the proposed Ice Age Drive alignment and the City has identified funds for design & construction making this a very high priority project for the URA Board and the city; and

WHEREAS, the URA Board approved URA Resolution 2022-001 Authorizing Kittelson & Associates, Inc. out of Portland, Oregon to complete the Preliminary Design of SW Ice Age Drive; and

WHEREAS, the Preliminary Design work is complete and the results were presented to City Council members at a work session on December 6, 2022 at which the southernmost alignment was identified as the preferred alignment; and

WHEREAS, to increase transparency and provide newly elected officials opportunity to review and comment on the preferred alignment the URA Board approved URA Resolution 2023-001 endorsing the southern alignment of SW Ice Age Drive as the local preferred alternative to advance to final design & construction; and

WHEREAS, the Request for Proposal released through the Daily Journal of Commerce in conformance with ORS 297C.100-125 (Public Contracting for Professional Services) for the Preliminary Design work and approved by URA Resolution 2022-001, was a full-service request for all professional & related services required to deliver a road & utility project of this size & nature through the end of construction; and

WHEREAS, Kittelson & Associates, Inc. has developed a Scope of Work and an associated not-to-exceed fee amount of $994,990.80 required to complete the final design, obtain the necessary construction permits, produce final bid documents, and provide bid support during the bid period, including review & tabulation of bids; and

WHEREAS, staff recommends a design contingency equal to 15% of the associated not-to-exceed fee amount, or $149,248.62 be authorized for use by the Agency Manager via the Contract Change Order approval process, for unforeseen conditions & issues needing to be addressed by the consultant; and

WHEREAS, the total amount authorized for expenditure over the current and pending fiscal years by this resolution is $1,144,239.42 and will be funded from Urban Renewal Agency funds established by Ordinance 2021-005.

NOW, THEREFORE, THE SHERWOOD URBAN RENEWAL AGENCY BOARD RESOLVES AS FOLLOWS:

Section 1. The Agency Manager is hereby authorized to sign a Professional Services Contract with Kittelson & Associates, Inc. for the final design of SW Ice Age Drive with a Scope of Work in a form substantially similar to the attached Exhibit A.

Section 2. The Professional Services Contract with Kittelson & Associates shall be in the amount of $994,990.80, in conformance with a fee schedule in a form substantially similar to the attached Exhibit B.

Section 3. The Agency Manager is hereby authorized to amend the Professional Services Contract with Kittelson & Associates up to a Contingency Amount of $149,248.62 (15% of the original Professional Services Contract fee amount) via the Contract Change Order approval process, for unforeseen conditions needed to complete the design and solicit bids for construction.

Section 4. This Resolution shall be effective upon its approval and adoption.

Duly passed by the Urban Renewal Agency Board this 21st day of February 2023.

Tim Rosener, Chair

Attest:

Sylvia Murphy, MMC, Agency Recorder

EXHIBIT A

Scope of Services – Amendment 1

Ice Age Drive PS&E

Sherwood Project Number 702123

February 8, 2023

PROJECT BACKGROUND

Situated in the eastern edge of Sherwood in the Tonquin Employment Area, the future Ice Age Drive will open close to 300 acres for industrial expansion. The new roadway is classified as a Collector Road, connecting SW Oregon Street to SW 124th Avenue.

In October of 2010, the City adopted the Tonquin Employment Area Concept Plan - Preferred Concept Plan Report. This report provides the baseline analysis for the layout of future collector and local connector roads (Figure IV-5) within the Tonquin Employment Area (TEA). Mentioned also is the 2015 implementation plan that refined elements further and was also adopted/accepted by Council. The alignment of the Ice Age Drive roadway is dictated in part by existing BPA and PGE power lines, wetlands and limitations on the access locations/connection to SW Oregon Street and SW 124th Avenue.er

Beginning in 2019 several properties within the TEA have been annexed into the City, have received Land Use Approval, and are currently under construction. As part of the current site development construction processes, a portion of Ice Age Drive (formerly identified in the Concept Plan as Blake Road) is being constructed from SW 124th Avenue, westerly to the west property lines between the T-S Corporate Park and Willamette Water Supply Program parcels.

The project is located near the headwaters of drainage paths (Hedges Creek to the land dam at TS Corporate Park, and Rock Creek to the outfall at SW Tonquin Road) that are susceptible to erosion and will need to implement hydromodification management (HM) measures meeting Clean Water Services (CWS) Chapter 4 Design and Construction Standards. HM measures include hydrologic source control and treatment measures that promote infiltration or otherwise minimize the change in the peak flow, volume, and duration of runoff when compared to the pre-project condition. HM measures may also include constructed facilities (such as basins or ponds) that manage the flow rates and volumes of stormwater leaving a site (or from several sites that discharge to a regional facility).

The sanitary service area is bisected by a ridge line roughly running north-west to south-east along the BPA power line easement creating two sub-basins. The northern portion flows to the Rock Creek Interceptor which has sufficient capacity. The south portion flows to the Onion Flat Trunk line, and capacity concerns are being addressed through other projects. Preliminary sizing for the sanitary sewer indicates 12" and 15" pipes. It is our understanding based upon discussions with the City, that the alignment for the sanitary sewer collection system on Ice Age Drive should be confined to the street

right-of-way. Therefore, alternative horizontal sanitary sewer alignments will be dictated by the street alignment options.

The water service area is all encompassed within the 380 pressure zone. It is also noted that there is sufficient storage for the anticipated demands. Therefore, the water system layout becomes more straight forward. Preliminary sizing for the water line indicates 12" up to 16" pipes.
The alternative water alignments will be dictated by the street alignment options, and the water line will be in the right-of-way.

PRIOR WORK

Kittelson & Associates prepared an alternatives study for the alignment of Ice Age Drive. This study identified the constraints related to Kinder Morgan, BPA, and PGE, as well as coordinate the alignment with adjacent development. The service routing for Water, Sanitary Sewer, and Stormwater was also considered. In January 2023, City Council adopted the South Alignment for Ice Age Drive with Sanitary Sewer being served from the East-West Road.

The traffic study for the alternatives study indicated that a traffic signal is warranted at the new intersection of Ice Age Drive and Oregon Street when constructed. At full build-out of the Tonquin Employment Area, a signal at Ice Age Drive and 124th will be warranted.

Along Oregon Street, a northbound right turn lane will be added to the new intersection.

A new roadway (East-West Road) is being built along the south side of the Sherwood Corporate Center (SCC). The Ice Age Drive project will extend the East-West Road to connect to Ice Age Drive.

PROJECT UNDERSTANDING

The primary purpose of this professional & related services contract is to obtain the necessary permits and prepare final plans, specifications, and engineer's cost estimate (PS&E) for the public solicitation of construction bids to improve the existing roadway to the ultimate Industrial Collector Street typical section, with multi-purpose sidewalks (if adequate ROW exists) and construct a regional stormwater management facility to treat runoff from the aforementioned road improvements.

The project will also attempt to stub laterals connections for essential public utilities (storm/water/sanitary) at locations that consider future development in order to reduce the likelihood of disturbing the new street infrastructure. Final PS&E will coordinate and consider the relocation & expansion of franchise utilities in order to accommodate the road widening with the intent to place utilities underground whenever possible. The project will extend new & underground existing overhead fiber optic systems owned or leased by the City (Sherwood Broadband) from Oregon Street to 124th Ave. In addition, all permanent and temporary impacts to private property will be determined, negotiated and are to be settled w/ the owners prior to soliciting construction bids.

Lastly, the City will lead the bid advertisement efforts and will be provided with assistance during the bidding process in order to respond to bidder inquiries and revise PS&E documents as needed (via addenda) to reduce risks during construction. Construction administrative duties, including: construction engineering, construction management, observations, and inspections will be deferred to

a separate consultant contract to be approved with the award of the construction contract to the apparent lowest responsive & responsible bidder.

Project Limits:

Ice Age Drive: From the intersection of SW Oregon St to the west side of the Water Treatment facility

Oregon Street: Extend the right turn lane built as SCC's temporary access to Ice Age, build ½ street improvements to north property line of taxlot C700 that the City purchased.

East-West Road: Extend from east side of SCC to Ice Age Drive, potentially creating a 4-leg intersection with Dahlke Lane being connected to the north leg.

Dahlke Lane: Re-align approaches on both side (north and south) of Ice Age Drive to ensure proper connection with planned new streets.

Water Quality/Quantity:

Stormwater will be treated via a regional facility located on the north side of Ice Age Drive, under the BPA Lines, out falling to Hedges Creek. The system will collect, convey, and treat stormwater from the roadway improvements and the approximate 24-acre area drainage basin that flows towards Ice Age Drive.

Signals/Interconnects:

With the construction of Ice Age Drive, a new traffic signal will be designed at Ice Age Drive intersection with Oregon Street. At this time, it is not anticipated that a signal will be constructed at 124th Avenue, rather area development and future traffic volumes will be monitored by the City and County to determine when a signal may be warranted.

Lighting:

Portland General Electric (PGE) Option C, Dark Sky Friendly LED Cobra lighting is anticipated but Option B lighting may be explored and coordinated with City staff for consideration as well

Franchise Utilities:

Convert existing overhead service to underground. Assume franchise utilities will consider undergrounding to be an act of "beautification" and as such the utility providers are only responsible for the costs of relocating facilities from overhead to overhead and the City would be responsibility for covering the difference in cost between OH-OH and OH-UG conversions. Assume this will require consultant to provide construction plans in which the City's contractor would provide/install the required infrastructure. Final responsibilities will be determined by consultant during design through "franchise utility coordination".

Sherwood Broadband (City Fiber). Assume the construction bid documents will include the infrastructure needed to extend the city fiber system from Oregon Street east to the 124th Ave. Sherwood Broadband will provide a 30% design plan that will be incorporated w/ the project.

Sanitary/Water:

Sewer pipe will be extended from the southeast side of SCC along the East-West Road connector and through Ice Age Drive. The pipe shall be extended west on Ice Age to TL C700, and east to approximately the mid-point of TL D700. Water pipe will be extended from the southeast side of SCC along the East-West connector and through Ice Age Drive. The pipe shall be extended west on Ice Age connecting to the SCC water line near TL C700, and east to approximately the PGE lines. Corrosion control is not required.

Natural Resources:

Sensitive Area (Wetland and Vegetated Corridor) impacts may be necessary for Ice Age Drive. Both the roadway and regional WQF project will attempt to avoid wetland encroachments and that any encroachments will be mitigated on-site or through the purchase of mitigation bank credits. Assume the project will receive an Individual Permit from DSL, a Nationwide Permit from USACE, and 401 Water Quality Certification from DEQ.

Walls:

No walls are anticipated, but could be added through the Extra Work as Authorized task

Landscaping:

Street trees and planter strips will be incorporated into the design along Ice Age Drive. Bark mulch or grass seed will be shown to match existing landscaping behind the sidewalk along the entire corridor. Assume the irrigation system will be a design-build system (for the water quality facilities) proposed by the contractor via submittal process during construction. No irrigation is anticipated for the planter strip. Sleeves under the sidewalk will be included.

Public Involvement/Outreach:

A single in-person public open house is anticipated to occur during the final design phase. Consultant team will prepare public facing materials and attend with City staff.

Right-of-Way (ROW):

Assumed 4 files for ROW and easement acquisitions will be required with consultant provided appraisals and independent appraisal review.

SPECIFIC SCOPE OF SERVICES

Summary of Work

Survey, engineering design, traffic engineering, geotechnical engineering, landscape design services, and ROW acquisition services, and construction support for this project based on the scope of services described herein.

Task 1.0 Contract Administration

Task 2.0 Traffic Analysis

Task 3.0 Geotechnical & Pavement

Task 4.0 Surveying & Mapping

Task 5.0 Drainage & Water Quality Studies

Task 6.0 Utility Coordination

Task 7.0 Environmental

Task 8.0 Final Design (90%, & 100% Bid Ready)

Task 9.0 ROW Acquisition

Task 10.0 Construction Support

Task 11.0 Public Engagement

Task 12.0 Extra Work as Authorized

The duration of this project is assumed to be from February 2023 through February 2024 for the completion of design, Right-of-way, and bidding tasks. Assume construction will occur between March 2024 and October 2024, with Construction Management active January 2024 through December 2024

Consultant RESPONSIBILITIES

Task 1.0 Contract Administration

1.1 Contract Administration

Consultant will:

- Prepare and maintain a contract and task decision log documenting all proposed changes to the projects (i.e. change orders and notices to proceed) as well as the proposed schedules and deliverables.
- Complete Subconsultant management tasks as defined in the attached Subconsultant scope of services.

- Prepare monthly invoices and progress reports. Consultant assumes an 12-month timeframe for the project to be designed and bid for construction.
- Create a project specific quality management plan. Quality control activities will be completed for each deliverable.

1.2 Project Coordination, Communication & Team Meetings

The proposed approach to project coordination during design is to hold project meetings with key project team members and representatives from the City (Project Management Team "PMT"). The Consultant Project Manager will direct all PMT meetings and provide direction to the rest of the team as the project progresses. These meetings will have a specific agenda with a predefined objective and outcome to address and resolve project issues as they are encountered. Agendas will be distributed a minimum of 3-days in advance of the meeting. Weekly video teleconference calls will be informal.

- It is assumed that monthly virtual or in-person PMT coordination meetings (2 hours each) will be held during the design phase of the project (12-month time frame). Meetings to be held at Kittelson's office in Portland, with up to 3 of the meetings held at the City of Sherwood.
- Weekly telephone conference calls with the Project Team (1 hour each), through design and construction phases.

1.3 Project Scheduling

Consultant will prepare a project schedule at the on-set of design. Quarterly updates will be provided with a bi-weekly look-ahead updates.

***Task 1.0 Deliverables**:*

- *Contract/Task Decision Log*
- *Monthly Progress Reports*
- *Quality Management Plan*
- *Monthly Invoices*
- *Quarterly Project Schedule Updates and Bi-Weekly Look-Ahead Updates*
- *Meeting Agendas*

Task 2.0 Traffic Analysis

A preliminary traffic study was completed to determine if warrants would be met for signals and what additional lanes would be required at the Ice Age Drive intersections with Oregon Street and 124th Avenue. This task will complete the formal warrant analysis and traffic study necessary for review and permitting with Washington County. The traffic study must be prepared for, reviewed and approved by Washington County DLUT, supplementing prior approval efforts lead by the City in 2021 (Oregon Street Access Management Plan)

2.1 Intersection Analysis

Consultant shall prepare a traffic analysis to support the County's approval of intersection control for the Project.

- Conduct analysis of Manual on Uniform Traffic Control Devices (MUTCD) signal warrants based on current traffic conditions.
- Conduct a level-of-service and queuing analysis of future weekday AM and PM peak hour conditions to determine recommended lane configuration, signal phasing, and storage length needs at the intersection signals at Oregon Street and 124th Avenue.
- Prepare a summary technical memorandum describing the key findings and recommendations.

Capacity analysis must be based on current Highway Capacity Manual ("HCM") methodology.

Task 2 Deliverables:

- *Draft and Final Traffic Report (.pdf)*

Task 3.0 Geotechnical & Pavement

Pavement design recommendations were completed with concept alignment study. A single boring was completed on Dahlke Lane near the BPA lines. The key geotechnical issues for this phase are subsurface basalt elevations and hardness.

3.1 Geotechnical Testing & Lab Analysis

The additional geotechnical investigation will be performed to provide recommendations for construction of the roadway and sanitary sewer. The geotechnical project elements are limited to the following scope:

- Obtain one-call utility locates for explorations and obtain permits through the City.
- Obtain locates from Kinder Morgan
- Complete hand auger borings in new pavement and infiltration locations under BPA/PGE lines to depths of up to 10 feet below ground surface (assumed 4 locations)
  - Complete shallow infiltration testing (up to 5.0 feet below ground surface) in two explorations.
- Complete mud rotary borings along the alignment of Ice Age Drive and the East-West Road connector to depths of approximately 20 feet below ground surface. Additional borings will be conducted at the proposed signal pole locations.
  - Up to sixteen (16) locations are estimated along the alignment and 2 each at Oregon Street and 124th intersection for a total of 20 locations.
  - Obtain soil samples at 2.5- to 5-foot intervals.
- Conduct the following laboratory tests using soil samples obtained from the explorations:
  - Up to six moisture content tests in general conformance with American Society for Testing and Materials (ASTM) D 2216
  - Up to one atterberg limit tests in general conformance with ASTM D 4318
  - Up to one test for material passing the U.S. No. 200 sieve in general conformance to ASTM D 1140
  - Up to two tests for soil gradation in general conformance to ASTM D422 for use in infiltration calculations.

Assumptions:

- Environmental permitting will not be required for the field work related to geotechnical investigations.
- The drill cuttings are not contaminated and may be disposed of off-site by our drilling subcontractor; the City will be notified of the final disposal site. If the drill cuttings appear to be contaminated, the City will be informed immediately, and NV5 will take necessary action upon authorization.
- Flagging and traffic control, if necessary for drilling, will be subcontracted.
- Permit fees will be provided by the City.

Task 3 Deliverables

- *Geotechnical Recommendations for signals, utilities, and roadway construction (.pdf)*
- *Draft Infiltration Results memo (.pdf)*

Task 4.0 Surveying & Mapping

Topographic survey data, via photogrammetric aerial methods, was collected for a large swath of the alignment. Only a portion of the data was resolved through the middle of the Tonquin Employment Area. Additional area for the South Alignment and East-West Road are necessary.

4.1 Topographic Survey

The additional project's survey limits will include all of tax lots D602, D600 and D800. Additional topographic survey will include a portion of the northeast corner of Tax Lot 600 on Map 2S128C to expand existing data along the proposed alignment.

Consultant will update the existing topographic survey in English units for the additional project area.

- Features to be shown include trees 6" (six-inches) or more in diameter-at-breast-height (dbh), utilities, utility poles, overhead wires, fences, area lights, culverts, driveways (including width and length), walks, crown line of streets, edge of pavement, ditches, traffic and other permanent signs, and structures as accessible.
- Underground features such as utility line sizes, rim elevations, invert elevations, fuel tanks, wells, septic tanks, and drain fields will be shown as indicated by surface features and other information including as-built drawings and utility company data.
- Kinder Morgan gas line locates will be collected as marked by the utility company.
- Photos of site conditions will also be taken.
- Reference the network and all mapping to the existing project datum, which has aHorizontal Datum on NAD 83(2011) epoch 2010.00, Oregon Coordinate Reference System (OCRS), Portland Zone. The Vertical Datum is on Washington County Vertical Datum. New control established will based on existing project control.

The updated aerial topographic data combined with field survey topographic data will be incorporated into an English topographic survey base map and digital terrain model utilizing AutoCAD Civil 3D.

4.2 Alignment Staking

Consultant will:

- Provide lath and hubs at 50 foot spacing on tangent sections and 25 foot spacing on curved sections along the ROW centerline for Ice Age Drive and the East-West Road connector.
- Provide a spreadsheet of centerline reference points and hub elevations to utility companies for use in excavating existing utilities ("potholing") at points of potential conflicts.

4.3 Right-of-Way Descriptions & Exhibit Maps

Consultant will:

- Provide input for monumentation plan sheets.
- Prepare descriptions on all required permanent easements and right-of-way dedications on 8 1/2" x 11" paper. Written legal description should be referenced as "Exhibit A". Assumes one centerline description and exhibit and four (4) additional files will be required for privately owned properties.
- Prepare descriptions on all required permanent easements and right-of-way dedications on 8 1/2" x 11" paper. Written legal description should be referenced as "Exhibit A". Assumes three (3) additional files will be required for up to three (3) City-owned properties along the Ice Age Drive alignment, including any storm water facility dedication.
- Centerline description and exhibit will be prepared and submitted to the city for approval prior to the preparation of any other files. Once approved the required files will be prepared.
- Descriptions will be dated and stamped by a professional land surveyor licensed in the State of Oregon.
- Descriptions for the properties will reference the last recorded deed by type of deed, owner's name, book and page, and date recorded. This information is to be taken from the last vesting deed.
- Descriptions will reference easements as "Permanent" i.e. (Permanent Slope Easement, Permanent Public Utilities Easement, Permanent Drainage Easement, Etc.).
- Descriptions will reference dedications of right of way as Parcel 1 and easements as Parcels 2 through 6. Multiple easements per Parcel are acceptable i.e. (Parcel 2- Permanent Slope/Permanent Public Utilities easement).
- Develop 8 1/2" x 11" parcel map for each parcel that an easement or dedication of right-of-way is required on. Parcel maps should be referenced as "Exhibit B". In addition to the centerline description referenced above, Consultant will provide 2 or 3 examples of descriptions to be reviewed by the City Project Manager and Attorney before proceeding with all the descriptions on the project. Each description will include the following:

- Reference centerline stations on the map. Show the distance from the centerline to existing right-of-way line and from centerline to proposed right-of-way and/or easement line(s) on the parcel map.
- On each parcel map provide a legend showing with a hatch area is being acquired. Give the areas for each parcel in acres or in square feet, if the area is small. Note: Legend should be consistent from file to file. For example, a hatch used for a permanent slope easement would be the same for all files on the project.
- Show north arrow, appropriate scale, project name, City project number and date exhibit was prepared.
- Feet are to be shown on all distances in "Exhibit B" (excluding centerline).

4.4 Right-of-Way Staking

Consultant will:

- Stake proposed centerline and proposed and existing ROW and easements for appraisals and acquisition process (for up to four (4) private properties, as noted above, lots or future tracts). Stakes to be provided at approximate lot lines, transitions, 50 foot intervals on tangent sections and 25 foot intervals on curved sections. Assumes all staking can be accomplished in three (3) trips to the site. Staking is assumed to be provided on private properties only.

4.5 Update Pre-Construction Record of Survey Map

Consultant will update the preliminary Pre-Construction Record of Survey map prepared in phase 1 of this project to include the new property corners set during the recent ALTA survey of D602. File updated map with Washington County Surveyor. Proposed roadway centerline will not be shown on the Pre-Construction Record of Survey map.

Task 4 Deliverables

- *Topographic Base Map (.dwg (C3D v.2020)*
- *50' Centerline PK Nail markers or equivalent stable point on non-asphalt surfaces*
- *Final Pre-Construction Record of Survey (hardcopy submittal to County for Filing)*
- *Legal Descriptions and Exhibits (7) (.pdf)*
- *Centerline Description (.pdf)*
- *ROW Staking (7 files)*

Task 5.0 Drainage & Water Quality Studies

Conceptual stormwater design was considered in the alternatives study. This task will formalize the hydraulic modelling and facility sizes based on the final design and additional geotechnical infiltration data.

5.1 Preliminary Stormwater Report

Consultant shall prepare a preliminary stormwater report that shall be submitted with 30% plans. The purpose of this report is to develop the overall recommendations of the basic storm water conveyance system layout, pipe/culvert outfall locations, treatment, and storage concepts. These recommendations do not contain full facility designs. It is a tool to assist in the selection of the types and locations of the

facilities to be designed. Wood shall prepare the Preliminary Stormwater Report following the outline below:

- **Introduction and Title –** This section shall list Project name, road name, beginning and ending mile points, and date of the report. The introduction will include the names of the engineering staff who prepared the recommendations, the purpose of the report, a brief description of the Project, and a summary of treatment/storage concepts and recommendations on their use.
- **Existing and Proposed Conditions Narrative –** The introduction will be followed by a narrative that describes the proposed changes to the existing conditions. The pollutant removal and storage targets will also be included in the narrative.
- **Proposed Mitigation Alternatives –** This section will include a brief generic discussion of proposed mitigation alternatives. The topics addressed will include location, removal efficiency, storage capacity, constructability, maintenance, and cost.
- **Other Issues –** This section shall discuss mitigation issues that are not addressed in the previous section on alternatives.
- **Recommendations –** This section shall discuss preliminary recommendations about the proposed alternatives. Aspects that shall be addressed include dependability, ease of construction, ease of maintenance, cost, and appearance.

5.2 Final Stormwater Design Report

Consultant shall prepare a final stormwater report for project that shall be submitted with 90% plans. The purpose of this report is to develop design documentation for final stormwater designs. Significant facilities include, but are not limited to, any of the following:

- Storm drain systems with pipes larger than 12 inches in diameter,
- Stormwater quality facilities, and
- Stormwater control facilities (detention, retention, infiltration, split-flow structures, etc.)

Stormwater design report will describe in detail the facilities following approval of the Preliminary Stormwater Report. This report provides facility design information such as the type, size, location, critical dimensions, and features. The Stormwater Design Report shall be completed after the advance plans and concurrently with the preparation of the final plans.

Consultant shall prepare a Final Stormwater Design Report in accordance with the Clean Water Services and City of Sherwood Standards. The facility design(s) incorporated in the final plans should comply with the information in the stormwater report unless approval for any change has been obtained from the engineer of record for the Stormwater Design Report. The report is expected to have the following sections:

1) **Cover Sheet and Index** - The report cover sheet includes the title, the Project name, the roadway name and number, the beginning and ending mile points. This information will match with the data provided on the title sheet for the plans. The cover sheet will carry the seal of the engineer of record.
2) **Project Overview** - including the following:

a. Project description, including the overall Project scope, including the need for the Project.
b. Purpose of the study, including a brief description of the facility design objectives, including the source of the objectives (i.e. environmental regulations, local drainage requirements such as drainage master plans, liability concerns, etc.). This topic will be discussed in more detail in the body of the report. This discussion also includes the following.
    i. Statement that the design objectives have been met.
    ii. Explanation about why any design objectives have not been met, if this is the case.
c. Key issues affecting Project scope, need, or design.
d. Summary of the results, as would be desired by a casual reader of the report, including abbreviated tables of pipe sizes and other facilities for quick reference.

3) **Background Information** - including information about the existing conditions and factors influencing the design. It includes the following.
    a. Watershed characteristics, both pre-construction, post-construction, and at the level of buildout expected at the end of the facility design life. Topics to be discussed are drainage area sizes, land uses, and other characteristics affecting drainage.
    b. Project area characteristics, with emphasis on the drainage systems.
        i. Pre-construction conditions.
        ii. Description of the existing drainage facilities.
        iii. Description of existing drainage problems if present.
        iv. Condition of the existing system.
        v. Post-construction conditions, including a description of the proposed facilities.
    c. The outfall, including the following.
        i. Description of the outfall, including condition.
        ii. Discharges expected at the outfall in the pre-construction, post-construction, and buildout at end of design life land use conditions.
        iii. Discussion of the ability of the outfall to satisfactorily convey the three previously listed discharges.
    d. Utilities, including the following.
        i. Summary of the utility location information available and used in the design. Mention the limitations of the utility location data. Mention if utilities are present, there may be conflicts, and the utility locations are not known.
        ii. Description of any utilities that affected the design, their effects, and how the effects were addressed in the design.
    e. Investigations, including the following.
        i. Research/previous studies used in the design should also be referenced.
        ii. Site reconnaissance used to collect design data should be mentioned.

4) **Design** - including detailed design information.

a. Design criteria, mentioning all criteria used in the design. References are made to published material available externally, and also to correspondence and other material retained in the supporting data file.
b. Analysis methods used in the design, including the following.
    i. Hydrology, including method used, with assumptions.
    ii. Hydraulics, including method used, with assumptions.
c. Narrative and calculations used in the design. Summary of the design calculations will be included in this section, and references are made to detailed information in the supporting data. Include a separate subsection for each facility or system.

5) Maintenance is addressed in this section, if any special activities will be required, or unusually frequent maintenance is expected. Detailed information will be included in an "Operation & Maintenance Manual"

Task 5 Deliverables

- *Draft & Final Preliminary Stormwater Report (.pdf)*
- *Draft & Final Stormwater Report (.pdf)*

Task 6.0 Utility Coordination

6.1 Utility Coordination

Consultant will initiate coordination with utilities and incorporate utility provided undergrounding plans into the design documents. The locations and elevations of existing utilities and options for resolving conflicts will be investigated. This work will include working with the City and utility companies to "pothole" crossings and other areas to identify and eliminate conflicts. It is expected that potholing will be provided by the utility companies and the Consultant will provide field survey. Once "potholing" data is obtained and mapped, the Consultant will provide it to the agency or company that owns and operates the utility.

Consultant will:

- Host a Utility Coordination Meeting at the City offices, inviting all known utility owners in the corridor, to confirm completeness of the one-call locates and to begin relocation and undergrounding design. This meeting will occur after the topographic survey (Task 2.2) is complete.
- Prepare a Utility Conflict Report and send utility conflict letters to the affected utility companies describing the conflicts that exist, and the required adjustment to eliminate the conflict. A spreadsheet of centerline reference points and elevations will be provided to utility companies for use in excavating existing utilities (potholing) at points of potential conflicts. Consultant will also provide the conflict list to an independent potholing service who will provide quotes to the utilities and coordinate with the Project team to aid in gathering pothole data. The schedule for making the necessary adjustment ahead of the beginning of road construction will be identified.
- Review pothole data provided by the utilities and make recommendations (i.e., Subsurface Utility Engineering) to the stormwater design to minimize utility relocation.

- Prepare a Utility Relocation Letter of conflict for each utility notifying them of unavoidable conflicts with a mandatory relocation date.
- Solicit underground concept design for overhead to underground conversion from all overhead utility companies and from Sherwood Broadband. Design of the underground conduit and vaults to be completed under task 8.

Task 6 Deliverables

- *Utility Coordination Meeting Notes (.pdf)*
- *Utility Conflict Report (.pdf)*
- *Utility Relocation Letter (.pdf)*

Task 7.0 Environmental & Arboricultural

7.1 Environmental Consulting

The project area includes wetlands and Vegetated Corridors but no impacts to these regulated resources is anticipated. As a result, it has been determined that the following permits and approvals may be required:

Service Provider Letter (SPL) – CleanWater Services: The project will be constructed within 200 feet of known vegetated corridor and sensitive areas including wetlands and will require an SPL.

Consultant will conduct a wetland delineation using the required criteria and methodologies of the Corps of Engineers *Wetland Delineation Manual Technical Report Y-87-1* (Environmental Laboratory, 1987) and the *Western Mountains, Valleys and Coast Region* regional supplement to the 1987 Manual. The flags will be numbered to facilitate the survey.

Consultant will schedule, attend, and prepare notes for a virtual pre-design meeting with CWS environmental & development review staff. Consultant will then prepare and submit a Natural Resource Assessment (NRA) report suitable for CWS review; assume a standard site assessment will be required, the roadway will be treated as a linear development and the WQF as site-development. The NRA will include a discussion of the property's sensitive areas, the associated vegetated buffer requirements, and an assessment of vegetated corridors associated with sensitive areas. Consultant will also complete the Sensitive Areas Pre-Screening Certification Form and prepare a Sensitive Areas Certification Form for submittal to CWS. This form has to be submitted with the required documentation in order to receive a Service Provider Letter (SPL). CWS site certification, assessment and review fees are not included within the costs of this proposal (paid by City).

Wetland Fill permits are assumed to not be required and not biological permitting will be required.

Consultant assumes additional cultural resources investigations will not be required for the permitting.

7.2 Erosion Control Permit

Consultant will:

- Coordinate erosion control measures with the City early in design.
- Prepare the 1200-C application for submittal to DEQ. Plans will be prepared under task 8.1.
- Lead all efforts to obtain a 1200-C permit including application submittal, coordination and follow-ups.

Task 7.0 Deliverables:

- *Draft and Final Sensitive Areas Assessment*
- *Draft and Final Wetland Delineation Report, as needed*
- *Draft and Final CWS Natural Resource Assessment*
- *Notes from CWS Pre-Design Meeting*
- *Erosion Control Permit Application (PDF form)*

Task 8.0 Final Design (90% and 100% Bid Ready)

The outcome of preferred alternative study will be the foundation for proceeding with the plan production of the preferred design. This task includes the final construction documents necessary to solicit permits from Washington County and advertise for construction bids. We anticipate the following construction sheets being required:

Sheet Series Title	Number of Sheets
Cover, Legend, Index	3
Typical Sections	2
Details	8
Traffic control/Staging Plan	2
Grading & Erosion Control	8
Detailed Grading (Curb Return)	4
Detailed Grading (Intersection)	2
Detailed Grading – ADA Ramps	8
Regional WQ Facility	6
Landscape	8
Plan & Profile	11
Illumination	5
Signing & Striping	6

Utility Undergrounding	7
Sewer Plan & Profile	8
Waterline Plan & Profile	8
Traffic Signal (at Oregon St)	8
Earthwork Cross Sections	22
Total	**128**

8.1 Roadway Construction Plans (90%, and 100% Bid Ready)

Consultant will prepare construction drawings for the described improvements. The following tasks will complete the final construction plans for the project:

- Before beginning any final construction plans, the project team will meet with City staff to refine design elements identified during the preliminary design and to focus on the parameters of the design.
- Prepare and organize all construction drawings. Identify which City standard drawings are needed. The construction plans format will be in accordance with City standards. Details will show pay limits for the bid items.
- Design plans will show the existing locations of manholes, catch basins, valves, culverts, utility poles, utility lines (alignment, size, invert elevation, and depth), existing easements, utility lines and sizes, property corners, and approximate property lines.
- Prepare Detailed Grading Sheets.
    - ADA Ramps:
        - Oregon Street: 6
        - East-West: 6
    - Intersections: 2
- Finalize Water Quality Facility Design
- Finalize erosion control plans.
- Finalize street and storm sewer plans (sizing performed in Task 5). Final profiles will be prepared for street and storm sewer plans. Plans will show proposed right-of-way and easement lines.
- Provide signed electronic PDF's of the contract plans.
- Provide digital copies of all deliverables. Plans will be in AutoCAD Civil 3D format.

8.2 Sanitary Sewer Plan & Profile (90%& 100% Bid Ready)

Consultant will prepare construction drawings for the described Sanitary Sewer improvements. The following tasks will complete the final construction plans for the project:

- Before beginning any final construction plans, the project team will meet with City staff to refine design elements identified during the preliminary design and to focus on the parameters of the design.
- Prepare and organize all construction drawings. Identify which City standard drawings are needed. The construction plans format will be in accordance with City standards. Details will show pay limits for the bid items.
- Sewer service stubs for future development will be identified by the City.
- Cased crossings of the Kinder Morgan gas line will be required.

8.3 Waterline Design (90%& 100% Bid Ready)

Consultant will prepare construction drawings for the described Waterline improvements. The following tasks will complete the final construction plans for the project:

- Before beginning any final construction plans, the project team will meet with City staff to refine design elements identified during the preliminary design and to focus on the parameters of the design.
- Prepare and organize all construction drawings. Identify which City standard drawings are needed. The construction plans format will be in accordance with City standards. Details will show pay limits for the bid items.
- Fire Hydrant locations and meter locations/sizes will be identified by the City.
- Cased crossings of the Kinder Morgan gas line will be included.
- No corrosion protection will be required for the new waterline.

8.4 Illumination Plans (90%, and 100%Bid Ready)

Based on photometric analysis developed in the alignment study, consultant will conduct the following to prepare illumination plans:

- Coordinate with City staff, PGE, and the project design team to confirm applicable design elements including fixture types, fixture wattages, pole heights, and target illumination levels.
- Coordinate with the power company and the City to verify the street light pole layout and the power source location.

8.5 Signal Plans (90%, and 100% Bid Ready)

The following tasks shall complete the final traffic plans:

- Develop the traffic signal sheets (including legend, signal plan, detection plan, and associated details) at the Ice Age Drive/Oregon Street Intersection.
- Coordinate signal plan review through Washington County

8.6 Signing & Striping Plans (90%, and 100%Bid Ready)

Consultant will prepare a signing and striping plan per the Manual on Uniform Traffic Control Devices (MUTCD) and City standards.

- Develop up to two (2) signing and striping plan sheets for the project area.
- Develop up to four (4) detail sheets associated with the signing and striping plan.

8.7 Franchise Utility Plans (90%, and 100%Bid Ready)

The following tasks will complete the underground franchise utility plans:

- Incorporate the schematic design of conduits and vaults provided by the utility companies into the construction plans. Consultant will set the alignment and grade of all vaults and conduits to integrate with the design and minimize conflicts.
- Provide utility conversion scope for each home.

8.8 Construction Staging Plans (90%, and 100%Bid Ready)

The following tasks will complete the temporary traffic control plans (TCP):

- Coordinate with City for construction staging strategies and any local signing or circulation needs.

8.9 Landscape Construction Plans (90%, and 100%Bid Ready)

Consultant will prepare planting plan & details for street trees and permanent seeding. We assume temporary irrigation design will be provided by the contractor for street tree and water quality facility establishment.

8.10 Earthwork Cross Sections & AMG Model Preparation

Consultant will prepare 25' cross sections of the proposed improvements: finish grade, subgrade, and sidewalk; including showing the Right-of-way & easements, and storm system. Prepare grade sheets of the design for the contractor's and inspector's use. A CAD File of the design terrain model will be prepared for the contractor's use in Automated Machine Control Grading.

8.11 Construction Specifications (90% and 100% Bid Ready)

Consultant will prepare the technical specifications following the ODOT/APWA format. After the 30% strip map has been reviewed, we will prepare an outline of the anticipated specification sections and any special/unique sections. At the 90% submittal, the technical specifications and bid documents will be bound into a formatted, comprehensive document.

8.12 Construction Estimates (90% and 100% Bid Ready)

Consultant will provide quantities and construction cost estimates for the 30%, 90%, and 100% submittals. A separate quantity take-off for the Landscape plantings will be provided to the City.

8.13 Constructability Review (90% and 100% Bid Ready)

Consultant will provide a constructability review of the plans at the 90% design milestone. The review will seek to identify design elements that may cause challenges, or conflicts during construction.

Task 8.0 Deliverables:

- *90% & 100% Construction Plans (one electronic copy in PDF. form and four paper copies per submittal)*
- *Roadway Cross Sections (one electronic copy in PDF. form and four paper copies per submittal)*
- *Construction DTM (CAD)*
- *Construction Specifications (90% and 100% Bid Ready) (one electronic copy in PDF. form and four paper copies per submittal)*
- *Construction Estimates (90%, and 100% Bid Ready) (one electronic copy in PDF. form and four paper copies per submittal)*
- *Constructability Review Memo (90% and 100% Bid Ready) (one electronic copy in PDF)*

Task 9.0 Right-of-Way and Real Property Acquisition Services

Consultant will provide ROW process following State of Oregon's Right of Way Manual and the Contractor Service Guide. It is assumed a total of 4 acquisitions are required for the project necessitating full case files per ODOT ROW manual. There may be 2 additional less formal casefiles in support of City owned remnant properties. It is assumed that acquisitions will be taking-and-damage appraisal formats. It is assumed that the acquisitions will be acquired in the City of Sherwood's name.

9.1 Right-of-Way Map

Consultant will develop right-of-way map showing existing and proposed Right-of-Way line and permanent and temporary easement lines for all ROW files. The Right-of-Way map is to be provided to the Right-of-Way staff upon delivery of 90% construction plans. Right-of-Way map is to be updated as construction plans are updated and produced. Right-of-Way map is to be delivered with construction plans.

- Scale for the right-of-way map, shall be in English units, the scale is to be an appropriate Engineering scale such as 1"=20', 1"=40', 1"=60', 1"=100'.
- For each parcel, show map and tax lot number, site address number and file number.
    - Major improvements within 50 feet of the outer most area of acquisition will be shown. If no acquisition is being acquired for a particular parcel, then show major improvements 50 feet from the existing right-of-way line. (Examples of major improvements to be shown on the right-of-way map are: houses, outbuildings, driveways, fences and other miscellaneous features needed for design.)

9.2 Preliminary Activities

Upon receipt of authorization to proceed with ROW Acquisition, Consultant shall set up ROW parcel files and deliver a General Information Notice (GIN), acquisition and relocation brochures, and a copy of

the applicable portion of the ROW Acquisition map (marked Preliminary and showing the right of way to be acquired) to all owners and occupants of affected properties where a taking and damages or value finding appraisal will be conducted (4 files). Consultant shall mail GINs via certified mail. Consultant shall use City GIN form. Consultant shall email a copy of each GIN as a separate file to the City ROW Program Manager or Designee.

Consultant shall prepare and maintain a Diary of Personal Contact for each file. The Diary of Personal Contact must include dates associated with the mailing of the GIN and/or TCAA in addition to the date, place of contact, parties contacted, what was delivered and explained, and a summary of what was discussed, for all contact with affected property owners and/or their representatives.

9.3 Appraisal & Appraisal Review

Taking and Damages appraisals shall be conducted by an Oregon State Certified Appraiser on four (4) identified properties. Appraisal reviews will also be conducted by an independent appraiser, separate from the initial appraisal on the identified properties that are appraised. Consultant will provide copies of the appraisal and appraisal review to the City who will recommend Just Compensation based on the appraisal. Just Compensation shall be no less than the review appraisal amount.

All Valuations will be packaged for City review and Council Approval prior to authorizing task 9.4.

9.4 ROW Acquisition

Consultant will draft all offer documents for the City's approval. Once approved and just compensation is set by the City, Consultant will tender all offers to the 4 acquisition files in writing at the compensation shown in the appraisal review, value finding, or TCAA and approved by the City Council. Conveyances taken for more or less than the approved Just Compensation will require a statement justifying the settlement. Said statement will include the consideration of any property trades, construction obligations and zoning or permit concessions. All signed documents will be submitted to the City for signatures, recording, and payment. Consultant will complete a diary of contact for each property owner.

Task 9 Deliverables:

- *Right-of-Way Map (4 exhibits)*
- *Right-of-Way Descriptions (4)*
- *Right-of-way Staking*
- *General Information Notice Letters (4 files)*
- *4 appraisals and 4 appraisal reviews*
- *4 completed right of way files*

Task 10.0 Construction Support

The scope of construction support is limited to the hours shown in the attached budget.

10.1 Bidding Support:

Consultant will assist the City as directed during the bidding process, limited to the total person-hours itemized in the fee proposal which shall not be exceeded unless modified by contract amendment. Scope includes, but is not limited to:

- Respond to bidder's questions to clarify intentions of design documents.
- Prepare text of any addenda determined to be necessary by the City.
- Prepare plan modification details for use in addenda

The following Construction Support services subtask (10.2 through 10.8) are presented for City consideration through a future contract amendment, if desired. Refer to the supporting supplemental budget spreadsheet for additional estimated fee information.

10.2 Construction Engineering Support (Future Contract subtask)

Consultant will provide construction assistance to the City during the construction stage of the project including:

- Visit site periodically and as requested from City construction management staff to review construction progress, answer questions, and help resolve in-field design decisions. Assumes 2 site visits in addition to bi-weekly construction meetings (task 4.3)
- Prepare design modification details as necessary as a result of different conditions encountered during construction.
- Prepare correspondence and back-up documentation during construction as needed to maintain construction schedule and respond to Contractor questions.
- Respond to RFI's by the Contractor and prepare plan revisions as necessary and required.
- Attend one walk-through with City prior to final acceptance by the City.
- Provide assistance in preparing punch-list items.
- Submittals and/or shop drawings review.
- Prepare engineer's certificate of compliance.
- Prepare written field observation reports for every visit to project site.
- Provide survey construction control to Contractor.

10.3 Construction Management (Future Contract subtask)

Consultant shall provide construction management and administration of the construction contract on behalf of the City including:

- Coordinate with internal construction team, project design team, agency representatives, and the construction contractor (CC) throughout the construction phase
- Coordinate, and lead the project Pre-Construction Conference
- Issue First, Second, and Third notification to indicate respectively when construction begins, when substantial completion is achieved, and when the project is entirely complete and closed out.
- Monitor and evaluate construction schedule and determine with the contractor is proceeding in a manner that will result in timely Project completion in conformance with the construction contract documents.

- Perform Labor Compliance monitoring as required by the construction contract and the ODOT Construction Manual – Chapter 19 Labor Compliance.
- Perform Equal Employment Opportunity ("EEO") monitoring as required by the construction contract and the ODOT Construction Manual.
- Prepare, submit, and coordinate processing of Contract Change Orders (CCOs), Extra Work Orders (EWOs), or Force Orders (FOs) as outlined in the ODOT Construction Manual, Chapter 15 – Change Orders, Force Account, Work by Public Forces, and Chapter 12G – Extra Work Performed on a Force Account Basis. Change Orders may include, but are not limited to, modification to the plans, specifications, and contract time. Only the City has the authority to approve and authorize changes to the construction contract including CCOs, EWOs, or FOs.
- Review contractor's monthly progress estimate and recommend approval and payment to the City after the contractor's requested quantity to date has been agreed to.
- Coordinate the review of construction Working Drawings, shop drawings, and other submittals submitted electronically by the Construction Contractor.
- Review, track, and coordinate responses to Requests for Information (RFIs) submitted by the construction contractor.
- Schedule a review of the Project at a time close to completion of on-site work.
- Schedule and lead a Project Final Inspection with Construction Contractor and City after receiving notice from the Construction Contractor that all punch list items, final trimming and cleanup have been completed in conformance with the contract documents.
- Prepare a punch-list of items to be corrected by the Construction Contractor.
- Once the punch-list items have been corrected, meet at Project site with the City for a follow-up to the Final Inspection.
- Provide the City with electronic copies of all construction documents and photos developed during construction.

10.4 Construction Activity Monitoring (Future Contract Subtask)

Consultant shall provide on-site monitoring and inspection of construction for conformance with, and shall enforce compliance with, construction contract documents. Consultant shall coordinate and conduct on-site monitoring and inspections so they do not cause unnecessary adverse impacts to the construction schedule. On-site monitoring and inspections must occur at critical times during the construction process based on Consultant's evaluation of the Construction Contractor's schedule, and construction contract documents. The consultant shall:

- Assist with environmental monitoring for compliance with regulatory permits:
    - Perform compliance and mitigation monitoring related to environmental conservation measures agreed upon with State and Federal regulatory agencies through permit conditions and as included in the construction contract.
    - Conduct site environmental inspections site visits to assist the Construction Contractor, and City in maintaining compliance with issued regulatory permits and the special provisions.
- Monitor construction activities during construction of the Project concurrently with Construction Contractor operations.

- Prepare General Daily Progress Reports of construction for days Consultant is on site
- Take photos of various construction activities
- Track and document all pay quantities for work and materials incorporated into the project.
- Perform wage interviews as required for labor compliance
- Review and monitor the Construction Contractor's documentation for the quality of all materials incorporated into the Project.
- Verify that all materials furnished and placed on the Project comply with the approved specifications.
- Identify and monitor Construction Contractor's quality control technicians and require proper and current certification(s), and require that proper testing frequencies and procedures are being followed. .
- Enforce compliance with the contract documents.
- The consultant is not responsible for site safety. Contractor retains full control and responsibility for site safety.
- On request, Survey to provide field and office support for construction verification surveying services. Including, verification of the Contractor's staked survey points used for the construction of various structures and utilities throughout the construction site at the City's request. This could include setting temporary construction control for verifying contractor survey, verifying storm, sanitary and water structure staking, curb line points, utility structures, signs, signal poles, power poles, illumination poles, retaining wall points, earthwork volumes following excavation, embankment construction, and Mitigation grading areas. In addition to office support, up to one hundred (100) field crew hours are assumed for this task, :
    - Provide office coordination, computations and field crew support for each request.
    - Provide summary notes of the results of each survey check.
    - Provide grade sheets upon the City's request.

10.5 Construction Meetings (Future Contract Subtask)

Consultant will lead bi-weekly construction meetings during active construction of the improvements.

- Provide construction meeting agenda
- Provide construction meeting notes

10.6 As-Built Plans and Project Closeout (Future Contract Subtask)

Consultant will:

- Prepare as-built drawings for the project (PDF and original signature–11x17)
- Prepare project close-out documents.

10.7 Post Construction As-Built Survey (Future Contract Subtask)

10.7 Post Construction As-Built Survey (Future Contract Subtask)

Consultant will provide post construction survey services to the City for this project area only.

- Post Construction As-Built Survey
    - Provide additional control as needed.

- Measure and/or survey the following items upon City Request:
  - Generate one-foot contour finish grade roadway surface including curbs and sidewalks following final paving.
  - Sanitary and Storm Structure locations (manholes at finish grade) and invert elevations. Assume 50 structures..
  - Interior of storm water detention and water quality features from top of bank or curb and surveyed to develop 1 foot contour.
  - Water structures including valves, meters, hydrants, and water manholes. Assume 50 features, currently unknown.
- Features measured in As-Built survey to be included in stand-alone drawing which includes 1 foot contour, finished grade DTM surface of roadway and storm water detention and water quality facilities.
- Invert elevations for Sewer and Storm as-builts to be included in As-built drawing.
- One photo of each feature will be provided. Storm and sanitary manholes will include photo of inside of structure.

10.8 Post Construction Record of Survey (Future Contract Subtask)

- Replace or provide additional survey control as needed.
- Monument the right-of-way centerline and right-of-way at curve points, angle points, intersection, and every 1000-foot on tangent and other points as required by County Surveyor. It is assumed based on current design that sixteen (16) monuments will be set at the centerline within monument boxes and additional forty-five (45) monuments set along the Right-of-Way. Monument box locations to be staked by DEA and installed by contractor during construction
- Replace or reference monuments found during the Pre-Construction survey and destroyed during construction, as required by ORS 209.155. It is assumed that twenty (20) monuments will need to be replaced.
- Prepare and file a Post-Construction Record of Survey to ORS 209.155 and Washington County Standards

Task 10.0 Deliverables:

- *Bid addendum documentation and revisions*

Under a future construction contract to include Subtasks 10.2 – 10.8, additional deliverables would include:

- *Field Review notes*
- *RFI Responses*
- *Submittal Reviews*
- *2D As-built survey drawing of mapped features*
- *3D As-built with 1 foot contours of roadway finished grade surface and storm water detention and water quality facilities*

- *Invert elevations for Sewer and Storm as-builts to be included in as-built drawing.*
- *One photo of each feature will be provided. Storm and sanitary manholes will include photo of inside of structure.*
- *11x17 As-built drawings (.pdf)Pre-Construction Conference Agenda and Meeting Notes (.pdf)*
- *First, Second, and Third notification (.pdf)*
- *Approval recommendation for Construction Contractor Monthly Progress Estimate (.pdf)*
- *Contract Change Orders and supporting Date for approval and signature (.pdf)*
- *General Daily Progress Reports (.pdf with final project documentation or as requested by the city)*
- *ADA Ramp inspection forms for Washington County (.pdf)*
- *Post-Construction Record of Survey to ORS 209.155 and Washington County Standards*

Task 11.0 Public Engagement

11.1 Public Engagement Materials:

The consultant team will lead development of public facing materials in support of a single project open house (coordinated by the City), anticipated to occur around the 90% design milestone. Consultant will print open house graphics and 2 consultant staff will attend the open house.

Task 11.0 Deliverables:

- *Mailer Invite for City to print/distribute (1)*
- *Open House Graphics (Strip Map, typical section board, 3D visualization, timeline)*

Task 12.0 Extra Work As Authorized

Perform additional services which are not covered under the above tasks as directed in writing by the County's Project Manager as limited by the task budget. Additional services shall be paid for the by the City at the rates established in the WOC. Potential additional services may include:

- Design of any retaining walls along Ice Age Drive
- If wetlands or VC are to be impacted by the project, Consultant will prepare a Tier II or above assessment as required by CWS
- If wetlands are to be impacted by the project, Consultant will prepare a Joint Permit Application (JPA) describing the proposed project, its purpose and need, an alternatives analysis, construction details, and proposed mitigation. The JPA will be submitted to the Corps and DSL for their review and approval
- Support City staff by reviewing federal grant requirements and relation to this project design and construction
- Traffic Signal #2 - Additional survey, mapping and signal design work should the City and County approved a traffic signal at the intersection of Ice Age Drive and 124th Avenue (outside of this project area)

- ROW Acquisition support for properties adjacent to planned traffic signal(s) at SW Oregon Street or SW 124th Avenue if signal poles cannot be designed to fit within ROW.

Reimbursable Expenses:

The reimbursable budget estimate is based on our experience with this project type and the governing agencies. It is an estimate only. Additional budget may be necessary to complete the project.

Customary reimbursable expenses mean the actual expense incurred in direct connection with the project. Vehicle mileage is reimbursed at the current IRS rate for project related travel.

The following project related expenses are reimbursed at cost:

- External Reproduction Services
- Travel Expenses, other than private vehicle mileage
- Express Postage
- Other Direct Expenses (survey filing fees; project specific supplies, etc.)

ASSUMPTIONS

The Consultant has made the following additional assumptions related to this project.

1. All permits and application fees will be paid by Sherwood, or as a reimbursable expense at cost.
2. Major access management improvements (i.e. parking lot recirculation plans, frontage road designs, etc.) are not included at this time.
3. As-built survey and Post Construction Record of Survey outlined above will not include the portion of Ice age Drive being designed and constructed by others along the Willamette Water Supply property.

CITY'S RESPONSIBILITIES

The City will:

1. Coordinate the relationship with other jurisdictions involved in the project, with adjacent property owners and with the general public.
2. Investigate and look into the requirements and terms of the federal grant agreement for the $3M, to double check for issues and potential red flags that could impact the City's efforts to design, permit and ultimately build the road.
3. Provide City standard drawings and details when possible.
4. Provide as-built CAD files of adjacent construction projects
5. Assist in utilities coordination and facilitate the timely receipt of utility data from the private utility companies.
6. Maintain the public involvement mailing list, obtain public meeting facilities, refreshments, and project press releases.
7. Pay for all permit costs

End of Consultant's Scope of Work, Exhibit A (26 pages total)

EXHIBIT B

Ice Age Drive
City of Sherwood
PROFESSIONAL SERVICES - HOURLY BREAKDOWN
February 8, 2023
Kittelson & Associates
Fee Summary

	Task	KAI Totals	TetraTech See attached breakdown	DEA See attached breakdown	NV5 See attached breakdown	Pacific Habitat Services See attached breakdown	Universal Field Services See attached breakdown	Total
		TOTALS						
Task 1.0	**Project Management, Project Coordination, and Project Scheduling**							
1.1	Contract Administration	$15,000.00						$15,000.00
1.2	Project Coordination, Communication & Team Meetings	$29,580.00	$10,420.00	$3,912.00	$3,468.00	$2,392.00	$1,002.80	$50,774.80
1.3	Project Scheduling	$7,440.00						$7,440.00
	Total Hours	246.00						
	Labor Cost	$52,020.00	$10,420.00	$3,912.00	$3,468.00	$2,392.00	$1,002.80	$73,214.80
	Total Cost This Task	**$52,020.00**	**$10,420.00**	**$3,912.00**	**$3,468.00**	**$2,392.00**	**$1,002.80**	**$73,214.80**
Task 2.0	**Traffic Analysis**							
2.1	Intersection Analysis/Traffic Memo	$18,540.00						$18,540.00
	Total Hours	100.00						100.00
	Labor Cost	$18,540.00	$0.00	$0.00	$0.00	$0.00	$0.00	$18,540.00
	Total Cost This Task	**$18,540.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$18,540.00**
Task 3.0	**Geotechnical & Pavement**							
3.1	Field Explorations & Lab Analysis	$1,770.00			$22,922.00			$24,692.00
	Total Hours	8.00						8.00
	Labor Cost	$1,770.00	$0.00	$0.00	$22,922.00	$0.00	$0.00	$24,692.00
	Total Cost This Task	**$1,770.00**	**$0.00**	**$0.00**	**$22,922.00**	**$0.00**	**$0.00**	**$24,692.00**
Task 4.0	**Surveying & Mapping**							
4.1	Topographic Survey	$3,490.00		$24,141.00				$27,631.00
4.2	Alignment Staking	$1,130.00		$12,014.00				$13,144.00
4.3	Right-of-Way Descriptions & Exhibit Maps	$1,910.00		$13,231.00				$15,141.00
4.4	Right-Of-Way Staking	$680.00		$11,166.00				$11,846.00
4.5	Update Preconstruction ROS Map	$950.00		$8,834.00				$9,784.00
	Total Hours	43.00						43.00
	Labor Cost	$8,160.00	$0.00	$69,386.00	$0.00	$0.00	$0.00	$77,546.00
	Total Cost This Task	**$8,160.00**	**$0.00**	**$69,386.00**	**$0.00**	**$0.00**	**$0.00**	**$77,546.00**
Task 5.0	**Drainage & Water Quality Studies**							
5.1	Preliminary Stormwater Report	$14,330.00						$14,330.00
5.2	Final Stormwater Report	$8,480.00						$8,480.00
	Total Hours	120.00						120.00
	Labor Cost	$22,810.00	$0.00	$0.00	$0.00	$0.00	$0.00	$22,810.00
	Total Cost This Task	**$22,810.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$22,810.00**
Task 6.0	**Utility Coordination**							
6.1	Utility Coordination	$32,340.00						$32,340.00
	Total Hours	168.00						168.00
	Labor Cost	$32,340.00	$0.00	$0.00	$0.00	$0.00	$0.00	$32,340.00
	Total Cost This Task	**$32,340.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$32,340.00**
Task 7.0	**Environmental & Arboricultural**							
7.1	Environmental Consulting	$5,740.00				$13,757.00		$19,497.00
7.2	Erosion Control Permit	$5,520.00						$5,520.00
	Total Hours	60.00						60.00
	Labor Cost	$11,260.00	$0.00	$0.00	$0.00	$13,757.00	$0.00	$25,017.00
	Total Cost This Task	**$11,260.00**	**$0.00**	**$0.00**	**$0.00**	**$13,757.00**	**$0.00**	**$25,017.00**
Task 8.0	**Final Design (90% & 100% Bid Ready)**							
8.1	Roadway Construction Plans (90% and 100% Bid Ready)	$127,460.00						$127,460.00
8.2	Sanitary Sewer Plan and Profile (90% and 100% Bid Ready)	$3,920.00	$47,724.00					$51,644.00
8.3	Waterline Design (90% and 100% Bid Ready)	$3,200.00	$47,724.00					$50,924.00
8.4	Illumination Plans (90% and 100% Bid Ready)	$25,180.00						$25,180.00
8.5	Signal Plans (90% and 100% Bid Ready)	$33,460.00						$33,460.00
8.6	Signing & Striping Plans (90% and 100% Bid Ready)	$18,005.00						$18,005.00
8.7	Franchise Utility Plans (90% and 100% Bid Ready)	$20,320.00						$20,320.00
8.8	Construction Staging Plans (90% and 100% Bid Ready)	$10,980.00						$10,980.00
8.9	Landscape Construction Plans (90% and 100% Bid Ready)	$20,040.00						$20,040.00
8.10	Earthwork Cross Sections & AMO Model Preparation	$16,210.00						$16,210.00
8.11	Construction Specifications (90% & 100% Bid Ready)	$14,960.00	$8,096.00					$23,056.00
8.12	Construction Estimates (90% & 100% Bid Ready)	$22,540.00	$8,532.00					$31,072.00
8.13	Constructability Review	$8,140.00		$7,232.00				$16,372.00
	Total Hours	1,761.00						1,761.00
	Labor Cost	$325,435.00	$112,076.00	$7,232.00	$0.00	$0.00	$0.00	$444,743.00
	Total Cost This Task	**$325,435.00**	**$112,076.00**	**$7,232.00**	**$0.00**	**$0.00**	**$0.00**	**$444,743.00**
Task 9.0	**ROW Acquisition**							
9.1	Right-of-Way Map	$4,580.00						$4,580.00
9.2	Preliminary Activities	$1,360.00					$3,234.00	$4,594.00
9.3	Appraisal & Appraisal Review	$1,360.00					$668.40	$2,028.40
9.4	ROW Acquisition	$4,060.00					$12,297.36	$16,357.36
	Total Hours	52.00						52.00
	Labor Cost	$11,360.00	$0.00	$0.00	$0.00	$0.00	$16,199.76	$27,559.76
	Total Cost This Task	**$11,360.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$16,199.76**	**$27,559.76**
Task 10.0	**Construction Support**							
10.1	Bidding Support	$5,700.00	$7,072.00	$0.00	$2,528.00			$15,300.00
	Total Hours	24.00						24.00
	Labor Cost	$5,700.00	$7,072.00	$0.00	$2,528.00	$0.00	$0.00	$15,300.00
	Total Cost This Task	**$5,700.00**	**$7,072.00**	**$0.00**	**$2,528.00**	**$0.00**	**$0.00**	**$15,300.00**
Task 11.0	**Public Engagement**							
11.1	Open House Materials	$17,460.00						$17,460.00
	Total Hours	100.00						100.00
	Labor Cost	$17,460.00	$0.00	$0.00	$0.00	$0.00	$0.00	$17,460.00
	Total Cost This Task	**$17,460.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$17,460.00**
Task 12.0	**Extra Work as Authorized (Illustrative)**							
	Retaining Wall(s)	$25,000.00						$25,000.00
	Tier II or above assessment by CWS	$20,000.00						$20,000.00
	Review of federal grant requirements	$15,000.00						$15,000.00
	Traffic Signal #2 (survey, design)	$65,000.00						$65,000.00
	Permitting for wetland impacts	$20,000.00						$20,000.00
	Total Hours	0.00						-
	Labor Cost	$145,000.00	$0.00	$0.00	$0.00	$0.00	$0.00	$145,000.00
	Total Cost This Task	**$145,000.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$145,000.00**
PROJECT SUMMARY								
	Total Project Hours	2,682.0	0.0	0.0	0.0	0.0	0.0	
	Total Salary Cost	$651,855.00	$129,568.00	$80,530.00	$28,918.00	$16,149.00	$17,202.36	**$924,222.36**
	Reimbursables Subtotal	$1,274.44	$206.00	$9,100.00	$32,670.00	$0.00	$27,524.00	**$70,788.44**
	Total Fee	$653,129.44	$129,768.00	$89,630.00	$61,588.00	$16,149.00	$44,726.36	**$994,990.80**
PROJECT TOTAL		**$ 653,129.44**						**$994,990.80**

EXHIBIT B

Ice Age Drivew
Reimbursable Estimate

Description	Firm	Basis of Estimate	Total
Task 1 - Project Management			***$ 391.69***
PMT Meetings	KAI	13 monthly PMT, 46mi RT	$ 391.69
Task 2 - Traffic Analysis			**$ -**
Task 3 - Geotechnical & Pavement			***$ 32,670.00***
Utility Locate	NV5	Subcontractor Estimate	$ 450.00
Traffic Control	NV5	Subcontractor Estimate	$ 1,500.00
Drilling	NV5	Subcontractor Estimate	$ 28,100.00
Mileage	NV5	200 miles	$ 120.00
Laboratory Testing	NV5	Rate Schedule	$ 2,500.00
Task 4 - Surveying & Mapping			***$ 9,100.00***
Post-Construction Filing Fee	DEA	Estimated Fee	$ 2,000.00
GeoTerra Photogrammetry	DEA	Subcontractor Estimate	$ 5,200.00
Mileage	DEA	Estimated Actual cost	$ 1,700.00
Printing & Delivery	DEA	Estimated	$ 200.00
Task 5 - Drainage/Water Quality Studies			***$ 32.75***
Mileage	KAI	50 miles RT	$ 32.75
Task 6 - Utility Coordination			**$ -**
Task 7 - Environmental & Arboricultural			**$ -**
Task 8 - Final Design (90% and 100%)			***$ 950.00***
document printing	TT		$ 200.00
bid document printing	KAI		$ 750.00
Task 9 - ROW and Real Property Acquisition Services			***$ 27,524.00***
Appraisal Reports	UFS	4 appraisals @$4,500	$ 18,000.00
Appraisal Reviews	UFS	4 appraisal Reviews @ $1,750	$ 7,000.00
Preliminary Title Reports	UFS	4 PTS @$450 each	$ 1,800.00
Postage	UFS	first class and overnight	$ 200.00
Mileage	UFS	IRS Rate. $.655/mile	$ 524.00
Task 10 - Construction Support (10.1 Only)			**$ -**
Task 11 - Public Engagement			***$ 100.00***
Rollplot Printing	KAI		$ 100.00
		Total	**$ 70,768.44**
Mileage Rate		$ 0.655	

EXHIBIT B

Ice Age Drive
City of Sherwood
PROFESSIONAL SERVICES - HOURLY BREAKDOWN
February 8, 2023
Kittelson & Associates
Fee Summary

	Task	Principal Darren	Project Manager Tony	SI 3 - Lead Senior Engineer Claire	SL1 - Designer Megan	SLS - Drainage Principal Cedo	SL2 - Drainage Engineer Daniel	Associate Technician Helen	Tech II Brad	Tech 1 Kazden	*KAI Totals* TOTALS
		$ 270.00	$ 270.00	$ 205.00	$ 155.00	$ 270.00	$ 175.00	$ 170.00	$ 145.00	$ 120.00	
Task 1.0	**Project Management, Project Coordination, and Project Scheduling**										
1.1	Contract Administration	6.00	24.00	24.00						12.00	$15,000.00
1.2	Project Coordination, Communication & Team Meetings	6.00	48.00	48.00	24.00					12.00	$29,580.00
1.3	Project Scheduling		4.00	24.00						12.00	$7,440.00
	Total Hours	14.00	76.00	96.00	24.00	0.00	0.00	0.00	0.00	36.00	246.00
	Labor Cost	$3,780.00	$20,520.00	$19,680.00	$3,720.00	$0.00	$0.00	$0.00	$0.00	$4,320.00	$52,020.00
	Total Cost This Task	**$3,780.00**	**$20,520.00**	**$19,680.00**	**$3,720.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$4,320.00**	**$52,020.00**
Task 2.0	**Traffic Analysis**										
2.1	Intersection Analysis/Traffic Memo	4.00	12.00	24.00	60.00						$18,540.00
	Total Hours	4.00	12.00	24.00	60.00	0.00	0.00	0.00	0.00	0.00	100.00
	Labor Cost	$1,080.00	$3,240.00	$4,920.00	$9,300.00	$0.00	$0.00	$0.00	$0.00	$0.00	$18,540.00
	Total Cost This Task	**$1,080.00**	**$3,240.00**	**$4,920.00**	**$9,300.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$18,540.00**
Task 3.0	**Geotechnical & Pavement**										
3.1	Field Explorations & Lab Analysis		2.00	6.00							$1,770.00
	Total Hours	0.00	2.00	6.00	0.00	0.00	0.00	0.00	0.00	0.00	8.00
	Labor Cost	$0.00	$540.00	$1,230.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$1,770.00
	Total Cost This Task	**$0.00**	**$540.00**	**$1,230.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$1,770.00**
Task 4.0	**Surveying & Mapping**										
4.1	Topographic Survey		1.00	4.00	8.00				8.00		$3,490.00
4.2	Alignment Staking			4.00	2.00						$1,130.00
4.3	Right-of-Way Descriptions & Exhibit Maps		1.00	8.00							$1,910.00
4.4	Right-Of-Way Staking		1.00	2.00							$680.00
4.5	Update Preconstruction ROS Map		2.00	2.00							$950.00
	Total Hours	0.00	5.00	20.00	10.00	0.00	0.00	0.00	8.00	0.00	43.00
	Labor Cost	$0.00	$1,350.00	$4,100.00	$1,550.00	$0.00	$0.00	$0.00	$1,160.00	$0.00	$8,160.00
	Total Cost This Task	**$0.00**	**$1,350.00**	**$4,100.00**	**$1,550.00**	**$0.00**	**$0.00**	**$0.00**	**$1,160.00**	**$0.00**	**$8,160.00**
Task 5.0	**Drainage & Water Quality Studies**										
5.1	Preliminary Stormwater Report		4.00	8.00	8.00	6.00	50.00				$14,330.00
5.2	Final Stormwater Report		2.00	2.00	2.00	6.00	32.00				$8,490.00
	Total Hours	0.00	6.00	10.00	10.00	12.00	82.00	0.00	0.00	0.00	120.00
	Labor Cost	$0.00	$1,620.00	$2,050.00	$1,550.00	$3,240.00	$14,350.00	$0.00	$0.00	$0.00	$22,810.00
	Total Cost This Task	**$0.00**	**$1,620.00**	**$2,050.00**	**$1,550.00**	**$3,240.00**	**$14,350.00**	**$0.00**	**$0.00**	**$0.00**	**$22,810.00**
Task 6.0	**Utility Coordination**										
6.1	Utility Coordination		36.00	60.00	48.00					24.00	$32,340.00
	Total Hours	0.00	36.00	60.00	48.00	0.00	0.00	0.00	0.00	24.00	168.00
	Labor Cost	$0.00	$9,720.00	$12,300.00	$7,440.00	$0.00	$0.00	$0.00	$0.00	$2,880.00	$32,340.00
	Total Cost This Task	**$0.00**	**$9,720.00**	**$12,300.00**	**$7,440.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$2,880.00**	**$32,340.00**
Task 7.0	**Environmental & Arboricultural**										
7.1	Environmental Consulting		4.00	12.00	8.00					8.00	$5,740.00
7.2	Erosion Control Permit		8.00	8.00	8.00					4.00	$5,520.00
	Total Hours	0.00	12.00	20.00	16.00	0.00	0.00	0.00	0.00	12.00	60.00
	Labor Cost	$0.00	$3,240.00	$4,100.00	$2,480.00	$0.00	$0.00	$0.00	$0.00	$1,440.00	$11,260.00
	Total Cost This Task	**$0.00**	**$3,240.00**	**$4,100.00**	**$2,480.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$1,440.00**	**$11,260.00**
Task 8.0	**Final Design (90% & 100% Bid Ready)**										
8.1	Roadway Construction Plans (90% and 100% Bid Ready)	16.00	48.00	200.00	160.00	24.00	84.00		160.00		$127,480.00
8.2	Sanitary Sewer Plan and Profile (90% and 100% Bid Ready)		4.00	8.00	4.00				4.00		$3,920.00
8.3	Waterline Design (90% and 100% Bid Ready)		4.00	8.00	2.00				4.00		$3,200.00
8.4	Illumination Plans (90% and 100% Bid Ready)	1.00	12.00	24.00	80.00				30.00		$25,180.00
8.5	Signal Plans (90% and 100% Bid Ready)	4.00	10.00	40.00	120.00				20.00		$33,480.00
8.6	Signing & Striping Plans (90% and 100% Bid Ready)	1.00	8.00	26.00	80.00				15.00		$18,005.00
8.7	Franchise Utility Plans (90% and 100% Bid Ready)	2.00	12.00	48.00	32.00				12.00		$20,320.00
8.8	Construction Staging Plans (90% and 100% Bid Ready)	4.00	6.00	16.00	24.00				8.00		$10,990.00
8.9	Landscape Construction Plans (90% and 100% Bid Ready)	2.00	6.00	16.00	36.00	6.00	30.00		12.00		$25,940.00
8.10	Earthwork Cross Sections & AMG Model Preparation		6.00	40.00	30.00				12.00		$18,210.00
8.11	Construction Specifications (90% & 100% Bid Ready)	4.00	24.00	24.00	16.00						$14,980.00
8.12	Construction Estimates (90% & 100% Bid Ready)	4.00	16.00	32.00	50.00	4.00	10.00				$22,540.00
8.13	Constructability Review	2.00	12.00	8.00	8.00	4.00	8.00				$9,140.00
	Total Hours	40.00	168.00	486.00	622.00	38.00	132.00	0.00	275.00	0.00	1,761.00
	Labor Cost	$10,800.00	$45,360.00	$99,630.00	$96,410.00	$10,260.00	$23,100.00	$0.00	$39,875.00	$0.00	$325,435.00
	Total Cost This Task	**$10,800.00**	**$45,360.00**	**$99,630.00**	**$96,410.00**	**$10,260.00**	**$23,100.00**	**$0.00**	**$39,875.00**	**$0.00**	**$325,435.00**
Task 9.0	**ROW Acquisition**										
9.1	Right-of-Way Map		4.00	8.00	12.00						$4,560.00
9.2	Preliminary Activities		2.00	4.00							$1,380.00
9.3	Appraisal & Appraisal Review		2.00	4.00							$1,380.00
9.4	ROW Acquisition		12.00	4.00							$4,560.00
	Total Hours	0.00	20.00	20.00	12.00	0.00	0.00	0.00	0.00	0.00	52.00
	Labor Cost	$0.00	$5,400.00	$4,100.00	$1,860.00	$0.00	$0.00	$0.00	$0.00	$0.00	$11,360.00
	Total Cost This Task	**$0.00**	**$5,400.00**	**$4,100.00**	**$1,860.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$11,360.00**
Task 10.0	**Construction Support**										
10.1	Bidding Support		12.00	12.00							$5,700.00
	Total Hours	0.00	12.00	12.00	0.00	0.00	0.00	0.00	0.00	0.00	24.00
	Labor Cost	$0.00	$3,240.00	$2,460.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$5,700.00
	Total Cost This Task	**$0.00**	**$3,240.00**	**$2,460.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$5,700.00**
Task 11.0	**Public Engagement**										
11.1	Open House Materials		4.00	12.00	24.00			60.00			$17,460.00
	Total Hours	0.00	4.00	12.00	24.00	0.00	0.00	60.00	0.00	0.00	100.00
	Labor Cost	$0.00	$1,080.00	$2,460.00	$3,720.00	$0.00	$0.00	$10,200.00	$0.00	$0.00	$17,460.00
	Total Cost This Task	**$0.00**	**$1,080.00**	**$2,460.00**	**$3,720.00**	**$0.00**	**$0.00**	**$10,200.00**	**$0.00**	**$0.00**	**$17,460.00**
Task 12.0	**Extra Work as Authorized (Illustrative)**										
	Retaining Wall(s)										$25,000.00
	Tier II or above assessment by CWS										$20,000.00
	Review of federal grant requirements										$15,000.00
	Traffic Signal #2 (survey, design)										$85,000.00
	Permitting for wetland impacts										$20,000.00
	Total Hours	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Labor Cost	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$145,000.00
	Total Cost This Task										**$145,000.00**
PROJECT SUMMARY											
	Total Project Hours	58.0	353.0	766.0	826.0	50.0	214.0	60.0	283.0	72.0	2,682.0
	Total Salary Cost	$15,660.00	$95,310.00	$157,030.00	$128,030.00	$13,500.00	$37,450.00	$10,200.00	$41,035.00	$8,640.00	$651,855.00
	Reimbursables Subtotal										$1,274.44
	Total Fee	$15,660.00	$95,310.00	$157,030.00	$128,030.00	$13,500.00	$37,450.00	$10,200.00	$41,035.00	$8,640.00	$653,129.44
PROJECT TOTAL											**$ 653,129.44**

EXHIBIT B

Ice Age Drive
City of Sherwood
PROFESSIONAL SERVICES - HOURLY BREAKDOWN
February 8, 2023
Fee Summary

	Task	$ 282.00 Project Manager Gordon Munro	$ 160.00 Project Engineer Hunter Bennett-Daggett	$ 125.00 Designer Lesley Martinez	$ 185.00 CAD Lead Bryan Thomasy	$ 152.00 Technical Editor Dan Portman	$ 132.00 Administrative Assistant Becky connelly	$ 265.00 QC Matt Huxley	$ 340.00 Technical Expert Mark Bush	*TetraTech* TOTALS
Task 1.0	**Project Management, Project Coordination, and Project Scheduling**									
1.2	Project Coordination, Communication & Team Meetings	26.00	16.00				4.00			$10,420.00
	Total Hours	26.00	16.00	0.00	0.00	0.00	4.00	0.00	0.00	46.00
	Labor Cost	$7,332.00	$2,560.00	$0.00	$0.00	$0.00	$528.00	$0.00	$0.00	$10,420.00
	Total Cost This Task	**$7,332.00**	**$2,560.00**	**$0.00**	**$0.00**	**$0.00**	**$528.00**	**$0.00**	**$0.00**	**$10,420.00**
	Total Cost This Task	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**
Task 8.0	**Final Design (90% & 100% Bid Ready)**									
8.1	Roadway Construction Plans (90% and 100% Bid Ready)									$0.00
8.2	Sanitary Sewer Plan and Profile (90% and 100% Bid Ready)	24.00	96.00	148.00	4.00	4.00	4.00	12.00	6.00	$47,724.00
8.3	Waterline Design (90% and 100% Bid Ready)	24.00	96.00	148.00	4.00	4.00	4.00	12.00	6.00	$47,724.00
8.4	Illumination Plans (90% and 100% Bid Ready)									$0.00
8.5	Signal Plans (90% and 100% Bid Ready)									$0.00
8.6	Signing & Striping Plans (90% and 100% Bid Ready)									$0.00
8.7	Franchise Utility Plans (90% and 100% Bid Ready)									$0.00
8.8	Construction Staging Plans (90% and 100% Bid Ready)									$0.00
8.9	Landscape Construction Plans (90% and 100% Bid Ready)									$0.00
8.10	Earthwork Cross Sections & AMG Model Preparation									$0.00
8.11	Construction Specifications (90% & 100% Bid Ready)	8.00	24.00	16.00						$8,096.00
8.12	Construction Estimates (90% and 100% Bid Ready)	6.00	24.00	24.00						$8,532.00
8.13	Constructability Review									$0.00
	Total Hours	62.00	240.00	336.00	8.00	8.00	8.00	24.00	12.00	698.00
	Labor Cost	$17,484.00	$38,400.00	$42,000.00	$1,480.00	$1,216.00	$1,056.00	$6,360.00	$4,080.00	$112,076.00
	Total Cost This Task	**$17,484.00**	**$38,400.00**	**$42,000.00**	**$1,480.00**	**$1,216.00**	**$1,056.00**	**$6,360.00**	**$4,080.00**	**$112,076.00**
Task 10.0	**Construction Support**									
10.1	Bidding Support	6.00	20.00	12.00					2.00	$7,072.00
10.2										
10.3										
10.4										
10.5										
10.6										
10.7										
	Total Hours	6.00	20.00	12.00	0.00	0.00	0.00	0.00	2.00	40.00
	Labor Cost	$1,692.00	$3,200.00	$1,500.00	$0.00	$0.00	$0.00	$0.00	$680.00	$7,072.00
	Total Cost This Task	**$1,692.00**	**$3,200.00**	**$1,500.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$680.00**	**$7,072.00**
PROJECT SUMMARY										
	Total Project Hours	94.0	276.0	348.0	8.0	8.0	12.0	24.0	14.0	784.0
	Total Salary Cost	$26,508.00	$44,160.00	$43,500.00	$1,480.00	$1,216.00	$1,584.00	$6,360.00	$4,760.00	$129,568.00
	Reimbursables Subtotal									$200.00
	Total Fee	$26,508.00	$44,160.00	$43,500.00	$1,480.00	$1,216.00	$1,584.00	$6,360.00	$4,760.00	$129,768.00
PROJECT TOTAL										**$ 129,768.00**

EXHIBIT B

Ice Age Drive
City of Sherwood
PROFESSIONAL SERVICES - HOURLY BREAKDOWN
February 8, 2023
Fee Summary

			$ 180.80	$ 255.00	$ 163.00	$ 141.00	$ 136.00	$ 119.00	$ 98.00	$ 142.00	$ 109.00	
	Task		Construction Manager	Survey Supervisor, PLS	Project Surveyor, PLS	Survey Analyst	Office Survey Technician	Party Chief	Field Survey Technician	Project Coordinator	Project Accountant	*David Evans & Assoc.*
				Pat Gaylord	Keith Lyman	Tyson Mizell	Tim Schweitzer	Shaun Potter	Mike Bosca	Laurie Youngs		TOTALS
Task 1.0	**Project Management, Project Coordination, and Project Scheduling**											
1.2	Project Coordination, Communication & Team Meetings			8.00	8.00					4.00		$3,912.00
		Total Hours	0.00	8.00	8.00	0.00	0.00	0.00	0.00	4.00	0.00	20.00
		Labor Cost	$0.00	$2,040.00	$1,304.00	$0.00	$0.00	$0.00	$0.00	$568.00	$0.00	$3,912.00
		Total Cost This Task	**$0.00**	**$2,040.00**	**$1,304.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$568.00**	**$0.00**	**$3,912.00**
Task 4.0	**Surveying & Mapping**											
4.1	Topographic Survey			2.00	8.00	16.00	50.00	60.00	60.00	1.00	1.00	$24,141.00
4.2	Alignment Staking				6.00	18.00	4.00	36.00	36.00	1.00		$12,014.00
4.3	Right-of-Way Desciptions & Exhibit Maps			4.00	40.00		40.00			1.00	1.00	$13,231.00
4.4	Right-Of-Way Staking				4.00	12.00		40.00	40.00	1.00		$11,166.00
4.5	Update Preconstruction ROS Map			2.00	16.00	2.00	24.00	10.00	10.00			$8,834.00
		Total Hours	0.00	8.00	74.00	48.00	118.00	146.00	146.00	4.00	2.00	546.00
		Labor Cost	$0.00	$2,040.00	$12,062.00	$6,768.00	$16,048.00	$17,374.00	$14,308.00	$568.00	$218.00	$69,386.00
		Total Cost This Task	**$0.00**	**$2,040.00**	**$12,062.00**	**$6,768.00**	**$16,048.00**	**$17,374.00**	**$14,308.00**	**$568.00**	**$218.00**	**$69,386.00**
Task 8.0	**Final Design (90% & 100% Bid Ready)**											
8.1	Roadway Construction Plans (90% and 100% Bid Ready)											$0.00
8.2	Sanitary Sewer Plan and Profile (90% and 100% Bid Ready)											$0.00
8.3	Waterline Design (90% and 100% Bid Ready)											$0.00
8.4	Illumination Plans (90% and 100% Bid Ready)											$0.00
8.5	Signal Plans (90% and 100% Bid Ready)											$0.00
8.6	Signing & Striping Plans (90% and 100% Bid Ready)											$0.00
8.7	Franchise Utility Plans (90% and 100% Bid Ready)											$0.00
8.8	Construction Staging Plans (90% and 100% Bid Ready)											$0.00
8.9	Landscape Construction Plans (90% and 100% Bid Ready)											$0.00
8.10	Earthwork Cross Sections & AMG Model Preparation											$0.00
8.11	Construction Specifications (90% & 100% Bid Ready)											$0.00
8.12	Construction Estimates (90% and 100% Bid Ready)											$0.00
8.13	Constructability Review		40.00									$7,232.00
		Total Hours	40.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	40.00
		Labor Cost	$7,232.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$7,232.00
		Total Cost This Task	**$7,232.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$7,232.00**
Task 10.0	**Construction Support**											
10.1	Bidding Support											$0.00
		Total Hours	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Labor Cost	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
		Total Cost This Task	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**
PROJECT SUMMARY												
		Total Project Hours	40.0	16.0	82.0	48.0	118.0	146.0	146.0	5.0	2.0	606.0
		Total Salary Cost	$7,232.00	$4,080.00	$13,366.00	$6,768.00	$16,048.00	$17,374.00	$14,308.00	$1,136.00	$218.00	$80,530.00
		Reimbursables Subtotal										$9,100.00
		Total Fee	$7,232.00	$4,080.00	$13,366.00	$6,768.00	$16,048.00	$17,374.00	$14,308.00	$1,136.00	$218.00	$89,630.00
PROJECT TOTAL												$ 89,630.00

EXHIBIT B

Ice Age Drive
City of Sherwood
PROFESSIONAL SERVICES - HOURLY BREAKDOWN
February 8, 2023

Fee Summary		Principal	PM I	Staff III	CADD	Senior PA	Support	
		$ 235.00	$ 162.00	$ 140.00	$ 118.00	$ 102.00	$ 81.00	
	Task	Principal	PM I	Staff III	CADD	Senior PA	Support	*NV5 Subtotal* TOTALS
Task 1.0	**Project Management, Project Coordination, and Project Scheduling**							
1.2	Project Coordination, Communication & Team Meetings	12.00	4.00					$3,468.00
	Total Hours	12.00	4.00	0.00	0.00	0.00	0.00	16.00
	Labor Cost	$2,820.00	$648.00	$0.00	$0.00	$0.00	$0.00	$3,468.00
	Total Cost This Task	**$2,820.00**	**$648.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$3,468.00**
Task 3.0	**Geotechnical & Pavement**							
3.1	Field Explorations & Lab Analysis	16.00	40.00	80.00	6.00	6.00	2.00	$22,922.00
	Total Hours	16.00	40.00	80.00	6.00	6.00	2.00	150.00
	Labor Cost	$3,760.00	$6,480.00	$11,200.00	$708.00	$612.00	$162.00	$22,922.00
	Total Cost This Task	**$3,760.00**	**$6,480.00**	**$11,200.00**	**$708.00**	**$612.00**	**$162.00**	**$22,922.00**
Task 8.0	**Final Design (90% & 100% Bid Ready)**							
8.1	Roadway Construction Plans (90% and 100% Bid Ready)							$0.00
8.2	Sanitary Sewer Plan and Profile (90% and 100% Bid Ready)							$0.00
8.3	Waterline Design (90% and 100% Bid Ready)							$0.00
8.4	Illumination Plans (90% and 100% Bid Ready)							$0.00
8.5	Signal Plans (90% and 100% Bid Ready)							$0.00
8.6	Signing & Striping Plans (90% and 100% Bid Ready)							$0.00
8.7	Franchise Utility Plans (90% and 100% Bid Ready)							$0.00
8.8	Construction Staging Plans (90% and 100% Bid Ready)							$0.00
8.9	Landscape Construction Plans (90% and 100% Bid Ready)							$0.00
8.10	Earthwork Cross Sections & AMG Model Preparation							$0.00
8.11	Construction Specifications (90% & 100% Bid Ready)							$0.00
8.12	Construction Estimates (90% and 100% Bid Ready)							$0.00
8.13	Constructability Review							$0.00
		0.00	0.00	0.00	0.00	0.00	0.00	-
	Labor Cost	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	Total Cost This Task	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**
Task 10.0	**Construction Support**							
10.1	Bidding Support	8.00	4.00					$2,528.00
	Total Hours	8.00	4.00	0.00	0.00	0.00	0.00	12.00
	Labor Cost	$1,880.00	$648.00	$0.00	$0.00	$0.00	$0.00	$2,528.00
	Total Cost This Task	**$1,880.00**	**$648.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$2,528.00**
PROJECT SUMMARY								
	Total Project Hours	36.0	48.0	80.0	6.0	6.0	2.0	178.0
	Total Salary Cost	$8,460.00	$7,776.00	$11,200.00	$708.00	$612.00	$162.00	$28,918.00
	Reimbursables Subtotal							$32,670.00
	Total Fee	$8,460.00	$7,776.00	$11,200.00	$708.00	$612.00	$162.00	$61,588.00
PROJECT TOTAL								**$ 61,588.00**

EXHIBIT B

Ice Age Drive
City of Sherwood
PROFESSIONAL SERVICES - HOURLY BREAKDOWN
February 8, 2023
Fee Summary

	Task	$ 186.00 Project manager John van Staveren	$ 133.00 Wetland Scientist 2	$ 126.00 Wetland Scientist 1	$ 99.00 Graphics Specialist Lisa Bosca	$ 89.00 Technical Editor/Administrative Jane LeBlanc	***Pacific Habitat Services Subtotal*** TOTALS
Task 1.0	**Project Management, Project Coordination, and Project Scheduling**						
1.2	Project Coordination, Communication & Team Meetings	10.00	4.00				$2,392.00
	Total Hours	10.00	4.00	0.00	0.00	0.00	14.00
	Labor Cost	$1,860.00	$532.00	$0.00	$0.00	$0.00	$2,392.00
	Total Cost This Task	**$1,860.00**	**$532.00**	**$0.00**	**$0.00**	**$0.00**	**$2,392.00**
	Total Cost This Task	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**
Task 7.0	**Environmental & Arboricultural**						
7.1	Environmental Consulting	12.00	50.00	20.00	13.00	12.00	$13,757.00
7.2	Erosion Control Permit						$0.00
	Total Hours	12.00	50.00	20.00	13.00	12.00	107.00
	Labor Cost	$2,232.00	$6,650.00	$2,520.00	$1,287.00	$1,068.00	$13,757.00
	Total Cost This Task	**$2,232.00**	**$6,650.00**	**$2,520.00**	**$1,287.00**	**$1,068.00**	**$13,757.00**
PROJECT SUMMARY							
	Total Project Hours	22.0	54.0	20.0	13.0	12.0	121.0
	Total Salary Cost	$4,092.00	$7,182.00	$2,520.00	$1,287.00	$1,068.00	$16,149.00
	Reimbursables Subtotal						$0.00
	Total Fee	$4,092.00	$7,182.00	$2,520.00	$1,287.00	$1,068.00	$16,149.00
PROJECT TOTAL							**$ 16,149.00**

EXHIBIT B

Ice Age Drive
City of Sherwood
PROFESSIONAL SERVICES - HOURLY BREAKDOWN
February 8, 2023
Fee Summary

	Task	Project Manager Seth Hemelstrand	Sr. R/W Agent Barry Bliss	R/W Agent Brendin Kirchner	Sr. Title Specialist Edith Solario	*Universal Field Services* TOTALS
		$ 83.55	$ 70.18	$ 50.13	$ 41.71	
Task 1.0	**Project Management, Project Coordination, and Project Scheduling**					
1.2	Project Coordination, Communication & Team Meetings	12.00				$1,002.60
	Total Hours	12.00	0.00	0.00	0.00	12.00
	Labor Cost	$1,002.60	$0.00	$0.00	$0.00	$1,002.60
	Total Cost This Task	**$1,002.60**	**$0.00**	**$0.00**	**$0.00**	**$1,002.60**
Task 9.0	**ROW Acqusition**					
9.1	Right-of-Way Map					$0.00
9.2	Preliminary Activities	24.00	8.00		16.00	$3,234.00
9.3	Appraisal & Apprasial Review	8.00				$868.40
9.4	ROW Acqusition	24.00	80.00	80.00	16.00	$12,297.36
	Total Hours	56.00	88.00	80.00	32.00	256.00
	Labor Cost	$4,678.80	$6,175.84	$4,010.40	$1,334.72	$16,199.76
	Total Cost This Task	**$4,678.80**	**$6,175.84**	**$4,010.40**	**$1,334.72**	**$16,199.76**
PROJECT SUMMARY						
	Total Project Hours	68.0	88.0	80.0	32.0	268.0
	Total Salary Cost	$5,681.40	$6,175.84	$4,010.40	$1,334.72	$17,202.36
	Reimbursables Subtotal					$27,524.00
	Total Fee	$5,681.40	$6,175.84	$4,010.40	$1,334.72	$44,726.36
PROJECT TOTAL						**$ 44,726.36**

EXHIBIT B

KITTELSON & ASSOCIATES

KITTELSON & ASSOCIATES, INC.
BILLING RATE SCHEDULE

Effective January 1, 2023

The current billing rates for Kittelson & Associates, Inc., staff are as follows and are subject to change:

Staff	Billing Rate
Principal / Senior Principal	$255 - $345
Associate Engineer/Planner	$220 - $250
Senior Engineer/Planner	$190 - $210
Engineer/Planner	$170 - $190
Transportation Analyst	$150 - $165
Principal Data Scientist/Developer	$245 - $330
Senior Data Scientist/Developer	$200 - $240
Data Scientist/Developer	$170 - $200
Data Analyst/Software Developer	$130 - $165
Software Technician	$100 - $125
Associate Technician	$180 - $200
Senior Technician	$160 - $180
Technician II	$140 - $155
Technician I	$120 - $135
Office Support	$90 - $110

Service & Other Direct Costs	Billing Rate
Mileage	Current IRS mileage rate
Travel & Other Direct Costs	Actual Costs
Subconsultants	Actual Costs

EXHIBIT B

TETRA TECH

SHERWOOD – ICE AGE DRIVE

TETRA TECH BILLING RATE SCHEDULE

February 7, 2023

Individual	Classification	Billing Rates
Gordon Munro, PE	Project Manager	$282.00
Matt Huxley, PE	Quality Assurance	$265.00
Mark Bush	Technical Expert	$340.00
Hunter Bennett-Daggett, PE	Project Engineer	$160.00
Lesley Martinez, EIT	Designer	$125.00
Bryan Thomasy	lead CAD	$185.00
Dan Portman	Graphics/Editor	$132.75
Becky Connelly	Sr. Administrative Assistant	$121.25

Other Tetra Tech staff billed out at 3.1 multiplier.
Hourly Rates may be Adjusted Yearly on January 1 per requirements of the contract
Billing Rates Good Through December 31, 2023
Subconsultant Markup and Other Expenses at Cost Plus 10% or as negotiated. These may include:

a. *Maps, photographs, their party reproductions, third party printing, equipment rental and special supplies related to the work.*
b. *Consultants, soils engineers, surveyors, contractors and other outside services.*
c. *Rented vehicles, local public transportation and taxis, travel and subsistence.*
d. *Project specific delivery charges.*
e. *Special fees, insurance, permits and licenses applicable to the work.*
f. *Outside computer processing, computation and proprietary programs purchased for the work.*

End of Consultant's Fee Schedule (Exhibit B, 10 pages total)