

CITY OF LONGVIEW, WASHINGTON

Scope of Work SR 432 / SR 411 Interchange Improvements

The Standard WSDOT Local Agency Consultant Agreement is amended and supplemented to include the following provisions regarding the Scope of Services.

INTRODUCTION

PBS Engineering and Environmental, Inc. and their Consultant team have been selected by the City of Longview to perform traffic and roadway design engineering, environmental permitting, public involvement process and other related engineering services for the SR 432 / SR 411 Interchange Improvements project. Professional services will include land surveying, alternative analysis, roadway design, stormwater design, traffic analysis and engineering, lighting design, landscape design, signal design, environmental documentation & permits, utility coordination and project coordination.

The project team includes:

- BergerABAM (ABAM) – Environmental studies & permitting.
- Kittelson & Associates – Traffic analysis and design, geometric layout, and public involvement.
- Archaeological Investigations Northwest (AINW) – Cultural resources investigations.

The SR 432 / SR 411 Interchange Improvements Project is FMSIB (state) and Cowlitz County funded.

The City of Longview is anticipating that environmental assessment for this Project will result in a City Critical Areas Ordinance, GEO 05-05 documentation and a State Environmental Policy Act (SEPA) checklist. Also, the Consultant shall prepare the National Pollutant Discharge Elimination System (NPDES) application and Storm Water Pollution Prevention (SWPP) Plan for the Project.

PROJECT DESCRIPTION/BACKGROUND

The SR 432 / SR 411 interchange currently does not have the capacity to serve the growing freight and traffic flow through the corridor. The project will address capacity constraints by widening the SR 432 westbound off-ramp to SR 411, rebuilding the intersection to facilitate heavy truck turning movements, and improve traffic signal operations. The eastbound on-ramp to SR 432 will be rebuilt to address a persistent roll-over truck crash history.

SCOPE OF WORK

TASK 1: PROJECT MANAGEMENT AND ADMINISTRATION

PBS shall oversee project tasks and coordinate with City representatives to manage the scope, schedule and budget for the design engineering phase.

Subtask 1.1 – Contract Administration, Invoicing, and Progress Reports

- Prepare and submit monthly invoices. Each invoice will include: date period covered by invoice, number of hours worked during the billing period with billing rates shown with detail information / timesheet provide as a backup; expenses and associated mark-ups; total cost for labor and expenses for the billing period; subconsultants fees with detail information / timesheet provide as a backup including markups for the billing period; and a total amount summarizing labor, expenses, and subconsultant fees.
- Prepare a Contract Summary Report to accompany the monthly invoices. The Contract Summary Report will list each invoice as well as current invoice with an itemized summary of invoice numbers, dates, and amounts billed for labor, expenses, and subconsultants as well as total amounts for each invoice. The Contract Summary Report will also list the total amount billed to date, total amount remaining under contract, and contract expiration date.
- Prepare a brief Project Status Report to accompany the monthly invoices. The Project Status Report will include: date period covered by Status Report, brief summary of work performed during the billing period, a notice to CITY raising any issues or concerns that could require a contract amendment/supplement, a brief summary of completed and/or upcoming project milestones, and action items needed from CITY for project delivery. Consultant shall monitor the status of the budget and take corrective actions to correct undesirable budget trends involving the CITY if scope is impacted.
- Maintain project documentation including a design memorandum, design criteria matrix and design decisions. Provide copies of project files and records to the CITY for city records. Final submittal documents shall be provided in electronic format – word or excel documents.

Deliverables

- Monthly invoices, Contract Summary Reports, and Project Status Reports.
- Project Documentation

Subtask 1.2 – Meetings

This item includes the preparing for and facilitating regular meetings to successfully complete the project.

- The Consultant shall schedule Project team meetings and prepare meeting agendas. This includes a Project kick-off meeting, monthly progress meetings with City staff, review meetings and coordination meetings.
 - 1 Kick-off meeting
 - 12 monthly meetings

Deliverables

- Meeting Agendas and Meeting Summaries delivered within 5 working days of the meeting

Subtask 1.3 – Management, Coordination, and Direction

- The Consultant shall provide management, coordination, and direction to the Project team in order to complete the project on time and within budget. The City fosters a partnership approach of all stakeholders in the Project. The Consultant shall integrate this strategy into the overall management approach.
- The Consultant shall establish a quality management program and designate responsibility for review of technical work and other deliverable products.
- The Consultant shall prepare and maintain a project design schedule. The schedule shall identify CONSULTANT tasks, major milestones and deliverables, and items provided by CITY and other consultants. The schedule shall be updated every month or as circumstances require.
- The Consultant shall coordinate Consultant tasks and activities with the City. This shall include using monthly meetings to plan and coordinate upcoming activities.
- The Consultant shall coordinate with private and public utilities, including power, phone, cable, gas and other utilities.
- The Consultant shall coordinate with property owners adjacent to the Project who will be affected by the roadway design. Prior approval from the City’s Project Manager will be required before any contact with private property owners occurs.

Deliverables

- Project Schedule & Schedule Updates
- Summary notes of coordination efforts

Subtask 1.4 – Coordination with WSDOT

- The Consultant will coordinate with WSDOT and the City of Longview for all applicable WSDOT design approvals, and processes related to the SR 432/ 411 Interchange Improvements project.
- WSDOT design review meetings with the City and the Consultant will be held for key aspects of the project for WSDOT approval.

Deliverables

- Coordination meeting agendas and meeting summaries.

TASK 2: DATA COLLECTION

PBS will perform topographic surveying and data collection services to include the following:

Subtask 2.1: Surveying

- Establish a control network throughout the project limits based on the WSDOT horizontal and vertical datum (NAD 83/2011 & NAVD 88).
- Conduct research of existing records for information on deeds, surveys, plats, road rights-of-way and easements along the project corridor.
- The survey field crew will collect data (property corners, right-of-way/centerline monuments, control and physical boundary/right-of-way features) in the project area and relevant to the project site. The project surveyor will then review research and use field data to determine the right-of-way location. PBS will meet with City staff to discuss right-of-way issues discovered prior to completing the survey.

- Perform topographic survey along the SR 432 west bound off-ramp, the SR 432 eastbound on-ramp and SR 432/SR 411 between the ramp including the ramp terminal intersections. PBS will conduct research of existing records for information on available as-built and utility maps, call one-call utility locates and then field survey existing above ground features (i.e. edge of pavement, curbs, sidewalks, buildings, trees, utilities, etc.) as well as elevations for utilities. Obtain field invert elevations on culvert ends and pipes inside manholes.
- Prepare surface model reflecting collected topographic survey and breaklines.
- Provide survey and mapping of wetland flagging to the design team

Subtask 2.2: Base Map

- Upon completion of topographic survey and development of surface model, PBS will prepare an existing conditions base map showing mapped features and utilities collected from both survey and as-built plans.
- Consultant shall coordinate with City staff regarding drafting standards and conventions.

Subtask 2.3: Site Visits

- Consultant survey manager will conduct a site visit for field verification of survey data represented in the project base map.

Subtask 2.4: Project Photos

- Consultant will conduct site visits, take project photos of each property along the corridor. Consultant will use ground photographs and videos to document pre-project conditions.

Deliverables

- Topographic Survey
- Surface Model
- Base map
- Legal Descriptions and Exhibits
- Project Photos
- Project videos

TASK 3: TRAFFIC ENGINEERING – TRAFFIC ANALYSIS AND FUTURE TRAFFIC DEMAND

Subtask 3.1 – Traffic Engineering Project Management

This task is associated with Kittelson & Associates, Inc. (KAI's) project management of the traffic analysis, functional design, and design phases associated with this project.

- Prepare up to twelve (12) monthly progress reports associated with Traffic Analysis and Design Phases.
- Prepare for and participate in up to twelve (12) project team meetings.
- Project kickoff meeting with Project team.
- Support PBS team preparing meeting agendas and summaries related to traffic elements of the project.
- Prepare for and participate in up to twelve (12) internal KAI coordination meetings coordinating deliverables between multi-discipline teaming members.

Subtask 3.1.2: Public Involvement

This task is associated with KAI's support in the public involvement process that is being led by PBS.

- See Task 8

Deliverables

- See task 8

Subtask 3.2 – Traffic Analysis Report

Subtask 3.2.1: Existing Transportation Facilities and Traffic Conditions

- Obtain weekday a.m. and p.m. peak hour turning movement counts at the following two (2) key intersections:
 - 3rd Avenue (SR411)/Westbound ramp terminal
 - 3rd Avenue (SR411)/Eastbound ramp terminal
- Prepare an existing conditions operations analysis of up to two (2) key intersections including documentation of performance measures including level of service, delay, queues, etc.
- Summarize the existing conditions analysis in the Traffic Analysis Report.
- Follow WSDOT Design Manual Chapter 1300 to document the intersection control type thru an Intersection Control Analysis. This may be included in the Traffic Analysis Report.

Subtask 3.2.2: Future Traffic Conditions

- Calculate future year 2040 projected weekday a.m. and p.m. peak hour turning movement counts at the following two (2) key intersections:
 - 3rd Avenue (SR411)/Westbound ramp terminal
 - 3rd Avenue (SR411)/Eastbound ramp terminal
- Prepare a future no-build conditions operations analysis of up to two (2) study intersections including documentation of performance measures including level of service, delay, queues, etc.
- Prepare a future conditions operations analysis of up to three (2) study intersections assuming the following traffic control treatments:
 - Traffic signal (or signal modification) –preliminary traffic signal warrants shall be evaluated to determine whether new traffic signals will be needed in the future and when those signals will be needed.
 - Roundabout - roundabout operations shall include capacity, delay, and queue lengths using the HCM 2010 methodology.
- Intersection layout requirements shall be identified at the study intersections, including lane configuration and queue distances.
 - Evaluate left-turn lane warrants and right-turn lane warrants at the unsignalized study intersections, as appropriate.
 - Conduct a queuing analysis of projected 2040 weekday a.m. and p.m. peak hour conditions to determine storage length needs at the project study intersections, as appropriate.
- Summarize future traffic conditions in the Traffic Analysis Report.
 - This memorandum will document the preferred intersection traffic control for the key intersections (signals versus roundabouts).

Subtask 3.3 – Traffic Design

The PBS team will advance the design at the conclusion of the preferred intersection control and configuration to preliminary (30 percent), 60, and 90 percent, and final construction contract documents as part of this task. PBS Team including KAI will be responsible to provide design engineering services for the deliverables outlined below for the following submittals:

- Preliminary (30%) Submittal
- 60% Submittal
- 90% Submittal
- Final submittal

Subtask 3.3.1: 30 Percent Design (Preliminary)

Assist the PBS team with developing preliminary construction documents to the 30 percent design stage. These documents will be used to assist the permit process. Review documents will consist of drawings, and a preliminary opinion of probable construction cost. At this design level, the overall design layout, footprint, and geometrics of the project are established and all decisions required to generate construction details have been made.

- Review and discuss intersection concepts (up to two concepts per intersection) with the project design team. Work collaboratively with the City, WSDOT and project design team to identify preferred intersection concepts for further refinement.
- Run autoturn modeling.

Subtask 3.3.2: 60 Percent Design (PS&E)

KAI will develop construction documents to the 60 percent design stage. These documents will consist of plans, a bid item list, and an opinion of probable construction cost.

- Traffic Signal Design – SR432/SR411 Westbound Ramp Terminal
 - Review the existing signal as-built drawings within the vicinity of the project from the City (if available).
 - Identify and confirm the traffic signal phasing and operations plan, turn lane storage needs, detection requirements, pedestrian and bicycle elements, and other key assumptions.
 - Prepare a preliminary signal equipment layout for City / WSDOT review and approval, including up to two (2) revisions as needed.
 - Develop traffic signal plan and detail sheets for the SR432/SR411 Westbound Ramp Terminal intersection.
 - If needed, it is assumed PBS will be responsible for providing the geotechnical investigation and structural engineering services for the signalized intersection to support the signal poles and foundation designs.
 - Develop a construction cost estimate for the 60% design level.
- Signing and Striping Design
 - Review the existing signing and striping as-built drawings within the vicinity of the project from the City / WSDOT (if available).
 - Develop signing and striping plan and detail sheets for the roadway improvements.
 - Develop a construction cost estimate for the 60% design level.
- Street Lighting Design
 - Review the existing illumination as-built drawings within the vicinity of the project from the City (if available) and explore the opportunity to extend the existing street lighting system if possible.

- Coordinate with the City / WSDOT to verify the final preferred street light fixture.
- Conduct up to two (2) photometric analyses of LED fixtures to determine a conceptual-level street light pole layout along 3rd Avenue (SR411) within the project limits.
- Coordinate with the City to verify the final preferred street light pole layout.
- Coordinate with the City and power company to verify the power source.
- Develop street lighting plan and detail sheets for the installation of new street lights along 3rd Avenue (SR411) and ramps within the project limits.
- Develop a construction cost estimate for the 60% design level.

The 60% plans shall include:

- Preliminary Signal Equipment Layout at SR432/SR411 Westbound Ramp Terminal
- Preliminary Signing and Striping Plan
- Preliminary Illumination Plan

Deliverables

- 60% Level Plans, including Cost Estimates (3 copies of the plans 11X17 and a PDF of the plan set and cost estimate)

Subtask 3.3.4: 90 Percent Design (PS&E)

KAI will address review comments from the 60% plans and develop construction documents to the 90 percent design stage. These documents will consist of plans, specifications, a bid item list, an opinion of probable construction cost, and an anticipated construction schedule.

The 90% plan set shall include the following Sheets:

- Advance Signal Modification Plan
- Advance Signing and Striping Plan
- Advance Illumination Plan

Deliverables

- 90% Plans, Specifications, and Cost Estimates

Subtask 3.3.5: Final Design (PS&E)

KAI will address review comments from the 90% plans and develop construction documents to the 100% (Final) design stage. These documents will consist of plans, specifications, a bid item list, an opinion of probable construction cost, and an anticipated construction schedule. Final documents will be sealed as appropriate for jurisdictional engineering review.

Address the 90% comments. 100% and final design phase plan set shall include:

- 100% (Final) Signal Modification Plan
- 100% (Final) Signing and Striping Plan
- 100% (Final) Illumination Plan

Deliverables

- 100% PS&E (3 copies on 11X17 and a pdf of the plan set) Contract Documents in word format and cost estimate in excel. Final CAD drawings and Civil 3D.
- Bid Package with stamp and seal 22x34 size,

TASK 4: DESIGN ENGINEERING – PLANS, SPECIFICATIONS & ESTIMATE (PS&E)

The Consultant will advance the roadway design through preliminary (30 percent), 60 percent, 90 percent, and final construction contract documents as part of this task. PBS Team will be responsible to provide design engineering services for the deliverables outlined below for the following submittals:

- Intersection Plan for Approval
- Preliminary (30%) Submittal
- 60% Submittal
- 90% Submittal
- Final submittal
- QA/QC

Subtask 4.1: Intersection Plan for Approval

The Consultant will develop an intersection plan for WSDOT approval per Chapter 1300 of the Design Manual. The plan will include:

- Geometric design elements
- Channelization
- Traffic data
- Right of way lines

Deliverable

- Draft intersection plan for approval (PDF)
- Final intersection plan for approval (1 copy on 22x34)

Subtask 4.2: 30 Percent Design (Preliminary)

The Consultant will develop preliminary construction documents to the 30 percent design stage. Review documents will consist of drawings, and a preliminary opinion of probable construction cost. At this design level, the overall design layout, footprint, and geometrics of the project are established and all decisions required to generate construction details have been made.

Design tasks include the following

- Develop alignments and profiles for SR 432 westbound off-ramp and eastbound on-ramp
- Develop lane geometry at intersections.
- Develop traffic detour, temporary signal and construction staging of the work during construction in this phase to determine impact during construction, impacts to city street if traffic is detoured.
- Model the proposed ramps in Civil3D to determine grading limits and slope impacts
- Coordinate stormwater facility location and design with City staff.
- Traffic control plan and staging
- Design Documentation follow the WSDOT Design Manual Chapter 300 guidelines for Design Approval
- Meet with City / WSDOT staff after review of the 30% plans.

The 30% plans shall include:

- Cover Sheet with vicinity map and sheet index.
- Legend Sheet
- Plan over Profile Sheets showing basic roadway geometry information and incorporating

- recommended intersection geometry, and lane configurations.
- Plan sheets showing conceptual storm layout in plan view only.
- Preliminary location of stormwater management facilities
- Traffic control plan and staging

Deliverable

- 30% Civil Plans (3 copies on 11X17 and a PDF of the plan set)
- 30% Construction Cost Estimate

Subtask 4.3: 60 Percent Design (PS&E)

The Consultant will develop construction documents to the 60 percent design stage. These documents will consist of plans, an opinion of probable construction cost, and an anticipated construction schedule. These documents will be used to assist the permit process.

Design tasks include the following:

- Refine alignments and profiles based on review comments from the City / WSDOT
- Develop detailed geometric layout of intersections and grading
- Refine corridor model of the proposed streets in Civil3D based on review comments
- Review existing frontage improvements and incorporate into the proposed improvements
- Refine proposed drainage basin layout and hydrologic model for proposed conditions
- Refine layout and design for water quality treatment and runoff control facilities.
- Develop preliminary stormwater report
- Calculate quantities and prepare a 60% engineer's estimate of construction costs.
- Submit 60% plan set and cost estimate for review
- Meet with City / WSDOT staff after review of the 60% plans.

The 60% plans shall include:

- Cover Sheet
- Civil Legend Sheet
- Typical Sections
- Site Prep/Demolition Plans
- Erosion Control and Grading Plans
- Erosion Control Notes Detail Sheets
- Plan over Profile Sheets showing basic roadway geometry information
- Utility Plan – Updated general concepts for stormwater system and facilities.
- Intersection Layouts
- Landscape Plans
- Preliminary signal and lighting plans
- Preliminary construction staging plans
- Construction Signing Plan
- Traffic control plan

Deliverables

- 60% Design Plans, including Cost Estimates (3 copies of the plans 11X17 and a PDF of the plan set and cost estimate)
- Conceptual Construction Schedule

Subtask 4.4: 90 Percent Design (PS&E)

The Consultant will address review comments from the 60% plans and develop construction documents to the 90 percent design stage. These documents will consist of plans, specifications, a bid item list, an opinion of probable construction cost, and an anticipated construction schedule.

Design tasks include the following:

- Design Documentation follow the WSDOT Design Manual Chapter 300 guidelines for Project Development Approval
- Update street design based on comments from 60% Plans
- Update construction notes, curb return grades, storm sewer system
- Update stormwater analysis based on comments from 60% plans
- Update and finalize the Stormwater Report.
- Compute quantities and prepare an engineer's estimate of construction costs.
- Prepare 90% Level Project Specifications including current WSDOT amendments, GSP's and special provisions for unique bid items, materials and construction requirements.
- Submit 90% plan set, specifications, and cost estimate for review
- Meet with City / WSDOT staff after review of the 90% plans.

The 90% plan set shall include the following:

- Cover Sheet
- General Notes and Legend Sheet
- Typical Sections
- Site Prep/Demolition Plans
- Miscellaneous Details Sheet
- Erosion Control and Grading Plans
- Erosion Control Notes and Details
- Street and Storm Plan / Profile Sheets
- Stormwater Facility Plans and Details
- Signing and Striping Plans
- Lighting Plans and Details
- Signal and lighting plans
- Construction staging plans
- Construction Signing Plans
- Standard Detail Sheets
- Landscape Plans and Details
- Traffic control plan

Deliverables

- 90% PS&E (3 copies on 11X17 and a pdf of the plan set)
- 90% Contract Documents in Word format
- 90% Construction Cost Estimate in Excel format.
- Final Stormwater Report

Subtask 4.5: Final Design (PS&E)

The Consultant will address review comments from the 90% plans and develop construction documents to the 100% and Final design stage. These documents will consist of plans, specifications, a bid item list, an opinion of probable construction cost, and an anticipated construction schedule.

Design tasks include the following:

- Prepare final special provisions as needed for nonstandard items shown on the plans, and compile the project specifications.
- Compute quantities and prepare an engineer's estimate of construction costs.
- Submit 100% PS&E for Review
- Address City / WSDOT review comments regarding the plans, specs, and estimate.
- Prepare the project NPDES permit application, and post the Notice of Intent (NOI) in the City's newspaper of record
- Prepare the project SWPPP
- Prepare Final Bid Package
- Submit final bid package

100% and final design phase plan set shall include:

- Cover Sheet
- General Notes and Legend Sheet
- Typical Sections
- Erosion Control and Grading Plans
- Erosion Control Notes Details
- Miscellaneous Details Sheet
- Site Prep/Demolition Plans
- Street and Storm Plan / Profile Sheets
- Stormwater Facility Plans and Details
- Signing and Striping Plans
- Lighting Plan and Details
- Signal plan and details
- Construction staging plans
- Construction Signing Plan
- Standard Detail Sheets
- Landscape Plans and Details
- Traffic control plans

Deliverables

- NPDES Permit Application
- Copy of SWPPP
- 100% PS&E (3 copies on 11X17 and a pdf of the plan set)
- Contract Documents in Word format
- Construction Cost Estimate in Excel format.
- Construction plans signed and stamped 22x34 size

Subtask 4.6: QA/QC and Constructability Review

The Consultant will provide quality assurance/quality control (QA/QC) for all design work in accordance

with the Consultant's QA/QC standards. The Consultant will provide senior level design and construction personnel to review plan submittals and provide technical support.

An internal senior engineer with no previous project involvement provides an independent review for technical completion and constructability prior to all major milestones and deliverables.

Deliverables

- None

Subtask 4.7: Landscape design

60% Concept Phase

Erosion control seeding estimate for ramps.

Southwest quadrant of the westbound SR 432 off-ramp terminal intersection. (SW quadrant of 3rd avenue and Tennant Way Frontage Road)

- The CONSULTANT will provide conceptual level landscape plans showing general landscape design concept showing general layout and plant species list of possible plant materials. Landscaping will be designed to limit access and parking adjacent to and under the overpass. No irrigation will be addressed. Fees include setting up base drawing, providing conceptual landscape plan, providing plan for review and comment, one revision based on comments and a conceptual cost estimate.

90% Phase

Erosion control seeding plans, specifications and estimate.

Southwest quadrant of the westbound SR 432 off-ramp terminal intersection.

- The CONSULTANT will provide landscape plans showing plant types, location, size and planting requirements. Provide plan sheets for review and comment and one revision based on those comments. Fees also include a preliminary cost estimate for all landscape work.

Final Design

Erosion control seeding plans, specifications and estimate.

Southwest quadrant of the westbound SR 432 off-ramp terminal intersection.

- The CONSULTANT will provide construction drawings for all landscape plantings. Includes planting details and WSDOT specifications.

Practical Solutions, Practical Design

Exclusion: WSDOT Practical Solutions, Practical Design is excluded.

TASK 5: UTILITY COORDINATION

Task 5: Utility Coordination

Contact utilities within the project limits and obtain existing system mapping. Review mapping for consistency with project base map.

Conduct a utility reconnaissance of the project corridor to determine visual evidence of underground and above ground utility facilities and confirm utility provided facility maps and project base map completeness.

Identify and discuss with each utility special requirements associated with their facility relocation or modification.

Subtask 5.1: Utility Meetings

Organize and facilitate up to three group utility meetings to provide updated project information. Such meetings will address known facilities, potential for impact, timing requirements for potential relocations, initial information of reimbursable requirements. Meetings will also allow the exchange of each utility's relocation plans with the other utilities in order to maximize compatibility of relocation designs and utility and roadway construction sequencing. Prepare and transmit meeting agendas and meeting summaries to utility representatives, City and Consultant team members.

Subtask 5.2: Conflict Identification, Analysis and Recommended Resolution

Identify and analyze utility conflicts, compile and distribute utility conflict lists involving above ground, surface and underground conflicts, and make conflict resolution recommendations to utilities based on the 30% design.

Produce utility conflict plan sheets based on preliminary (30%) design plans and accompanying utility conflict spreadsheets indicating conflict item number, type of utility, conflict status, average cover during and after construction, whether utility is in or out of public right-of-way, and comments. Assume six different utility operators.

Revise conflict analysis and conflict spreadsheets based on 90% design plans.

Revise conflict analysis and conflict spreadsheets based on 100% design plans.

Subtask 5.3: Conflict Notification and Utility Relocations

Notify the impacted utilities and coordinate the efforts of the utility agencies in developing and executing a plan for relocating utilities to resolve conflicts with the project design. As part of that effort:

- Prepare and deliver to each involved utility owner a Conflict Notice with attached conflict list and map. Assume up to six different utility operators. Notice shall require a utility response in the form of a proposed facility adjustment plan and schedule to complete the utility work. Allow each utility a 30-day period to respond with a proposal from date of the notice.
- Review utilities' proposed relocation plans to verify that identified conflict items are addressed and that the plans accommodate and conform to the construction requirements for the Project. Provide written approval of each utility's relocation plan. Up to nine total reviews will be performed for the utilities' relocation plans (average 1.5 per utility).
 - a. City of Longview – Water
 - b. City of Longview – Sanitary Sewer
 - c. NW Natural – Gas
 - d. Cowlitz PUD – Power
 - e. CenturyLink – Telephone
 - f. Comcast – Cable
 - g. CDID #1 – Drainage

Assumptions:

- City will provide utility plans, GIS and other supporting documents for City utilities within the project corridor

- Utility design location fees, if any, are not included in Consultant's costs and will be paid by the City if required.
- Utilities will provide as-built system maps of their facilities within the project corridor
- Additional right-of-way and/or easements that may be required for relocated utilities, is the responsibility of the utilities or the City in the event of prior rights.

Deliverables

- Meeting agendas and summaries for each utility meeting.
- 30% Submittal - Existing utilities identified and marked-up on survey base mapping.
- Utility Conflict Memorandum at 60% Plans
- Conflict notice letters and attachments for each utility.
- 90% and 100% utility conflict analysis based on design plans.
- Review and comments on utility relocation plans

TASK 6: GEOTECHNICAL ENGINEERING

Subtask 6 – Geotechnical Engineering

This task includes work to conduct a geotechnical investigation to evaluate pavement, soil and groundwater conditions along the project alignment. Tasks include geotechnical design recommendations and construction guidelines for the proposed roadway widening and improvements, including pavement design, roadway embankments, stormwater detention facility, utility trench construction, retaining walls, and traffic signal pole foundations. The work will be conducted in general conformance with City of Longview (City) Design Standards, Washington State Department of Transportation's (WSDOT's) Geotechnical Design Manual, and Washington State Department of Transportation's (WSDOT's) Highway Runoff Manual (HRM). Specific tasks include:

- Review readily available geologic, groundwater, and soil survey maps that cover the project vicinity.
- Review available geotechnical reports prepared for nearby developments (available in our files) and provided by the City.
- Conduct a reconnaissance of the project alignment.
- Mark the proposed exploration locations in the field and notify the "One Call" service for public utility locates.
- Prepare traffic control plans for and provide traffic control during completion of field explorations.
- Advance up to six mechanically drilled borings to characterize as-built pavement and subsurface soil and groundwater conditions. We anticipate that three to four days will be required for drilling.
 - Drill up to six borings to a depth between 10 and 40 feet below grade to evaluate pavement as-built section and subgrade conditions. Conduct dynamic cone penetrometer (DCP) (or "N" values at 2.5 and 5 foot intervals beneath existing pavement to evaluate pavement subgrade strength and characterization of deeper soil conditions for potential traffic control structure at the westbound SR 432 off-ramp terminal intersection, fill embankment areas and shallow retaining walls.
 - Install piezometers in up to two of the borings to monitor groundwater levels.
- Maintain a log of the soils encountered in the explorations and collect soil samples for laboratory testing.
- Restore the explorations in the following manner:

- Borings - Backfill the drilled borings/monitoring wells in accordance with WSDOE standards. In paved areas, the surface of the boreholes will be patched with concrete or asphalt. The piezometers will be protected by flush-mount monuments/enclosures. Excess soil cuttings from the borings will be removed from the site.
- Collect an initial groundwater level reading from the monitoring wells approximately one week after installation. Collect 1 additional groundwater prior to issuance of the final geotechnical report.
- Conduct a program of laboratory testing on select soil samples. The actual quantity and type of tests run will be based on the materials collected, though for budgeting purposes include up to:
 - 1 particle-size distribution tests (sieve analyses)
 - 4 percent fines determinations (percent passing the No. 200 sieve)
 - 30 moisture content and/or density determinations
 - 2 Atterberg Limits determinations
 - 1 organic content determinations
 - 1 modified compaction testing (ASTM D1557)
 - 1 compacted California Bearing Ratio test CBR
- Conduct engineering analyses to evaluate:
 - Utility trench construction guidelines. (excavations and backfill)
 - Embankment construction alternatives. (structural fill)
 - Pavement design and rehabilitation options.
 - Retaining wall earth pressure design parameters (including active, at-rest, and passive pressures).
 - Retaining wall foundation design parameters.
 - Traffic signal foundation design parameters.
 - Seismic design parameters.
 - Earthquake and geologic hazards.
 - Dewatering plan
- Prepare a draft geotechnical report summarizing the results of the subsurface exploration and laboratory testing programs, and presenting appropriate recommendations and conclusions.
- Prepare a final geotechnical report incorporating requested changes/updates from the project team's review of the draft report.
- Coordinate geotechnical tasks with other design tasks
- Attendance at up to two project meetings

Assumptions

The above scope of work is based upon the following assumptions:

- Rights of entry will be obtained under other work tasks for work outside the right of way.
- Field work will be performed during daylight hours.
- If contaminated soils are encountered, then additional charges will be incurred for equipment decontamination, testing, and soil disposal.
- The City will issue a street use permit at no cost to the Consultant.
- Abandonment of the groundwater monitoring wells is not included in our scope. We have assumed that this task will be completed during construction by the project contractor.

Deliverables

- Draft geotechnical report (electronic PDF copy)

- Final geotechnical report (electronic stamped and signed PDF copy, word stamped and signed document and up to 3 hard copies)

TASK 7: ENVIRONMENTAL REVIEW AND DOCUMENTATION

Subtask 7.1 – Wetland Delineation

The Consultant will delineate the boundaries of all wetlands within the SR 432/SR 411 project corridor in accordance with the criteria and methods described in the U.S. Army Corps of Engineers (USACE) 2010 Regional Supplement to the USACE Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region – Version 2.0 (USACE 2010). The delineation will entail collecting and reviewing background information, as well as conducting the actual delineation fieldwork. The Consultant will review background information, including soil maps, topographic maps, National Wetland Inventory maps, and recent and historic aerial photos. These will assist in determining the location of jurisdictional wetlands. During field investigation, the Consultant will collect the necessary data, determine the wetland boundaries, record the boundaries using a GPS unit capable of post-processed sub-meter accuracy, and flag them in the field for survey and for future verification by regulating agencies.

In conjunction with the wetland delineation, the Consultant will also delineate the ordinary high water mark (OHWM) of the mapped stream within the project corridor using the Washington State Department of Ecology (Ecology) publication titled – Determining the Ordinary High Water Mark on Streams in Washington State.

Once all fieldwork is complete, the Consultant will prepare a project-specific wetland delineation and assessment report for the site corridor that summarizes the findings of the field investigations. The Consultant will compile the data collected in the field onto wetland data sheets and summarize the results in report form. The Consultant will evaluate pertinent records concerning wetland alterations and site hydrology as required by the delineation method and assess all delineated wetlands using the Washington State Wetland Rating System for Western Washington (Ecology 2004). Finally, the delineation report will include the graphics required for concurrency by the regulating agencies.

After completion of the initial delineation, the Consultant team will meet internally to discuss the mapped wetlands within the corridor and determine steps that could be taken to avoid and/or minimize impacts to the wetlands. Identified wetlands will be surveyed and the survey results will be used by the project team to develop a design concept that will minimize and reduce impacts to wetlands and critical areas as much as possible.

Assumptions

- City will arrange access to the properties for consultant.
- If necessary, the City will be responsible for determining the wetland mitigation location and obtaining rights to delineate and use of the site.
- One day of wetland field delineation

Deliverables

- Draft project corridor wetland delineation report (one electronic)
- Final project corridor wetland delineation report (one electronic and five hard copies)

Subtask 7.2 – SEPA Documentation and Approval

Project grading is anticipated to exceed 500 cubic yards and a critical areas permit will be required for the project; therefore a SEPA Checklist will be required. The Consultant will complete a SEPA checklist in accordance with SEPA (RCW 43.21C) and SEPA Rules (WAC 197-11).

Assumptions

- The City will be the lead agency and will prepare the SEPA threshold determination.
- The SEPA threshold determination is anticipated to be a Determination of Non-Significance (DNS) or Mitigated Determination of Non-Significance (MDNS).
- As the project has no federal funding, NEPA review will not be required.
- A SEPA Environmental Impact Statement is not required.

Deliverables

- Draft SEPA Checklist (one electronic copy)
- Final SEPA Checklist (one electronic copy)

Subtask 7.3 – City Critical Areas Permit

The project area is known to contain multiple critical areas as regulated under Longview Municipal Code (LMC) 17.10. These critical areas include wetlands and fish and wildlife habitat conservation areas which the critical area permit will be limited to. Because it is anticipated that the project will require some degree of impact to areas within the wetlands or streams associated buffers, a Critical Areas permit will be required.

The Consultant will prepare the critical areas permit application that will include the necessary forms and a critical areas report that summarizes how impacts will be avoided, minimized, and/or mitigated for each type of critical area, including supporting documents, such as the wetland delineation (completed under Task 9.1) and the geotechnical report. The Consultant will prepare the critical areas report will in accordance with the LMC 17.12 – Standards for Preparing Critical Areas Reports and Mitigation Plans.

The Consultant will work with City review staff to obtain a draft staff report for the critical areas permit and will circulate the draft staff report to the project team via email for review and input. The Consultant will collect and compile team comments on the staff report and will respond to City review staff with any suggested edits to the staff report.

Assumptions

- Impacts to wetlands or streams will be avoided and no state or federal permits will be required. If impacts to wetlands or stream will occur, a separate scope and fee to address state and federal permits will be prepared.
- Impacts to wetland and/or stream buffers cannot be avoided and a critical areas permit is required by the City.
- Critical areas impacts may include both temporary and permanent impacts.
- The City will agree that temporary project impacts are adequately mitigated by construction methods and restoring impacted areas to their existing condition.
- The City will conduct one round of review on the draft staff report.
- Permit application fees are excluded.

- Recordation of a covenant or tract to preserve critical areas and/or project mitigation, if necessary, will be handled by the City.

Deliverables

- Draft critical areas report consisting of a narrative and summary of impacts/mitigation of critical areas for City review (one electronic copy)
- Final critical areas report based on City comments (one electronic copy and hard copies needed for submittal)
- Application form and compilation and submittal of the compiled application package
- Review and coordination of a draft staff report document with the City and project team

Subtask 7.4 - Cultural Resource Analysis

The City of Longview (City) SR 432/SR 411 interchange improvement project will require compliance under Governor's Executive Order 05-05 (EO 05-05). AINW will provide an archaeological and historic resource survey for the EO 05-05 review and provide information for the State Environmental Protection Act (SEPA) submittal. The study will be directed by AINW staff meeting the professional qualifications of the Secretary of the Interior's Standards and Guidelines in Archaeology and Historic Preservation. Department of Archaeology and Historic Preservation (DAHP) standards will also be followed.

AINW will perform the following tasks:

- Participate in a project kick-off meeting/conference call.
- Conduct a background review of the previous studies performed in the vicinity.
- Provide the EZ-1 Form that outlines the project area for the City to submit to for approval. After approval, the Consultant will send the form to DAHP and the Tribes.
 - The EZ-1 needs to include maps and photographs of the project area and outline the proposed archaeological survey and historic inventory methodology. A field visit will be needed to photograph the project area to complete the EZ-1 Form.
 - Once the EZ-1 is accepted, the archaeological survey fieldwork can be conducted.
- Conduct an archaeological survey.
 - Fieldwork will include a pedestrian survey using transects spaced no more than 33 feet (10 meters) apart.
 - Excavate up to nine (9) shovel tests in the project area. The shovel tests will be used to delineate resource boundaries, if resources are found. Shovel tests will be 30 centimeters at the surface and will be excavated to 50 centimeters below the surface or deeper, if warranted. Soils will be screened through ¼- and ⅜-inch mesh hardware cloth. The shovel tests will be backfilled immediately upon completion.
 - If artifacts are observed, they will be photographed, but not collected.
- Up to two archaeological sites may be documented: an abandoned railroad grade and one other potential archaeological resource.
 - No archaeological resources have been previously recorded within the project area.
 - If more than two archaeological resources are found, an additional budget may be needed to complete the resource form(s).
 - The resources will be recorded on State of Washington Archaeological Site Inventory Forms.
- Three historic-period drainage ditches are within the project area: Ditches 3, 4, and 11. The ditches are part of the Consolidated Diking Improvement District No. 1 system.

- Ditch 3 has been previously recorded as a historic property and determined eligible for listing in the National Register of Historic Places (NRHP) by DAHP. The existing form will need to be updated.
 - Ditches 4 and 11 will need to be inventoried, evaluated, and documented on State Historic Property forms.
- Prepare the survey report to meet review by several agencies.
 - Review by WSDOT for EO 05-05 compliance.
 - Review by the City and to provide information needed for SEPA review.
 - Archaeological Site and Historic Property Inventory Forms would be appended to the report.
 - Upon acceptance, AINW will compile the report, site forms, and historic property forms as a single document. The Consultant will submit the report to DAHP, the Tribes, and WSDOT, for EO 05-05.
 - The report will also be submitted with the SEPA.

Deliverables

- An EZ-1 Form, draft and final.
- A cultural resource report, draft and final.

Out of Scope Exclusions

- If an archaeological site is found, based on the results of the pedestrian survey and shovel testing, additional excavations may be needed to evaluate the resource for its eligibility for listing in the NRHP. This additional work would be done after the survey has been completed and after consultation with both the DAHP and with Tribes. Various approaches—from avoidance to data recovery—may be applied to the resource if it is found to be eligible for listing in the NRHP.
- If a significant historic resource is within the project, additional effort may be needed to address the potential for adverse effect. Documentation and coordination needed to address an adverse effect to a historic resource are not included in the present scope.
- If a permit from the U.S. Army Corps of Engineers (Corps) needed, an additional budget will be needed to elevate the study to a cultural resources survey and report. The report would also need to be reviewed by the Corps under Section 106 of the National Historic Preservation Act, independently from EO 05-05.

Subtask 7.5 – Water Quality/Stormwater Technical Report (PBS)

Included in Task 4 above.

Subtask 7.6 – Construction Stormwater Permit

The CONSULTANT shall coordinate with the Department of Ecology, prepare and submit a Construction Stormwater General Permit application and transfer of permit to the selected Contractor. CONSULTANT staff will prepare the permit application and Notice of Intent (NOI). The NOI will be submitted to the local newspaper. CONSULTANT will prepare the Transfer of Coverage and Notice of Termination forms for CITY and Contractor signature and submittal, which will constitute transfer of coverage to the Contractor.

In addition, CONSULTANT will prepare the SWPPP to be kept at the site during construction.

Deliverables:

- Permit Application
- Notice of Intent (NOI)
- SWPPP
- Transfer of Coverage Form
- Notice of Termination Form

TASK 8: PUBLIC INVOLVEMENT

Subtask 8.1 – Stakeholder Interviews

Conduct one-on-one interviews with selected stakeholders. From these interviews, the consultant can better understand their expectations and/or concerns about the project and can gather important information regarding existing conditions and constraints that will affect the project. For this task, the Consultant will coordinate with the City to determine the stakeholders to be interviewed. The City will take the lead on sending a letter to these stakeholders introducing them to the project and notifying them of the City's desire to interview them. The Consultant will take the lead in scheduling, preparing for, and facilitating the stakeholder interviews. Upon completion of these interviews, the Consultant will create a summary report of stakeholder comments, findings, and key observations. The Consultant will provide one draft copy of this report to the City for review. Upon receipt of City comments, the Consultant will create a final report and provide it to the project team members and to the City's project staff.

Assumptions

- City will prepare and send introduction letter to stakeholders
- Up to 10 stakeholders will be interviewed
- Interviews will be up to one hour in length
- Stakeholder interviews will be conducted in Longview
- The City will develop and provide a list of contact information for the stakeholders
- One round of City review of the stakeholder questions and draft summary report
- Consultant will schedule and conduct all interviews

Deliverables

- Coordination with City to determine stakeholder interview list
- Draft and final list of interview questions (one electronic copy)
- Draft and final summary report of stakeholder findings and key observations (one electronic copy)

Subtask 8.2 – Open House

The Consultant will support the City in the planning, preparation, and facilitation of one public open houses for the project. The focus of these open houses will be as follows.

Open House – will be held after preliminary design concepts have been developed for the project (30 percent design). The purpose of the event will be to share design concepts with the public and gather input and feedback that will be shared with the City and consultant to help in refining the design.

Assumptions

- The City will identify and secure an appropriate venue (location) for the open house.
- Venue fees, if any, will be paid by the City.
- The City will set up, staff, and breakdown the open houses.
- The Consultant will design a postcard/mailer to announce each open house.
- Open houses are assumed to be two hours in length and will be advertised through the City's existing website, the postcard/mailer announcement, and through a public notice in the local newspaper.
- The City will use their existing mailing list and will be responsible for printing, mailing, and postage fees for the postcard/mailer.
- The City will be responsible for fees incurred for publishing public notices in the local newspaper.
- Consultant will prepare exhibit and drawings for the open house
- Consultant will attend the open house.

Deliverables

- Staffing for house
- Postcard/mailer for open house
- Draft and final content for public notice
- Draft and final exhibit drawings.

TASK 9: DESIGN ENGINEERING SERVICES DURING CONSTRUCTION

The Consultant during the construction of the Project shall provide limited bidding and engineering services. The anticipated construction engineering services are described as follows:

Pre Bid Opening Responsibilities

The Consultant shall respond to questions from prospective bidders and City staff before bid opening in reference to the bid package.

Prepare addendums

Deliverables

- Electronic responses to bidder inquiries, submittals, and RFIs
- Answer pre-bid questions
- Prepare addendum
- Attend preconstruction conference

TASK 10: CONSTRUCTION SUPPORT

The City reserves the right to request PBS Engineering and Environmental to prepare an amendment to this contract for construction-phase inspection and engineering services for this project. Following completion of the Design Phase Services, and upon the City's satisfaction with the PBS's performance during design, and after the City and WSDOT have approved the final bidding documents, the City may amend this contract.

CITY DELIVERABLES TO THE CONSULTANT

Sample Projects

The City will provide copies of sample City projects, and design guidelines. The City will also provide electronic files of title blocks, standard details for streets, traffic signal, street lighting and other available details.

Project Coordination

The City will assist the Consultant in managing relationships with other jurisdictions involved in the project, adjacent property owners and the public. The City will provide staff to meet and discuss the project with the Consultant as needed. The City will provide written comments pertaining to the design submittals.

Right of Entry Permits

The City will obtain the right of access to private parcels within the project corridor. The Consultant will identify parcels where entry is required.

Utility List

The City will provide the Consultant with a list of local contacts for utilities within the project limits. Design and plan preparation for the addition or relocation of utilities within the project limits will be completed by others.

Street Light and Traffic Signal Requirements

The consultant will utilize WSDOT illumination type, the minimum illumination levels and uniformity ratios to be used in the project design.

Deliverables

- Sample projects
- Project coordination
- Right of Entry permits
- Pavement type & structural sections selection
- Utility list