

**CONTRACT E00312E13
EXHIBIT A
Scope of Work**

ENGINEERING SERVICES FOR THE PUGET SOUND EMERGENCY RADIO NETWORK

Background

Puget Sound Emergency Radio Network (PSERN)

The goal of the PSERN Project is to develop a system design and install the PSERN that will replace the existing Emergency Radio System (ERS). The selected PSERN Vendor will also complete the construction of the new private radio tower sites, install the associated radio equipment and transition the existing ERS to the PSERN, which will occur in later phases of the project. As part of the PSERN Project, it will be the responsibility of King County to complete the design and construction of the new government radio sites and modifications to existing radio sites that are owned by both the government and private entities. The location and number of sites were identified in the selected system vendor's Pre-Design Proposal. Construction activities for the new government sites and modifications to the existing sites will commence at a later phase in the project. The future phases of the project will be dependent on the King County Council and voter's approval of the funding measure in the Spring of 2015. If the measure is approved, the selected PSERN vendor will complete the final system architecture design, construct the new private radio tower sites, test and install equipment and transition the existing ERS to the PSERN. King County will be working concurrently with the consultant team on this contract to complete the construction of the new government radio tower sites and modifications to the existing sites, which will need to be completed within 24 months from the issuance of the system vendor's Notice to Proceed (NTP), which is currently scheduled for mid-2015. The expected completion date of the site construction is projected to be May 2017.

The PSERN Project includes representatives from the current owners of the radio system, which include the City of Seattle, EPSCA, King County and ValleyCom. It must also be emphasized that the majority of the design activities that are required under this RFP must be completed by mid-2015 to meet the aggressive project schedule; therefore, deliverables will need to be completed in an efficient and effective manner.

Overview of Scope of Work

The Consultant team will provide professional services for site viability verifications for the new government sites and existing sites, which include, but are not limited to, initial research regarding site ownership and easements, ability to obtain legal access and permits for use of the site, site visits, environmental review, and identification of any other constraints that will affect the ability to utilize the sites specified. For existing tower sites, a tower analysis may be completed, which will include the analysis of added loads. Required modifications to the existing towers to hold the additional loads should be identified during this process. Once the site is considered viable by the County, the Consultant team will provide assistance throughout the project for preliminary design, environmental review process, permitting, final design

(including surveying, geotechnical, engineering, architectural and environmental mitigation), scheduling, cost estimating, community relations, and assistance during construction.

The County does not know at this time whether or not this project is likely to cause a significant adverse environmental impact and consequently whether the environmental review for this project will require the preparation of an Environmental Impact Statement or a Determination of Non-Significance; therefore, the proposer should assume that either process could be used.

The four (4) phases for the Project are anticipated to be negotiated and executed as indicated below. Phases may occur concurrently. The County reserves the right to amend the resulting Agreement to add or remove work associated with Phase(s) 2, 3A, 3B and 4. The County also reserves the right to select another consultant to perform the additional phases. Since the project is dependent on both the King County Council and voter's approval of a funding measure, certain phases or activities may not commence unless the funding is approved. For the purpose of the proposal, assume the following durations of time for each phase:

- Phase 1 - Site Viability Verification; two (2) months
- Phase 2 – Real Estate Assistance; ten (10) months
- Phase 3A – Preliminary Design Services; three (3) months
- Phase 3B – Final Design Services; three (3) months
- Phase 4 – Services During Construction; twenty-four (24) months

The County's Project Team and the Consultant Project Team will work together to meet the aggressive schedule, while utilizing each team member's skill set throughout the decision making processes, which will contribute to the successful completion of the project.

A Project Representative will be assigned to perform overall management of the Consultant and the Contract.

Tasks for Phase 1 – Site Viability Verification

Task 100 – Project Management

This task includes all work related to the management, administration, and coordination of Consultant activities through Phase 1.

100.1 Project Management Plan

The Consultant will submit a draft Project Management Plan (PMP) to the County's Project Representative for review within 10 calendar days of receiving Notice to Proceed (NTP) for Phase 1. The PMP will include the deliverables from Subtasks 100.2–100.7. The Consultant will submit a final PMP after receiving comments back from the County and will update the PMP at the completion of Phase 1.

100.2 Work Breakdown Structure (WBS)

The Consultant will coordinate with the Project Representative and subject area leads to create a draft project-level Work Breakdown Structure (WBS) to Level 4 or 5 (task and subtask) through the completion of Phase 1 and Level 3 (activity) for the remainder of the project.

100.3 Initial Contract Schedule Estimate

The Consultant will prepare a detailed contract schedule for Phase 1 consistent with the activities, tasks, and subtasks outlined on the WBS. The Consultant will use the Critical Path Method (CPM) to identify the expected critical path, and the schedule will include appropriate internal and external milestones, appropriate network logic (e.g., all but the first and last tasks have at least one predecessor and successor), and PERT (Beta)-based duration estimates. The Consultant will estimate the schedule for the remainder of the project for key milestones and deliverables. The contract schedule will be developed using Microsoft Project (version 2010). The Consultant will update the schedule monthly in conjunction with the County for inclusion with the monthly report (see Task 100.14).

100.4 Initial Responsibility Assignment Matrix (RAM)

The Consultant will prepare a Responsibility Assignment Matrix (RAM) that identifies a responsible person for each Consultant task or subtask in Phase 1. The RAM should be created using a Microsoft Excel template developed by the Consultant. The RAM will use the following designations:

- R = Responsible. There will always be only one team member identified as responsible for a task. This person may or may not perform the work, but will be the contact person for the PM and other team members who can give status information on the task.
- A = Accountable. Anyone identified as accountable must provide notice to the responsible party that the work package is complete and of acceptable quality, by either explicit acceptance criteria or implicit quality criteria, e.g. professional judgment.
- P = Perform. Any team member (which would include Consultants) may be identified as performing the task. This code identifies all team members working on the task, and who will be providing resource estimates (labor hours) for their work expected for the task.
- I = Inform. Any team member not in any of the other three roles may be designated to be informed of the task work, either during or at completion. For resource estimating, it is assumed that no hours are planned on this task for members whose only role is to be informed.

The Consultant will update the RAM as needed to reflect changes in responsibility.

100.5 Communication Plan

The Consultant, with input from the County, will submit a draft and final communication plan to the Project Representative that includes the following:

- Project team organization including County and Consultant staff
- Contact information for County and Consultant staff including phone numbers and mail/email addresses

- Protocols for team communication
- Protocols for external communication including stakeholders and regulators that are consistent existing County protocols
- Document control plan (paper and electronic documents)
- Conflict resolution protocols. Such protocols should allow for peer-to-peer resolution before moving up the chain of command

100.6 Quality Management

The Consultant will submit for approval a plan for assuring the quality of all work performed under the proposed contract, including coordinating and interfacing activities and deliverables. The Consultant will assign reviewers independent of the project team to review all project deliverables. In addition, a technical writer will be required to review all project deliverables.

For all document submittals, the County will review the draft submittals and will transmit review comments via email to the Consultant using a comment tracking form. The Consultant shall use the form to provide a written response to the County for each comment within 5 calendar days of receipt of the comments, or an agreed upon timeframe between the Project Representative and the Consultant Project Manager. Each comment response shall describe how the comment will be incorporated into the final document. Each comment response will be reviewed with the County's Project Representative to reach consensus on resolution. As a reminder, time is of the essence.

100.7 Change Control Plan

The Consultant will submit for approval a plan to monitor and control document revisions, scope changes and decisions. At a minimum, the following items will be monitored and reported.

- Statement of the change requested or issue
- Expected date of resolution
- Name of the person responsible for resolution
- Date request initiated
- Name of the initiator
- Statement of potential impacts, including total project budget, construction cost budget, significant changes to the project that would affect the County's risk, and total project, phase, and construction durations
- Resolution

100.8 Kickoff Meeting

The Consultant Project Manager and each subject area lead will facilitate three-hour kickoff meeting with the County project team. The meeting will be held at the Chinook Building, located at 401 5th Avenue in Seattle, Washington. The meeting topics will include, but are not limited to, reviewing the team members and their responsibilities, project objectives, Phase 1 deliverables, communications plan, and draft schedule. The Consultant will prepare the meeting agenda with assistance from the Project Representative and record meeting notes. The meeting notes will be submitted to the County Project Representative within three working days following the meeting.

100.9 Team Meetings and Workshops

The Consultant will prepare for and participate in bi-weekly team meetings (1.5 hours in length), which may include, but are not limited to, County staff, stakeholders that own the existing ERS and representatives from permitting jurisdictions, etc. A typical meeting agenda will include:

- Review of open action items
- Schedule review and update
- Progress reports
- Critical issues
- Discussion of technical issues
- Remediation plan (if required)
- New action items

At a minimum, the meetings will be attended by the County's Project Representative, selected County project team members, the Consultant Project Manager, and key members of the Consultant team as needed for discussion of task items. The Consultant will submit a draft agenda a minimum of three days in advance of the meetings to the County. The Consultant will keep detailed meeting notes for all team meetings, distribute draft notes to the team within three working days of the meeting, and incorporate changes to the notes as needed. Final notes will be delivered within three working days of receiving changes from the County.

The Consultant will also prepare for and participate in workshops needed to review information collected for the site viability verifications, which will be delivered to County in Technical Memorandums or Summary Plans. For the purpose of making a proposal, the proposers should assume that two (2) workshops will be scheduled for four to six (4-6) hours and will include up to six Consultant staff. The workshops will be located at the Chinook Building (401 5th Avenue, Seattle, WA 98104), and may include the following topics:

- Review of Existing As-Builts and Other Reference Information
- Confirmation from each Site Owner that a Site can be Utilized
 - Site Owner's Contact Information
 - Identify Rent and Other Terms at Each Site
- List of Overlying Easements at each Site
- List of Owners for the Existing Equipment at each Site (if used as part of the design)
- Review of Right-of-Entry, or other Site Access Agreements
- Environmental Review and Mitigation Alternatives
 - Application Review for the SEPA Process
- Identification of Permitting Requirements and Timeline to Obtain the Permits

- Application Review for FAA, Land Use Permits, etc.
- Geotechnical Analysis
- Identification of Building Constraints at each Site and Design Alternatives
- Issues that would Limit the Use of the Site
- Construction Costs Estimates
- Schedule

100.10 Technical Group Meetings

The Consultant Project Manager and up to two (2) Consultant subject area leads to attend two-hour monthly Technical Group staff briefings. These meetings will serve to provide a project status update to non-team Technical Group staff members and to obtain technical input as needed.

100.11 Telephone Updates

The Consultant Project Manager will call the Project Representative once weekly for one hour, at a time to be determined, to discuss and review the Project. The Consultant may also include the subject area leads in engineering, architectural design, environmental review, real estate acquisition/relocation and permitting as a conference call. Discussion items may include, but are not limited to, project status, information presented in the progress reports, direction for upcoming team meetings, review issues, decisions made, open action items, upcoming project milestones, and recovery plans. Update the Decision/Issues/Changes and Action Item Logs as necessary.

100.12 Decisions/Issues/Changes Log

The Consultant will develop and maintain a log that will be used to track project decisions and how they were made, issues, and project/contract changes. The log should be updated monthly and submitted with the monthly progress report. The log should be created using Microsoft Excel.

The log should include the following information:

- Assigned item number
- Description of Decision, Issue, or Change
- Originator of the Issue Tracking Log entry
- Initiation date of the Action Item
- Responsible person for tracking the issue
- Description of potential impacts the project scope, schedule, and budget
- Description of potential impacts to the Consultant contract
- Description of the decision made and the date in which it was approved by the Project Representative

100.13 Action Items Log

The Consultant will develop (or utilize a sample provided by the County) and maintain an Action Items Log. The log should include the following information.

- Action Item Number
- Action Item Description
- Originator of the Action Item
- Initiation date of the Action Item
- Problem, issue or interest the Action Item is intended to address
- Responsible person for completing the Action Item
- Action Item due date
- Action Item completion date
- Results of completing the Action Item and any impacts the project scope, schedule, and budgets

The log should be updated weekly and submitted with the monthly progress report. The log should be created using Microsoft Excel and contained as a separate sheet within the same spreadsheet as the Decision/Issues/Changes Log.

100.14 Monthly Progress Reports and Monthly Progress Invoice

The Consultant will submit a monthly progress report to the Project Representative on a date to be determined by the County. Monthly progress reports will include:

- A brief narrative of work completed for the prior month for each Consultant WBS task/subtask
- A brief narrative of work expected to be completed during the next month for each Consultant WBS task/subtask
- Identification of any WBS tasks or subtasks that are delayed or determined to be at-risk and a summary of a recovery plan including action items, staff required, Gantt chart (schedule) modifications, dependencies, and project impacts
- A performance report utilizing a mutually acceptable Earned Value Technique (EVT) to chart monthly earned value. Any specific technique used must be tied to the monthly schedule update for the contract
- Decisions/Issues/Changes Log
- Action Items Log

100.15 Health and Safety Plans

The Consultant may prepare a Health and Safety Plan for the Project, site specific Health and Safety Plans for planned field work, including geotechnical investigations and surveying.

Task 100 Potential Deliverables

Copies of deliverables will include: one printed copy (unbound); one copy in the native file format on CD or thumb drive; and one copy in PDF (searchable with imbedded table of contents) format on CD or thumb drive.

- Project Management Plan
- Work Breakdown Structure (WBS)
- Project Schedule
- Responsibility Assignment Matrix (RAM)
- Communication Plan
- Quality Management Plan
- Change Control Plan
- Kickoff Meeting Notes
- Team Meetings and Workshops
- Workshop Summaries
- Meeting Agendas and Notes
- Weekly Telephone Updates
- Decisions/Issues/Changes Log
- Action Items Log
- Monthly Progress Reports
- Health and Safety Plan

Task 200 Environmental Compliance Services

The Consultant shall provide technical services as required and upon approval from the Project Representative for the environmental aspects of the project, including, but not limited to, the completion of technical analyses and reports required to support the State Environmental Policy Act (SEPA) or NEPA environmental review process and review under Section 7 of the ESA and Section 106 of the NHPA.

The location of the sites for this project will be within multiple jurisdictions, some of which are outside of King County. The County, or local jurisdiction, may be the designated SEPA or NEPA lead Agency. As such, the Consultant will be responsible for completing the appropriate site analysis, permitting applications and any other documentation for the environmental review process. The Consultant shall prepare the environmental checklist or Environmental Impact Statement (EIS), whichever is applicable, and the County will review and provide comments. The Consultant will be required to provide services as needed to support the environmental review process. This may include the development of technical documents describing existing environmental conditions, potential impacts and associated mitigation. The Environmental

Conditions Assessment and Environmental Impact Assessment shall be included in a combined draft and final Environmental Assessment Technical Memorandum.

200.1 Environmental Conditions Assessment

The Consultant will describe existing environmental conditions encountered at the proposed sites, including regulatory constraints that may influence siting, construction, or operation of the proposed project. This assessment will be included in a Technical Memorandum, with a copy of permit applications and a summary matrix of environmental conditions, including potential regulatory and permitting implications. Environmental elements anticipated to be characterized include, but are not limited to the following: Earth, Air, Plants and Animals, Noise, Environmental Health, Environmental Justice, Land Use, Traffic and Transportation, Public Services and Utilities (including safety considerations), Cultural Resources (if needed) and Aesthetics. Preliminary information will be characterized and summarized in a way that can be expanded into sections of a SEPA or NEPA environmental checklist or EIS, whichever is applicable.

The Consultant will generate a draft and final Technical Memorandum documenting the information collected during the Environmental Conditions Assessment.

200.2 Environmental Impact Assessment

The Consultant will identify potential adverse environmental impacts to various elements of the environment and identify appropriate mitigation measures that include all elements of the project. Elements of the environment for which analysis of adverse environmental impacts and associated mitigation may be required include, but are not limited to: Earth, Air, Plants and Animals, Noise, Environmental Health, Environmental Justice, Land Use, Traffic and Transportation, Public Services and Utilities (including safety considerations), Cultural Resources (if required) and Aesthetics. This information will be summarized in a draft and final Technical Memorandum.

200.3 Meetings with Permitting and Regulatory Agencies

One Consultant team member will attend up to ten (10) 2-hour meetings with the County and regulatory agencies if needed. The Consultant will provide meeting materials as required, including but not limited to, the agendas, presentation materials, and notes.

200.4 Cultural Resources Monitoring

The Consultant may be asked to monitor geotechnical exploration work (Subtask 300.2) performed during Phase 1 and will summarize in a report the monitoring effort and findings.

Task 200 Potential Deliverables

Copies of deliverables will include: one printed copy (unbound); one copy in the native file format on CD or thumb drive; and one copy in PDF (searchable with imbedded table of contents) format on CD or thumb drive. Cultural resources may be delivered in PDF format only due to legal sensitivities.

- Meeting Agendas, Materials, and Notes
- Environmental Assessment Technical Memorandum including:
 - Environmental Conditions Assessment
 - Environmental Impact Assessment
- Cultural Resources Monitoring Report (if required)

Task 300 Geotechnical

The purpose of this task is to perform geotechnical engineering and related services to determine the geotechnical conditions affecting the feasibility and construction of all elements of the Project. Historical data will be supplemented with borings, which will provide information that can be used during the Predesign and Final Design phases of the project.

300.1 Geotechnical Survey

Perform geotechnical data collection and review, including the research, acquisition and review of existing available geotechnical data for projects completed at or in the vicinity of possible new construction locations as identified in Attachment A. Conduct a field reconnaissance of surface geology to identify areas of unstable soils, rock outcroppings, corrosive soils, erosion, etc.

300.2 Soil Exploration Plan

Based on the review of existing geotechnical information under Subtask 300.1, prepare a draft and final Soil Exploration Plan for Phase 1, based on gaps in existing information. Plan the boring/pothole locations to characterize soil conditions at the project site to sufficiently identify the impact that these conditions could have on the constructability. Assume three (3) borings/potholes. Once authorized by the County, proceed with execution of the approved Soil Exploration Plan.

300.3 Boring/Pothole Permits

Obtain all permits required for geotechnical borings and submit under Task 400.

300.4 Geotechnical Report

The Consultant will provide a Geotechnical Report describing expected soil conditions and geotechnical design criteria and preliminary recommendations for each site.

Task 300 Potential Deliverables

Copies of deliverables will include: one printed copy (unbound); one copy in the native file format on CD or thumb drive; and one copy in PDF (searchable with imbedded table of contents) format on CD or thumb drive.

- Soil Exploration Plan (draft and final)
- Geotechnical Report

- A Copy of Boring/Pothole Permits

Task 400 Permitting Services

The Consultant will be asked to provide permitting services as needed. This task includes the identification of potential permitting both on private property and within the right-of-way and identifies impacts to the project scope, schedule, and budget as well as provides services in the development of a recommended strategic approach for all Federal, State, and Local requirements to permitting that best suits each element of this project. The Consultant will also evaluate the permitting requirements for FAA/TOWAIR, FCC and Conditional Use permits that may be required for this Project.

400.1 Meetings

Up to three (3) Consultant team members will attend up to twenty (20) 2-hour meetings with the County, regulatory agencies, and/or other stakeholders, if needed. Prepare meeting notes and action items.

400.2 Permitting Technical Memorandum

Prepare a Technical Memorandum identifying potential permitting processes for each site. This information will be used to help identify the timeline to obtain permits, requirements and identify if a site cannot be utilized due to permitting limitations. The Technical Memorandum at a minimum includes:

- A WBS style flow chart identifying all potential land use and construction permits as well as council approvals. The list must also include permit linkages (predecessors/successors/concurrency), critical paths, and major milestones.
- A permit matrix outlining potential permits, application requirements and timelines for each site. Included should be a brief summary of each permit's potential overall risk to schedule and budget for each of the proposed sites.
- Identify potential constraints (e.g., space, critical areas) at each site that would increase permitting complexity.
- Completed applications, forms and documents that will be submitted to each permitting jurisdiction (case-by-case basis).
- A plan to ensure regulatory compliance.

400.3 Geotechnical Boring Permits

Submit copies of permits obtained per Task 400 to support geotechnical exploration/borings to the County.

Task 400 Potential Deliverables

Copies of deliverables will include: one bound and one unbound hard copy; one copy in MS Word format on CD or thumb drive; one copy in PDF (searchable with imbedded table of contents) format on CD or thumb drive.

- Meeting Notes and Action Items
- Permitting Technical Memorandum
 - WBS of potential permits and approvals
 - Permit Matrix
 - Descriptive summary of overall potential permitting risks and potential constraints that may impact the Project schedule and budget
 - Completed forms/documents that will be submitted to each permitting jurisdiction
 - A plan to ensure regulatory compliance
- PowerPoint Presentations, if needed
- Geotechnical Boring Permits

Task 500 Survey and Utility Location Services

The Consultant may be asked to conduct site surveys to obtain necessary information for right-of-way agreements, permits, and design plans that will be developed in later phases.

500.1 Surveys

Conduct site surveys to obtain required information for tasks including, but not limited to, right-of-way agreements, permits, and design plans that will be developed in later phases. Identify existing utilities by referencing existing records, one-call system, and/or potholing to evaluate potential conflicts. Additionally, conduct surveys of geotechnical soil boring locations as-needed. Electronic copies of surveys produced should comply with County or jurisdictional standards.

500.2 Survey Meetings

Up to two Consultant team members will attend up to ten (10) 2-hour meetings with the County to discuss survey or existing utility issues. The Consultant will provide meeting materials as required including presentation materials, agendas, and notes.

Task 500 Potential Deliverables

Copies of deliverables will include: one printed copy (unbound); one copy in the native file format on CD; and one copy in PDF (searchable with imbedded table of contents) format on CD.

- Meeting Materials, Agendas, and Notes
- Survey Documentation
- Electronic copies of surveys produced should comply with County or jurisdictional standards

Task 600 Estimated Construction Cost and Schedule

The Consultant will provide services to prepare construction cost and schedule estimates for each site.

600.1 Cost Estimates

The Consultant will prepare construction cost estimates for each site. The use of qualified, professional cost analysts will be required for preparing all formal estimates and will need to comply with AACE standards. The Consultant will document all assumptions used in cost estimates and reasons for cost changes between each level of design.

600.2 Schedule Estimates

The Consultant will prepare project schedule estimates in Microsoft Project as required. The schedules will include milestone start and finish dates, including required regulatory milestones, design, permitting, right-of-way acquisition, bidding, and construction contract award and execution. The schedule will identify the anticipated duration in months and any construction windows identified during design. The basis for this work will be the initial schedule provided by the County, which will be further refined and maintained monthly by the Consultant in Microsoft Project 2010 as noted in Subtask 100.14.

Task 600 Potential Deliverables

Copies of deliverables will include: one printed copy (unbound); one copy in the native file format (Microsoft Excel 2010 and Project 2010) on CD or thumb drive; and one copy in PDF (searchable with imbedded table of contents) format on CD or thumb drive.

- Cost Estimates
- Project Schedule Estimates

Task 700 Existing Site Analysis

If an existing site is proposed for use, the Consultant shall conduct site visits as needed to confirm field conditions. By conducting site visits and reviewing existing reference material for each of the existing sites, the Consultant shall determine if any constraints exist that would cause the site to be considered not viable.

700.1 Existing Site Analysis Report

If an existing site is proposed for use, the Consultant shall have the sole responsibility for determining the constraints at each site and the recommended design approach (use site as-is, modify site, develop new site, etc.), which shall be included in a draft and final Existing Site Analysis Report. All site conditions listed in reference material and attachments shall be field verified and will be the responsibility of the Consultant to confirm. Access to select sites may not be available during certain seasons due to weather constraints. The Consultant shall include two (2) visits to each location. The Consultant may be responsible for acquiring legal access to each site as specified under Phase 2 of this contract, unless access is coordinated by

King County. For facilities requiring new antenna support structures, the Consultant shall note the type of structure to be constructed (rooftop frame, small monopole, large monopole, three/four leg self-supporting tower or guyed tower). If structural analysis work is required as part of this report, the report must be reviewed, signed and sealed by a licensed Professional Structural Engineer in the State of Washington. Any recommended modifications at existing sites must be reviewed and approved by both King County and the site owner. If the site owner does not agree to modifications or the site is found to not support the recommended modifications, the site will be found not viable. When conducting an analysis at each existing site, the following design considerations shall be made at a minimum:

- The Consultant shall include the type of structure that will be constructed (rooftop frame, small monopole, large monopole, three/four leg self-supporting tower or guyed tower)
- The Consultant must refer to the reference material provided by the County and must consider which elements at the site will be designed and constructed by the PSERN system vendor so that there will be a clear understanding of how the elements will be integrated together at each site
- All designs shall be required to meet TIA/EIA 222G requirement for critical public safety applications, for the specific location specified
- All designs shall adhere to the requirements established in the IBC2009 or latest adopted version by the State of Washington
- All designs and installations shall be performed in accordance with, or with the equivalent of, IEEE Std. 1100-2005 IEEE Recommended Practice for Powering and Grounding Sensitive Electronic Equipment (IEEE 'Emerald Book'), and applicable system vendor site standards
- All facilities shall have the ability to double the number of non-microwave base station antennas in order to accommodate future system growth
- If a new tower is proposed, it shall be designed to twist and sway rigidity standards that allow for 6 or 11 GHz microwave operation
- Tower lighting and/or painting, as may be required by the FAA, shall also be described. Tower lighting systems shall include the ability to deliver a variety of alarm conditions to the radio or microwave NMS for ease of remote alerting and monitoring.
- If required, a prefabricated shelter or built on-site shelter may be included in the analysis and shall consider the specifications listed in *Exhibit A Attachment 1: Shelter – Prefabricated*.
 - The design specifications listed in *Exhibit A Attachment 1: Shelter – Prefabricated* are for the reference and shall be verified by the Consultant's licensed Structural Engineer to ensure that all buildings meet Federal, State and Local Codes
- If required, the following elements shall also be considered in the analysis:

- Tower, building, generator and fuel foundations
- Retaining walls
- Site improvements (clearing, surfacing, culverts, or other improvements that may be required)
- Based on the proposed site modifications, the Consultant shall confirm if any limitations exist with the power supply and back-up power at each site and the Consultant shall provide recommended modifications or upgrades that may be needed
- If required, generators included in the analysis shall be ONAN or equivalent and shall be sized to support the site power requirements, including HVAC and lighting load, with an additional 15% capacity for growth
 - Assumed generator sizing shall be in the 30kW-50kW range, which shall be confirmed by the Consultant
 - Fuel storage systems with containment shall be included if a generator is required at a site
 - Automatic transfer switches (ATS) shall be included and sized suitably to support the identified loads, which will later tie into the DC Power system developed by the PSERN vendor
 - Any generator or ATS added to a site will later tie into the alarm monitoring systems that will transmit to the radio system NMS or microwave NMS, which will be developed by the PSERN vendor
 - Generator alarms may include overcrank, start/no-start conditions, fuel system monitoring, as well as other alarms
 - ATS alarms may include transfer status, as well as other alarms
- If an existing site is found not viable due to limitations related to power, loading, space constraints or site owner restrictions, the Consultant shall provide a summary describing the conclusion of the analysis
- If an existing tower is found not viable due to power, loading or space constraints and there is a possible alternative approach to utilize the existing site, the Consultant shall provide a description describing the alternative approach
- Standardization should be considered as a key component for any equipment or infrastructure proposed
- Cost Estimates to complete the construction at each site should be included as part of Subtask 700.1.
- The preparation of exhibits and/or layout drawings that clearly depict the modifications to the existing sites, which may be utilized for environmental, permitting and/or other submittals required throughout Phase 1.

Task 700 Potential Deliverables

Copies of deliverables will include: one printed copy (unbound); one copy in the native file format (Microsoft Excel 2010 and Project 2010) on CD or thumb drive; and one copy in PDF (searchable with imbedded table of contents) format on CD or thumb drive.

- (Draft and Final) Existing Site Analysis Report
 - Summarized analysis for each site discussing the recommended design modifications and any design constraints that would impact the viability of the site
 - Alternative approaches
 - Cost estimates
 - Exhibits and/or layout drawings

Task 800 New Government Sites

If a new government site is proposed for use, the Consultant shall conduct a site visit to verify existing field conditions. The consultant should also determine if any constraints exist that would cause the site to be considered not viable.

800.1 New Government Site Analysis Report

If a new government site is proposed for use, the Consultant shall have the sole responsibility for determining the constraints at each site and the recommended design approach, which shall be included in a draft and final New Government Site Analysis Report. All site conditions listed in reference material and attachments shall be field verified and will be the responsibility of the Consultant to confirm. Access to select sites may not be available during certain seasons due to weather constraints. The Consultant shall include two (2) visits to each location. The Consultant may be responsible for acquiring legal access to each site as specified under Phase 2 of this contract, unless access is coordinated by King County. For facilities requiring new antenna support structures, the Consultant shall note the type of structure to be constructed (rooftop frame, small monopole, large monopole, three/four leg self-supporting tower or guyed tower). If structural analysis work is required as part of this report, the report must be reviewed, signed and sealed by a licensed Professional Structural Engineer in the State of Washington. Any recommended modifications at sites must be reviewed and approved by both King County and the site owner. If the site owner does not agree to modifications or the site is found to not support the recommended modifications, the site will be found not viable. When conducting the new government site analysis, the following design considerations shall be made at a minimum:

- The Consultant shall include the type of structure that will be constructed (rooftop frame, small monopole, large monopole, three/four leg self-supporting tower or guyed tower)
- The Consultant must refer to the reference material provided by the County and must consider which elements at the site will be designed and constructed by the PSERN system vendor so that there will be a clear understanding of how the elements will be integrated together at each site

- All designs shall be required to meet TIA/EIA 222G requirement for critical public safety applications, for the specific location specified
- All designs shall adhere to the requirements established in the IBC2009 or latest adopted version by the State of Washington
- All designs and installations shall be performed in accordance with, or with the equivalent of, IEEE Std. 1100-2005 IEEE Recommended Practice for Powering and Grounding Sensitive Electronic Equipment (IEEE 'Emerald Book'), Motorola Solutions (formerly Motorola) R56 Standards and Guidelines for Communication Sites, and Harris (formerly M/A-COM) AE/LZT123 4618/1 R34 Site Grounding and Lighting Protection
- All facilities shall have the ability to double the number of non-microwave base station antennas in order to accommodate future system growth
- If a new tower is proposed, it shall be designed to twist and sway rigidity standards that allow for 6 or 11 GHz microwave operation
- Tower lighting and/or painting, as may be required by the FAA, shall also be described. Tower lighting systems shall include the ability to deliver a variety of alarm conditions to the radio or microwave NMS for ease of remote alerting and monitoring.
- Where required, a prefabricated shelter or built on-site shelter shall be included in the analysis and shall consider the specifications listed in *Exhibit A Attachment 1: Shelter – Prefabricated*.
 - The design specifications listed in *Exhibit A Attachment 1: Shelter – Prefabricated* are for reference and shall be verified by the Consultant's licensed Structural Engineer to ensure that all buildings meet Federal, State and Local Codes
- The following elements shall also be considered in the analysis:
 - Tower, building, generator and fuel foundations
 - Retaining walls
 - Site improvements (clearing, surfacing, culverts, or other improvements that may be required)
 - Access road
- Generators included in the analysis shall be ONAN or equivalent and shall be sized to support the site power requirements, including HVAC and lighting load, with an additional 15% capacity for growth
 - Assumed generator sizing shall be in the 30kW-50kW range, which shall be confirmed by the Consultant
 - Fuel storage systems with containment shall be included if a generator is required at a site

- Automatic transfer switches (ATS) shall be included and sized suitably to support the identified loads, which will later tie into the DC Power system developed by the PSERN vendor
- Any generator or ATS added to a site will later tie into the alarm monitoring systems that will transmit to the radio system NMS or microwave NMS, which will be developed by the PSERN vendor
 - Generator alarms may include overcrank, start/no-start conditions, fuel system monitoring, as well as other alarms
 - ATS alarms may include transfer status, as well as other alarms
- If a new government site is found not viable due to limitations related to design or space constraints, the Consultant shall provide a summary describing the conclusion of the analysis
- If a new government tower is found not viable and there is a possible alternative approach to utilizing the existing site, the Consultant shall provide a description describing the alternative approach
- Standardization should be considered as a key component for any equipment or infrastructure proposed
- Cost Estimates to complete the construction at each site should be included as part of Subtask 700.1.
- The preparation of exhibits and/or layout drawings that clearly depict the modifications to the sites, which may be utilized for environmental, permitting and/or other submittals required throughout Phase 1.

Task 800 Potential Deliverables

Copies of deliverables will include: one printed copy (unbound); one copy in the native file format (Microsoft Excel 2010 and Project 2010) on CD or thumb drive; and one copy in PDF (searchable with imbedded table of contents) format on CD or thumb drive.

- (Draft and Final) New Government Site Analysis Report
 - Summarized analysis for each site discussing the recommended design approach and any constraints that would impact the viability of the site
 - Alternative approaches
 - Cost estimates
 - Exhibits and/or layout drawings

Task 900 Energy Efficiency

The Consultant may provide technical services required to comply with King County energy conservation plans and legislation. The King County Energy Plan (2010) and the King County

Strategic Climate Action Plan (2012) outline energy conservation targets, which include a reduction in normalized net energy use in County buildings and facilities, as compared to a 2007 baseline, by at least 15% by 2015, and 20% by 2020. In order to achieve these targets, King County has passed legislation that enables and encourages capital improvement project teams to implement sustainable design/green building practices (Green Building and Sustainable Development Ordinance), as well energy efficient design practices (Ordinance 16927 for Energy Efficiency in Capital Improvement Projects).

900.1 Energy Analysis Report

The Consultant may work closely with the Project Representative and County staff to conduct and complete an Energy Analysis Report. At this preliminary level, the Energy Analysis Report is intended to, first, identify planning-level energy efficiency/conservation measures and renewable energy opportunities that generally apply to the project, and second, determine energy costs and savings associated with each alternative, for use in the project life-cycle cost analyses. Through these tasks, the Alternatives Analysis-level Energy Analysis Report should help influence and inform final alternative recommendation. It will be followed by a Predesign-level Energy Analysis Report, defined in Phase 3A below. As required and defined by Ordinance 16927, this Energy Analysis Report shall include at minimum:

- 1) Planning-level options and ideas to achieve maximum energy efficiency/energy use reduction/renewable energy production in the future operating facility.
- 2) Planning-level options and ideas to achieve greenhouse gas emissions reductions in both construction and the future operating facility.
- 3) Planning-level identification of possible energy efficiency and/or renewable energy incentive funding.
- 4) Estimated total annual energy costs and savings for *each* of the 2 – 4 best apparent alternatives, a summary of the project life-cycle cost analyses performed (that take each alternative's estimated total annual energy costs and savings into account), and a description of which alternative was selected, and why.

Task 900 Potential Deliverables

Copies of deliverables will include one printed copy, one copy in the native file format, and one copy in the PDF (searchable with imbedded table of contents) format:

- Alternatives Analysis-level Energy Analysis Report

Task 1000 Sustainable Building Practices

In keeping with the County's Sustainability Initiatives the Consultant will investigate and determine which items from the green building principles, practices, and materials (Leadership in Energy and Environmental Design principles - LEED) may be incorporated into the Predesign Phase of this contract as deemed feasible by the County. Sustainable Green Building Practices will not have a total life cycle cost that exceeds 2% as compared to the total life cycle cost of a non-sustainable Green Building project. The requirements in the County's Green Building and Sustainable Development Ordinance will be complied with.

1000.1 Eco-Charette

Prepare for and conduct a 4-hour Eco-Charette with Consultant staff, the County's staff and select stakeholders to identify which items from the King County Sustainable Infrastructure Scorecard could be incorporated into the upcoming Predesign Phase.

1000.2 Supporting Documentation

Provide the documents necessary to support sustainable building practice requirements in the design and construction of the project, including total life cycle cost estimates for each recommended practice.

Task 1000 Potential Deliverables

Copies of deliverables will include: one printed copy (unbound); one copy in the native file format on CD; and one copy in PDF (searchable with imbedded table of contents) format on CD.

- King County Sustainable Infrastructure Scorecard
- Technical memoranda
- Total Life Cycle Cost Estimates

Task 1100 Architectural/Artist Design Review Services

This task may include services for the design review processes and presentations related to public presentations as well as the services required as a part of the County's 1% for Public Art Program that may be required as a part of this project and is administrated with the assistance of 4culture. The 1% for art process will begin at this phase of the project to determine the best approach to the incorporation of public input and allow artist input to affect the design of the facilities as appropriate.

Task 1100 Potential Deliverables

Copies of deliverables will include: one printed copy (unbound); one copy in the native file format on CD; and one copy in PDF (searchable with imbedded table of contents) format on CD.

Potential Deliverables will include at a minimum:

- Presentation plans and renderings
- Perspective drawings
- Physical Working and Massing Models to affectively study and display design alternatives

Task 1200 Overall Site Viability Verification

The Consultant shall review all of the existing information, analysis and conclusions listed throughout Tasks 200 – 1100 and provide an overall approach plan that accounts for each element, constraint and timeline.

1200.1 Overall Site Viability Verification Technical Memorandum

The Consultant shall compile all information, analysis and conclusions from Tasks 200-1100 and shall prepare an Overall Site Viability Verification Technical Memorandum that summarizes the findings and provides a final recommended approach plan, with up to three (3) proposed alternatives, to complete the design, supporting activities and construction. The plan shall include the completion of all Project elements, such as, acquiring permits, finalizing the negotiations of any agreements/leases, environmental assessments or mitigation activities and shall include the overall Project cost estimates and schedule in accordance with Task 600. This information will be incorporated in the Predesign Report in Phase 3A. As a reminder, the proposed plan should coincide with the County's aggressive schedule to advertise for construction by April 2015 and initiate construction field activities by June 2015, at the latest. All sites must be completed within twenty-four (24) months after the issuance of the system vendor's Notice to Proceed, which is projected to occur in mid-2015 and will be dependent on the County Council and voter's approval of a funding measure. The draft and final Overall Site Viability Verification Technical Memorandum shall include the following at a minimum:

- Identify the viability of all sites
- Recommend an approach plan, with proposed alternatives, to complete the design, which considers all constraints identified in Tasks 200-1100, supporting activities and construction
 - The plan may be divided into the following sections:
 - Modifications to the Existing Sites
 - New Government Sites
 - All plans shall coincide with the County's goal of advertising for construction by May 2015, which will require the completion of the following items at a minimum:
 - SEPA
 - Acquisition of all agreements/leases, or any other approvals to construct at a site
 - Permits
 - Design (Plans and Specifications)
 - King County Sustainable Infrastructure Scorecard
 - All plans shall consider that the construction for all sites must be completed within twenty-four (24) months from the date of the issuance of the system vendor's Notice to Proceed
 - The plan shall consider all required Policies and Procedures for the advertisement and implementation of construction activities (County and local jurisdictions)
 - The County may choose to utilize or modify one of the Consultant's alternative approaches or propose a new approach to complete remaining phases

Task 1200 Potential Deliverables

Copies of deliverables will include: one printed copy (unbound); one copy in the native file format (Microsoft Excel 2010 and Project 2010) on CD or thumb drive; and one copy in PDF (searchable with imbedded table of contents) format on CD or thumb drive.

- Overall Site Viability Verification Technical Memorandum

The following Phases are not part of the initial contract award. They are included here to suggest the work requirements after Phase 1. The County reserves the right to amend this contract after Phase 1 is complete, unless agreed upon by the County Project Representative. This work can only be added by amendment to this contract. The County also reserves the right to procure the services of another Consultant to perform any of the work that may be added by contract amendment.

Tasks for Phase 2 – Real Estate Services

Task 2000 Real Estate Services

The Consultant may be asked to provide real estate services as needed to identify property use and access requirements/agreements, overlying easements, lease costs and any potential issues that would be an impact to the project scope, schedule, and budget or prevent the County from utilizing the site. The Consultant will also assist in the development of a recommended strategic approach to property use and access agreements that best suits each element of this project.

2000.1 – Project Management

This task includes all work related to the management, administration, and coordination of Consultant activities through Phase 2.

2000.2 Project Management Plan

The Consultant will update the Project Management Plan (PMP) outlined in Task 100.1 to reflect work in Phase 2 of the Contract.

2000.3 Work Breakdown Structure (WBS)

The Consultant will update the WBS as outlines in Subtask 100.2 to reflect work in Phase 2 of the Contract.

2000.4 Contract Schedule Estimate

The Consultant will update the Contract Schedule Estimate as outlined in Subtask 100.3 to reflect the work in Phase 2 of the Contract.

2000.5 Initial Responsibility Assignment Matrix (RAM)

The Consultant will update the Contract Schedule Estimate as outlined in Subtask 100.4 to reflect the work in Phase 2 of the Contract.

2000.6 Communication Plan

The Consultant will update the Communications Plan as outlined in Subtask 100.5 to reflect the work in Phase 2 of the Contract.

2000.7 Quality Management

The Consultant will update the Quality Management Plan and implement as outlined in Subtask 100.6 to reflect the work in Phase 2 of the Contract.

2000.8 Change Control Plan

The Consultant will update the Change Control Plan as needed, as outlined in Subtask 100.7 to reflect the work in Phase 2 of the Contract.

2000.9 Kickoff Meeting

The Consultant Project Manager and each subject area lead will participate in a County facilitated three-hour kickoff meeting with the project team. The meeting will be held at the Chinook Building located at 401 5th Avenue in Seattle, Washington. The meeting topics will include, but are not limited to, reviewing the team members and their responsibilities, project objectives, Phase 2 deliverables, communications plan, and schedule. The Consultant will prepare the meeting agenda with assistance from the Project Representative and record meeting notes. The meeting notes will be submitted to the Project Representative within three working days following the meeting.

2000.10 Meetings

One Consultant team member will attend up to ten (10) 2-hour meetings with King County, property owners and/or other stakeholders, if needed. Prepare meeting notes and action items.

2000.11 Rights-of-Entry

The Consultant may be asked to negotiate and obtain right-of-entries or access rights to gain access to private and government owned property to conduct geotechnical borings, surveys, site investigations, etc. The forms/agreements and requirements will be included in the Property Acquisition Plan, or upon request by the County. Assume up to fifty (50) right-of-entries will be required.

2000.12 Property/Easement Acquisition

The Consultant may be asked to provide real estate services including Title research, interpretation of zoning codes, appraisals and evaluations, property/easement acquisitions, property leases and other right-of-way services. The documentation/agreements and requirements will be included in the Property Acquisition Plan.

2000.13 Property Acquisition Plan

Prepare a high level Property Acquisition Plan identifying the property owner, access requirements/agreements, overlying easements (including all temporary and permanent), lease costs and any potential issues that would prevent the County from utilizing the site. A high level property matrix to monitor property acquisition activities should be updated and provided to the Project Representative on a monthly basis with monthly progress reports, or as requested. The Plan at a minimum will include:

- High Level Matrix to Monitor Property Acquisition Activities, which may include the following:
 - Property/Easement Owner Contact Information for each Location
 - Property/Easement Acquisition Criteria Documentation
 - Zoning Requirements
 - Potential Costs and Schedule Impacts
- Right-of-Entry Forms/Agreements
- Lease Agreements

Task 2000 Potential Deliverables

Copies of deliverables will include: one bound and one unbound hard copy; one copy in MS Word format on CD or thumb drive; one copy in PDF (searchable with imbedded table of contents) format on CD or thumb drive.

- Meeting Notes and Action Items
- Property Acquisition Plan
 - High Level Matrix to Monitor Property Acquisition Activities
 - Property/Easement Owner Contact Information for each Location
 - Property/Easement Acquisition Criteria Documentation
 - Zoning Requirements
 - Potential Costs and Schedule Impacts
 - Right-of-Entry Forms/Agreements
 - Lease Agreements

Tasks for Phase 3A – Preliminary Design Services

The purpose of Predesign is to develop the selected alternative from the Phase 1 *Overall Site Viability Verification Technical Memorandum* and provide sufficient information for the project team to establish a project baseline cost estimate and schedule. The Predesign Report and associated deliverables will be issued to the project team as a draft for review and comments that will be incorporated into the final Predesign Report. This will ensure that baselines will be set only after the project team and all project personnel are satisfied that the level of available information is sufficient to establish project baselines. The baseline design will be carried into final design where construction bid documents will be produced and permitting, community outreach, etc. will be conducted.

For all document submittals, the County will review the draft submittals and will transmit review comments via email to the Consultant using a tracking form. The Consultant will use the form to provide a written response to the County for each comment within 5 days of receipt of the comments. Each comment response should describe how the comment will be incorporated into

the final document. Each comment response will be reviewed with the County's Project Representative to reach consensus between the Project Representative and the Consultant on resolution.

Task 3000 – Project Management

This task includes all work related to the management, administration, and coordination of Consultant activities through Phase 3A.

3000.1 Project Management Plan

The Consultant will update the Project Management Plan (PMP) outlined in Task 100.1 to reflect work in Phase 3A of the Contract.

3000.2 Work Breakdown Structure (WBS)

The Consultant will update the WBS as outlines in Subtask 100.2 to reflect work in Phase 3A of the Contract.

3000.3 Contract Schedule Estimate

The Consultant will update the Contract Schedule Estimate as outlined in Subtask 100.3 to reflect the work in Phase 3A of the Contract.

3000.4 Initial Responsibility Assignment Matrix (RAM)

The Consultant will update the Contract Schedule Estimate as outlined in Subtask 100.4 to reflect the work in Phase 3A of the Contract.

3000.5 Communication Plan

The Consultant will update the Communications Plan as outlined in Subtask 100.5 to reflect the work in Phase 3A of the Contract.

3000.6 Quality Management

The Consultant will update the Quality Management Plan and implement as outlined in Subtask 100.6 to reflect the work in Phase 3A of the Contract.

3000.7 Change Control Plan

The Consultant will update the Change Control Plan as needed, as outlined in Subtask 100.7 to reflect the work in Phase 3A of the Contract.

3000.8 Kickoff Meeting

The Consultant Project Manager and each subject area lead will facilitate a three-hour kickoff meeting with the County project team. The meeting will be held at the Chinook Building located at 401 5th Avenue in Seattle, Washington. The meeting topics will include, but are not limited to, reviewing the team members and their responsibilities, project objectives, Phase 3A deliverables, communications plan, and schedule. The Consultant will prepare the meeting agenda with assistance from the Project Representative and record meeting notes. The meeting notes will be submitted to the Project Representative within three working days following the meeting.

3000.9 Team Meetings and Workshops

The Consultant will prepare for and participate in bi-weekly team meetings (1.5 hours in length), which may include, but is not limited to, County staff, stakeholders' that own the existing ERS and representatives from permitting jurisdictions, etc. A typical meeting agenda will include:

- Review of open action items
- Schedule review and update
- Progress reports
- Critical issues
- Discussion of technical issues
- Remediation plan (if required)
- Risk Register
- New action items

At a minimum, the meetings will be attended by the County's Project Representative and/or Project Manager, selected County project team members, the Consultant Project Manager, selected subject area leads and key members of the Consultant team as needed for discussion of task items. The Consultant will submit a draft agenda a minimum of three days in advance of the meetings to the County. The Consultant will keep detailed meeting notes for all team meetings, distribute draft notes to the team within three working days of the meeting, and incorporate changes to the notes as needed. Final notes will be delivered within three working days of receiving changes from the County.

The Consultant will also prepare for and participate in workshops needed to review information collected for the site viability verifications, which will be delivered to County staff in Technical Memorandums or Summary Plans. For the purpose of making a proposal, the proposers should assume that two (2) workshops will be scheduled for four to six (4-6) hours and will include up to six Consultant staff. The workshops will be located at the Chinook Building (401 5th Avenue, Seattle, WA 98104), and may include the following topics:

- Review of the Predesign (approximately 30% design) Documents

3000.10 Technical Group Meetings

The Consultant Project Manager and up to two (2) Consultant subject area leads to attend two-hour monthly Technical Group staff briefings. These meetings will serve to provide a project status update to non-team Technical Group staff members and to obtain technical input as-needed.

3000.11 Telephone Updates

The Consultant Project Manager will call the Project Representative once weekly for one hour, at a time to be determined, to discuss and review the Project. The Consultant may also include the subject area leads in engineering, architectural design, environmental review, real estate acquisition/relocation and permitting as a conference call. Discussion items may include, but are

not limited to, project status, information presented in the progress reports, direction for upcoming team meetings, review issues, decisions made, open action items, upcoming project milestones, and recovery plans. Update the Decision/Issues/Changes and Action Item Logs as necessary.

3000.12 Decisions/Issues/Changes Log

The Consultant will develop and maintain a log as outlined in Subtask 100.12.

3000.13 Action Items Log

The Consultant will develop (or utilize a sample provided by the County) and maintain an Action Items Log as outlined in Subtask 100.13.

3000.14 Monthly Progress Reports and Monthly Progress Invoice

The Consultant will submit a monthly progress report to the Project Representative on a date to be determined by the County. Monthly progress reports will include:

- A brief narrative of work completed for the prior month for each Consultant WBS task/subtask
- A brief narrative of work expected to be completed during the next month for each Consultant WBS task/subtask
- Identification of any WBS tasks or subtasks that are delayed or determined to be at-risk and a summary of a recovery plan including action items, staff required, Gantt chart (schedule) modifications, dependencies, and project impacts
- A performance report utilizing a mutually acceptable Earned Value Technique (EVT) to chart monthly earned value. Any specific technique used must be tied to the monthly schedule update for the contract
- Decisions/Issues/Changes Log
- Action Items Log

3000.15 Health and Safety Plans

The Consultant may prepare a Health and Safety Plan for the Project, site specific Health and Safety Plans for planned field work, including geotechnical investigations and surveying.

3000.16 Risk Analysis

The Consultant may be asked to prepare a risk register for the selected project alternative and may update the register as risks are identified. The Consultant may provide the project team with status updates at scheduled *Team Meetings* as needed.

Task 3000 Potential Deliverables

Copies of deliverables will include: one printed copy (unbound); one copy in the native file format on CD or thumb drive; and one copy in PDF (searchable with imbedded table of contents) format on CD or thumb drive.

- Project Management Plan
- Work Breakdown Structure (WBS)
- Project Schedule

- Responsibility Assignment Matrix (RAM)
- Communication Plan
- Quality Management Plan
- Change Control Plan
- Kickoff Meeting Notes
- Team Meetings and Workshops
- Workshop Summaries
- Meeting Agendas and Notes
- Weekly Telephone Updates
- Decisions/Issues/Changes Log
- Action Items Log
- Monthly Progress Reports
- Health and Safety Plan
- Risk Register

Task 3100 – Predesign

The purpose of Predesign is to develop the selected alternative approach and include sufficient information for the project team to establish the project baselines, scope, schedule, and costs, which the project will be evaluated against when the project is complete. Predesign, typically 30-40% design, provides the framework for completing final design, obtaining permits, outlines the project specifications/design criteria required, develops layout drawings and demonstrates the approach for the construction of the project. The Consultant will evaluate and document the County’s selected alternative from the “*Overall Site Viability Verification Technical Memorandum*”, or the County may choose to utilize a new suggested approach. The Predesign Report and associated deliverables will be issued to the project team as a draft for review and comments will be incorporated into the final Predesign Report. This will ensure that baselines will be set only after the project team and all project personnel are satisfied that the level of available information is sufficient to establish project baselines. The Consultant must consider the following specifications, at a minimum, in the Predesign of the facilities. The Consultant must also complete the King County Sustainable Infrastructure Scorecard and include any analysis or supporting documentation.

Predesign will include, but is not limited to, the following Subtasks:

3100.1 Existing Tower Analysis

If an existing tower site is proposed for use, the Consultant shall conduct a tower analysis to make a determination if the existing tower will support the loads imposed by the new system. The Consultant must list any modifications to the tower that may be required to support the additional loads, which shall be addressed in the Predesign Report. All structural analysis

completed must be reviewed, signed and sealed by a licensed Professional Structural Engineer in the State of Washington.

3100.2 Energy Analysis Report

The Consultant may work closely with the Project Representative and County staff to conduct and complete an in-depth and comprehensive Energy Analysis Report. This Predesign-level Energy Analysis Report is intended to build off of energy efficiency, energy use reduction, and renewable energy options and ideas identified in the Alternatives Analysis-level Energy Analysis Report from Phase 1. It is intended to be very detailed, and to influence and inform final design. As required and defined by Ordinance 16927, this Energy Analysis shall include at minimum:

- 1) Detailed options and recommendations to achieve maximum energy efficiency/renewable energy production/a reduction in facility energy usage of at least 10% below levels that would be achieved under applicable building code requirements.
 - a. For each energy efficiency/conservation measure, provide a detailed energy savings estimate.
- 2) Detailed options and recommendations to achieve greenhouse gas emissions reductions in both construction and the future operating facility.
- 3) Identification of all available financial incentives from utility companies or other parties for achieving a reduction in energy usage/greenhouse gas emissions, and/or renewable energy production.
- 4) A financial analysis of the incremental project cost for achieving the reductions in energy usage/greenhouse gas emissions, and/or renewable energy production, based on a life-cycle cost analysis that calculates net present value of the incremental cost, net of any financial incentives from utilities or other outside sources, and the operational and utility savings over the life of the applicable systems.

The recommended alternative may be incorporated into the Predesign Report.

3100.3 Architectural/Artist Design Review Services

This task may include services for the design review processes and presentations related to public presentations as well as the services required as a part of the County's 1% for Public Art Program that may be required as a part of this project and is administrated with the assistance of 4culture. The selected recommendations may be incorporated in the Predesign Report.

Task 3100.4 Predesign Report

The Consultant will coordinate with the County to review the "Overall Site Viability Verification Technical Memorandum" for Phase 3A to identify which information needs for the Predesign will be developed, or the County shall decide if a new approach shall be used to develop the Predesign. The County may decide to add, modify or omit some of the information and the

Consultant will document what information has been changed and why. The Consultant will also coordinate with the County to update the assumptions, constraints, requirements, and preferences developed during Phase 1. Based on the information and documentation developed under Phase 1 and the recommendations from the County, the Consultant shall develop the design documents for the draft and final Predesign Report. The Consultant must also complete the King County Sustainable Infrastructure Scorecard, Points Analysis, Financial Analysis (including total life cycle cost analysis) and any documentation to support the sustainability process.

Task 3100 Potential Deliverables

Copies of deliverables will include: one printed copy (unbound); one copy in the native file format on CD or thumb drive; and one copy in PDF (searchable with imbedded table of contents) format on CD or thumb drive.

- Existing Tower Analysis (signed and sealed by a licensed Professional Engineer)
- Predesign-level Energy Analysis Report
- Architectural/Artist Design - Presentation plans and renderings, Perspective drawings and Physical Working and Massing Models to affectively study and display design alternatives
- (Draft and Final) Predesign Report
- King County Sustainable Infrastructure Scorecard, Analysis Reports and Supporting Documentation

Task 3200 Geotechnical

The purpose of this task is to perform geotechnical engineering and related service, if needed, to determine the geotechnical conditions affecting the feasibility and construction of the Project. Historical data will be supplemented with borings, which will provide information that can be used during the Predesign phase of the project.

3200.1 Boring Plan

Based on the review of existing geotechnical information under Task 300, prepare an update to the Boring Plan, if needed, for use during Predesign, based on gaps in existing information. Plan the boring locations to characterize soils conditions at the project site sufficiently to identify the impact that these conditions could have on the constructability of the recommended alternative.

Assume two additional borings to provide data for gaps in the existing information.

3200.2 Boring Permits

Obtain all permits required for geotechnical borings and submit under Subtask 300.4.

3200.3 Settlement and Vibration

Identify structures and improvements in the vicinity of the project sites that could be at risk to settlement and vibration damage by the construction of this project.

3200.4 Updated Geotechnical Report

The Consultant will provide updates to the Geotechnical Report under Subtask 300.4, if needed, describing expected soils conditions and geotechnical design criteria and recommendations for final design of the recommended design approach. The documentation of lab results of soils samples from borings and other field tests within the Geotechnical Report will be provided to contractors.

Task 3200 Potential Deliverables

Copies of deliverables will include: one printed copy (unbound); one copy in the native file format on CD or thumb drive; and one copy in PDF (searchable with imbedded table of contents) format on CD or thumb drive.

- Updated Boring Plan
- Updated Geotechnical Report
- A copy of Boring Permits

Task 3300 Environmental Compliance Services

The Consultant will provide technical services required for environmental aspects of the Project. The location of the sites for this project will be within multiple jurisdictions, some of which are outside of King County. The County, or local jurisdiction, may be the designated State Environmental Policy Act (SEPA) Lead Agency. As such, the County, or local jurisdiction, will determine and conduct the appropriate environmental review, issue project SEPA Threshold Determinations, if applicable, and release required notices and documents. If it is determined that an Environmental Impact Statement (EIS) is required, the Consultant will be the lead for preparing the documentation for the EIS process, with input from the County. The Consultant will be required to provide services as necessary for the environmental review process and related public involvement processes.

3300.1 Meetings

Assume up to five (5) 2-hour meetings with two (2) Consultant team members. The Consultant will provide meeting materials as required, which shall include, but is not limited to, presentation materials, agendas, and notes.

3300.2 Endangered Species Act (ESA) Evaluation/Documentation

The Consultant may be asked to prepare a draft and final Biological Assessment and Essential Fish Habitat Assessment for compliance with requirements of Section 7 of the ESA and the Magnuson-Stevens Fishery Conservation and Management Act, as amended. The Consultant may provide technical services to the County during National Marine Fisheries Service and U.S. Fish and Wildlife Service review, and will draft responses to comments from the Services.

3300.3 Cultural Resources Monitoring

If requested and recommended as a result of the cultural resources investigation under Phase 1, the Consultant may be asked to monitor geotechnical borings performed during Phase 3A. Based on the monitoring effort and findings, the Consultant will prepare a draft and final Cultural Resources Survey for compliance with Section 106 of the National Historic Preservation Act.

The Consultant will provide technical services to the County during Section 106 consultation and draft responses to comments from the State Department of Archaeology and Historic Preservation (DAHP) or Tribes.

3300.4 Additional Technical Memoranda

The Consultant will prepare additional Technical Memoranda on topics as requested by the County, which include information required for SEPA, EIS, or other environmental compliance efforts. Assume ten (10) technical memoranda.

Task 3300 Potential Deliverables

Copies of deliverables will include: one printed copy (unbound); one copy in the native file format; and one copy in PDF (searchable with imbedded table of contents) format.

- Meeting materials, agendas, and notes
- Biological Assessment/Essential Fish Habitat Assessment (if required)
- Cultural Resources Survey Report (if required)
- Archaeological Resources Monitoring Plan and Inadvertent Discovery Plan (if required)
- Technical Memoranda

Task 3400 Permitting Services

The Consultant will be asked to provide services for permitting, as noted in the subtasks below, as needed to support Predesign.

3400.1 Meetings

Up to three (3) Consultant team members will attend up to five (5) 2-hour meetings with King County, regulatory agencies, and/or other stakeholders, if needed. The Consultant will provide meeting materials as required including presentation materials, agendas, and notes.

3400.2 Permitting

The Consultant will be asked to provide services for permitting activities throughout Phase 3A as needed, including, but not limited to:

- Preparing a plan for ensuring the recommended design approach meets the Local, State, and Federal regulatory requirements
- Develop and maintain a Permit Management Plan with an updated Permit Matrix based on the *Permitting Technical Memorandum* identified in Subtask 400.2, which shall be included in the Predesign Report and will be submitted with the monthly status report updates to the Project Representative
- Prepare and submit permit application packets and correction notices
- Provide exhibits, as required
- Prepare PowerPoint Presentations, as required, for permitting purposes

- Prepare and submit design drawings (separate permit set)
- Update permitting WBS flow charts, project schedules, matrices, and permit trackers as needed
- Attend permitting meetings and create draft agendas and follow-up summary notes as needed
- Develop utility and/or jurisdictional mitigation agreements and maintain all permitting documentation.

3400.3 Geotechnical Boring Permits

Submit copies of permits obtained per Subtask 3200.2 to support geotechnical investigations/borings to the County.

Task 3400 Potential Deliverables

Copies of deliverables will include: one printed copy (unbound); one copy in the native file format on CD or thumb drive; and one copy in PDF (searchable with imbedded table of contents) format on CD or thumb drive.

- Permit Management Plan
- A copy of all permit applications submitted
- A copy of all executed permits
- Meeting materials, agendas and notes

Task 3500 Survey and Utility Location Services

The Consultant shall utilize the survey data collected from Task 500 and perform surveys to collect additional information as needed. The datum for survey work and all deliverables to the County will be in a format requested by the County.

3500.1 Update Surveys

The Consultant shall utilize information collected under Task 500 and shall conduct additional site surveys to obtain required information for tasks including, but not limited to, right-of-way agreements, permits and design plans as needed. This will include identifying existing utilities by referencing existing records, one-call system, and/or potholing to evaluate potential conflicts. Additionally, the Consultant shall conduct surveys of geotechnical soil boring locations as needed. Electronic copies of surveys produced should comply with County standards.

The Consultant may be asked to prepare up to fifty (50) legal surveys for easements, leases and/or other right-of-way agreements.

3500.2 Base Mapping

The Consultant shall provide base mapping for the 30% level of detail for Predesign and update during Final Design. Plans will be in AutoCAD® format and shall include:

- Locations of all public and private utilities

- Topographic survey

Task 3500 Potential Deliverables

Copies of deliverables will include: one printed copy (unbound); one copy in the native file format on CD or thumb drive; and one copy in PDF (searchable with imbedded table of contents) format on CD or thumb drive.

- Update survey documentation, including legal surveys
- Electronic copies of surveys produced in AutoCAD® format per the County's standards
- 30% level base mapping
- Updates, as required, to base map

Task 3500 Estimated Construction Cost and Schedule

The Consultant will prepare construction cost and schedule estimates at Predesign for all project elements utilizing the methods outlined under Task 600.

3500.1 Cost Estimates

The Consultant will prepare construction cost estimates at the Predesign level. The use of qualified, professional cost analysts will be required for preparing all formal estimates and will need to comply with AACE standards. The Consultant will document all assumptions used in cost estimates and reasons for cost changes between levels of design.

3500.2 Schedule Estimates

The Consultant will prepare updates to the Phase I schedule Subtask 600.2 and prepare construction schedule estimates in Microsoft Project 2010 at Predesign. The schedules will include milestone start and finish dates including bidding, construction contract award and execution. The schedule will identify the anticipated construction duration in months, calendar days and any construction windows. If the selected approach requires multiple construction bid packages, the Consultant shall prepare a separate schedule for each package and shall include the milestones listed under this subtask.

Task 3500 Potential Deliverables

Copies of deliverables will include: one printed copy (unbound); one copy in the native file format on CD or thumb drive; and one copy in PDF (searchable with imbedded table of contents) format on CD or thumb drive.

- Construction cost estimates for Predesign
- Construction schedule estimates for Predesign

Tasks for Phase 3B – Final Design Services

The Consultant shall complete the Final Design based on the Final Predesign Report and input from the King County Project Representative and team. The Consultant will also provide design

information at appropriate times, as required, to support related requirements of environmental mitigation, permitting and right-of-way and public comment requirements.

For all document submittals, the County will review the draft submittals and will transmit review comments via email to the Consultant using a tracking form. The Consultant will use the form to provide a written response to the County for each comment within 5 days of receipt of the comments. Each comment response should describe how the comment will be incorporated into the final document. Each comment response will be reviewed with the County's Project Representative to reach consensus between the Project Representative and the Consultant on resolution.

Task 4000 – Project Management

This task includes all work related to the management, administration, and coordination of Consultant activities through Phase 3B.

4000.1 Project Management Plan

The Consultant will update the Project Management Plan (PMP) outlined in Task 100.1 to reflect work in Phase 3B of the Contract.

4000.2 Work Breakdown Structure (WBS)

The Consultant will update the WBS as outlines in Subtask 100.2 to reflect work in Phase 3B of the Contract.

4000.3 Contract Schedule Estimate

The Consultant will update the Contract Schedule Estimate as outlined in Subtask 100.3 to reflect the work in Phase 3B of the Contract.

4000.4 Initial Responsibility Assignment Matrix (RAM)

The Consultant will update the Contract Schedule Estimate as outlined in Subtask 100.4 to reflect the work in Phase 3B of the Contract.

4000.5 Communication Plan

The Consultant will update the Communications Plan as outlined in Subtask 100.5 to reflect the work in Phase 3B of the Contract.

4000.6 Quality Management

The Consultant will update the Quality Management Plan and implement as outlined in Subtask 100.6 to reflect the work in Phase 3B of the Contract.

4000.7 Change Control Plan

The Consultant will update the Change Control Plan as needed, as outlined in Subtask 100.7 to reflect the work in Phase 3B of the Contract.

4000.8 Kickoff Meeting

The Consultant Project Manager and each subject area lead will facilitate three-hour kickoff meeting with the project team. The meeting will be held at the Chinook Building located at 401 5th Avenue in Seattle, Washington. The meeting topics will include, but are not limited to, reviewing the team members and their responsibilities, project objectives, Phase 3B

deliverables, communications plan, and schedule. The Consultant will prepare the meeting agenda with assistance from the Project Representative and record meeting notes. The meeting notes will be submitted to the Project Representative within three working days following the meeting.

4000.9 Team Meetings and Workshops

The Consultant will prepare for and participate in bi-weekly team meetings (2 hours in length), which may include, but is not limited to, County staff, stakeholders' that own the existing ERS and representatives from permitting jurisdictions, etc. A typical meeting agenda will include:

- Review of open action items
- Schedule review and update
- Progress reports
- Critical issues
- Discussion of technical issues
- Remediation plan (if required)
- Risk Register
- New action items

At a minimum, the meetings will be attended by the County's Project Representative and/or Project Manager, selected County project team members, the Consultant Project Manager, selected subject area leads and key members of the Consultant team as needed for discussion of task items. The Consultant will submit a draft agenda a minimum of three days in advance of the meetings to the County. The Consultant will keep detailed meeting notes for all team meetings, distribute draft notes to the team within three working days of the meeting, and incorporate changes to the notes as needed. Final notes will be delivered within three working days of receiving changes from the County.

The Consultant will also prepare for and participate in workshops needed to review information collected for the site viability verifications, which will be delivered to County staff in Technical Memorandums or Summary Plans. For the purpose of making a proposal, the proposers should assume that two (2) workshops will be scheduled for four to six (4-6) hours and will include up to six Consultant staff. The workshops will be located at the Chinook Building (401 5th Avenue, Seattle, WA 98104), and may include the following topics:

- Review of the Final Design Documents at 60%, 90% and 100% Design

4000.10 Technical Group Meetings

The Consultant Project Manager and up to two (2) Consultant subject area leads to attend two-hour monthly Technical Group staff briefings. These meetings will serve to provide a project status update to non-team Technical Group staff members and to obtain technical input as-needed.

4000.11 Telephone Updates

The Consultant Project Manager will call the Project Representative once weekly for one hour, at a time to be determined, to discuss and review the Project. The Consultant may also include the subject area leads in engineering, architectural design, environmental review, real estate acquisition/relocation and permitting as a conference call. Discussion items may include, but are not limited to, project status, information presented in the progress reports, direction for upcoming team meetings, review issues, decisions made, open action items, upcoming project milestones, and recovery plans. Update the Decision/Issues/Changes and Action Item Logs as necessary.

4000.12 Decisions/Issues/Changes Log

The Consultant will develop and maintain a log as outlined in Subtask 100.12.

4000.13 Action Items Log

The Consultant will develop (or utilize a sample provided by the County) and maintain an Action Items Log as outlined in Subtask 100.13.

4000.14 Monthly Progress Reports and Monthly Progress Invoice

The Consultant will submit a monthly progress report to the Project Representative on a date to be determined by the County. Monthly progress reports will include:

- A brief narrative of work completed for the prior month for each Consultant WBS task/subtask
- A brief narrative of work expected to be completed during the next month for each Consultant WBS task/subtask
- Identification of any WBS tasks or subtasks that are delayed or determined to be at-risk and a summary of a recovery plan including action items, staff required, Gantt chart (schedule) modifications, dependencies, and project impacts
- A performance report utilizing a mutually acceptable Earned Value Technique (EVT) to chart monthly earned value. Any specific technique used must be tied to the monthly schedule update for the contract
- Decisions/Issues/Changes Log
- Action Items Log

4000.15 Health and Safety Plans

The Consultant may prepare a Health and Safety Plan for the Project, site specific Health and Safety Plans for planned field work, including geotechnical investigations and surveying.

4000.16 Risk Analysis

The Consultant may be asked to prepare a risk register for the selected project alternative and may update the register as risks are identified. The Consultant may provide the project team with status updates at scheduled *Team Meetings* as needed.

Task 4000 Potential Deliverables

Copies of deliverables will include: one printed copy (unbound); one copy in the native file format on CD or thumb drive; and one copy in PDF (searchable with imbedded table of contents) format on CD or thumb drive.

- Project Management Plan
- Work Breakdown Structure (WBS)
- Project Schedule
- Responsibility Assignment Matrix (RAM)
- Communication Plan
- Quality Management Plan
- Change Control Plan
- Kickoff Meeting Notes
- Team Meetings and Workshops
- Workshop Summaries
- Meeting Agendas and Notes
- Weekly Telephone Updates
- Decisions/Issues/Changes Log
- Action Items Log
- Monthly Progress Reports
- Health and Safety Plan
- Risk Register

Task 4100 – Final Design

The Consultant will conduct the Final Design activities based on the County's direction and as defined in the final Predesign Report. As the project progresses through the Final Design task, modifications may be required due to constraints and issues that arise from environmental determinations, right-of-way agreements/leases, etc. The Consultant will provide design deliverables and supporting information at appropriate times to support the related requirements of environmental mitigation, permitting, right-of-way, and community involvement comment requirements. The Consultant must consider the following specifications listed in Attachment A, at a minimum, in the design of the facilities.

Final Design will include but is not limited to the following Subtasks:

4100.1 Final Design Drawings and Specifications

The Consultant will prepare 60 percent, 90 percent and 100 percent construction plans and specifications. During Final Design, the Consultant will receive and respond to review comments

from permitting agencies, site owners, the County, Value Engineering effort and the construction management Consultant or representative. The 60 percent submittal will include architectural and engineering plans and draft related specifications, Divisions 1-17. The 90 percent submittal will contain complete plans and specifications, Divisions 1-17, and will be suitable for construction. The 100 percent submittal will incorporate all applicable review comments and will be ready for bidding. The Consultant will prepare and submit the construction contract plans required for construction of the improvements. The construction contract plans and specifications will be stamped and signed by professional engineers licensed in the State of Washington. Depending on the selected approach for construction, the Consultant shall be responsible for the preparation of multiple construction bid packages if needed. Each bid package shall include a list of the submittals that the contractor will be required to submit during the implementation of construction.

The Consultant shall include and clearly indicate green building design elements on drawings and in specifications (Division 1 – 17) as determined during Phase 1, Predesign and outlined in the King County Sustainable Infrastructure Scorecard. The Consultant shall determine and describe in the specifications the process to document or gather the required documentation for the sustainable project elements that will be constructed and the construction processes that will be required of the selected contractor. The Consultant must also complete the Final King County Sustainable Infrastructure Scorecard, Points Analysis, Financial Analysis (including total life cycle cost analysis) and any documentation to support the sustainability process.

4100.2 Architectural/Artist Design Review Services

This task may include services for the design review processes and presentations related to public presentations as well as the services required as a part of the County's 1% for Public Art Program that may be required as a part of this project and is administrated with the assistance of 4culture. The elements of art that are incorporated in the project in the form of artist made building parts or elements of art located on the project site but not included as building parts will be incorporated into the construction drawing by the Consultant as appropriate before the documents go out for bidding. Construction drawings will be provided to the Consultant by the artist for incorporation.

4100.3 Startup, Testing, and Commissioning Plan

The Consultant may be asked to develop a startup, testing, and commissioning plan to be included in the bid documents, if required, and implemented during construction. The Consultant may work with operations staff and the PSERN system vendor in developing the plan. The plan will be designed to ensure that the components that the County is responsible for implementing integrate into the PSERN system vendor's components. The main focus will be the start-up and testing of the power supply at each site since the responsibility lies with both the selected contractor and the PSERN system vendor. The PSERN system vendor will be solely responsible for designing and implementing a transition plan from the existing Emergency Radio System to PSERN.

Task 4100 Potential Deliverables

Copies of deliverables will include: one printed copy (unbound); one copy in the native file format on CD or thumb drive; and one copy in PDF (searchable with imbedded table of contents) format on CD or thumb drive.

- 60 percent, 90 percent, and 100 percent design drawings and specifications
- Final King County Sustainable Infrastructure Scorecard, Analysis Reports and Supporting Documentation
- Architectural/Artist Design - Perspective drawings, Physical Working and Massing Models to affectively study and display design alternatives and Final Project Architectural Model displaying sites in context, architectural design, landscape architectural design and elements of environmental mitigation that have been incorporated into the sites at 100% design
- Design review meeting agendas and minutes
- Documentation of review comments and written responses
- Complete set of final contract bid documents in accordance with the Guidelines provided by the County, including the Bidding Documents, General Conditions (Division 0), General Requirements (Division 1), Technical Specifications and the Contract Plans
- Appendices, which may include, but are not limited to, special site assessments for geotechnical, traffic guidelines (contractor will be responsible for developing traffic control plans), or permits
- Startup, Testing, and Commissioning Plan

Task 4200 Geotechnical

The purpose of this task is to perform geotechnical engineering and related service, if needed, to determine the geotechnical conditions affecting the feasibility and construction of the Project. Historical data will be supplemented with borings, which will provide information that can be used during the Predesign and Final Design phases of the project.

4200.1 Boring Plan

Based on the review of existing geotechnical information under Task 300, prepare an update to the Boring Plan, if needed, for use during Predesign and Final design, based on gaps in existing information. Plan the boring locations to characterize soils conditions at the project site sufficiently to identify the impact that these conditions could have on the constructability of the recommended alternative.

Assume 2 additional borings to provide data for gaps in the existing information.

4200.2 Boring Permits

Obtain all permits required for geotechnical borings and submit under Subtask 300.4.

4200.3 Settlement and Vibration

For Final Design, identify structures and improvements in the vicinity of the project sites that could be at risk to settlement and vibration damage by the construction of this project. Design mitigation measures to prevent settlement and vibration of adjacent structures, or if necessary, restoration requirements. Design instrumentation system to monitor settlement and vibration, if needed.

4200.4 Updated Geotechnical Report

The Consultant will provide updates to the Geotechnical Report under Subtask 300.4, if needed, describing expected soils conditions and geotechnical design criteria and recommendations for final design of the recommended design approach. The documentation of lab results of soils samples from borings and other field tests within the Geotechnical Report will be provided to contractors.

Task 4200 Potential Deliverables

Copies of deliverables will include: one printed copy (unbound); one copy in the native file format on CD or thumb drive; and one copy in PDF (searchable with imbedded table of contents) format on CD or thumb drive.

- Updated Boring Plan
- Updated Geotechnical Report
- A copy of Boring Permits

Task 4300 Environmental Compliance Services

The Consultant will provide technical services required for environmental aspects of the Project. The location of the sites for this project will be within multiple jurisdictions, some of which are outside of King County. The County, or local jurisdiction, will be the designated State Environmental Policy Act (SEPA) Lead Agency. As such, the County, or local jurisdiction, will determine and conduct the appropriate environmental review, issue project SEPA Threshold Determinations, if applicable, and release required notices and documents. If it is determined that an Environmental Impact Statement (EIS) is required, the Consultant will be the lead for preparing the documentation for the EIS process, with input from the County. The Consultant will be required to provide services as necessary for the environmental review process and related public involvement processes.

4300.1 Meetings

Assume up to five (5) 2-hour meetings with two (2) Consultant team members. The Consultant will provide meeting materials as required, which shall include, but is not limited to, presentation materials, agendas, and notes.

4300.2 Endangered Species Act (ESA) Evaluation/Documentation

The Consultant may be asked to prepare a draft and final Biological Assessment and Essential Fish Habitat Assessment for compliance with requirements of Section 7 of the ESA and the Magnuson-Stevens Fishery Conservation and Management Act, as amended. The Consultant

may provide technical services to the County during National Marine Fisheries Service and U.S. Fish and Wildlife Service review, and will draft responses to comments from the Services.

4300.3 Cultural Resources Monitoring

If requested and recommended as a result of the cultural resources investigation under Phase 1, the Consultant may be asked to monitor geotechnical borings performed during Phase 2. Based on the monitoring effort and findings, the Consultant will prepare a draft and final Cultural Resources Survey for compliance with Section 106 of the National Historic Preservation Act. The Consultant will provide technical services to the County during Section 106 consultation and draft responses to comments from the State Department of Archaeology and Historic Preservation (DAHP) or Tribes.

4300.4 Additional Technical Memoranda

The Consultant will prepare additional Technical Memoranda on topics as requested by the County, which include information required for SEPA, EIS, or other environmental compliance efforts. Assume five (5) technical memoranda.

Task 4300 Potential Deliverables

Copies of deliverables will include: one printed copy (unbound); one copy in the native file format; and one copy in PDF (searchable with imbedded table of contents) format.

- Meeting materials, agendas, and notes
- Biological Assessment/Essential Fish Habitat Assessment (if required)
- Cultural Resources Survey Report (if required)
- Archaeological Resources Monitoring Plan and Inadvertent Discovery Plan (if required)
- Technical Memoranda

Task 4400 Permitting

The Consultant will be asked to provide services for permitting, as noted in the subtasks below, as needed to support the Final design.

4400.1 Meetings

Up to three (3) Consultant team members will attend up to five (5) 2-hour meetings with King County, regulatory agencies, and/or other stakeholders, if needed. The Consultant will provide meeting materials as required including presentation materials, agendas, and notes.

4400.2 Permitting

The Consultant will be asked to provide services for permitting activities throughout Phase 3B as needed, including, but not limited to:

- Preparing a plan for ensuring the recommended design approach meets the Local, State, and Federal regulatory requirements

- Develop and maintain a Permit Management Plan with an updated Permit Matrix based on the *Permitting Technical Memorandum* identified in Subtask 400.2, which shall be included in the Predesign Report and will be submitted with the monthly status report updates to the Project Representative
- Prepare and submit permit application packets and correction notices
- Provide exhibits, as required
- Prepare PowerPoint Presentations, as required, for permitting purposes
- Prepare and submit design drawings (separate permit set)
- Update permitting WBS flow charts, project schedules, matrices, and permit trackers as needed
- Attend permitting meetings and create draft agendas and follow-up summary notes as needed
- Develop utility and/or jurisdictional mitigation agreements and maintain all permitting documentation.

4400.3 Geotechnical Boring Permits

Submit copies of permits obtained per Subtask 4200.2 to support geotechnical investigations/borings to the County.

Task 4400 Potential Deliverables

Copies of deliverables will include: one printed copy (unbound); one copy in the native file format on CD or thumb drive; and one copy in PDF (searchable with imbedded table of contents) format on CD or thumb drive.

- Permit Management Plan
- A copy of all permit applications submitted
- A copy of all executed permits
- Meeting materials, agendas and notes

Task 4500 Survey and Utility Location Services

The Consultant shall utilize the survey data collected from Task 500 and perform surveys to collect additional information as needed. The datum for survey work and all deliverables to the County will be in a format requested by the County.

4500.1 Update Surveys

The Consultant shall utilize information collected under Task 500 and shall conduct additional site surveys to obtain required information for tasks including, but not limited to, right-of-way agreements, permits and design plans as needed. This will include identifying existing utilities by referencing existing records, one-call system, and/or potholing to evaluate potential conflicts. Additionally, the Consultant shall conduct surveys of geotechnical soil boring locations as-needed. Electronic copies of surveys produced should comply with County standards.

The Consultant may be asked to prepare up to fifty (50) legal surveys for easements, leases and/or other right-of-way agreements.

4500.2 Base Mapping

The Consultant shall provide updated base mapping for the Final Design. Plans will be in AutoCAD® format and shall include:

- Locations of all public and private utilities
- Topographic survey

Task 4500 Potential Deliverables

Copies of deliverables will include: one printed copy (unbound); one copy in the native file format on CD or thumb drive; and one copy in PDF (searchable with imbedded table of contents) format on CD or thumb drive.

- Update survey documentation, including legal surveys
- Electronic copies of surveys produced in AutoCAD® format per the County's standards
- Updates, as required, to base map

Task 4600 Estimated Construction Cost and Schedule

The Consultant will prepare construction cost and schedule estimates at Predesign, 60 percent, 90 percent, and 100 percent design for all project elements utilizing the methods outlined under Task 600.

4600.1 Cost Estimates

The Consultant will prepare construction cost estimates at the 60, 90, and 100 percent design level. The use of qualified, professional cost analysts will be required for preparing all formal estimates and will need to comply with AACE standards. The Consultant will document all assumptions used in cost estimates and reasons for cost changes between levels of design.

4600.2 Schedule Estimates

The Consultant will prepare updates to the Phase I schedule Subtask 600.2 and prepare construction schedule estimates in Microsoft Project 2010 at 60 percent, 90 percent, and 100 percent design. The schedules will include milestone start and finish dates including bidding, construction contract award and execution. The schedule will identify the anticipated construction duration in months, calendar days and any construction windows identified during final design. If the selected approach requires multiple construction bid packages, the Consultant shall prepare a separate schedule for each package and shall include the milestones listed under this subtask.

Task 4600 Potential Deliverables

Copies of deliverables will include: one printed copy (unbound); one copy in the native file format on CD or thumb drive; and one copy in PDF (searchable with imbedded table of contents) format on CD or thumb drive.

- Construction cost estimates for 60, 90, and 100 percent design
- Construction schedule estimates for 60, 90, and 100 percent design

Task 4700 - Construction Bidding Services

The Consultant will provide service to the County during the bid preparation process, which includes the following subtasks.

4700.1 Pre-Bid Meeting(s)

The Consultant will prepare for and attend Pre-Bid Meeting(s) with potential bidders to describe the project and to record questions asked, which will be answered through the addenda process.

4700.2 Response to Bidder Questions

The Consultant will respond to questions as requested by the County that come from potential bidders in preparation of their construction bids. Assume five (5) sets of questions.

4700.3 Addendum

The Consultant will prepare up to ten (10) addenda.

4700.4 Bid Evaluation

The Consultant may provide bid review services to the County in reviewing bids, completing reference checks, and ascertaining responsibility for the two (2) lowest bidders.

Task 4700 Potential Deliverables

- Agenda and meeting materials for pre-bid meeting
- Written responses to bidder questions
- Preparation of up to ten (10) addenda

Tasks for Phase 4 – Services During Construction (Not Construction Management & Inspection Services)

Task 5000 – Services During Construction

The Consultant may provide services related to the review, testing, and other administration of the construction contract as requested by the County's Project Representative.

5000.1 – Project Management

The Consultant may provide the following project management activities:

- Track and review costs incurred in providing services

- Perform monthly construction contract status reports that will include information such as the number of design modification reviews and submittal reviews to date
- Organize and maintain project records
- Meet with the County's Project Representative monthly to review the scope, schedule, and cost of completed and anticipated Consultant services

5000.2 – Monthly Progress Reports

The Consultant will submit a monthly progress report to the County at a time to be determined by the County. Monthly progress reports will include:

- A brief narrative of work completed for the prior month for each Consultant WBS task/subtask
- A brief narrative of work expected to be completed during the next month for each Consultant WBS task/subtask
- Identification of any WBS tasks or subtasks that are delayed or determined at-risk and a summary of a recovery plan including action items, staff, required, Gantt chart (schedule) modifications, dependencies, and project impacts
- A performance report utilizing a mutually acceptable Earned Value Technique (EVT) to chart monthly earned value (the County will provide an example format). Any specific technique used must be tied to the monthly schedule update for the contract
- Decisions/Issues/Changes Log
- Action Items Log

5000.3 Review Services

As requested by the County, the Consultant will review information submitted by the construction contractor including submittals, shop drawings, and surveys. The Consultant will also respond to Requests for Information (RFI), review Requests for Change Order (RCOs), Requests for Change Proposal (RCPs), and attend construction meetings as requested. On a limited basis, the County may request that the Consultant to prepare cost estimates for Changes Orders. Services will be provided at the County's written request and authorization by the County's Project Representative to the extent the proposed budget allows.

5000.4 Technical Services

The Consultant will be required to provide other technical services associated with the construction contract. These services may include, but are not limited to, conducting site visits to observe conditions discovered during construction, providing services necessary for resolving conflicts with existing facilities or other unanticipated conditions encountered during construction and preparing design revisions.

5000.5 Record Drawings

The Consultant will be requested to produce record drawings using available as-built information provided by the County and construction contractors.

5000.6 Start-up, Testing, and Commissioning Services

The Consultant may be requested to provide start-up, testing and commissioning services by implementing the Startup, Testing, and Commissioning Plan developed during Phase 3B, with the County and a Construction Management Consultant or representative. The Consultant will provide documentation such as test results, updates to Operations and Maintenance Manuals, etc.

5000.7 Operations and Maintenance Manuals

The Consultant may be requested to produce electronic and hardcopy Operations and Maintenance manuals for the facilities constructed.

Task 5000 Potential Deliverables

- Monthly status reports
- Copies of contractor submittals marked or otherwise appropriately documented in accordance with the County's recommended procedures
- Comments on RFIs, change orders, and change proposals
- Copy of Record Drawings (electronic copy in AutoCAD, or other requested format and one unbound hard copy (11x17 inch)
- Site visit reports and notes
- Drawing and specification revisions
- Cost estimates
- Operations and Maintenance Manuals (if required)

Task 5100 Community Involvement Services

The Consultant may be asked to provide services for community outreach and involvement activities as needed.

The County's Community Relations staff will lead the community outreach effort for this Project. A high level of community interest and concern is expected for this Project due to the complexity and size of the project and the body of stakeholders. The Consultant may be asked to provide services for community outreach and involvement activities throughout Phase 3B as needed including:

- Develop recommendations to the County on community relations strategies and techniques.
- Coordinate, provide meeting management services, and attend up to twenty (20) community meetings, this may include: location logistics, meeting goals and structure, visual and written resource displays, registration, greeting, audio-visual services, agenda preparation, facilitation, cleanup and follow-up correspondence, minutes or summary.

- Work with County staff to develop strategies for addressing community concerns and complaints
- Coordinate outreach efforts with community groups/programs and events, including stakeholder meetings, local fairs, and briefings
- Write informational pieces such as newsletters, fliers, website text and postcards.
- Monitor social media platforms
- Provide on-the-ground construction community relations such as visiting construction sites regularly, initiating face-to-face contact with affected parties (e.g. neighbors, businesses, etc.), reassessing communication needs throughout project implementation, drafting and delivering fliers, responding to questions and concerns from neighbors in the field, on the telephone or by e-mail, making recommendations to project team to alleviate community concerns.
- Respond to a 24-hour construction voicemail box by carrying a County-issued pager or cell phone.
- Attend project team meetings
- Respond to citizen inquiries with King County's customer service guidance emphasizing timely responses, courtesy, cultural competency, fairness and resolution.
- Recommend culturally appropriate outreach techniques.
- Development of briefing packets and presentations for internal and external use
- Graphic design and printing
- Coordinate, provide event services, and staff up to five (5) large public events, this may include: drafting an event plan, location logistics, visual and written resource materials and displays, registration, coordinating before and during event with presenters, greeting, audio-visual services, agenda preparation, cleanup, follow-up correspondence, and summary.

Services to be provided by County staff include:

- Mail services
- Printing costs for fliers
- Rental and refreshment costs for meeting venues
- Development and issuance of all news releases
- Development of all responses on social media outlets
- Development and maintenance of project Web site
- Coordinating communications with major community stakeholders
- Production of project signs and displays and presentations for public meetings

- Translation and Interpretation services

Task 5100 Potential Deliverables

Copies of deliverables will include: one printed copy (unbound); one copy in the native file format on CD or thumb drive; and one copy in PDF (searchable with imbedded table of contents) format on CD or thumb drive.

- Documenting responses
- Written informational pieces such as newsletters, fliers, website text and postcards
- Graphics and/or pictures (as necessary) to convey project information or document community outreach activities
- Draft responses to citizen's questions and concerns (written and/or oral as appropriate)
- Community meeting materials, including meeting notes and summaries

REFERENCE DOCUMENTS

The following documents are referenced in or pertinent to the tasks associated with this Scope of Work and are to be used as guidelines in the performance of this work:

- *Exhibit A Attachment 1: Shelter - Prefabricated.*
- *Exhibit A Attachment 2: Project Management Plan.*
- *Exhibit A Attachment 3: Staffing Plan.*
- *Exhibit A Attachment 4: Work Breakdown Structure.*