Full Service Example SOW (version date 7/14/20)

This SOW example is an optional starting point for full-service A&E projects. This example template will need significant revision as needed for project-specifics. It is not exempt from legal sufficiency review.

General Instructions for SOW Template:

* Yellow highlight indicates instructions or notes that are deleted before finalizing the SOW for a WOC/Contract.
* Blue highlight indicates fields or provision that need to be reviewed and updated with project-specific information/requirements.
* Quantities. When entering quantities, the best practice is to use only the Arabic numeral and not spell out the numeral followed by the digit in parenthesis; i.e. - “3 weeks after NTP”.
* Delete text of any tasks that do not apply to the Project and label as “RESERVED” next to the task title. Contingency tasks that do not apply to a given Project can be deleted without marking as “RESERVED”, provided task numbering is revised if necessary.
* Send suggested revisions/updates to Kim Rice, OPO Technical Development Coordinator.

Revision History post 11/21/18

7/14/20 – Update ADA ramp inspection provisions per revisions from Heidi Shoblom.

3/5/20 – Per request from Susan White for Task 3.2:

* replace Part 3 verbiage with the new name “Environmental Prospectus”
* update links and provide new “ODOT NEPA Manual” reference(s)

1/3/20 – Per request from Zach Davis:

* Add new Project Risk task as task 1.6,
* Update Task 16 – Value Engineering.
* Add new optional Cost Risk Assessment Task as task 17, and

12/3/19 – Update Task 16 (Value Engineering) per request from Zach Davis.

10/1/19 – Change references of “Traffic Management Plan” to “Transportation Management Plan”.

8/20/19 – Added reference to new ODOT Communications Standards in section B.1.d; Minor edits to task 13.9 – R/W Relocations; Updated task 9.1.2 Bridge PS&E with edits recommended by Dan Anderson, Specifications Engineer.

4/19/19 – Added to section B.5 General Requirements) new Temporary Protection and Direction of Traffic language requested by Project Delivery.

4/8/19 – Added optional task 16 for Value Engineering (VE) Study (per Zach Davis and Peter Kennedy)

4/2/19 – Revised task 3.2 NEPA Categorical Exclusion (“CE”) and Programmatic CE (“PCE”) per SOW review from Consulting Services Unit and NEPA Unit.

3/22/19 – Deleted task 5.4.2 (Utility Constraints Notice) per email from Tammy Saldivar, ODOT Utility Liaison.

3/12/19 – Minor cleanup edits throughout Task 2 Survey based on edits from DOJ review; Remove “and/or” from several tasks; Change “The purpose of this task is to….” to “Consultant shall….” in several tasks; delete inserted comments; other minor cleanup edits in various tasks.

2/14/19 – Change references of “Trns\*port” to “AASHTOWare Project Estimator (per Mike Lippsmeyer).

2/11/19 – Update Task 2, Survey

2/1/19 Add “Access to ODOT ROW” Language in Standards and General Requirements section (per 2/1/19 email districts statewide from Ray Mabey)

12/10/18 Task 5 – Utilities Coordination. Per 12/3/18 email from Damon Eliuk, update R/W Manual references and hyperlinks to manuals and forms.

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# A. PROJECT DESCRIPTION and OVERVIEW OF SERVICES

Consultant shall provide the following in conformance with the tasks, standards and other applicable requirements set forth or incorporated in this Contract WOC: Preliminary Engineering (“PE”) Services required to prepare the Design Acceptance Package (“DAP”); final plans, specifications and estimate (“PS&E”) documents; right-of-way (R/W) Services; assistance during bidding; and construction contract administration, construction engineering and inspection (“CA/CEI”) consultation Services during construction; (the “Services”). The required Services are for the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_public improvement project described below (the “Project”).

## Project Description

Insert description including limits that tie to survey task.

## General Expectations

For WOC SOW:

The General Expectations set forth in the Price Agreement, Exhibit A, Section A shall apply.

For project-specific contract SOW, use current “General Expectations” language in Exhibit A, Section A of the contract template.

**Phases of Services** [Revise as necessary or delete if not applicable.]

The contracted Services will be a phased development as follows:

* Phase I –DAP
* Phase II – Final Design [including Preliminary Plans; Advance Plans; and Final PS&E
* Phase III - Right-of-Way (“R/W”)]
* Phase IV - CA/CEI

Following completion of a given phase, Agency may, at its discretion:

* Amend this WOC to add the next phase (or various elements), or
* Elect to complete subsequent phase tasks with in-house staff, or
* Assign subsequent phase tasks to another consulting firm.

Agency and Consultant shall negotiate the detailed tasks, deliverables, schedule and costs for each phase Agency elects to add. Each added phase will be authorized only by written WOC amendment with all required approvals and signatures.

**Construction Budget** [**Agency’s budget for the construction contract must be entered** **below** if this WOC includes, or will include in future phases, preparation of design plans. If not applicable, delete this Construction Budget subsection. See Price Agreement Part II, Section 6.c – Design Within Funding Limit for Consultant requirements for design and notification of budget deficiencies. If Consultant believes construction budget is insufficient, they must demonstrate this to Agency prior to significant development of design.]

The estimated construction contract price for the Project described in this WOC is $ \_\_\_\_\_\_.

## Agency Responsibilities

* Attendance at appropriate meetings and work sessions;
* Coordination and communication of internal agency staff;
* Coordination and communication with City and other stakeholders;
* Provide access to available Project information, recommendations and goals;
* Review of Project progress to verify adherence to this WOC and delivery schedule;
* Notify Consultant of any known delays above and beyond the control of Consultant;
* Provide appropriate and timely review of Project deliverables supplied by Consultant to verify they are consistent with Project objectives and the requirements of the WOC;
* Define stakeholder roles/authority;
* Define Project goals and design criteria;
* Provide all environmental-related support for the Project;
* Coordinate media contact;
* Agency will answer Request for Information within 5 business days
* Alignment – provide details
* Survey- provide details

## Schedule

* Notice to Proceed is anticipated \_\_\_\_\_\_\_\_\_\_\_\_\_
* Final PS&E Delivery to Agency is anticipated \_\_\_\_\_\_\_\_\_\_\_.
* Bid-let target date is \_\_\_\_\_\_\_\_\_\_\_\_.

**Acronyms and Definitions Table** - located at the end of the SOW.

# B. STANDARDS and GENERAL REQUIREMENTS

These are the current provisions (as of Oct 2018) set forth in the PA and Contract templates.

Add any standards not included in the PA that are applicable to the needed services. Some of the discipline specific items should just be added to the respective task language for the discipline (i.e., RW requirements and contact info should just be added to the RW task language.

## 1. Standards

The standards, manuals, directives and other guidance applicable to Professional Services and Related Services provided under the Contract WOC are referenced below or available on Agency’s webpages linked below and are incorporated by this reference with the same force and effect as though fully set forth herein. Additional standards, guidance and general requirements applicable to the Project may be specified in individual tasks or elsewhere in the Contract.

The standards, manuals, directives and other guidance listed below or available on Agency’s webpages are not exhaustive and may not include all applicable standards for a given Project. **Consultant shall be responsible for determining all applicable practices and standards to be used in performing Professional Services** **and Related Services. Consultant shall inform and demonstrate to Agency if standards, directives or practices required by Agency in performance of the work are insufficient, in conflict with applicable standards, or otherwise create a problem for the design.** Should the requirements of any reference, standard, manual or policy referenced in the Contract WOCconflict with another, Consultant shall request Agency in writing to resolve the conflict.

Unless otherwise specified in a given task, the most current version of applicable standards, manuals, directives and other procedural guidance shall apply. Unless otherwise specified, the system of measurement and language used in all deliverables will be English.

**a. Planning, Survey, Preliminary Engineering and Design Manuals, Standards and Guidance:** [Revise or add to the following list as needed for applicable ref standards/manuals; delete list and enter “RESERVED” if not applicable.]

* **Technical Manuals - alphabetical list** (<https://www.oregon.gov/ODOT/Engineering/Pages/Manuals.aspx>)
* **Planning Guidance and Resources** (<https://www.oregon.gov/ODOT/Planning/Pages/Guidance.aspx>)
* **Planning Analysis** (<https://www.oregon.gov/ODOT/Planning/Pages/Technical-Tools.aspx>)
* **Geo-Environmental Guidance (**<https://www.oregon.gov/ODOT/GeoEnvironmental/Pages/Guidance.aspx>)
* **Geometronics Resources & Guidance** (<https://www.oregon.gov/ODOT/ETA/Pages/OCRS.aspx>)
* **Surveying Manuals & Resources** (<https://www.oregon.gov/ODOT/ETA/Pages/Surveying.aspx>)
* **Bridge Standards & Manuals** (<https://www.oregon.gov/odot/bridge/pages/index.aspx>)
* **Engineering Guidance** (<https://www.oregon.gov/ODOT/Engineering/Pages/Eng-Guidance.aspx>)
* **Technical Guidance** (<https://www.oregon.gov/ODOT/Engineering/Pages/Technical-Guidance.aspx>)
* **Access Management Manual & Guidance** (<https://www.oregon.gov/odot/engineering/pages/access-management.aspx>)
* **Project Delivery Guide & Forms** (<https://www.oregon.gov/ODOT/ProjectDel/Pages/Project-Delivery-Guide.aspx>)
* **Oregon Standard Specifications for Construction** (<https://www.oregon.gov/ODOT/Business/Pages/Standard_Specifications.aspx>)
* **ODOT Forms Library** (<https://www.oregon.gov/ODOT/Forms/Pages/default.aspx>)

[Include the following ADA language in all contracts/PAs. Additionally, environmental/cultural-resources compliance is critical when making/modifying ramps. Tasks or contingency tasks should be included in the statement of work if there will be ground disturbance with the potential to unearth archaeological/cultural artifacts. This needs to be considered prior to the initiation of construction, not after.]

* **ADA Compliance – Assessment, Design, Inspection.** When the Services under this Contract include **assessment or design (or both)** for curb ramps, sidewalks or pedestrian-activated signals (new, modifications or upgrades), Consultant shall:

a. Use ODOT standards to assess and ensure Project compliance with the Americans with Disabilities Act of 1990 (“ADA”), including ensuring that all sidewalks, curb ramps, and pedestrian-activated signals  meet current ODOT Highway Design Manual standards; and

b. Follow ODOT’s processes for design, modification, upgrade, or construction of sidewalks, curb ramps, and pedestrian-activated signals, including using the ODOT Highway Design Manual, ODOT Design Exception process, ODOT Standard Drawings, ODOT Construction Specifications, providing a temporary pedestrian accessible route plan and current ODOT Curb Ramp Inspection form.

When the Services under this Contract include inspection of curb ramps, sidewalks or pedestrian-activated signals (new, modifications or upgrades), all such inspections shall include inspection for compliance with the standards and requirements in a. and b. above.  Inspections must be performed by ODOT certified inspectors (which must include certified environmental inspectors when appropriate). In addition, at Project completion, Consultant shall complete the applicable ramp-specific ODOT Curb Ramp Inspection Form734-5020(A-G) for each curb ramp constructed, modified, upgraded, or improved as part of the Project. Each completed form must be submitted electronically by clicking the “Submit by E-mail” button on the form (and cc APM). The forms are documentation required to show that each curb ramp meets ODOT standards and is ADA compliant. ODOT’s fillable Curb Ramp Inspection Form and instructions are available at the following address:

<https://www.oregon.gov/ODOT/Engineering/Pages/Accessibility.aspx>

Above references to curb ramps, sidewalks or pedestrian-activated signals also include, when applicable, shared use paths, transit stops, park-and-rides and on-street parking.

[Delete the following if not applicable:]

* **Green Energy Technology:** For public buildings, if green energy technology is determined to be appropriate, designs must include green technologies based on at least 1.5% of the construction costs (see ORS 279C.527 and 279C.528 for applicability and reporting requirements).

[List here any other applicable standards for planning, PE or design Services. If the ref standards are included in the applicable task, they do not need to be listed here.]

* **Construction Plans and Notes.** Consultant shall prepare the plan sheets in accordance with the CPDG and must display the following information:
* Right of way (“R/W”) lines, existing topography, construction centerline, new construction and travel lanes.
* Paving limits and type (full depth, overlay, etc.)
* Pavement grinding locations, special plans or details
* Location of drainage features

Consultant shall prepare quantity takeoffs in accordance with the Contract Plans Development Guide

(CPDG), and current Agency bid item listing.

* **Alignment and R/W Plans**. Consultant shall prepare the alignment plans in accordance with the CPDG. The alignment plans must display the lines, construction centerline data and coordinates necessary to construct the Project.
* **Detail Sheets.** Consultant shall prepare all necessary detail sheets in accordance with the CPDG. The detail sheets are details that are unique to the Project and are not covered by Agency Standard Plans. The anticipated detail sheets include erosion control details, drainage details, roadway details and traffic control details.

[Delete the following if CA/CEI services will not be performed:]

**b.** **CA/CEI Phase Manuals, Standards and Guidance**

If Construction Contract Administration/Construction Engineering & Inspection (“CA/CEI”) Services are included in the SOW or added to the SOW by amendment, Consultant shall complete the CA/CEI Services in accordance with [OPTION 1 - for projects that will be let through Office of Project Letting]ODOT’s Construction Manual, the Manual of Field Test Procedures and the ODOT Inspectors Manual and other applicable manuals and guidance available at the following Agency webpages:

* **Construction Manuals** (<https://www.oregon.gov/ODOT/Construction/Pages/Construction-Manuals.aspx>)
* **Contract Administration** (<https://www.oregon.gov/ODOT/Construction/Pages/Contract-Administration-Services.aspx>)

All inspection Services must be performed by Agency-certified Inspectors as required by Agency’s Inspection Quality Assurance Program (“IQAP”). [OPTION 2 – for state-funded projects that will be let through ODOT Region procurements (revise the following as applicable for the project)]the current State of Oregon General Conditions for Public Improvement Contracts (<https://www.oregon.gov/das/Procurement/Guiddoc/GenCon4PI.pdf>).

Consultant’s qualified staff shall diligently monitor the work of the construction contractor in order to determine whether the Project is constructed in compliance with the construction contract documents and any applicable current standards and manuals. Consultant shall immediately advise Agency of any construction which Consultant knows, or with the exercise of professional care should know, fails to conform to the federal or state standards applicable to construction of the Project.

See ADA inspection requirements under Section A.1.a, “ADA Compliance – Assessment, Design, Inspection**”.**

[List here any other applicable standards for CA/CEI phase Services (or link to applicable standards if they are available on line).]

[Leave in the following if applicable; otherwise delete:]

**c.** **Website or Web Content Development and Maintenance Standards**

Consultant shall perform all required web-related Services in conformance with the **ODOT Web Standards** (available at: <https://www.oregon.gov/ODOT/Pages/Web-Toolkit.aspx>), which is incorporated into this PA with the same force and effect as though fully set forth herein. ODOT shall have ownership and control of Work Products developed by Consultant as set forth in the terms and conditions, **Ownership of Work Product** provisions.

[Leave in the following if SOW includes any public involvement/outreach or other communications functions on behalf of ODOT; otherwise delete:]

**d. ODOT Communications Standards**

For any Consultant tasks that require communications functions on behalf of Agency, Consultant shall comply with the ODOT Communications Standards (available at: <https://www.oregon.gov/ODOT/Pages/Web-Toolkit.aspx>) which is incorporated into this Contract with the same force and effect as though fully set forth herein.

**2. Design Criteria and Project Assumptions/Conditions.**

[List any design criteria and assumptions/conditions that apply to this Project.]

**3. Software Requirements**

Consultant’s software must produce deliverables that are fully compatible, readable and useable by Agency software, requiring no modification or translation of Consultant’s deliverables. No loss of data integrity or accuracy may result from any transfer of data. Compressed data must be in a "self-expanding executable" format. To ensure and verify this level of compatibility, Agency may provide sample or required format(s) to Consultant, and Consultant and Agency may conduct tests of sample deliverables from Consultant, and Agency may provide sample or required format(s) to Consultant. Agency reserves the right to reject deliverables that do not meet these requirements. If a deliverable is rejected, Consultant shall resubmit deliverables to Agency that meet these requirements, and shall not bill Agency for the rejected deliverables or for time associated with correcting the rejected deliverables.

Consultant shall deliver all Work Products in the format(s) required by Agency. Consultant may propose alternative software for consideration by Agency. If Agency determines that the alternative software meets the compatibility requirements of this section, Agency may choose to accept the use of the alternative software. Agency will document this approval in writing.

Software standards currently used by Agency are specified below. Agency anticipates that it will update its software periodically and at such time, new software may be required by notice provided to Consultant 30 days in advance. Software standards include but are not limited to the following:

* **ProjectWise.** Use of ODOT’s ProjectWise network is required for this Project (see Exhibit L). [Confirm applicability with APM. If not applicable, delete this requirement, Exhibit L and reference to Exhibit L in Part 1, Section 4.a of the PA.]
* [List other software/apps required] **\_\_\_\_\_\_\_\_\_\_**

**4. Professional Licenses, Registrations and Qualifications**

* Consultant and its subconsultants must be duly licensed to perform the Services, as required by the applicable Oregon Revised Statutes and Oregon Administrative Rules, and other applicable laws. Consultant’s personnel and subconsultant personnel must be duly licensed to perform all Services which they will be performing under the Contract/WOC, and must perform such Services under the "responsible charge" of a person so licensed (as that term is defined under ORS Chapter 672), or must be otherwise exempt from any licensing requirements applicable to the Services being performed.
* Agency may require Consultant’s Personnel to demonstrate a competency in the particular area/discipline to which they are assigned. This may include, but is not limited to, submittal of license number, resume, and work samples from previously completed services or projects.

**5. General Requirements**

* **Quality Plan (QP) for Professional Services and Related Services.** Consultant shall ensure quality assurance and quality control is performed in conformance with the approved QP on file with Agency.
* **Endorsement of Data.** Consultant shall place their official Oregon Registered Engineer seal and signature on all engineering design drawings and specifications furnished to ODOT, as well as any other materials specified in ORS 671.025, 671.379, 672.020(2), 672.025(2), 672.028(2) and 672.605, as applicable,that require such seal and signature.
* **Electronic Documents, Digital Seal and Signature.** If required under the WOC/Contract, Consultant shall use ODOT’s ProjectWise Network (see Exhibit L) for electronic submittal and receipt of files as necessary for the Project. All final documents identified in ORS 671.025, 671.379, 672.020(2), 672.025(2), 672.028(2) and 672.605, as applicable, must bear the digital seal and signature of the Oregon registered professional under whose supervision and control they were prepared. Documents must be submitted in the format specified in the Contract for each deliverable and must comply with OAR 804-030, OAR 806-010, OAR 809-050 and OAR 820-025 requirements, as applicable, for digital seal and signature capable of independent verification, final and draft documents, modifications to designs, and dual stamping of documents.
* **Safety Equipment.** Consultant shall provide and use all safety equipment including (but not limited to) hard hats, safety vests and clothing if required by State and federal regulations and ODOT policies and procedures for the Services under the WOC/Contract.
* **Personnel, Materials, and Equipment**. Consultant shall provide competent personnel and shall furnish all supplies, equipment, tools, and incidentals required to accomplish the work. All equipment and tools must be in good operating condition and shall be kept in proper adjustment throughout the duration of the WOC/Contract. All materials and supplies must be of good quality and suitable for the assigned work.

[List here any additional general requirements applicable to the Project]

* **Access to ODOT Right-Of-Way**. Consultant shall notify and coordinate with the Agency District Manager, or Assistant District Manager, having jurisdiction over the Project area at least 48 hours in advance of needing to be on-site. Consultant shall not begin on-site work until approval is received from the district. Consultant shall reschedule the on-site work if requested by the district.

Oregon Department of Transportation  
District 3  
885 Airport Road SE, Building P  
Salem OR 97301  
District Manager – Cole Mullis

Assistant District Manager – Tim Swift

503-986-2900

* **Temporary Protection and Direction of Traffic.** When a field crew is working on (or within 30 feet of) a travel lane, Consultant shall protect the crew and warn approaching traffic by providing safety equipment and temporary traffic controls conforming to a stamped and approved traffic control plan or the 2011 Oregon Temporary Traffic Control Handbook (<https://www.oregon.gov/ODOT/Engineering/Docs_TrafficEng/OTTCH-v2011.pdf>), for operations of 3 days or less. Consultant shall plan, coordinate and get approval of all work zone activity as outlined in the Mobility Procedures Manual (<https://www.oregon.gov/ODOT/MCT/Documents/MobilityProcedureManual.pdf>).
* **Subsurface Exploration Work**.  Prior to conducting subsurface exploration work, Consultant shall obtain archeologic clearances from Agency for specific exploration plans and noise permits from local jurisdictions if applicable.

**6. Compliance with Applicable Law** (in addition to those identified elsewhere in the PA.)

[If there are any applicable federal, state or local laws with respect to the Services in addition to the laws identified elsewhere in the Contract, identify them here. If none, delete all text and just leave “6. RESERVED”.]

**7. NEPA Related Requirements**[The following provision is required for all FHWA-funded contracts that include:

* + preliminary and final design services in a single contract for a project with pending NEPA decision documents;
  + NEPA Document preparation, preliminary engineering, final design and/or CA/CEI services in a single contract; or
  + final design services under a single contract for which the final design solicitation will be published prior to the NEPA decision date.]

1. **NEPA Decision Documents and Final Design**

Agency is not obligated to proceed with final design for any alternative; all reasonable alternatives will be evaluated and given appropriate consideration, and Consultant may not proceed with final design until the relevant NEPA decision documents have been issued.

The following provision is required if NEPA Document preparation is combined with preliminary engineering, final design and/or CA/CEI services:

1. **NEPA Document Objectivity**

If Agency concludes, at any time during the term of the Contract, that the Environmental Impact Statement, Environmental Assessment or Categorical Exclusion (as applicable) was not prepared with objectivity in accordance with 23 USC 112 (f), Consultant and its Affiliates shall not be eligible to complete the remaining tasks associated with the Contract.

The following applies if the Contract includes preparation of EIS, EA or Cat-Ex.

1. **Preparation of EA, EIS or Categorical Exclusion**

If a consultant is awarded a contract to prepare an Environmental Impact Statement, Environmental Assessment or Categorical Exclusion for a project, that consultant and its Affiliates may prepare the designs/plans/specifications for the project or may propose under a separate solicitation to prepare designs/plans/specifications for the project only if Agency concludes that the NEPA document was prepared with objectivity. Agency is not obligated to proceed with final design for any alternative. All reasonable alternatives will be evaluated and given appropriate consideration, and consultant may not proceed with final design until the relevant NEPA decision documents have been issued (e.g., Categorical Exclusion, Finding of No Significant Impact, or Record of Decision).

# C. REVIEW, COMMENT and SCHEDULE OVERVIEW

* Consultant shall coordinate with Agency staff as necessary and shall revise draft deliverables to incorporate Agency draft review comments.
* Consultant shall return the revised deliverables to Agency staff, with Agency comments incorporated, within 10 business days of Consultant’s receipt of Agency’s comments, unless a different timeframe is specified for specific tasks or otherwise agreed to in writing by Agency.

# D. FORMAT REQUIREMENTS

* Consultant shall use ProjectWise for electronic submittal and receipt of files as necessary for the Project (see PA Exhibit L [OR] WOC Attachment D).
* Consultant shall submit draft deliverables in electronic format via email (and hard copy if requested).
* Consultant shall also submit all graphic files accompanying reports separately in .jpg or .tif formats unless specified differently by Agency.
* Each draft and final text-based or spreadsheet-based deliverable shall be provided in MS Office file formats (i.e., MS Word, Excel, etc.) and must be fully compatible with version used by Agency.

Additional format requirements may be listed with specific tasks/deliverables in the SOW or in the PA.

# E. TASKS, DELIVERABLES and SCHEDULE

Consultant shall complete all tasks and provide all deliverables (collectively, the “Services”) included in this SOW and in accordance with the performance and delivery schedules listed below.

# TASK 1 PROJECT MANAGEMENT

Consultant shall manage and coordinate the tasks included in this SOW. Consultant shall also coordinate with Agency on work tasks performed by others. Consultant shall provide Quality Control (“QC”) such that deliverables submitted to Agency have been peer-reviewed prior to submittal.

## Task 1.1 Project Management and Coordination

Consultant shall schedule and coordinate Work Tasks within this SOW and shall maintain liaison and coordination with Agency. Consultant’s Project Manager (PM) shall be Consultant’s primary point of contact and shall communicate with Agency regarding the status of work being performed and to discuss issues or concerns that may impact the Project. This includes weekly check-in phone calls between the PM and APM.

Consultant shall monitor the Project budget and expenditures to meet Project requirements and objectives.

Consultant shall maintain Project files including, but not limited to: engineering computations, assumptions, meeting agendas and minutes, business drawings, progress reports, correspondence and memoranda. Compiling the Project files must be an ongoing task, commencing upon receipt of the notice to proceed (“NTP”), and incorporating documents as they are generated throughout the Services for this Project.

**Deliverables/Schedule:** Consultant shall provide:

* Project files must be delivered within 4 weeks of request by Agency.
* Scheduled weekly/biweekly check-in phone call calendar event (reoccurring event) within 2 weeks after NTP.

## Task 1.2 Progress Reports

Consultant shall prepare monthly progress reports throughout the duration of the Services for this Project.

The monthly progress report must be in a format acceptable to Agency and must:

* Summarize the previous month’s Consultant activities, the deliverables submitted, and identify who the deliverables were provided to.
* Show percent complete of each of the tasks/deliverables in progress, and the percent of overall Services complete to date.
* If R/W Services are included in the SOW, include status of R/W activities for each parcel impacted by the Project.
* For fixed-price method of compensation, identify staffing used for that reporting period. For other compensation methods, the staffing used must be identified in the invoice backup documentation.
* Describe the planned activities for the next month.
* Identify any schedule or budget issues, other pending issues that need resolution, team personnel changes, unanticipated problems, any issues that may delay the delivery schedule, and other relevant events or information, as applicable.

**[Invoice Preparation -  shall not be listed as a task and/or deliverable (and shall not include costs in BOC) unless ODOT has on file a signed** [**Certification of Invoicing and ODC Billing Practices**](https://www.oregon.gov/odot/Business/Procurement/DocsPSK/InvODCcert.docx) **(ODC Cert) from the Consultant that indicates invoice preparation is charged to each project and is not included in the firm’s overhead. Firm’s approved for invoice prep charges are identified in the** [**Billing Rate Share Drive**](file://Scdata2/opobillingratedata/AcceptedRates/Firm_ESR_NBR) **maintained by OPO. The invoice limitation does not apply to project status reports, which are a required deliverable to be submitted with monthly invoices.]**

**Deliverables/Schedule:** Consultant shall provide:

Monthly progress reports (provided with monthly invoice and supporting documentation as required in Exhibit B of the Price Agreement) submitted via email to APM and Region 1 Headquarters Office at the following email address: [Region1ContractInvoices@odot.state.or.us](mailto:Region1ContractInvoices@odot.state.or.us) due no later than the 5th calendar day of the month following the reporting month.

## Task 1.3 Project Schedule and Schedule Updates

Consultant shall submit a detailed work element schedule to Agency using MS Project for Consultant’s tasks. Consultant’s work element schedule must have, as a minimum, the following milestones with associated submittal dates:

* NTP
* Meetings
* Site Visits
* Draft DAP, DAW, Final DAP, Preliminary, Advance, and Final PS&E milestone completion dates
* Agency review periods
* R/W Phase
* Utility Relocation tasks
* Region Management Review meetings
* OPL PS&E delivery date
* OPL Advertisement Date
* OPL Bid Opening Date

Expand as needed in negotiations

**Deliverables/Schedule:** Consultant shall provide:

* Baseline Microsoft Project Schedule submitted within 2 weeks after the written NTP (1 electronic copy and 1 paper copy).
* Monthly Project Schedule updates as needed.

## Task 1.4 Meetings

Consultant shall prepare for, lead and facilitate meetings as identified below. Meeting dates and locations will be collaboratively scheduled between Consultant and APM. Consultant shall host meetings with screen and voice sharing software capable of running concurrently for use by Agency, Consultant staff, and sub-Consultant staff, at the discretion of the APM.

For each meeting, Consultant shall prepare a meeting agenda and provide draft meeting notes, which must include draft action items and record of any decisions from the meetings. Agendas must be submitted to the APM 5 business days prior to each meeting. Consultant shall prepare and maintain a Project Action Item/Decision Log to track action items and decisions discussed at Project meetings (as determined by Agency).

The action item / decision log must include a description of the item or decision and who is assigned the action. Consultant shall provide the draft summary notes to Agency for review and distribution.

### Task 1.4.1 Kick-Off Meeting

Consultant shall facilitate 1 Project kick-off meeting within TBD business days of NTP. The Project kick-off meeting will be held at Agency’s Region 1 Office located at 123 NW Flanders Street. TBD Consultant staff (PM, TBD, and note taker) shall attend the meeting, which is estimated to be 2 hours in length excluding travel time.

**Deliverables/Schedule;** Consultant shall:

* Provide meeting agenda 5 business days prior to the meeting (1 electronic copy).
* Provide draft summary notes (including action item / decision log) within 5 business days of meeting (1 electronic copy).
* Provide final summary meeting notes within 5 business days of receipt of all Agency comments (1 electronic copy).

### Task 1.4.2 Project Development Team Meetings (“PDT”)

Consultant shall facilitate TBD Agency PDT meetings at Agency’s Region 1 Office during performance of the work. Agency PDT meetings will be scheduled at the APM discretion. TBD Consultant staff will attend the Project development team meetings assumed to be 2 hours in length excluding travel time and will focus on key decision points associated with the scope of the Project.

**Deliverables/Schedule:** Consultant shall:

* Provide Roll Map including key Project elements
* Provide meeting agenda to APM 5 business days prior to date of the meeting
* Provide draft summary notes (including action item / decision log) within 5 business days of meeting (1-electronic copy)
* Provide final summary meeting notes within 5 business days of receipt of all Agency comments (1 electronic copy).

### Task 1.4.3 Project Subteam Meetings

Consultant shall conduct up to TBD meetings at Agency’s Region 1 Office to coordinate design efforts by a particular technical discipline. TBD Consultant staff shall attend each subteam meeting. Subteam meetings will be held at either Consultant’s office or Agency’s Region 1 Headquarters Office, location at the discretion of the APM, and is anticipated to be no more than 2 hours in length excluding travel time.

**Deliverables/Schedule:** Consultant shall:

* Provide meeting agenda to APM 5 business days prior to date of the meeting
* Provide draft summary notes (including action item / decision log) within 5 business days of meeting (1-electronic copy)
* Provide final summary meeting notes within 5 business days of receipt of all Agency comments (1 electronic copy).

### Task 1.4.4 Project Site Meetings

Consultant shall schedule and conduct 2 site visit meetings with Agency staff to identify existing conditions, strategies, and solutions. One Project site visit will review Project site locations. The second Project site visit will involve ODOT Maintenance to gain knowledge of the existing electrical system and provide access to the existing service cabinets. 4 Consultant staff (PM, ITS lead, structural lead, Geotech lead) will attend the 4-hour Project site meetings, which excludes travel time.

**Deliverables/Schedule:** Consultant shall:

* Provide meeting agenda to APM 5 business days prior to date of meeting;
* Attend and conduct the meeting as requested by Agency;
* Draft summary notes (including action item / decision log) within 5 business days of meeting (1 electronic copy)

### Task 1.4.5 Design Verification Workshop (“DVW”)

Consultant shall conduct 1 DVW meeting to be held approximately 3 business days after submittal of the Design Verification Package DAP. The purpose of the DVW is to reach acceptance of the proposed design concept for the Project. Consultant shall describe how Agency-provided design elements have been reviewed, accepted, and incorporated into Consultant’s design deliverables. 5 Consultant staff shall attend the DVW meeting, which is anticipated to be no more than 3 hours in length excluding travel time.

**Deliverables/Schedule:** Consultant shall:

* Provide meeting agenda to APM 5 business days prior to date of meeting;
* Provide Corridor Roll map with key scope and issues (2 print and 1 .pdf versions)
* Attend and conduct the meeting as required by Agency;
* Draft summary notes (including action item / decision log) within 5 business days of meeting- (1 electronic copy)
* Final summary notes within 5 business days of receipt of all Agency comments - (1 electronic copy).

### Task 1.4.6 Design Acceptance Workshop (“DAW”)

Consultant shall prepare agenda and conduct 1 DAW meeting to be held approximately 2 weeks after submittal of the Draft DAP. The meeting will be scheduled by Agency and held at Agency’s Portland Office. The purpose of the DAW is to reach final resolution of comments compiled from Agency reviews and to reach consensus on the proposed design for the Project. For estimating purposes, it is assumed that up to 4 Consultant staff shall attend the DAW Meeting, and the meeting will be no more than 3 hours in length, not including travel time. Consultant shall prepare draft and final meeting summary notes for the meeting.

**Deliverables/Schedule:** Consultant shall provide:

* Meeting agenda to APM 5 business days prior to date of meeting;
* Attendance and participation at the meeting as requested by Agency;
* Draft meeting summary notes (including action item / decision log) within 5 business days of meeting- (1 electronic copy);
* Final meeting summary notes within 5 business days of receipt of all Agency comments - (1 electronic copy).

### Task 1.4.7 Preliminary Plans Review Meeting

If this meeting is going to occur, task language must be added here.

### Task 1.4.8 Region Management Review Meetings

APM will schedule and conduct and Consultant shall attend up to TBD PS&E Package Submittal Meetings with Agency at Agency’s Region 1 Office to review the Draft and Final PS&E packages which includes the submittal package requirement as listed in ‘Final PS&E Submittal Checklist’ and ‘Final PS&E Completeness Checklist’ found at:

<http://www.oregon.gov/ODOT/HWY/OPL/docs/word/final_pse_submittal_checklist.doc>

Each Meeting will be scheduled by the APM at least 2 weeks prior to PS&E submittal to Agency with the assistance by the APM. The APM, Region 1 Technical Center Manager, Region 1 Area Manager, Construction PM, and the Region 1 Project Delivery Manager must be invited to the meeting.

Consultant shall prepare meeting notes that include an action item log of what specific actions are needed. The action item log shall include a description of the item or decision and who is assigned the action.

The PM shall attend the PS&E Package Submittal Meetings, with each meeting estimated to be 2 hours in length excluding travel time.

**Deliverables/Schedule:** Consultant shall provide:

* Draft ‘Final PS&E Submittal Checklist’ due to Agency at start of meeting and a draft paper copy of each submittal package requirement as listed in ‘Final PS&E Submittal Checklist’;
* Draft Project meeting notes and action log due to Agency within 3 business days following the meeting- (1 electronic copy);
* Final summary notes within 2 business days of receipt of all Agency comments - (1 electronic copy).

Task 1.4.9 Construction Hand-off Meeting

Consultant shall conduct 1 Construction Hand-off meeting with Agency at Agency’s assigned Construction Office to review the PS&E package prior to bid advertisement. The purpose of this meeting is to familiarize the Construction Project Manager and assigned crew members with the Project prior to bid advertisement.

Consultant shall schedule the meeting 2 weeks after PS&E submittal to Agency, with the assistance of the APM. Agency attendees will include the APM, Construction Project Manager, and Assistant Construction Project Manager.  Other Agency staff including the Construction Inspector and Construction Surveyor will attend the meeting.

PM and three Consultant staff shall attend the meeting with the meeting being not more than two hours in length excluding travel time.

***Deliverables/Schedule:*** Consultant shall provide:

* Bidding PS&E due at start of meeting (1 paper and 1 electronic copy).
* Electronic design files (.dgn, .alg and .dtm) due to Agency 2 weeks prior to meeting.
* Draft Project meeting notes and action log due to Agency within 3 business days following the meeting (1 electronic copy).
* Final summary notes and action log within 2 business days of receipt of all Agency comments (1 electronic copy for each meeting).

### Task C1.4.10 Additional PDT or Technical Discipline Subteam Meetings (**CONTINGENCY TASK – see Section F**)

Consultant shall attend up to 5 meetings scheduled by Agency at Agency’s Portland Office, or near the Project site to coordinate design efforts as needed. Consultant shall prepare the meeting agenda. For estimating purposes, it is assumed that 3 Consultant staff shall attend each meeting, anticipated to be 2 hours in length including travel time.

**Deliverables/Schedule:** Consultant shall:

* Attendance and participation at the meeting as requested by Agency;
* Draft summary notes (including action item / decision log) within 3 days of meeting- 1 paper copy and 1 electronic copy (Microsoft Word®).

### **Task 1.5 Quality Assurance/Quality Control**

(See [**approved Quality Plans (QPs) for consultants on file**](file://scdata2/ADU_Regions_share/QAQC_Plans_A&E).)

Consultant shall perform QC reviews prior to submittal of plans, design revisions and computations, estimates, and other deliverables in conformance with Consultant’s approved Quality Plan on file with Agency.  Consultant shall coordinate between design disciplines so that the design is in conformance with applicable Agency design standards (in place at time of Project), and that prior review comments have been incorporated into the design. Consultant shall maintain a comment log noting review comments received from Agency, Consultant’s response to each of the comments as well as the final resolution of the issue. Consultant shall include documentation of completed QC reviews in the QA/QC section of the Project files.

**Deliverables/Schedule:** Consultant shall provide completed comment log (electronic copy), QC checklists and QC certification/sign-off page with the following milestones:

* [Optional] Matrix or table identifying names of QC reviewer(s) for each discipline, due within 2 weeks of NTP.

For the following items, ensure QC hours are not budgeted here and in the Tasks where the QC is occurring.

* Draft DAP Plans QC documents due with Draft DAP (Task 11.5)
* Preliminary Plans QC documents due with Preliminary Plans (Task 14.1.1)
* Advance Plans QC certification due with Advance Plans (Task 14.2.1)
* Final Plans QC certification due with Final Plans (Task 14.3.1)

Include the following when applicable to meet the requirements of Highway Directive DES 01-02.

**Task 1.6 PROJECT RISK MANAGEMENT**

Managing Project risk includes a process of risk identification, analysis, response, tracking, and decision-making control points. Pursuant to [Highway Directive DES 01-02](https://www.oregon.gov/ODOT/Engineering/Doc_TechnicalGuidance/DES-01-02.pdf), Consultant shall create and maintain a plan for managing Project risks that includes a Project Risk Register.

**Task 1.6.1 Generate Project Risk Register**

***(Insert specific meeting location and durations. Otherwise, the following must be included without any deletions or revisions)***

2 weeks after the Project Kickoff meeting, Consultant shall schedule, prepare the agenda for, and lead up to a 4 hour meeting not including travel time, held at Agency’s offices in Region XX, for the purposes of generating a Project Risk Register. Meeting participants must include Consultant PM, APM, Consultant discipline leads, and Agency review staff. The meeting must include, at minimum, the following activities:

* Project overview;
* Risk identification including risk description and documented assumptions regarding the risk;
* Qualitative risk analysis for scope, schedule, and budget risks that includes determining, through engineering judgment, the probability that the risk will occur and, if the risk where to occur, the impact to the Project schedule and budget;
* Prioritization of risk events;
* Development and documentation of a detailed risk response strategy;
* Determination of the risk owner; and
* Documenting all information generated in this meeting in the Project Risk Register.

Consultant discipline leads responsible for the preliminary engineering and design of the Project, which include: bridge and structures, roadway, traffic, right of way, utilities, hydraulics, geotechnical, and environmental, shall attend and participate in creating the Project Risk Register.

Consultant shall complete the Project Risk Register and submit it, along with other required deliverables, to the APM within 7 calendar days of the meeting.

**Deliverables and Schedule:**

Consultant shall provide:

* Meeting agenda (electronic copy – PDF) to APM 7 calendar days prior to the date of the meeting to the APM
* Consultant discipline leads to attend and participate in an up to 4 hour meeting; and
* Project Risk Register (electronic copy – PDF) to APM within 7 calendar days of meeting

**Task 1.6.2 Monitor, Review, and Updating the Project Risk Register**

***(Insert specific meeting location and durations. Otherwise, the following must be included without any deletions or revisions)***

Throughout Project development Consultant shall schedule, prepare the agenda for, and lead up to 5 meetings, held at Agency’s offices in Region XX. The purpose of these meetings is to monitor and review previously identified Project risks as well as documenting projects risks that have emerged during design development; all of which shall be used to update the Project Risk Register. This meeting can be held concurrently with a milestone submission comments review meeting with prior approval from the APM. Each meeting will last no longer than X hours, not including travel time, and can be held by teleconference with prior approval from the APM. Meeting participants must include Consultant PM, APM, Consultant discipline leads, and Agency review staff. The consultant is responsible for providing all meeting materials needed to facilitate the meeting.

The meeting must include, at minimum, the following activities:

* Evaluating effectiveness of risk response actions taken;
* Re-evaluating each risk status (active, dormant, or retired) after undergoing risk response action;
* Re-analyzing the risk after undergoing risk response action to determine the residual risk;
* Determining if new risks have emerged during design development, including risk description and documented assumptions regarding the risk;
* Qualitative risk analysis for new scope, schedule, and budget risks that have emerged during design development that includes determining, through engineering judgment, the probability that the risk will occur and, if the risk where to occur, the impact to the Project schedule and budget;
* Prioritizing of new risk events;
* Developing and documenting a detailed risk response strategy for new risks;
* Determining, identifying and documenting the risk owner of new risks;
* Updating the risk monitoring and control section of the Project Risk Register for all identified risks with a narrative describing risk response actions taken including risk retirement; and
* Documenting all outcomes and decisions in the Project Risk Register.

Consultant shall update the Project Risk Register and deliver to the APM with the submission of the following milestones: Design Acceptance Package (DAP), Preliminary Plans, Advance Plans, Final Plans, and Plans, Specifications, and Estimate (PS&E).

Consultant discipline leads responsible for the preliminary engineering and design of the Project, which include: bridge and structures, roadway, traffic, right of way, utilities, hydraulics, geotechnical, and environmental, shall schedule, attend, and participate meetings for monitoring and reviewing Project risks.

Based on the results from the monitor, review, and update meetings for the Project Risk Register, Consultant shall update the Project Risk Register and submit it to the APM within 7 calendar days of the meeting.

**Deliverables and Schedule:**

Consultant shall provide:

* Consultant discipline leads to attend and participate in 5, 2 hour monitor, review, and update meetings for the Project Risk Register within 2 weeks of each milestone distribution
* Consultant shall provide an updated Project Risk Register (electronic copy) delivered to APM within 7 calender days of the meeting

**Task 1.6.3 Construction Management Transition**

***(Specify if the construction administration is Agency or Consultant led. Insert specific meeting location. Otherwise, the following must be included without any additions, deletions or revisions)***

6 weeks prior to the Project bid date, Consultant PM shall schedule, prepare the agenda for, and lead up to a 2 hour meeting, held at Agency’s offices in Region XX, for the purposes of reviewing the Project Risk Register with key construction administration personnel. Meeting participants must include Consultant PM, APM, and Agency/Consultant construction PM. The meeting will last no longer than 2 hours not including travel time and can be attended remotely with prior approval from the APM. The meeting must include, at minimum, the following activities:

* Reviewing of the entire Project Risk Register with the Agency/Consultant Construction PM, specifically highlighting active and high severity risks;
* Diligent review of risks that have been accepted as a risk response strategy;
* Discussion of how the risks evolved during the Project development and design phase; and
* Identifying, analyzing, and developing any new risks that have arisen since the Plans, Specifications & Estimate (PS&E) phase.

**Deliverables and Schedule**:

Consultant shall provide:

* Schedule, prepare an agenda for, and lead the construction management transition meeting on the date agreed upon by Agency
* Draft meeting notes, including action item/ decision log, (electronic copy – PDF) to APM within 7 calendar days of meeting
* Final meeting notes (electronic copy – PDF) to APM within 7 calendar days of receipt of all Agency comments on draft notes

**TASK 2 SURVEY**

Survey task version date: 3/11/19

**[INSTRUCTIONS]:**

* Yellow highlighted areas include instructions that are deleted prior to executing contract/WOC.
* Blue highlighted areas indicate text or fields that need information provided or revised.
* Quantities. When entering quantities, the best practice is to use only the Arabic numeral and not spell out the numeral followed by the digit in parenthesis.
* Delete text of any tasks that do not apply to the Project and label as “RESERVED” next to the task title.. Contingency tasks that do not apply to a given Project can be deleted without marking as “RESERVED”, provided task numbering is revised if necessary.

# TASK 2 SURVEY

Consultant shall survey the Project for the areas as described in Section A of this SOW unless otherwise noted in specific tasks. Consultant shall adhere to the standards stipulated by Oregon Revised Statute (“ORS”) 672.047, subsections (1) through (7). Consultant's Professional Land Surveyor, registered in the State of Oregon, shall review and stamp as “Approved” all survey related deliverables and shall perform all land surveying Services under this SOW in conformance with all state statutes pertaining to survey and land boundary laws. These include, but are not limited to, the following state statutes: ORS Chapters 92, 93, 209 and 672.

The Services provided under this task must be accomplished according to the following manuals and standards:

* ODOT Survey Policy and Procedure Manual
* ODOT Basemap Standards, Data Collection and Drafting Procedures
* ODOT Right of Way (“R/W”) Engineering Manual
* ODOT Highway Design Manual (R/W Section)
* ODOT Contract Plans Development Guide (Base Maps)
* ODOT Global Navigation Satellite System (“GNSS”) Guidelines
* ODOT Monumentation Policy
* ODOT Survey Filing Map Standards - (Control Recovery and Retracement Surveys)
* ODOT Survey Filing Map Standards - (R/W Monumentation Surveys)
* ODOT Manual for Survey Control Data Sheets for Construction Plans
* [ODOT ProjectWise User’s Manual](http://transnet.odot.state.or.us/hwy/ProjectWise/SiteAssets/SitePages/Home/ODOT%20ProjectWise%20User%20Manual.pdf) [Delete if not applicable]

Consultant shall conform to applicable requirements in Agency manuals and standards for all authorized contingency tasks/deliverables.

## Prior to Commencing Survey

## Consultant shall schedule meeting with Region Survey Office to review SOW and discuss any specific questions.

## Limits of Consultant Survey

Consultant shall provide surveying Services for XXXXXX.

## Limits of Agency Survey

Agency will provide surveying Services for the following XXXXXX.

## Task 2.1 Survey Control

Consultant shall create a Survey Control Plan Sheet relative to horizontal and vertical datum, map projection, and coordinate systems.

Horizontal Control

Consultant shall establish horizontal control according to Agency standards as specified in manuals above with Agency approved coordinate system prior to establishing control.

Vertical Control

Consultant shall establish Project vertical control based on current Agency standards or other datum as approved by Agency, using procedures as specified in manuals above.

**Deliverables**

Consultant shall submit the following items (per the due date included in the table at end of Task 2) prior to filing control survey with the County.

* Raw Data
  + Horizontal
  + Vertical
  + Scanned copy of the original field notes, including processing edits in red color, electronic copy (.pdf).
* Narrative of RAW data. For the levels electronically processed, submit 1 copy of each of the following: original raw file as collected in the field, adjustment report file showing level closure data. and file showing the level rod readings not shown in the field notes.
* A report of adjustment of control using Agency approved methods as specified in manuals.
* A text file containing point numbers, adjusted northing and easting coordinates, elevations, and descriptors. Primary GPS network; provide geodetic coordinates.
* Survey Control Plan Sheet to be submitted as part of Draft DAP deliverables in format specified in Draft DAP task.

### **Task C2.1.1 Additional Control for Changes to Project Limits** (**CONTINGENCY TASK; See section F**)

**[Add task language and deliverables if the contingency task is included in the SOW.]**

## Task 2.2 Recovery and Retracement

Consultant shall identify the location of the existing Centerline(s), R/W lines, Property line(s) (Resolve), to perpetuate the location of the monuments found and document the control used for this Project area. Consultant shall produce Survey Filing Maps (“SFM”) as deliverables.

These tasks must address the requirements of ORS 209.150 and 209.155 and other survey related statutes.

**Tools**

The MicroStation seed file, drafting menus, and other tools are available on the ODOT FTP site: (<ftp://ftp.odot.state.or.us/isb/appeng/MicroStation/V8i/>)

The seed file (seedRW2d.dgn) is used to create the “key number”ret.dgn or appropriate Projectwise naming convention, which is a single Microstation file containing multiple models to produce the maps. “The Survey Filing Map Borders” model contains ODOT borders the extra models not needed, can be removed from the file.

Consultant shall draft all coordinate correct line work and elements in the “Design” model of the Bentley Microstation .dgn file, contained in the electronic R/W seed file. The scale will vary on whether it is an urban or rural area. The scale typically will be either 1 inch = 50 feet in an urban area or 1 inch = 100 feet in a rural area.

**Research**

Consultant shall perform data research as necessary to prepare for and support all Project activities, and to produce Project maps and reports as called for in subsequent tasks.

**Monument Recovery**

Consultant shall survey all features necessary to complete Monument Recovery for this Project.

Consultant shall notify County Surveyor of any public land survey corner or accessories in danger of being destroyed due to the impending Project, pursuant to ORS 209.140.

**Existing R/W & Boundary Resolution**

Consultant shall resolve the R/W centerlines alignments, R/W lines and property boundaries abutting the highway along the proposed route of construction at the following location XXXXXX.

Consultant shall submit the retracement and narrative to the ODOT Region Surveyor for review prior to drafting the SFM.

**Control, Recovery, Retracement Survey Filing Map (“SFM”)**

Consultant shall create an SFM in accordance with Agency “Survey Filing Map Standards”, County and ORS requirements.

Consultant shall submit a 20% deliverable of the Control, Recovery or Retracement survey(s) for review of the first stages of drafting. This submittal must show the sheet layout with the portions of the survey cut out within the sheets, alignments, R/W lines, and property lines. Consultant shall submit a monument station and offset report with the 20% review.

Consultant shall submit an 80% deliverable of the Control, Recovery or Retracement survey(s) for review of the last stages of drafting. This submittal must show the data for the survey filing as complete except details and R/W computed points.

Consultant shall submit a 99% deliverable to Agency a copy of the Control, Recovery or Retracement survey(s) sent to the County for review. If the County does not review before filing then this will be Agency’s last review before filing with the County.

Consultant shall submit the following with the Draft SFM package:

* “Trio listing kit” with Property Vesting Deeds in electronic format for each property within the Project site
* Ownership List in Microsoft Excel spreadsheet
* Electronic version of all existing R/W maps (in .pdf format)
* County Assessor Maps in.pdf in format.
* General Land Office Plats in.pdf format.
* County Road establishment records in electronic format.
* County Road vacation records in electronic format.
* Subdivision and Land Partition Plats in electronic format.
* County Surveys of record in electronic format.
* Maps and Data related to Government Public Lands – Survey Corners and any references in electronic format.
* Copies of all field survey notes in electronic .pdf format
* Current maps, data sheets, surveys, etc in electronic format.
* Geodetic Survey Mark Report (ODOT Form 734-2802) for all recovered marks owned or appearing set by a government agency.
* Scanned copy of the original field notes in .pdf format.
* ASCII file containing the following information in this order, Point number, Northing, Easting, Elevation, alpha feature code, and any attributes collected.
* Bentley MicroStation .dgn file - this must have centerlines, R/W lines, property lines and ownerships of properties abutting our highway and all tied monuments.
* Bentley Inroads .alg file - this must consist of the centerlines, control and monument data.
* Narrative document - this must explain the procedures used to resolve the R/W centerline, using the examples in the SFM Drafting Standards as a guide to the type of content in the narrative.
* Bentley Inroads Reports of alignment(s) .xml - this must have alignment and curve reports that show coordinates, bearings, stations etc per Bentley Inroads standard reports.
* Report of Monument Location - this is the station and offset report, which must show the relationship of the monuments to the retraced alignment(s).

**Deliverables/Schedule:** Consultant shall provide Draft and Final SFM packages per the due dates included in the table at end of Task 2.

**[Add dates to deliverables table]**

* 20% Draft SFM - 20% draft of the Control, Recovery or Retracement Survey(s) in Bentley MicroStation .dgn and Bentley Inroads .alg file format and a .pdf copy of the draft map.
* 80% Draft SFM - 80% Draft SFM of the Control, Recovery or Retracement Survey(s) in Bentley MicroStation .dgn and Bentley Inroads .alg file format and a .pdf copy of the draft map.
* 99% Final SFM - Draft Final of the Control, Recovery or Retracement Survey(s). This copy must be submitted to the county for review if that county does reviews. This must be in Bentley MicroStation .dgn and Bentley Inroads .alg file format and a .pdf copy of the draft map.
* Final SFM of the Control, Recovery or Retracement Survey(s). This must be in Bentley MicroStation .dgn and Bentley Inroads .alg file format.
* A .pdf copy of the recorded survey as approved by the county.

## Task 2.3 Topographic Data and Basemap

Consultant shall collect the existing topographic features and create a basemap used to design this Project. Consultant shall collect topographical data to accurately represent the surface of the ground to be included in the Digital Terrain Model.

Consultant shall collect topographic data of constructed and natural features within the Project limits using Agency approved methods and standards, including all file naming and coding formats.

Two-dimensional features, if needed, must be mapped according to Agency standards.

**[Add list of specifics that we want them to map.]**

Consultant shall make field ties of all utility features including, but not limited to underground and overhead utility. Consultant shall collect 3D positions of overhead utility lines.

**Deliverables/Schedule:** Consultant shall provide the following per the due dates included in the table at end of Task 2.

* 1 electronic copy, in .pdf format, of the original field notes.
* Text file containing the following information in this order:
  + Point Number, Northing, Easting, Elevation, Alpa Code (PNEEC) with suffix “ST” if point is the beginning of a line, and any additional feature information collected.
* Utility Request Documentation (.pdf), including Oregon Utility Notification tickets
* Provide any correspondence from the utility including emails or phone call logs.
* Base Map in MicroStation design file (.dgn) containing all the tied topographic features conforming to Agency file naming conventions.

## Task 2.4 Digital Terrain Model (“DTM”)

Consultant shall create a three-dimensional digital terrain surface using topographical data collected within the areas described in this SOW.

Consultant shall create the DTM that meets Agency’s criteria for surface triangulation. Consultant shall collect confidence points in the field and generate a confidence point report. The topographical data and confidence points must be gathered by techniques consistent with the construction of a DTM as defined by Agency standards.

**Deliverables/Schedule:** Consultant shall provide the following per the due dates included in the table at end of Task 2.

* InRoads .dtm file that is compatible with Agency’s current version of InRoads.
* Confidence point analysis report in .pdf format.
* MicroStation design file (.dgn), or model within Basemap dgn, displaying triangles and contours.

### **Task C2.4.1 BaseMap/DTM** **Revisions** (**CONTINGENCY TASK; See Section F**)

Consultant or Agency may initiate discussion regarding needed revisions and updates to the Basemap and DTM data due to Project changes as a result of design changes or design additions. Consultant shall perform needed revisions and updates to Basemap and DTM data according to Agency standards as specified in applicable survey manuals.

[Additional basemap and dtm data areas to be defined here.]

## Task 2.5 Right of Way (“R/W”) Engineering (Mapping and Descriptions)

Consultant shall perform the following Services under this Task:

* Determine the necessary R/W to accommodate the Project construction.
* Develop a R/W basemap.
* Develop the R/W acquisition maps.
* Prepare written property description and addendums or RITS data sheets.
* Prepare sketch map to accompany legal descriptions.
* Support the Project R/W acquisition.
* Map the existing highway accesses within the Project limits.

**Tools**

See the R/W Engineering Internet Page for manuals and help documents:

<https://www.oregon.gov/ODOT/ETA/Pages/ROW-Engineering.aspx>

### **Task 2.5.1 R/W Basemap and New R/W Design/Layout for Project**

Consultant shall prepare the R/W basemap and new R/W Design/Layout according to Agency standards.

**Deliverables/Schedule:** Consultant shall provide the following deliverables per the due dates included in the table at end of Task 2.

* InRoads Alignment File(.alg).
* The Microstation file containing the R/W basemap/“Design” model, per Agency standards**.**

### **Task 2.5.2 Active R/W Acquisition Map**

Consultant shall prepare the R/W Acquisition Map according to Agency standards.

**Deliverables/Schedule:** Consultant shall provide the following deliverables per the due dates included in the table at end of Task 2:

* Microstation .dgn file with the appropriate MicroStation models that form the Active R/W Acquisition Map submitted in electronic format (\*rw.dgn).
* A .pdf copy of the Active R/W Acquisition Map.

### **Task 2.5.3 R/W Descriptions and Sketch Maps**

Consultant shall use the Active R/W acquisition map to develop the descriptions and sketch maps for (X) parcel(s), according to Agency standards.

Consultant shall obtain from the Project access sub-team (Agency or Consultant) the access rights to be acquired with each conveyance for the Project. Consultant shall coordinate with Agency’s Right of Way and Access Management Sections to develop the specific access management strategy for the Project.

**Deliverables/Schedule:** Consultant shall provide the following deliverables per the due dates included in the table at end of Task 2:

* The electronic vesting documents for each property owner(s) submitted in single, independent electronic files for each individual property description to the Region Survey Unit with notification to the APM.
* The R/W Sketch map in electronic format (.pdf). The R/W Sketch map must have the topographic model referenced into it.

### **Task C2.5.4 Right of Way Descriptions Revisions due to Project Scope Changes** (**CONTINGENCY TASK; see Section F**)

This Contingency Task is applicable to revising R/W documents related to changes made by Agency or other third parties after Consultant has completed work covered by Task 2. This task is not applicable to revisions to correct deliverable deficiencies, errors or omissions by Consultant, which must be corrected no cost to Agency.

### **Task C2.5.5 Railroad Exhibit Maps** (**CONTINGENCY TASK; See Section F**)

[Add task language and deliverable if the contingency task is included in the SOW.]

### **Task C2.5.6 Forest Service Plat Maps (CONTINGENCY TASK; see Section F)**

[Add task language and deliverable if the contingency task is included in the SOW.]

### **Task C2.5.7 Bureau of Land Management (“BLM”) Plat Maps (CONTINGENCY TASK; See Section F)**

[Add task language and deliverable if the contingency task is included in the SOW.]

### **Task C2.6 Staking (CONTINGENCY TASK; see Section F)**

Consultant shall place stakes during Project development, construction or at other times of Agency need. This may include but is not limited to: existing R/W, proposed R/W, proposed easements, proposed environmental mitigation sites, construction grades, slope staking, and utility location and relocations.

**Deliverables/Schedule:** Consultant shall submit the following deliverables per the due dates included in the table at end of Task 2:

* Physical stakes placed and or paint marks.
* Original field notes and one scanned copy of the original field notes in .pdf format.
* Electronically stored point location “As-Staked” in the Point Number, Northing, Easting, Elevation, Alpa Code PNEEC format.
* Grade calculations in electronic .pdf format.

### **Task C2.7  Monumentation Surveys** (**CONTINGENCY TASK; see Section F**)

Consultant shall prepare the monumentation survey according to Agency standards.

The purpose of the monumentation task is to document the location of the R/W Centerlines and R/W lines, at the end of construction.  These tasks are to address the requirements of ORS 209.155.

Consultant shall replace destroyed monuments that are not within areas of new R/W purchased, according to ORS 209.150 and 209.155.  Consultant shall place ODOT-provided caps or Company specific caps per ORS on all monuments replaced or referenced.

Consultant shall create SFMs in accordance with Agency “Survey Filing Map Standards”, County and ORS requirements.

**Deliverables/Schedule**

Consultant shall submit (per the due dates included in the table at end of Task 2):

* 99% Draft SFM of the Monumentation Survey(s).

Submit this copy to Region Survey Office through the APM for review. The submittal shall also include copies of the new Microstation file and Inroads Geometry file. The new Inroads Geometry file must include at a minimum:

* + a copy of all alignments that ODOT purchased R/W from,
  + COGO points for all monuments to be set,
  + all control points and monuments found and set

Note: Agency will return review comments to Consultant within X weeks of receiving the 99% deliverable of the SFMs.

* Final SFM - File the final SFM of the Monumentation Surveys with County after addressing any County comments.  The submittal shall include copies of the completed Microstation file and Inroads .alg file.
* County Survey Filing Record  - Provide an electronic copy of the recorded Final SFM from County in .pdf format.

**SURVEY TASK SUMMARY AND SCHEDULE TABLE**

[Edit dates and tasks as needed in deliverables table. For full service WOCs, the contents of this table should be moved to Task Summary and Schedule Table for all tasks at the end of the SOW.]

|  |  |  |
| --- | --- | --- |
| **Task Number** | **Task Title** | **Deliverables Due Dates** |
| 2.1 | Survey Control | XXXXXX |
| C2.1.1 | Additional Control for Changes to Project Limits (CONTINGENCY TASK) | Per agreed-to date specified in contingency NTP |
| 2.2 | Recovery and Retracement   * 20% Draft SFM * 80% Draft SFM * 99% Final SFM - Draft Final * FINAL SFM * A .pdf copy of the recorded survey as approved by the county. | XXXXXX  XXXXXX  XXXXXX  XXXXXX  XXXXXX  XXXXXX |
| 2.3 | Topographic Data and Basemap | XXXXXX |
| 2.4 | DTM | XXXXXX |
| C2.4.1 | Task C2.4.1 BaseMap/DTM Revisions  (CONTINGENCY TASK) | Per agreed-to date specified in contingency NTP |
| 2.5.1 | R/W Basemap and New R/W Design/Layout for Project | XXXXXX |
| 2.5.2 | Active R/W Acquisition Map | XXXXXX |
| 2.5.3 | R/W Descriptions and Sketch Maps | XXXXXX |
| C2.5.4 | Task C2.4.1 BaseMap/DTM Revisions  (CONTINGENCY TASK) | Per agreed-to date specified in contingency NTP |
| C2.5.5 | Railroad Exhibit Maps  (CONTINGENCY TASK) | Per agreed-to date specified in contingency NTP |
| C2.5.6 | Forest Service Plat Maps  (CONTINGENCY TASK) | Per agreed-to date specified in contingency NTP |
| C2.6 | Staking (CONTINGENCY TASK) | Per agreed-to date specified in contingency NTP |
| C2.7 | Monumentation Surveys (CONTINGENCY TASK) | Per agreed-to date specified in contingency NTP |

# TASK 3 ENVIRONMENTAL SERVICES

## Task 3.1 Environmental Reconnaissance and kick off *- RESERVED*

[Mark 3.2 as RESERVED if not applicable.]

## Task 3.2 NEPA Categorical Exclusion (“CE”) and Programmatic CE (“PCE”) documentation

Consultant shall provide technical assistance and Services necessary to meet Federal Highway Administration (“FHWA”) National Environmental Policy Act (“NEPA”) classification documentation requirements for NEPA Categorical Exclusion projects (“Class 2 Projects”).

Consultant shall complete this task in compliance with Agency’s “ODOT NEPA Manual 420 – Categorical Exclusions and Programmatic Categorical Exclusions” procedures, available at: <https://www.oregon.gov/odot/GeoEnvironmental/Pages/NEPA-Manual.aspx> (found on the “ODOT NEPA Program website” <https://www.oregon.gov/odot/GeoEnvironmental/Pages/NEPA.aspx>)

Consultant shall prepare all deliverables for this task using fillable forms available on the ODOT NEPA Program website.

### 3.2.1 Draft Environmental Scoping Documentation

The “Environmental Prospectus” demonstrates that adequate environmental scoping has occurred by documenting potential environmental impacts of the Project on environmental resources within the Project area of potential impact. The Environmental Prospectus is required by Agency and FHWA to meet NEPA requirements and determine the appropriate NEPA classification for the Project.

Agency will: [add or delete applicable obligations that Agency intends to perform]

* Provide a written description of the Project and conceptual design for inclusion in draft Environmental Prospectus and to describe the scope of the potential environmental work needed to comply with all appropriate local, state, and federal laws.
* Provide Project scoping notes, if available.
* Review draft Environmental Prospectus deliverables and provide comments to be addressed by Consultant in the next version of draft Environmental Prospectus.
* Approve (sign) and finalize the Environmental Prospectus.
* Coordinate with FHWA and other state or Federal agencies as needed.

Consultant shall: [add or delete applicable services that Consultant shall perform]

* Prepare draft Environmental Prospectus to comply with Agency and FHWA requirements and standards outlined in *ODOT NEPA Manual 420*.
* Coordinate with Agency’s Region Environmental Coordinator.
* Organize and attend 1 site visit to the proposed Project area and visit all areas of the Project to obtain information for draft Environmental Prospectus. Site visit attendees must include a minimum of 1 Agency representative with sufficient Project information to describe the Project in full.
* Research all available information as necessary to sufficiently address every section of draft Environmental Prospectus, including but not limited to:
  + Project scoping notes, if available from Agency
  + Project description provided by Agency
  + Conceptual design for the Project provided by Agency
  + Inspection of proposed Project area during site visit
  + Information provided by Agency subject matter experts
* Incorporate relevant information obtained from research into draft Environmental Prospectus as appropriate.
* Prepare draft Environmental Prospectus using the most current format and procedures found on ODOT NEPA Program website.
* Prepare the draft Environmental Prospectus to address multiple disciplines as they are applicable to the Project, including but not limited to: [Select all disciplines that must be addressed in draft Environmental Prospectus for this Project]

|  |  |
| --- | --- |
| * Aesthetics / Visual Resources | * Air Quality |
| * Biological Resources (Fish, Birds, Wildlife, Plants/Habitat) | * Environment and Archaeological Resources) |
| * Economic and Social Impact Considerations | * Energy Resources |
| * Environmental Justice Considerations | * Hazardous Materials and Sites |
| * Land Use Compatibility / Permits Needed | * Noise Study / Mitigation |
| * Public Parks / Recreation Resources | * Right-of-Way Needs (Permanent and Temporary) |
| * Section 4(f) evaluation and documentation | * Section 6(f) identification and coordination with Oregon Parks and Recreation documentation |
| * Traffic Analysis and Study Report | * Wetlands and Waters of the State/US * Floodways and Floodplains |
| * Water Resources / Water Quality / Stormwater |  |

Draft Environmental Prospectus must: [add or delete applicable requirements for draft Environmental Prospectus deliverable]

* Be completed in its entirety to address all applicable requirements for the Project.
* Indicate recommended NEPA classification (checkbox) for the Project (“PCE” or “CE”).
* Meet requirements and standards in *ODOT NEPA Manual 420*, as applicable to this Project.
* Describe the potential environmental impacts of the Project.
* Address all disciplines as required in this task.

**Task 3.2.1 Deliverables and Schedule**

#### 3.2.1.1 Submit 1 electronic copy of initial draft Environmental Prospectus to APM within 90 calendar days of NTP – or – per Task 1 Project Design Schedule. [Choose appropriate option or specify another timeline for due date]

#### 3.2.1.2 Submit 1 electronic copy of final draft Environmental Prospectus to APM within 2 weeks – or – per Task 1 Project Design Schedule [choose appropriate option or specify another timeline for due date] following receipt of Agency review comments.

### C3.2.2 PCE Determination Form (Draft) (**CONTINGENCY TASK – see Section F.)**

[Notice to Proceed for this Contingency Task must be pre-approved by Regional Environmental Coordinator.]

If authorized by NTP, Consultant shall:

* Prepare a draft PCE Determination Form using the appropriate fillable form provided on ODOT NEPA Program website.
* Prepare PCE Determination Form in compliance with *ODOT NEPA Manual 420*.
* Complete draft PCE Determination Form after draft Environmental Prospectus is finalized and approved by Agency, and prior to start of preparing the PCE Approval (Task 1.3)

Agency will coordinate and collaborate with other agencies as needed to obtain required approvals and signatures.

**Task C3.2.2 Deliverables and Schedule**

#### C3.2.2.1 Submit 1 electronic draft PCE Determination Form to APM within 3 weeks of Agency’s approval of Environmental Prospectus – or – per Task 1 Project Design Schedule. [Choose appropriate option or specify another timeline for due date]

### Task 3.2.3 Draft and Final NEPA CE and PCE Documentation

Consultant shall prepare draft NEPA CE or PCE documentation, as applicable in compliance with *ODOT NEPA Manual 420* and Section C of this Statement of Work.

Consultant shall, with Agency input, compile all CE or PCE supporting documentation, including but not limited to:

* research and field data
* State and Federal agency consultation and coordination documentation (provided by Agency)
* all environmental clearances, findings, and approvals (provided by Agency)

Consultant shall:

* Complete a draft PCE Approval or draft CE Closeout after all relevant state and Federal environmental clearances, findings, and approvals have been finalized and approved by Agency.
* Utilize forms available on ODOT-NEPA website
* Prepare draft PCE Approval or draft CE Closeout documents based on:
  + Information in CE or PCE supporting documentation for each discipline identified as part of the Project in the Environmental Prospectus.
  + Approved Environmental Prospectus, including all state and Federal agency environmental clearances, findings, and approval documentation.
* Follow specific protocols and use specific language in the *ODOT NEPA Manual 420* to complete draft PCE Approval or draft CE Closeout discipline narrative sections.
* Include the approved/final signed supporting documents as required by the *ODOT NEPA Manual 420*, and as applicable to the Project (e.g., Endangered Species Act (“ESA”) approvals, cultural resources documentation, hazardous materials, Section 4(f) findings, etc.).

On behalf of FHWA and in compliance with the PCE Agreement, Agency will approve the Agency-accepted PCE Approval and supporting documents, or Agency will submit the Agency-accepted CE Closeout and supporting documents to FHWA Oregon Division for review and approval.

**Task 3.2.3 Deliverables and Schedule**

3.2.3.1 Submit1 electronic copy of draft PCE Approval or draft CE Closeout and all appropriate approved/final signed supporting documents to Agency per Task 1 Project Design Schedule. [Choose appropriate option or specify another timeline for due date]

#### 3.2.3.2 Submit 1 electronic copy of revised, Agency-accepted, PCE Approval or revised, Agency-accepted, CE Closeout and supporting documents to Agency within 2 weeks following receipt of Agency review comments – or – per Task 1 Project Design Schedule. [Choose appropriate option or specify another timeline for due date]

## Task 3.3 Transportation

Consultant shall compile a Draft Transportation Technical Report to include the findings from the analysis of no-build and build alternatives showing the anticipated effects of the build alternative on vehicle and alternative modes of transportation.

The report shall include traffic data and analyses developed in Task 10 and shall follow the following outline.

* Traffic analysis summarizing future travel demand, performance of all study area signalized intersection performance, corridor travel times, and peak spreading.
* Analyze boarding and alighting data, ridership numbers and forecasts, compile transit stop deficiencies, transit connections, origins and destinations and examine planned improvements to transit service and stops.
* Map of sidewalk locations and gaps, bike lane widths, locations and gaps and connections to the larger bike and pedestrian system.
* Map of all approaches, public and private, in the study area
* Map of proposed concepts for potential alternate routes of access overlaid on land use map, if needed
* Pie graph showing collision type, crash type and a description of trends and contributing factors. A safety analysis of age, time of day, weather and mode.
* Bar chart showing crashes at each intersection for each direction
* Methodology Memo in appendix summarizing the travel demand forecasting methods, post processing steps, safety data organization intersection analyses.

Consultant shall distribute Draft Transportation Report to Agency via E-mail in .pdf format. Agency will supply consolidated set of comments to Consultant within 3 weeks of receipt of Draft Transportation Report. Consultant shall provide comments on the documentation within 2 weeks of receipt of Agency comments. Subsequent to ODOT review, Consultant shall submit revised draft report to Federal Highway Administration (“FHWA”) for a 30 calendar day review. Consultant shall revise document based on comments from FHWA after receiving approval from ODOT.

Consultant shall distribute a Final Transportation Technical Report to Agency via email in .pdf format. Agency will supply a consolidated set of comments to Consultant within 2 weeks of receipt of the initial Final Transportation Technical Report. Consultant shall implement Agency comments on the draft of the report and produce a Final Transportation Baseline Report within 2 weeks of receipt of Agency comments.

Consultant shall attend 4 coordination meetings. Each meeting will be held at ODOT Region 1 offices, including 3 Consultant staff for up to 2 hours per meeting.

**Deliverables/Schedule:** Consultant shall provide:

* Draft Transportation Technical Report delivered 4 weeks after NTP is received.
* 1st Revised Transportation Technical Report delivered 2 weeks following receipt of Agency review comments.
* 2nd Revised Transportation Technical Report delivered 2 weeks following receipt of FHWA review comments.
* Final Transportation Technical Report delivered 2 weeks following receipt of Agency confirmation of final revisions.

## Task 3.4 Land Use Permit*- RESERVED*

## Task 3.5 Parks and Recreation - Section 4(f)

### Task 3.5.1 Section 4(f) Technical Memo

Section 4(f) Evaluations demonstrate that there is no feasible and prudent alternative to the “use” of National Register of Historic Places (“NRHP”)-listed or eligible historic sites, or “use” of a publicly-owned recreational resource, and that all possible planning was done to minimize harm if there are uses of properties. Potential historic and recreational resources within the Area of Potential Impact (“API”) will be evaluated for potential impacts.

Consultant shall prepare a Section 4(f) technical memo that identifies potential Section 4(f) properties within the Project’s API. Consultant shall also determine whether the Project impacts will require 4(f) Evaluations for each of these resources. In the Section 4(f) report, Consultant shall identify the specific Section 4(f) resources that the Project will potentially impact; determine the applicability of Section 4(f) status to individual resources; determine whether Project impacts constitute a “use” of each resource, state whether a Section 4(f) Evaluation will or will not be required. This analysis must be conducted according to the specific criteria for “use” of a Section 4(f) resource as defined in FHWA guidance.

**Deliverables/Schedule:** Consultant shall provide:

* Draft Section 4(f) Technical Memo delivered 27 weeks after NTP
* 1st Revised 4(f) Paper delivered 2 weeks following receipt of Agency review comments.
* 2nd Revised 4(f) Paper delivered 2 weeks following receipt of FHWA review comments.
* Final Section 4(f) Background Paper delivered 2 weeks following receipt of Agency confirmation of final revisions.

## Task 3.6 Business and Communities - *RESERVED*

## Task C3.7 Environmental Justice (CONTINGENCY TASK – see Section F)

Consultant shall prepare a draft and final Environmental Justice Assessment for the Project. Per Agency’s Environmental Justice Evaluation Checklist, the assessment must address the Project area demographics, describe Agency’s public involvement for the Project, and identify any disproportionately high or adverse impacts to low income or minority populations. At a minimum, information for the assessment will be collected through Census research and outreach in the Project area conducted as part of Task 4 (Public Involvement – Public Information) and Task 13 (R/W). The written assessment will be a maximum of 5 pages.

**Deliverables/Schedule:** Consultant shall provide:

* Draft Environmental Justice Assessment (.doc format) within 8 weeks of NTP for this contingency task;
* Final Environmental Justice Assessment within 2 weeks from receipt of Agency comments.

## Task 3.8 Visual Character and Resources

## Task 3.9 Noise Studies and Variances

Consultant shall provide noise analysis preparation, variance permit preparation, and assistance to Agency in meetings with the City of Portland. Consultant shall complete the following tasks:

### Task 3.9.1 Noise Technical Report (“NTR”)

#### Task 3.9.1.1 Meetings Related to Noise Study

Consultant shall attend and participate in up to 3 Project meeting(s) as scheduled by Agency or regulatory agencies. Consultant shall prepare minutes and distribute via email.

Meeting minutes must include:

* Discussion summary;
* Notes of any relevant written material on meeting room white board;
* Decisions made; and
* Next Steps/Action Items.

**Deliverables/Schedule:** Consultant shall provide:

* Meeting minutes due 3 business days after each meeting.

#### Task 3.9.1.2 Field Investigation, Data Gathering for NTR

Consultant shall conduct field investigations and data gathering at up to 6 locations as required for impact and abatement analyses and inclusion in the NTR.

Consultant shall:

* Follow the measurement requirements in the updated Federal traffic noise rule found in [23 CFR 772](http://www.gpo.gov/fdsys/pkg/FR-2010-07-13/pdf/2010-15848.pdf) and July 2011 [ODOT Noise Manual](https://www.oregon.gov/odot/GeoEnvironmental/Docs_Environmental/Noise-Manual1.pdf) (”ODOT Noise Manual”).
* Prior to the on-site visit, consult with Agency and ODOT Noise Specialist to determine if there are any specific noise sensitive locations that need to be addressed (e.g., locations of noise complaints, locations that might become noise impacted because of vegetation removal in the R/W, or locations subject to high non-traffic background noise levels).
* Coordinate measurement locations with the ODOT Noise Specialist before proceeding with field work.
* Identify existing land uses within the area to be studied prior to on-site visit and confirm noise sensitive land uses during site visit;
* Identify local topographical conditions (naturally occurring or man-made) that may affect the transmission of noise (e.g., berms or existing sound walls)
* Identify noise-sensitive properties as identified in Table 1 of the ODOT Noise Manual. Noise sensitive properties include properties used for schools, offices, retail, public, and residential use. Noise sensitive properties also include properties for which development is permitted;
  + Measure traffic noise in accordance with procedures in FHWA’s [Measurement of Highway Related Noise](http://www.fhwa.dot.gov/environment/noise/measurement/measure.pdf) (<https://www.fhwa.dot.gov/environment/noise/measurement/mhrn00.cfm> ) and Appendix D of the ODOT Noise Manual.
* Perform concurrent directional traffic counts by vehicle classification and determine speeds of all major roads during on-site short term noise monitoring. The counts must be recorded on the Noise Measurement Record form found in Appendix D of the ODOT Noise Manual or similar;
* Provide photographic and written documentation of each measurement site;
* Provide noise measurement sites on mapping or aerial photography with a scale of either 1″=100′ or 1″=200′.
* Provide current calibrations for noise meter(s) used in field investigation

**Deliverables/Schedule:** Consultant shall provide:

* Results from the field investigation and information gathering to be included in NTR.
* Current calibrations for the noise meter used for measurements to be included in draft and final NTR.
* Retain copies in Project files (Task 1) of the field investigation and data collected for the NTR, including noise measurement site forms, photographs, and mapping, that are to be submitted with the draft and final NTR as appendix material.

#### Task 3.9.1.3 Compare Measured-to-Predicted Noise Values

Consultant shall:

* Use the most recent version of the FHWA Traffic Noise Model (currently TNM 2.5) to construct an existing conditions noise model with the locations used during field measurements as receiver locations and the traffic counted at time of measurement as inputs to the model. The results of this modeling must be compared to the noise levels measured in the field. Pursuant to guidance found in the FHWA Traffic Noise Model Version 1.0 Users Guide[[1]](#footnote-2), agreement of 3 decibels or less, between the measured noise values and modeled noise values, is generally considered satisfactory. If the modeled noise level disagrees by more than 3 decibels, Consultant shall conduct additional review and follow-up of the modeled results to determine the likelihood of input error or the need for topographical inputs to the model.
* Review and follow-up measurement analysis to eliminate correlation errors.
* Model verification results, along with the traffic data used, and document in the noise studies.
* Note(s):
* No adjustment need be made for disparities of 3 decibels or less.
* No adjustments to model output to account for errors in verification are allowed without concurrence from the ODOT Noise Specialist.

If correction factors are used, then they must be justified and discussed in the NTR. Additional or unusual shielding is to be agreed upon, in advance, by Agency noise specialists. Additional or unusual shielding must be accounted for by measurement at site location and discussed in the NTR. Shielding that is not warranted for model validation must not be included in the noise impact modeling.

**Deliverables/Schedule:** Consultant shall provide:

* Results of this task in draft and final NTR. The electronic modeling files for model verification must be submitted with the draft and final NTR.
* Retain copies of all modeled comparisons (including electronic input/output data files used for modeling) for inclusion in the Project files (Task 1), to be submitted to Agency with the final NTR.

#### Task 3.9.1.4 Traffic Noise Impact Analysis and Mitigation Consideration

Consultant shall provide a comparison between the Peak Traffic Hour and the Peak Truck Hour to determine which of those two conditions result in the worst-case noise hour. Consultant shall submit reports detailing the outcome of all modeling runs, including the modeling runs used to determine worst case condition, to Agency with the draft and final NTR. Consultant shall use the worst-case noise condition (either Peak Hour or Peak Truck Hour) for all modeled scenarios to arrive at the worst-case traffic noise condition.

Consultant shall conduct traffic noise modeling and analysis for existing and future year based on one build alternative and the no-build alternative provided to Consultant for the Project. The alternatives analysis must include, at a minimum, the Existing Peak Noise Hour, the No-Build Future Peak Noise Hour, and the Build Future Peak Noise Hour. The analysis of alternatives must compare the number of times the noise approaches or exceeds ODOT’s NAACs by receiver and land use category.

Consultant shall consider noise mitigation measures where traffic noise impacts occur.  The traffic noise impact criteria against which the Project traffic noise levels are evaluated are taken from Title 23 of the Code of Federal Regulations (“CFR”) Part 772, Procedures for Abatement of Highway Traffic Noise and Construction Noise (July 13, 2010) and the ODOT Noise Manual.

Where noise mitigation is considered, Consultant shall analyze and evaluate abatement according to feasible and reasonable criteria described in 23 CFR 772 and the ODOT Noise Manual. The abatement evaluation must be discussed in the NTR and summarized using the Noise Abatement Evaluation form found in Appendix G of the ODOT Noise Manual.

Consultant shall include in draft and final NTR documentation of noise mitigation analysis and recommendations, mapping of location(s) for recommended mitigation, table or spreadsheet showing the variations of barrier wall dimensions considered (along with the amount of noise reduction per benefitted receiver and the costs associated with the specific variation), and recommendation regarding build or no-build for mitigation.

Consultant shall utilize the Special Use worksheet in the ODOT Noise Manual Appendix F for noise abatement measures for schools, parks, place of worship, and other nonresidential developments.

If Project is in Final Design Phase, Consultant shall provide Agency with location of properties that would benefit from the mitigation so that residents and owners can be surveyed as to their wishes concerning mitigation.

Consultant shall evaluate all reasonable criteria with the exception of the abatement approval survey.

The abatement evaluation forms must be included in the Technical Report.

**Deliverables/Schedule:** Consultant shall provide:

* Electronic input and output data files used for impact analysis must be included as a deliverable in the NTR table(s) showing comparison of alternatives to be included in NTR.
* Noise Mitigation Evaluation and Recommendation form for each abatement measure analyzed (ODOT Noise Manual, Appendix G), to be included in the NTR.
* Documentation of abatement cost factors for Category C, D or E if necessary (ODOT Noise Manual, Appendix F, Table 1), to be included in the NTR.
* Electronic input and output TNM data files used for mitigation evaluation to be submitted with Deliverables for NTR

#### Task 3.9.1.5 Prepare NTR

Consultant shall prepare a draft and final NTR to adequately and accurately detail the findings of the noise study investigation, traffic noise analysis, and proposed noise mitigation efforts. The required documentation contained in the NTR is found in 23 C.F.R. § 772 and the ODOT Noise Manual. Appendix I of the ODOT Noise Manual provides an outline of the essential components of NTRs. The ODOT Noise Manual is the primary document to be followed in development of the noise study and the technical report. Consultant shall direct questions regarding alternative format to APM.

The NTR must incorporate all elements required in the ODOT Noise Manual and results of the tasks in this SOW including, but not limited to:

* Measured traffic noise level as well as a correlation to the modeled results for each of the noise measurement sites.
* Predicted Existing, No-Build Future and Future Build noise conditions for each alternative under study. Documentation of this information in the report must be furnished by use of text, tables, and mapping (graphics). As part of this documentation, existing roadway alignments and proposed future roadway alignments must be identified by mapping.
* Identification and discussion of any developed land use that is planned for displacement as a result of Project construction and a summary of the net effect on the number of traffic noise impacts through their removal. This may be accomplished through text, tables, and mapping that clearly identifies the subject land use.
* Table comparing the number of traffic noise impacts for each alternative. Traffic noise impacts must be clearly identifiable by means of mapping and through numbering of the noise prediction sites. Identification of traffic noise impacts must show the anticipated noise level at each receiver and the number of receptors each receiver represents.
* Summary of noise mitigation consideration or, if needed, the detailed noise mitigation analysis conducted for each noise impacted receiver or group of receptors.
* Discussion of unavoidable impacts.
* Discussion of noise compatible planning concepts and design year noise levels and distances to NAAC criteria or NAAC contours for undeveloped land.
* If the noise mitigation analysis includes a recommendation for noise barriers, Consultant shall include a statement in the NTR similar to the following:

“At this time it appears likely that the proposed noise mitigation in question will be included in the Project. During the Final Design Phase of the Project, the noise wall will be re-evaluated to determine if the wall(s) still meets the criteria for reasonableness and feasibility and is desired by the residents of the area. If, at that time, a majority of the residents do not want the wall, or if the design of the Project has changed and the wall is no longer reasonable or feasible to construct, the barrier in question may not be recommended for construction.”

Consultant shall conduct QA/QC checks on all submittals to Agency. This includes checking all modeling input and output, and tables and figures in report for errors. These checks must be performed by someone other than the noise analyst. Submittals to Agency must be reviewed by senior Consultant staff other than the analyst, who is proficient in TNM, traffic noise impact and abatement analyses. Submittals to Agency must be edited to eliminate grammatical errors, and to ensure consistency and readability.

Consultant shall submit the draft NTR for one review by Agency. Consultant shall respond to Agency comments and incorporate responses in the final NTP. Agency will provide comments in a consolidated form with contradictions and redundancies (due to multiple reviewers) reconciled by Agency prior to providing to Consultant.

Upon approval by Agency staff, the final NTR must be reviewed and stamped by an Oregon-registered professional engineer who is employed by the same firm as the noise analyst and meets the requirements of OAR 820-010-0720.

Once the final NTR has been stamped, electronic and hard copies of the finished product must be submitted to Agency.

Note: Agency will distribute to FHWA, local jurisdictions, and others, as deemed appropriate.

**Deliverables/Schedule:** Consultant shall provide:

* Draft NTR within 12 weeks from the completion of vertical and horizontal design, and receipt of existing and future Peak truck and peak vehicular hour traffic volumes spit out by vehicle class (e.g., automobile, medium trucks, heavy trucks, buses, and motorcycles), and existing and future roadway speeds in both .pdf (with figures and appendices) and MS Word (without figures) format. If detailed noise mitigation analysis is required, 2 weeks will be added to schedule.
* Modeling files in electronic format with draft and final NTR.
* 1st Revised Report delivered 2 weeks following receipt of Agency review comments.
* 2nd Revised Report delivered 2 weeks following receipt of FHWA review comments.
* Final Report delivered 2 weeks following receipt of Agency confirmation of final revisions including all supporting documentation, mapping, forms, traffic data, and other information used in the development of the report.

### Task 3.9.2 Final Noise Wall Location Analysis

Consultant shall complete the following to confirm the earlier analysis and mitigation recommendations are still applicable to the Project:

Consultant shall:

* Review original NTR to determine where and what noise mitigation was recommended.
* Review the design of the Project for significant design changes that have occurred since the date of the original NTR and noise mitigation recommendation.
* If significant design changes have occurred, Consultant shall discuss with Agency’s Noise Specialist and prepare a Final Noise Wall Analysis memo to document whether or not those changes have the capacity to affect the originally proposed noise mitigation (i.e. render it ineffective or unnecessary.)
* If the design has significantly changed, Consultant shall re-analyze (via TNM modeling) the area in question to determine if the number and location of the traffic noise impacts have changed, the wall(s) proposed is still feasible and reasonable. The abatement analysis determines the final noise barrier design. Consultant shall include in the Final Noise Wall Analysis memo any design revision recommendations to Agency.
* Consultant shall provide Agency with location of properties that would benefit from the mitigation so that residents and owners can be surveyed as to their wishes concerning mitigation. Agency is responsible for survey/voting process unless specified under specific task authorization.
* After Consultant receives Agency’s comments on the draft Noise Wall Analysis memo, Consultant shall submit a final Noise Wall Analysis Memo to APM.
* Consultant shall finalize noise mitigation forms as part of the final Noise Wall Analysis Memo.

Agency will provide Consultant with TNM runs from the original NTR.

**Deliverables/Schedule:** Consultant shall provide:

* Location of properties that would benefit from noise mitigation due with draft and final Noise Wall Analysis Memo. This will be illustrated via mapping (e.g., “x” for each property on aerial mapping)
* Draft Noise Wall Analysis memo is due within 8 weeks of establishment of final roadway geometry.
* Final Noise Wall Analysis Memo within 2 weeks of receipt of draft review comments from Agency.

### Task 3.9.3 Noise Variances

#### Task 3.9.3.1 Coordination with Agency Staff

Consultant shall participate in up to 3 meetings or conference calls with Agency staff at ODOT Region 1 offices in Portland to serve as a Technical Resource and to gather information in the preparation of noise variance permit application and supporting materials, and to identify and document the nighttime construction activities to be included in the noise variance application, the specific pieces of equipment to be used during nighttime construction activities, the duration of each nighttime construction activity, and the anticipated dates on which each anticipated nighttime construction activity would occur.

Coordination must be done with the ODOT Community Affairs Specialist assigned to this Project, in order to determine the public outreach activities concerning construction noise. A detailed summary of all outreach activities must be reported in the variance application.

**Deliverables/Schedule:** Consultant shall provide:

* Information gathered from this sub-task will be incorporated in the variance applications (Task 3.9.3) with timeframes as determined by the APM.

#### Task 3.9.3.2 Construction Noise Calculations

Consultant shall utilize the information gathered in Task 3.11.1 as inputs to FHWA’s Roadway Construction Noise Model (“RCNM”, version 1.1 or newer) to estimate noise levels from construction equipment to be used on the Project at representative distances to describe anticipated nighttime construction noise levels at the nearest (first‐row) noise‐sensitive receptors. The construction noise analysis must also include the noise reducing effects of any topographical conditions, noise walls, earth berms or structural shielding. A summary of all acoustical shielding, or lack thereof, must be produced for each site. Based on the construction noise projections, a recommended 15-minute Leq noise level for the variance application will be derived and used in the noise variance application. The information gathered in Task 3.11.1 will also be used to provide the number of nights required for the completion of the sign upgrade/replacement. Existing nighttime noise levels must be provided and will be based on previous noise measurements along the Project corridor unless necessary.

In the absence of nearby representative noise measurements activate Contingency Task C3.9.3.5 which addresses ambient noise measurements.

The information above must be produced for each individual site.

**Deliverables/Schedule:** Consultant shall provide within timeframes required by the APM.

* RCNM input/output files to be included as an attachment to the variance application (Task C3.9.3.5) and sent to the ODOT Noise Program Manager for review.
* Recommended 15 minute Leq construction noise levels for the noise variance application (Task 3.9.3.3)
* Number of nights necessary to complete the work
* Site descriptions to include the distance from the nearest receiver to the construction site
* Site topographical conditions, to include noise walls, earth berms or structural shielding between the site and the receiver.
* Estimated or measured existing noise levels during nighttime hours

#### Task 3.9.3.3 Prepare Local Agency Noise Variance Application

Consultant shall prepare a permit application for the City of Portland requesting a variance for nighttime construction work. The variance must be approved by the City of Portland.

The noise variance application must present, for each of the work sites, the information from Task 3.9.3.2 above. The noise variance application shall also provide mapping showing the nearest noise sensitive receivers and noise measurement locations if applicable. ODOT Specification 00290.32 Noise Control, which provides ODOT construction noise mitigation measures, shall be included in the variance application.

**Deliverables/Schedule:** Consultant shall provide within the timeframes required by the APM.

* Figures and tables to be included in Draft and Final Variance Application due within timeframe provided by the APM
* Draft noise variance application in electronic format in M.S. Word format for Agency review. Consultant shall incorporate or resolve all comments prior to finalizing the noise variance application for submittal to each local jurisdiction.
* 1 electronic copy of the final noise variance application and 1 hard copy to Agency.

#### Task 3.9.3.4 Attendance at Local Agency Noise Review Meetings

Consultant shall attend up to 2 meetings with the City of Portland’s Noise Review Board as required by Agency to serve as a Technical Resource to Agency’s presentation of the Project’s anticipated nighttime construction noise activities. Consultant shall explain the technical material in the application, which may include but may not be limited to; noise measurements and locations, the RCNM, and other technical noise related questions that the Noise Review Board may pose.

* It is assumed that only the standard ODOT noise mitigation measures as described in Specification 290.32 will be sufficient for the noise variance application, and that detailed noise mitigation design will not be required.
* Agency will be responsible for submitting the noise variance application to local agencies, and shall be responsible for payment of all fees associated with the noise variance application.

Deliverables/Schedule: Consultant shall provide the following as required by the APM.

* Prepare supporting materials (maps, photos and noise analysis) to aid in the presentation of the variance application such that the permit application can be approved by the City of Portland and other local agencies prior to any night work.
* Attend up to 2 meetings or conference calls with Agency Staff as required by Agency.
* Attend up to 2 City of Portland Noise Review Board meetings as required by Agency.

#### Task C3.9.3.5 Background Noise Measurements (**CONTINGENCY TASK – see Section F**)

Consultant shall perform on-site background construction noise monitoring prior to the start of construction. The methodology for the measurements is divided into 4 sections: 1) Background Monitoring, 2) Data Collection, 3) Data Analysis, and 4) Quality Control.

1. Background Monitoring: Consultant shall measure background sound levels at specific noise sensitive or roadside locations as determined by the APM.

*Note: Selection of monitoring locations shall be based on sites most likely to be impacted by construction noise.*

Measurements must be conducted for a 24 hour period to capture nighttime hours when traffic noise is quieter. Consultant shall provide background nighttime measurements if a variance is needed for nighttime work. Consultant shall monitor at up to 3 sites.

1. Data Collection: Consultant shall take all noise measurements in accordance with American National Standards Institute (“ANSI”) procedures for community noise measurements. The measurement location shall be at least 5 meters (16.5 feet) from any solid structure to prevent acoustical reflections and at a height of 1.5 meters (5 feet). The equipment used for noise monitoring must be Type 1 sound level meters equipped with a statistical analysis module or sound level meters with statistical analysis capabilities.

Consultant shall complete system calibration on an annual basis. System calibration must be traceable to the National Institute of Standards and Testing (“NIST”). The system must meet or exceed the requirements for an ANSI Type 1 noise measurement system. At a minimum, the following noise metrics must be recorded, using Fast response: Lmin, Lmax, MaxP, Leq, L01, L05, L10, L50 and L90. Consultant shall directly compare these noise metrics to Project construction-related noise levels permitted within the conditions of the approved noise variance.

1. Data Analysis: Consultant shall tabulate the data and compare to the permitted noise levels established in the conditions of the noise variance.
2. Quality Control (“QC”): Consultant shall maintain QC through pre/post monitoring calibration, transfer of data via computer interface, and using a spreadsheet for data presentation and analysis.

**Deliverables/Schedule:** Consultant shall provide as required by the APM.

* Maps showing monitoring locations to be incorporated into the Variance Application.
* Measurement data per City of Portland noise data format requirements to be incorporated into the Variance Application. Data format must be compatible with the City of Portland’s requirements in order to determine compliance with the approved variance conditions.

## Task 3.10 Air Quality

### Task 3.10.1 General Air Quality Analysis

This task is for projects located in “Non-attainment or Maintenance” areas of the US National Ambient Air Quality Standards (“NAAQS”).

Consultant shall determine the regulatory requirements to be satisfied by the Air Quality Analysis. This includes NEPA, Transportation Conformity Rule, FHWA’s Mobile Source Air Toxics (“MSAT”) Interim guidance and Indirect Source Construction permit requirements.

Consultant shall request all available Project information needed to conduct the study from the APM. This includes, but is not limited to, the Project description, detailed mapping of the Project showing lane configurations and proposed alignment for the existing roadway and the build design, and the traffic engineering report for appropriate traffic data and traffic signal timing information needed to conduct the level of study.

Consultant shall review the Project’s traffic engineering data and reports that are pertinent to conducting the air quality analysis. Consultant shall provide a comparative discussion in the report of existing and projected traffic data for each alternative and its effect on the Project as it relates to air quality. This comparative discussion must be based on using average daily traffic volumes (“ADTs”), Vehicle Miles of Travel (“VMTs”), vehicular speeds, and vehicular capacity (“v/c”) and level of service (“LOS”) for all alternatives and analysis years studied.

Consultant shall verify the exact status of the Project in the most recent conforming Regional Transportation Plan (“RTP”) and Transportation Improvement Program (“TIP”) with metropolitan planning organization (“MPO”) in the Project’s specific urban nonattainment/maintenance areas. Consultant shall verify if the design concept and scope of the Project is the same as what was used in the RTP/TIP regional emissions analysis conducted for air quality conformity and include these findings in the air quality technical report. A discussion of the Project status and results of the regional analysis must be included in the Air Quality Technical Report. Consultant shall research and collect air monitoring data from the nearest monitors located within close proximity to the Project area. Data for all maintenance pollutants plus additional pollutants of concern (such as mobile source air toxics) for regionally significant projects, being monitored within the area must be summarized from ODEQ records. These data must be incorporated into the Air Quality Technical Report.

Consultant shall identify any Direct, Indirect (Secondary) and Cumulative air quality impacts expected as a result of the Project.

Consultant shall identify construction mitigation measures or other mitigation measures that may be required as a result of the Project. A general discussion of air pollutant emissions expected during construction and any construction mitigation measures must be included in the technical report.

Consultant shall use FHWA’s Interim Guidance on MSAT Analysis in NEPA Documents dated December 6, 2012 or more recent guidance if available and deemed acceptable by Agency’s Air Quality Program Manager. Consultant shall contact Agency’s Air Quality Program Manager to discuss methodology before work is commenced. Consultant shall only use air toxic analysis methodologies that are acceptable to FHWA. For very large projects where a quantitative MSAT Analysis is required, EPA MOVES model must be used following FHWA guidance. Consultant shall incorporate the MSATs Analysis results into the draft Air Quality Technical Report.

Consultant shall be available to answer questions from Agency, as needed.

**Deliverables/Schedule:** Consultant shall provide:

* Consultant shall include the findings of the General Air Quality Analysis for projects located “Nonattainment or Maintenance” areas of the NAAQS in the draft and revised final Air Quality Technical Report and state whether or not the Project will comply with transportation conformity regulations and if concentrations of pollutants are expected to be below the NAAQS.

### Task 3.10.2 CO Hot-spot Analysis

If Project is located in a carbon monoxide maintenance area, Consultant shall determine if quantitative or qualitative CO hot-spot analysis (or if a combination of analyses) is required per 40 CFR § 93.123, and 40 CFR § 93.126 and 40 CFR § 93.127. To make the determination, Consultant shall:

* Identify if the Project includes intersections that are identified in applicable State Implementation Plan as sites of violation or possible violation or having the worst Level of Service or highest traffic volumes as identified in the plan.
* Obtain traffic data from the traffic engineer assigned to the Project.
* Review existing, No-Build, and Build traffic data to determine if intersections affected by the Project will operate at LOS D, E, or F, as defined by the MUTCD.
* If signalized intersections affected by the Project are present that will operate at LOS D, E, or F, then Consultant shall perform a quantitative CO hot-spot analysis under Task C3.10.3 and model a maximum of 3 intersections with the worst combination of LOS and highest traffic volumes (per Contingency Task C3.10.3). The remaining intersections affected by the Project will be evaluated qualitatively.

If signalized intersections are at LOS C or better, then a qualitative analysis must be performed. Consultant shall provide the supporting documentation of the methodology used and study findings in the technical report. At a minimum, the qualitative analysis must be based on using intersection LOS information.

If Consultant determines that a quantitative CO hot-spot analysis is necessary per the analysis conducted in subtasks “a” and “b” above, Consultant shall submit a methods memo via email to APM for concurrence. The methods memo must include a brief summary of the reasons a quantitative CO hot-spot analysis is necessary, the number and location of intersections to be analyzed, and the input assumptions for modeling.

**Deliverables/Schedule:** Consultant shall provide:

* Document in draft and final Air Quality Technical Report the factors considered and determination of need for quantitative or qualitative CO hot-spot analysis (or a combination of analyses is required). Document must include a summary of intersection LOS and delay (or v/c).
* Document in draft and final Air Quality Technical Report a paragraph discussing the methodology and findings of the qualitative analysis for intersections that are at LOS C or better.
* Methods memo (only submitted if Quantitative CO Hot Spot Analysis is necessary).

### Task C3.10.3 Quantitative CO Hot-Spot Analysis (**CONTINGENCY TASK – see Section F**)

Following approval of authorization via NTP for this Contingency Task from APM, Consultant shall complete the subtasks and deliverables below. It is assumed the same intersections will be used for each design alternative.

If it is determined that the three worst case intersections identified as needing a quantitative CO hot-spot analysis differs between the alternatives under consideration, Consultant shall notify APM of findings. APM may authorize additional intersections for quantitative CO hot-spot analysis.

Consultant shall conduct the analysis using the EPA MOVES2014a or more recent version and CAL3QHC models. The quantitative CO hot-spot analysis shall be performed for CO for a maximum of three intersections and three analysis years. The analysis years are the existing year, the year of Project completion, and the design year. The results of the modeling shall be compared to the State of Oregon air quality standards and NAAQS. It is assumed that the three intersections being analyzed in the quantitative CO hot-spot analysis are the same for all build alternatives and the no-build alternative being studied.

If a quantitative CO hot-spot analysis is required, Consultant shall use EPA model MOVES2014a (or latest emissions model in accordance with 40 CFR 93.111) to develop motor vehicle emission factors for the appropriate analysis years and vehicular speeds to be used in the dispersion modeling. The analysis years are the existing year, the year of Project completion, and the design year. Vehicular speeds must be the same as those identified in the respective traffic data. Model assumptions and input data must be consistent with the assumptions used in attainment planning or RTP/TIP conformity

The availability of MOVES data templates by area will differ depending on whether there has been a recent regional emissions analysis by the air agency or metropolitan planning organization (“MPO”) using MOVES. ODOT’s Air Program Manager will obtain any readily available templates from other agencies. Consultant shall contact Air Program Manager to confirm which templates can be provided and which templates will be default MOVES data or which templates need to be developed by Consultant. Consultant shall follow EPA’s Guidance dated March 2015 “Using MOVES in Project-Level Carbon Monoxide Analyses” or more recent guidance documents. All MOVES templates used for the analysis shall be included in the Project documentation file, along with MOVES run spec, input and output files and databases.

If Project is located in a carbon monoxide maintenance area and a quantitative CO hot-spot analysis is required, Consultant shall use EPA model CAL3QHC to predict local peak hour and average 8-hour CO concentrations at reasonable receptor and exposure sites. “Reasonable receptors” are determined by following EPA’s Guideline for Modeling Carbon Monoxide from Roadway Intersections. The 1-hour CO concentrations are to be predicted based on peak hour traffic conditions. The 8-hour concentrations must be calculated using a persistence factor obtained from Agency. Predicted CO concentrations must be calculated and reported to the part per million and must be compared to the State of Oregon air quality standards and NAAQS. Before work begins, Consultant shall obtain background CO levels and appropriate persistence factors for the CO analysis from Agency’s Air Quality Technical Manual.

For intersections affected by the Project that operate at LOS D, E, or F but are not identified as one of the top three used for a CO quantitative hot-spot analysis, a qualitative analysis must be performed. In this case, the qualitative analysis must be based on a comparison of the results of the three intersections studied in the quantitative CO hot-spot analysis. Consultant shall provide the supporting documentation of the methodology used and study findings in the technical report for any qualitative analysis conducted for intersections that operate at LOS D, E, or F.

**Deliverables/Schedule:** Consultant shall provide:

* Consultant shall include the analysis methodology and findings of the Quantitative (and additional Qualitative, if needed) CO Hot-spot Analysis in the draft and revised final Air Quality Technical Report and state whether CO impacts are expected to occur as a result of the Project.

### Task 3.10.4 Air Quality Technical Report Documents

Consultant shall prepare a draft and revised final Air Quality Technical Report. The report must follow Agency’s required format titled “ODOT’s Air Quality Technical Report Outline for projects requiring an EIS or EA.” Consultant shall prepare the draft and final Air Quality Technical Report documenting the details of the Air Quality Analysis and shall provide the supporting information.

**Deliverables/Schedule:** Consultant shall provide:

* Draft Air Quality Technical Report delivered 12 weeks after NTP is received.
* 1st Revised Air Quality Report delivered 2 weeks following receipt of Agency review comments.
* 2nd Revised Air Quality Report delivered 2 weeks following receipt of FHWA review comments.
* Final Air Quality Technical Memorandum delivered 2 weeks following receipt of Agency confirmation of final revisions.

## Task 3.11 Greenhouse Gas Impacts and Global Climate Change - *RESERVED*

## Task 3.12 Energy- *RESERVED*

## Task 3.13 Biology

### Task 3.13.1 Biological Resources Technical Report

Consultant shall prepare a Biological Resources Technical Report that will build upon information gathered in the Environmental Reconnaissance Report. The technical report will provide information on fish, wildlife, plant species and the vegetation type/habitat maps for areas of potential impact under the No build and Build Alternatives.

Consultant shall refine information from the Reconnaissance Report for any mapped aquatic resources, listed species point specific habitat, listed species occupied habitat, and noxious weed populations (in compliance with Executive Order 13112) with new information. The technical report will address direct and indirect impacts to biological resources including wildlife corridors, secondary and cumulative impacts, and recommended mitigation or conservation measures for unavoidable impacts. Consultant shall contact and request input from Agency biologist for the impact and mitigation analysis. The fish impact evaluation will include stormwater effects analysis based on current NMFS stormwater guidelines. Consultant shall communicate with regulatory agency resource staff to address impacts and to develop an appropriate mitigation strategy. Consultant shall conduct up to 2 filed visits with regulatory resource staff as determined necessary to facilitate coordination on the Project.

Consultant shall complete sensitive plant surveys for all plants on all land currently within the Area of Potential Effect including any land within the APE not surveyed in the Reconnaissance Report. Two plant surveys are anticipated to be conducted to coincide with flowering dates of target species.

**Deliverables/Schedule:** Consultant shall provide:

* Draft Biolgoical Resources Technical Report delivered 5 weeks after NTP is received.
* 1st Revised Biological Resources Technical Report delivered 2 weeks following receipt of Agency review comments.
* 2nd Revised Biological Resources Technical Report delivered 2 weeks following receipt of Agency review comments.
* Final Biological Resources Report delivered 2 weeks following receipt of Agency confirmation of final revisions.

### Task 3.13.2 Endangered Species Act/T & E Species

#### Task 3.13.2.1 No Effect Memorandum

#### Task 3.13.2.2 Botanical Clearance

#### Task 3.10.2.3 Programmatic Agreement (FAHP Biological)

### Task 3.13.3 Stormwater Management Plan

## Task 3.14 Wetlands / Section 404 Permits

### Task 3.14.1 Wetlands Technical Report

Consultant shall prepare a Wetlands Technical Report documenting the results of wetlands determination and assessment of impacts and mitigation measures as described below. The report will describe methods and field results, with a discussion of each wetland and other Waters of the United States and State described. Consultant shall:

* Complete a review of background information relating to wetlands within the Project area. This will include review of the Environmental Reconnaissance Report, wetland inventory maps, soil survey maps, maps showing the Build alternative and other available information.
* Determine wetlands and other waters of the U.S. and State (including rivers, streams, ditches and canals) within the area of potential effect identified by Agency for the Build Alternative. Consultant assumes that wetlands that are situated within, or immediately adjacent to, the APE for the Build Alternative and design will be determined.

A Level 2 Routine Determination Method as described in the US Army Corps of Engineers (“USACE”) Wetlands Delineation Manual (Environmental Research Laboratory, 1987) will be used. This method is based on the presence of hydrophytic vegetation, hydric soils, and wetland hydrology in delineating wetlands and satisfies both State and Federal regulations. Sample plots will be established in appropriate areas to determine the presence and extent of wetlands. Consultant shall not flag wetland boundaries but will utilize GPS survey specific points along the wetland perimeter to assist future survey work. Wetland boundaries will be hand-drawn on aerial photos of the Project site.

Consultant shall contact Agency, DSL, and USACE staff, and arrange and conduct one field review of wetlands with resource agencies and Agency staff, as appropriate. Consultant shall revise wetland maps as required per field review.

Wetland boundaries will be digitized into the projects GIS database, which will calculate the size of each wetland. All plot data will be recorded on DSL and USACE approved data forms and included with the determination report. Consultant shall complete a functions and values assessment of determined wetlands following the Judgmental Method described in the Guidebook for Hydrogenomorphic based Assessment of Oregon Wetland and Riparian Sites. The judgmental method follows a qualitative assessment of wetland function and capacity for elements such as water storage, sediment stabilization, and support of fish and wildlife habitat.

Consultant shall conduct analysis of wetland impacts, practicable alternatives and wetland mitigation for the Build Alternative. Consultant shall document the impacts anticipated from the Build Alternative and the No Build Alternative, and describe actions proposed to avoid and or minimize impacts at each wetland site and avoidance/minimization options considered and rejected as a result of consultation and or practicability. The Wetlands Technical Report will also address impacts during construction, and secondary and cumulative impacts.

**Deliverables/Schedule:** Consultant shall provide:

* Draft Wetlands Resources Technical Report delivered 5 weeks after NTP is received.
* 1st Revised Wetlands Resources Technical Report delivered 2 weeks following receipt of Agency review comments.
* 2nd Revised Wetlands Resources Technical Report delivered 2 weeks following receipt of Agency review comments.
* Final Wetlands Resources Report delivered 2 weeks following receipt of Agency confirmation of final revisions.

### Task 3.14.2 Section 404 Permit - *RESERVED*

## Task 3.15 Geology and Soils *- RESERVED*

## Task 3.16 Cultural Resources (Archeological)

### Task 3.16.1 Archeological Investigation with Technical Report (Phase I investigation)

#### Pedestrian Survey

Consultant shall provide Agency Archaeologist with a minimum of 5 business days advance notice prior to the field reconnaissance. The field reconnaissance will include a pedestrian survey. Consultant shall conduct pedestrian surveys within the API and must include areas where ground will be disturbed by Project construction including temporary access roads, as well as staging areas, material sources, disposal sites, detours, etc.

Pedestrian survey methods will be consistent with the latest updated State Historic Preservation Office (“[SHPO”) guidelines](http://www.oregon.gov/oprd/HCD/ARCH/docs/Master_Final_FieldGuidelines_June2015.pdf). The recommended maximum spacing of transects will be 20 meters apart and may vary depending on terrain features and ground visibility. Consultant shall determine transect spacing based on professional judgment to ensure that all probable site locations are discovered. All cultural resources observable on the surface and in exposed subsurface profiles will be identified and recorded. Field Reconnaissance will enable Consultant to identify areas of high and low probability for archaeological resources and to determine the appropriate level of survey or subsurface exploratory probing.

#### Subsurface Exploratory Probing

Consultant shall obtain all required excavation permits and conduct subsurface exploratory probing in the API. Copies of the draft excavation permits must be provided to Agency Archaeologist prior to submittal to SHPO. Consultant shall provide Agency Archaeologist with a minimum of 5 business days advance notice of exploratory probing. Subsurface exploratory probing field methodology must be consistent with the latest updated [SHPO guidelines](http://www.oregon.gov/oprd/HCD/ARCH/docs/Master_Final_FieldGuidelines_June2015.pdf).

Consultant shall excavate Shovel Test Units (STUs) at 30 foot intervals, or closer as deemed appropriate by Consultant, across identified archaeological sites to determine the presence or absence of subsurface cultural materials, as well as to define site boundaries.

Consultant shall perform up to 20 soil probes within approximately 10 acres of visible ground surface will be subject to pedestrian survey. Up to 1 site and 1 isolate would be identified.

Probing must be based on an established research design. Probes must be at least 30cm in diameter and dug to sterile (at least two levels void of cultural material) or to 50cm and two sterile levels where possible, or as appropriate based on varying field conditions. Materials must be screened with a 1/8-inch mesh screen (1/4-inch, as needed; see SHPO guidelines).

Auguring may be used to establish soil stratigraphy or depth of archeological deposits and may be incorporated into the research design, if approved by Agency Archaeologist. Materials must be screened with a 1/8-inch mesh screen.

Subsurface exploratory probing would only be completed within the API.

Consultant will not identify or curate artifacts and no sites will be recorded, and no site forms will be prepared. Should an archaeological site be identified, Agency will add Services to this WOC by written amendment to address the site(s) identified during this task.

#### Phase I Report Preparation

Consultant shall prepare a Phase I Archaeological Investigation Report. The report must include:

1. A purpose statement and full Project description including:
   1. ODOT Key Number and Federal Aid Number.
   2. Location and legal description.
   3. General environmental description.
   4. Historic context.
   5. Proposed construction activities.
   6. Defined API.
   7. Total acreage of impact.
   8. Anticipated direct, indirect and cumulative impacts.
2. Results of SHPO/THPO data base searches including:
   1. Brief summary of previous archaeological research completed within 1 mile of the API.
   2. Brief summary of recorded archaeological features within 1 mile of the API.
3. Results of GLO and Sanborn map review, including a brief summary of features (trails, buildings, etc.) depicted on maps and within the API.
4. Discussion of ethno-historic information and historic context of the API and surrounding environment.
5. Description of pedestrian survey methods including date(s) of survey, types of transects used, and names and duties of personnel conducting the survey.
6. Results of pedestrian survey including ground conditions (percent visibility) and difficulties encountered, if any; descriptions of any archaeological artifacts encountered and other pertinent information.
7. Description of subsurface exploratory probing methodology including date(s) of probing, and names and duties of personnel completing probes.
8. Results of subsurface exploratory probing, including descriptions of soil conditions and any archaeological artifacts encountered and other pertinent information. Negative findings must be reported also.
9. Summary of Tribal consultation(s), to be provided by Agency.
10. A summary with recommendations that must include a discussion of the site(s) identified and whether or not they meet NRHP criteria and maintain integrity.
11. List of references cited.
12. Location map at 1:24,000 scale; aerial image (Google map acceptable) showing API; and representative digital images of current conditions within the API.
13. Site forms and isolate forms (hard copies) for newly discovered archaeological sites and isolates. Consultant shall also complete the SHPO Online Site Form.
14. Site update forms for previously identified archaeological sites.
15. If a DOE is prepared under Task C5.6.2 for historic sites with no subsurface component, a modified DOE, a maximum of 2-3 pages long, in an appendix. This appendix must include a short discussion on Boundaries (vertical and horizontal) and Integrity, as well as a Statement of Significance and discussion of the NRHP Criteria. Consultant shall provide enough information to write a detailed DOE.
16. Maps, photos and an artifact catalogue.

**Deliverables/Schedule:** Consultant shall provide:

* Draft Phase I Technical Report (in Word format), with site forms and isolate forms (1 hard copy within 36 weeks of NTP.
* Final Phase I Technical Report (in .pdf format), with site forms, 2 hard copies (with electronic files), digital images of each photo and illustration, raw GPS files (\*ssf and \*.cor), and edited GIS files (\*shp, \*.shx, and \*.dbf), due two weeks after receipt of Agency comments on draft.

## Task 3.17 Historic Resources

### Task 3.17.1 Historic Resources Technical Report

Consultant shall prepare an Historic Resources Technical Report that contains a summary of the development of the Project area, a summary of research on previously identified resources in the Project area, the results of the Section 106 consultation process, and a description of the Project alternative’s effects to Historic Resources in the Project area.

As part of developing the Historic Resource Technical Report, Consultant shall review the SHPO Statewide Inventory and conduct a site visit reconnaissance of the Project area. Consultant shall prepare the Historic Resource Technical Report that includes:

* A summary of the historical development of the Project area, a summary of research on previously identified resources in the Project area, the results of the Section 106 consultation process, and a description of different Project alternative’s effects to Historic Resources within the API;  
  Baseline documentation on newly recorded historic resources that were not 45 years old at the time of the 2003 Environmental Baseline Report
* A brief discussion of each historic resource and a summary of whether the resource retains historic integrity and whether any of the National Register of Historic Places Criteria for Evaluation apply to that resource;
* A map that identifies the location of each evaluated historic resource in the API.
* Determination(s) of Eligibility for potential resources in the Project API (see Task 4.4.2.4.2 below).

**Deliverables/Schedule:** Consultant shall provide:

* Draft Historic Resources Technical Report delivered 14 weeks after NTP is received.
* 1st Revised Historic Resources Technical Report delivered 2 weeks following receipt of Agency review comments.
* 2nd Revised Historic Resources Technical Report delivered 2 weeks following receipt of FHWA review comments.
* A Final Historic Resource Technical Report submitted in electronic and hard copy format to Agency within 2 weeks following receipt of Agency confirmation of final revisions.

### Task 3.17.2 Section 106 Determination of Eligibility (“DOE”) for the NRHP) Forms and Project Submittal Letter

For those resources identified by ODOT and Consultant as having the potential to be eligible for inclusion in the National Register of Historic Places (NRHP), Consultant shall prepare a Determination of Eligibility (DOE). Each DOE will include a brief physical description, history, context, map, and photographs of resources that possess integrity of location, design, setting, materials, workmanship, feeling, and association.

For the DOE Report(s), Consultant shall prepare a Project Submittal Letter in ODOT-approved format. The Project Submittal Letter(s) will be prepared as Draft and Final, with Final letters to be submitted with DOE report(s).

Consultant shall prepare up to 15 DOEs for resources identified in the 2011 Historic Resources Baseline Report.

Resources that were not 45 years old at the time of the 2011 Environmental Baseline Report must be recorded at the baseline level. For each resource identified as potentially eligible for the NRHP, a DOE form will be prepared.

Consultant shall attend up to 3 agency meetings associated with this task.

**Deliverables/Schedule:** Consultant shall provide:

* Draft DOE and Submittal Letter for resource(s) to be delivered 16 weeks after NTP is received.
* Final DOE and Submittal Letter for resource(s) delivered 2 weeks after Agency review.

### Task 3.17.3 Finding of Effect (“FOE”) Report(s)

After consultation with ODOT, Consultant shall prepare up to ten Section 106 Findings of Effect (FOE) for each historic resource that has been listed or determined eligible for the NRHP. Each FOE must assess the effects on the historic resource, including physical destruction or damage, alteration or rehabilitation, removal, change of setting, introduction of visual, atmospheric, or audible elements, neglect of a property, or transfer or sale of ownership. Consultant shall include in the report a discussion of the alternatives to avoid or minimize adverse effects using the Criteria for Adverse Effect as an evaluation tool.

When requested by ODOT, Consultant shall coordinate with ODOT project designer or project team leader to discuss available options to avoid or minimize adverse effects to listed or eligible historic resources. Consultant shall coordinate with ODOT to obtain FHWA concurrence with the proposed FOE on the resources prior to transmittal to SHPO.

For FOE Report(s) authorized, Consultant shall prepare Project Submittal Letter(s) in ODOT approved format. The Project Submittal Letter(s) must be prepared as Draft and Final and submitted with FOE report(s).

FOE’s that are Adverse must be made available to the public and interested parties including local historical societies, landmark/historic resources commissions or Certified Local Government (CLG). Consultant shall coordinate with ODOT Staff to develop a list of interested parties and agencies for each Adverse FOE. Consultant, with input from ODOT, will develop an advertisement or notification of Adverse Effect Announcements for local newspapers and interested parties and agencies.

ODOT will provide draft review comments to Consultant within 2 weeks. Consultant shall incorporate draft review comments in Final Finding of Adverse Effect Announcement.

**Deliverables/Schedule:** Consultant shall provide:

* Draft FOE and Submittal Letter for resource(s) in MS Word
* Final FOE and Submittal Letter for resource(s) in MS Word and .pdf versions
* 1 electronic copy of Draft Adverse Finding Announcement in ODOT-approved format and addresses of the newspapers and interested parties (i.e., local historical societies and historic resources commissions) within 2 weeks of SHPO concurrence of adverse effect.
* 1 copy of the Final Adverse Finding Announcement in hard copy and electronic format no later than 2 weeks after ODOT review.
* A Section 106 project-level joint finding of effect will be prepared for historic resources and archaeological resources.

## Task 3.18 Water Resources Technical Report

Consultant shall prepare a Water Resources Technical Report that summarizes the existing water resources conditions and the conceptual stormwater management plan for 1 Build alternative.

The Water Resources Technical Report must identify potential impacts from the Project to surface and ground waters and will specify mitigation goals and proposed approaches for meeting the water resources Project goals. The conceptual stormwater management plan will indicate additional R/W needs for the treatment and disposal of the Project contributing impervious area.

Conceptual plans will be prepared showing the proposed stormwater improvements for 1 build alternative. A conceptual construction cost estimate for stormwater improvements will be prepared.

**Deliverables/Schedule:** Consultant shall provide:

* Draft Water Resources Technical Report delivered 5 weeks after NTP is received.
* First Revised Water Resources Technical Report delivered 2 weeks following receipt of Agency review comments.
* Second Revised Water Resources Technical Report delivered 2 weeks following receipt of Agency review comments.
* Final Noise Water Resources Report delivered 2 weeks following receipt of Agency confirmation of final revisions.

## Task 3.20 (Not Used)

## Task 3.19 Water Quality Analysis - *RESERVED*

## Task 3.21 Visual Resources - *RESERVED*

## Task 3.22 Environmental Permits and Clearances

Consultant shall prepare information required for Agency to apply for Clackamas County Permits (other than the Noise Variance covered by Task 3.11) as well as prepared the permit applications. These permits include Surface Water Plan review and Erosion Control Permits.

**Deliverables/Schedule:** Consultant shall prepare:

* Clackamas County reviews and permits.

## Task 3.23 Hazardous Materials Study and Services

The purpose of this task is to facilitate Agency compliance with environmental regulations pertaining to site cleanup and waste management. The Services to be provided shall include:

* Conduct a Hazardous Materials Corridor Study to identify potential sources of contamination that could impact property acquisition or construction.
* Inspect Bridge No. \_\_\_\_\_\_\_ for lead-based paint and asbestos containing materials.
* Conduct geophysical surveys to identify potential underground storage tanks or buried debris.
* Screen and collect soil and water samples from geotechnical borings which may be drilled in areas with known or suspected subsurface contamination.
* Collect surface soil samples from road shoulders to determine if the soil meets Oregon Department of Environmental Quality (“DEQ”) standards for clean fill.
* Conduct site-specific subsurface investigations to determine if soil or groundwater are contaminated within the project corridor.
* Prepare contract bid documents for handling and disposal of contaminated materials.

Consultant shall conduct all tasks in accordance with ODOT’s HazMat Program Procedures Guidebook (March 2010) and applicable industry standards.  Consultant shall submit deliverables in an electronic format (native file and .pdf) version using Microsoft® Word.

### Task 3.23.1 Hazardous Materials Corridor Study

Consultant shall conduct a Hazardous Materials Corridor Study (“HMCS”) according to the following standards and guides:

* “Hazardous Waste Guide for Project Development” (1990), by the American Association of State Highway and Transportation Officials (“AASHTO”) Special Committee on Environment, Archaeology and Historic Preservation;
* “ODOT Hazmat Program Procedures Guidebook,” 2010, Oregon Department of Transportation;
* “Level 1 Corridor Study” report template, Oregon Department of Transportation; and
* The requirements listed below.

Consultant shall conduct a site reconnaissance to identify potential sources of contamination that could impact construction or result in Agency acquiring contaminated property.

Consultant shall review available federal and State environmental databases to identify sites that could potentially impact the Project, using the minimum search radii listed below.

| Environmental Database | Search Radius |
| --- | --- |
| State-Equivalent NPL List (ECSIS) | 0.5 mile |
| Oregon Permitted Landfill List | 0.5 mile |
| State Leaking (L)UST List | 0.25 mile |
| Federal RCRA Generators List | Site and Adjoining |
| State Fire Marshal’s Spill Response List | Site and Adjoining |
| State Certified UST List | Site and Adjoining |

Consultant shall review DEQ files, available using DEQ’s Facility Profiler web site at <http://deq12.deq.state.or.us/fp20/>, to determine whether contamination from adjacent facilities is likely to impact Project construction. Alternatively, this review may be conducted using commercially available database reports such as provided by EDR.

Consultant shall review the Oregon Water Resources Department on-line database at <http://apps.wrd.state.or.us/apps/gw/well_log/Default.aspx> to determine if water wells or monitoring wells are located on or adjacent to the project corridor.

Consultant shall review project files at the DEQ Northwest Region office in Portland, OR for all facilities considered to be high risk for impacting Project construction. Consultant shall use DEQ file information to delineate contaminated areas within the project corridor and identify if that information is sufficient to develop construction plans and specifications without additional sampling.

Consultant shall conduct historical research to identify past uses of the project corridor and adjacent properties, using at least two of the following resources:

* Sanborn Fire Insurance Maps
* Aerial Photographs
* Reverse City Directories
* Historic property ownership/occupancy records or building permits

The resource(s) selected must, if possible, provide historic information regarding land use back to 1935 at 10 year intervals, or Consultant must demonstrate that such information is not readily available.

Consultant shall review pertinent records that may be made available by Agency as they relate to the environmental condition of the project corridor.

Consultant shall assess if soil sampling is necessary to determine if soil excavated from the project corridor shall meet DEQ clean fill screening levels for contaminants-of-concern including pesticides, herbicides, metals, polynuclear aromatic hydrocarbons, petroleum hydrocarbons, and solid waste.

Consultant shall prepare a HMCS report summarizing the information obtained through the activities listed above, using ODOT’s Corridor Report Template available at <https://www.oregon.gov/ODOT/HWY/GEOENVIRONMENTAL/Pages/guidance_resources.aspx>.

The report must include photographs documenting project corridor observations. The report must include conclusions that identify specific sources of contamination that could impact Project construction and recommendations for further investigation, if needed.

**Deliverables/Schedule:** Consultant shall provide:

* Draft HMCS report to Agency within 8 weeks following Notice to Proceed (NTP).
* Final HMCS report within 1 week following receipt of Agency comments.

### Task 3.23.2 Evaluation of GeoTechnical Boring Locations

In addition to the HMCS, Consultant shall evaluate all proposed geotechnical boring locations for potential hazardous materials impacts prior to drilling (see Task 6). The evaluations shall determine if geotechnical borings should be monitored for hazardous materials during drilling.

For each boring location, Consultant shall fulfill the following requirements to determine if hazardous materials could potentially impact drilling:

* Conduct a site reconnaissance of the drill site location to identify potential sources of contamination.
* Review available federal and State environmental databases using the minimum search radii listed below.

| Environmental Database | Search Radius |
| --- | --- |
| State-Equivalent NPL List (ECSIS) | 0.25 mile |
| Oregon Permitted Landfill List | 0.25 mile |
| State Leaking (L)UST List | 0.25 mile |
| Federal RCRA Generators List | Site and Adjoining |
| State Fire Marshal’s Spill Response List | Site and Adjoining |
| State Certified UST List | Site and Adjoining |

* Review DEQ files, available using DEQ’s Facility Profiler web site, to determine whether contamination from adjacent facilities is likely to impact drill site locations.
* Review project files at the DEQ Northwest Region office for all facilities considered to be high risk to drilling activities.
* Review historic aerial photos over the past 80 years at 10 year intervals to determine past land use adjacent to drill site locations.
* Review pertinent records that may be made available by Agency as they relate to the environmental conditions at drill site locations.
* Determine if subsurface soil and groundwater samples should be collected during drilling to assess for contaminants-of-concern.

Consultant shall prepare a 1-page technical memorandum for each boring location summarizing the findings of the evaluation conducted this task. The memorandum shall provide a determination on whether or not geotechnical borings should be monitored for hazardous materials during drilling under Task 3.23.3. Technical memorandums shall include copies of site photographs, DEQ file information, and historic aerial photographs.

**Deliverables/Schedule:** Consultant shall provide:

* Draft technical memorandums to Agency within 8 weeks following NTP.
* Final technical memorandum reports within 1 week following receipt of Agency comments.

### Task 3.23.3 Bridge (or Structure) Inspection Survey

Consultant shall inspect Bridge No. \_\_\_\_\_\_\_ for lead-based paint and asbestos containing materials (“ACM”s). Agency will provide electronic copies of bridge plans for inspection. Consultant shall review the plans and collect samples of paint and suspected ACMs for laboratory analysis. The results of materials testing must be presented in a Structure Survey report.

#### Task 3.23.3.1 Work Plan and Health and Safety Plan

Consultant shall prepare a Work Plan and Health and Safety Plan (“HASP”) describing how samples must be collected for Task 3.23.3.2. The Work Plan must describe sample collection methods, sampling equipment, equipment decontamination, and handling and shipment of samples. The HASP must be completed in accordance with 29 CFR 1910.120, OAR 437-02-100 et seq. and all other state and Federal worker health and safety regulations that may be applicable for Task 3.23.2.2. The HASP must reflect the sampling and characterization activities described in the Work Plan. The HASP must cover the activities of all Consultant, sub-consultant, and Agency employees and include a traffic control plan, if needed.

Consultant shall obtain all required permits from Agency District Permit Office prior to initiating fieldwork activities. The District contact person is listed in B.4, General Requirements.

Consultant shall submit the Work Plan/HASP to Agency for review and comment. Task 3.23.2.2 must not proceed until after Consultant has received written authorization (e-mail) from Agency.

**Deliverables/Schedule:** Consultant shall provide:

* Draft Work Plan/HASP to Agency within 4 weeks following NTP.
* Final Work Plan/HASP within 1 week following receipt of Agency comments.

#### Task 3.23.3.2 Sample Collection and Reporting

Consultant shall collect paint and coating samples from all painted surfaces on Bridge No.\_\_\_\_\_. Consultant shall collect at least 2 samples for each paint type observed. Consultant shall ensure all paint layers are included in the samples; do not separate paint layers into individual samples. As many as \_\_\_\_\_\_ paint samples must be collected for analysis. Consultant shall provide flagging and traffic control as needed to complete sample collection.

The samples shall be shipped to ESC Lab Sciences in Mt. Juliet, TN. The samples shall be analyzed for the following:

* Total lead, cadmium, and chromium according to Method 6010; and
* PCBs according to Method 8082

Consultant shall submit samples using the State chain of custody form, indicating the laboratory must bill Agency directly and requesting a turn-around time of 5 business days. Consultant shall be responsible for shipping samples under chain-of-custody procedures, such that the samples arrive at the laboratory undamaged. Agency will pay all shipping costs directly to the laboratory.

Consultant shall inspect Bridge No. \_\_\_\_\_\_ for ACMs and collect samples of all suspected ACMs that will be disturbed during construction. Consultant shall use an asbestos inspector accredited under the Asbestos Hazards Emergency Response Act (“AHERA”) to perform the inspection and sampling. The asbestos survey must include: compiling a homogeneous materials list, collecting bulk samples of suspected ACMs, and analysis by polarized light microscopy (“PLM”). Consultant shall collect bulk samples in general accordance with AHERA protocols and submit samples to a NVLAP certified laboratory for analysis, requesting a turn-around time of 5 business days. Consultant shall collect as many as \_\_\_\_\_\_ samples for asbestos analysis.

The results of the materials testing described above shall be presented in a Bridge (or Structure) Survey report. The report shall discuss sample methods, laboratory analytical results, and provide recommendations for materials handling. The report shall include a map showing sample locations, photographs of materials sampled, data tables summarizing laboratory results, laboratory reports and chain-of-custody forms.

**Deliverables/Schedule:** Consultant shall provide:

* Draft Survey report to Agency within 8 weeks following NTP.
* Final Survey report within 1 week following receipt of Agency comments.

### Task C3.23.4 Geotechnical Drilling Support ( **CONTINGENCY TASK – see Section F**)

If recommended by Task 3.23.2, Consultant shall monitor for hazardous materials during geotechnical drilling (see Task 6). Consultant shall field screen drill spoils and collect soil and groundwater samples sufficient to adequately determine whether or not subsurface materials are contaminated. The results shall be presented in a technical memorandum. The memorandum must discuss soil and groundwater sample methods, analytical results, and conclusions regarding the presence or absence of subsurface contamination.

#### Task 3.23.4.1 Work Plan and Health and Safety Plan

Consultant shall prepare a Work Plan and Health and Safety Plan describing how samples shall be collected from geotechnical borings. The Work Plan shall describe the number of borings, sample collection, sampling equipment, equipment decontamination, and handling and shipment of samples. The HASP shall be completed in accordance with 29 CFR 1910.120 and OAR 437-02-100 et seq., and all other state and Federal worker health and safety regulations applicable for Task 3.23.3.2. The HASP mustreflect the sampling and characterization activities described in the Work Plan. The HASP must cover the activities of all Consultant, sub-consultant, and Agency employees.

Consultant shall submit the draft Work Plan/HASP to Agency for review and comment. No field work activities under Task 3.23.4.2 shall proceed until after Consultant has received written authorization (e-mail) from Agency.

**Deliverables/Schedule:** Consultant shall provide:

* Draft Work Plan/HASP within 2 weeks following NTP.
* Final Work Plan/HASP within 1 week following receipt of Agency comments.

#### Task 3.23.4.2 Subsurface Sampling and Reporting

Consultant shall collect surface soil and groundwater samples from geotechnical borings sufficient to determine whether or not contaminants-of-concern are present. Samples shall be collected as described in the approved Work Plan. As many as 3 soil samples and 1 water sample shall be collected from each boring recommended for monitoring. Soil samples shall be field screened for volatile organic compounds using a photoionization detector (“PID”).

Investigation derived waste (“IDW”) generated from borings monitored under Task 3.23.3.2 shall be placed in 55-gallon drums and temporarily stored on Agency property pending the results of laboratory analyses. The contents and date of accumulation will be marked on each drum. Consultant shall be responsible for disposal of all IDW.

Soil samples shall be analyzed for:

* NWTPH-Gx, NWTPH-Dx, Method 8260B VOCs, Method 8270 SIM PAHs, RCRA 8 total metals, and total antimony, copper, and zinc.

Groundwater samples shall be analyzed for:

* NWTPH-Gx, NWTPH-Dx, Method 8260B VOCs, Method 8270 SIM PAHs, and dissolved RCRA 8 metals.

Samples shall be shipped to ESC Lab Sciences in Mt. Juliet, TN. Consultant shall submit samples using the State chain of custody form, indicating the laboratory must bill Agency directly and requesting a turn-around time of 5 business days. Consultant shall be responsible for shipping samples under chain-of-custody procedures, such that the samples arrive at the laboratory undamaged. Agency will pay all shipping costs directly to the laboratory.

Consultant shall prepare a technical memorandum summarizing the results of Task 3.23.3.2. The report shall include:

* Field observations, photographs, description of sampling, laboratory reports, and data tables summarizing analytical results.
* Evaluation of the laboratory results versus DEQ’s clean fill screening levels and risk-based concentrations for construction and excavation workers.
* Conclusions that identify specific sources of contamination that could impact Project construction.
* Recommendations for handling and disposal of contaminated soil or groundwater that may be generated during construction activities.

**Deliverables/Schedule:** Consultant shall provide:

* Draft technical memorandum within 4 weeks following completion of Task 3.23.3.2.
* Final technical memorandum within 1 week following receipt of Agency comments.

### Task C3.23.5 Geophysical Survey (**CONTINGENCY TASK – see Section F**)

If recommended by the Hazardous Materials Corridor Study (Task 3.23.1), Consultant shall conduct geophysical surveys using magnetic survey and ground penetrating radar to determine if underground storage tanks or metallic debris are present.

Consultant shall prepare a Geophysical Survey Work Plan describing survey methods and equipment. The work plan must address the activities of all Consultant, sub-consultant, and Agency employees and include a traffic control plan, if needed.

Consultant shall obtain all required permits from Agency District Permit Office prior to initiating fieldwork activities. The District contact person is listed in B.4, General Requirements.

Consultant shall submit the Geophysical Survey Work Plan to Agency for review and comment. Field survey must not proceed until the Consultant has received written authorization (e-mail) from Agency.

Geophysical surveys must be conducted using the following, or comparable, equipment:

* GEOMETRICS 858G Cesium Vapor Magnetometer (Magnetic Survey).
* Mala RAMAC Ground Penetrating Radar System with a 250 MHz antenna (GPR Survey).
* Schonstedt GA52 Magnetic Gradiometer.
* Aqua-Tronics A6 Pipe & Cable locator.
* Heath Sure- lock Pipe & Cable locator.
* Geophysical Survey Systems  SIR 2000

Measuring wheels may be used for positioning. Magnetic data must be processed and contoured to produce magnetic maps for each survey location. The magnetic maps must be plotted at a contour interval sufficient to detect underground tanks. Where potential underground storage tanks are identified by the magnetic survey, Consultant must conduct ground penetrating radar surveys to assess the size and number of tanks.

The results of the geophysical surveys must be presented in a summary report that describes the survey objectives, site location, equipment used, procedures, and results. The report must include maps showing the locations of magnetic anomalies relative to property boundaries and the project corridor.

**Deliverables/Schedule:** Consultant shall provide:

* Draft Geophysical Survey work plan to Agency within 4 weeks following NTP.
* Final Geophysical Survey work plan within 1 week following receipt of Agency comments.
* Draft Geophysical Survey report to Agency within 8 weeks following NTP.
* Final Geophysical Survey report within 1 week following receipt of Agency comments.

### Task 3.23.6 Shoulder Material Investigation

Consultant shall collect surface soil samples within the limits of the project corridor for laboratory analysis. The results of those analyses will be compared with DEQ guidelines to determine if surface soil excavated for Project construction can be handled and disposed as clean fill.

#### Task 3.23.6.1 Shoulder Material Investigation Work Plan and Health and Safety Plan

Consultant shall prepare a Shoulder Material Investigation Work Plan and HASP describing sample collection for Task 3.23.6.2. The Work Plan must describe sample collection methods, sampling equipment, equipment decontamination, and handling and shipment of samples. The HASP must be completed in accordance with 29 CFR 1910.120, OAR 437-02-100 et seq., and all other state and Federal worker health and safety regulations applicable for Task 3.23.6.2 The HASP must reflect the sampling and characterization activities described in the Work Plan. The HASP must cover the activities of all Consultant, sub-consultant, and Agency employees. The HASP must include a traffic control plan, if needed.

Consultant shall obtain all required permits from Agency District Permit Office prior to initiating fieldwork activities. The District contact person is listed in B.4, General Requirements

Consultant shall submit the draft Work Plan/HASP to Agency for review and comment. No field work activities under Task 3.23.6.2 shall proceed until after Consultant has received written authorization (e-mail) from Agency.

**Deliverables/Schedule:** Consultant shall provide:

* Draft Shoulder Material Investigation Work Plan/HASP to Agency within 4 weeks following completion of Task 3.23.1.
* Final Shoulder Material Investigation Work Plan/HASP within 1 week following receipt of Agency comments.

#### Task 3.23.6.2 Sample Collection and Reporting

Consultant shall collect surface soil samples from up to \_\_\_\_\_\_ locations. Consultant shall provide flagging and traffic control as needed to complete sample collection. At each location, samples will be collected at \_\_\_\_\_\_feet and \_\_\_\_\_\_ feet from edge of pavement. Soil samples shall be obtained from 0 to 0.5 feet and 1 to 1.5 feet below ground surface. Consultant shall mark the proposed sample locations in white paint and obtain utility locates for all locations. Consultant shall provide flagging and traffic control as needed to complete sample collection. Sample locations must be backfilled with excavation spoils; there must be no investigation derived waste (IDW). Equipment decontamination water can be disposed on-site.

Consultant shall ship the samples to ESC Lab Sciences in Mt. Juliet, TN where they will be composited into as many as \_\_\_\_\_\_ groups based on depth and distance from edge of pavement. The composite samples will be analyzed for the following:

* NWTPH-Gx, NWTPH-Dx, Method 8270 SIM PAHs, Method 8151 herbicides, Method 8081 pesticides, Method 8082 PCBs, and total metals according to Methods 6020 and 7471A.
* Total metals analyses will include antimony, arsenic, barium, cadmium, chromium, copper, lead, selenium, zinc, and mercury.

Consultant shall submit samples using the State chain of custody form, indicating the laboratory must bill Agency directly and requesting a turn-around time of 5 business days. Consultant shall be responsible for shipping samples under chain-of-custody procedures, such that the samples arrive at the laboratory undamaged. Agency will pay all shipping costs directly to the laboratory.

Consultant shall prepare a Preliminary Site Investigation (“PSI”) report summarizing the results of Task 3.23.6.2. The report must include the following:

* Field observations, photographs, description of sampling methods, laboratory reports, and tables summarizing the analytical results.
* Evaluation of the laboratory results compared to DEQ’s clean fill screening levels.
* Conclusions that identify specific sources of contamination that could impact Project construction.
* Recommendations for handling and disposal of contaminated surface soil generated during construction.

**Deliverables/Schedule:** Consultant shall provide:

* Draft PSI report within 4 weeks following completion of Task 3.23.6.2.
* Final PSI report within 1 week following receipt of Agency comments.

### Task C3.23.7 Site-Specific Investigations ( **CONTINGENCY TASK – see Section F**)

If recommended by the Hazardous Materials Corridor Study (Task 3.23.1), Consultant shall collect subsurface soil and groundwater samples in the project corridor and on \_\_\_\_\_\_ adjacent private property(ies). Soil and groundwater samples must be collected for contaminant analysis and the results presented in a PSI report. The report must discuss soil and groundwater sample methods, laboratory analytical results, and conclusions regarding the presence or absence of subsurface contamination.

#### Task 3.23.7.1 Site-Specific Investigation Work Plan and Health and Safety Plan

Consultant shall prepare a Site-Specific Subsurface Investigation Work Plan and Health and Safety Plan describing sample collection for Task 3.23.7.2. The Work Plan must describe the number of borings, sample collection, sampling equipment, equipment decontamination, and handling and shipment of samples. The HASP must be completed in accordance with 29 CFR 1910.120 and OAR 437-02-100 et seq., and all other state and Federal worker health and safety regulations applicable for Task 3.23.6.2. The HASP must reflect the sampling and characterization activities described in the Work Plan. The HASP must cover the activities of all Consultant, sub-consultant, and Agency employees. The HASP must include a traffic control plan, if needed.

Consultant shall obtain all required permits from Agency District Permit Office prior to initiating fieldwork activities. The District contact person is listed in B.4, General Requirements

Consultant shall submit the draft Site-Specific Subsurface Investigation Work Plan/HASP to Agency for review and comment. Consultant shall not proceed with field work activities under Task 3.23.7.2 until they have received written authorization (e-mail) from Agency.

**Deliverables/Schedule:** Consultant shall provide:

* Draft Site-Specific Investigation Work Plan/HASP within 4 weeks following completion of Task 3.23.1.
* Final Site-Specific Investigation Work Plan/HASP within 1 week following receipt of Agency comments.

#### Task 3.23.7.2 Site-Specific Investigation Sampling and Reporting

Consultant shall conduct subsurface investigations within the project corridor and on \_\_\_\_\_\_ adjacent private property (ies). Consultant shall collect surface soil samples from \_\_\_\_\_ direct push borings as described in the approved Site-Specific Investigation Work Plan. The borings must each be drilled depths ranging from \_\_\_\_\_\_ to \_\_\_\_\_\_ feet below ground surface. Two soil samples must be collected from each boring. If groundwater is encountered, then a groundwater sample must be collected. Samples collected from boreholes will be field screened for volatile organic compounds using a photoionization detector (“PID”). Consultant shall provide flagging and traffic control as needed to complete drilling and sampling. Agency will obtain right-of-entry permit for private property access if needed.

All test bore holes must be backfilled according to Oregon Water Resources Department regulations immediately following sample collection. The top 6 inches of each borehole will be filled with asphalt or concrete to match the existing pavement condition. IDW generated from drilling and testing must be placed in 55-gallon drums and temporarily stored on Agency property pending the results of laboratory analyses. The contents and date of accumulation will be marked on each drum. Consultant shall be responsible for disposal of all IDW.

Soil shall be analyzed for:

* NWTPH-Gx, NWTPH-Dx, Method 8260B VOCs, Method 8270 SIM PAHs, and total cadmium, chromium, and lead.

Groundwater samples shall be analyzed for:

* NWTPH-Gx, NWTPH-Dx, Method 8260B VOCs, and Method 8270 SIM PAHs.

Consultant shall ship samples to ESC Lab Sciences in Mt. Juliet, TN using the State chain of custody form, indicating the laboratory must bill Agency directly and requesting a turn-around time of 5 business days. Consultant shall be responsible for shipping samples under chain-of-custody procedures, such that the samples arrive at the laboratory undamaged. Agency will pay all shipping costs directly to the laboratory.

Consultant shall prepare a PSI report summarizing the results of Task 3.23.6.2. The report must include the following:

* Field observations, photographs, description of sampling, laboratory reports, and data tables summarizing analytical results.
* Evaluation of the laboratory results versus DEQ’s clean fill screening levels and risk-based concentrations for construction and excavation workers.
* Conclusions that identify specific sources of contamination that could impact Project construction.
* Recommendations for handling and disposal of contaminated soil or groundwater that may be generated from construction activities.

**Deliverables/Schedule:** Consultant shall provide:

* Draft PSI report within 4 weeks following completion of Task 3.23.6.1.
* Final PSI within 1 week following receipt of Agency comments.

### Task 3.23.8 Design Acceptance Narrative and Contract Documents

Consultant shall prepare and include in the Design Acceptance Package (Task 11), a narrative and PS&E for all construction activities impacted by contaminated materials. The DAP Narrative summarizes the results, conclusions, and recommendations provided in the Hazardous Materials Corridor Study and other studies completed prior to the DAP Project milestone.

Consultant shall provide plans specifications and estimates for managing hazardous materials to be submitted with the major Project milestones: Preliminary, Advance, and Final Plans (as covered in Task 14). Each milestone will be reviewed by the Region 1 Hazardous Material unit.

Comments received during the technical review shall be addressed by Consultant and incorporated into PS&E deliverables prior to the Project Team Review for each major Project milestone. Comments received during Project Team Reviews will be addressed by Consultant, documented in the Project review comment log, and incorporated in the deliverables for the next milestone.

Consultant shall prepare the PS&E using Agency’s existing templates. Boilerplate special provisions templates for contaminated media (Sections 00290 through 00299) are available at <https://www.oregon.gov/ODOT/Business/Pages/Standard_Specifications.aspx>

The special provisions shall include health and safety, sampling, waste management, and reporting requirements. Associated plans shall indicate the locations of contamination and hazardous materials that might impact Project construction.

**Deliverables/Schedule:** Consultant shall provide:

* Draft DAP Narrative 2 weeks prior to DAP Completion milestone
* Final DAP Narrative within 1 week following receipt of Agency comments.
* PS&E documents for technical review no later than 2 weeks prior to each of the major Project milestones: Preliminary, Advance, and Final Plans
* PS&E documents for Project Development Team review no later than 2 business days prior to each of the major Project milestones: Preliminary, Advance, and Final Plans
* Responses to review comments shall be added to the Project Comment Log within 1 week following receipt of Agency comments
* Final, stamped PS&E documents within 1 week following receipt of Agency Final Plans comments.

## Task 3.24 (Reserved)

# TASK 4 PUBLIC INVOLVEMENT – PUBLIC INFORMATION

Consultant shall assist Agency with public involvement throughout the Project. The primary goal of this task is sustaining ODOT’s partnerships with local agency partners and the general public. Agency will have overall responsibility for the Project public involvement and outreach program.

The work in this Task must be accomplished according to the following guides:

* DAS Web Style Guide
* ODOT Plain Language Guide
* ODOT Style Guide

## Task 4.1 Public Involvement/Communications Plan

### Task 4.1.1 Public Involvement Kick-off/strategy meeting

Consultant shall prepare for and attend 1 kick off/strategy meeting with Agency staff. Meeting dates, times and locations will be collaboratively scheduled between Consultant and APM. Consultant shall have capability to host meetings with screen and voice sharing software capable of running concurrently for use by Agency, Consultant staff, and sub-Consultant staff, at the discretion of the APM. TBD Consultant staff shall attend the meeting, estimated to be 2 hours in duration, to be held at Agency’s office in Portland, Oregon. The purpose for the meeting will be to discuss the Project goals and effects, and desired communication objectives and outcomes. The benefits and schedule for the Project will also be reviewed.

**Deliverables/Schedule:** Consultant shall provide:

* Meeting Agenda due TBD business days prior to start of meeting
* Attendance and participation at the meeting within TBD business days of the Kick off meeting
* Draft summary notes (including action item / decision log) within 5 business days of meeting- (1 electronic copy).
* Submit final summary notes to be delivered to APM within TBD business days of receipt APM and Agency Community Affairs Coordinator comments of draft summary notes - (1 electronic copy).

### Task 4.1.2 Public Involvement/Communications Plan

Consultant shall create a communications plan for the Project and update the plan as needed. The plan will include target audiences, key messages, communication and outreach tools, and a schedule designed to reach optimal highway users in the Project areas. The plan is expected to include a decision whether to conduct an in-person open house/public meetings based on the scope of the Project and level of stakeholder engagement/outreach. The plan will further detail Agency and Consultant roles and responsibilities.

To prepare for construction, Consultant shall evaluate previous outreach efforts and update the Communication Plan.

**[**Delete if there is no access management in the scope**]**

The Communication Plan must identify tasks related to the access management and identify property owners that will be affected by access modification.

**Deliverables/Schedule;** Consultant shall provide:

* Draft and final Communication Plan (.pdf) using Agency-provided template due within TBD business days after kick-off; final no later than 2 business days from receipts of Agency comments.
* Draft updated Communication plan (.pdf) due with Final Plans, Final updated Communication plan (.pdf) update due with PS&E submittal.

Task 4.1.3 Stakeholder Database and Comment Log

Consultant shall develop and maintain a stakeholder database that will be used to inform and update impacted businesses, residents, neighborhoods, organizations/jurisdictions in the Project area. The stakeholder list must be separated by location of the proposed work, identify the type of impact (noise, R/W, access management, etc), including contacts and addresses for property owners adjacent to the Project area. Consultant shall update the Stakeholder Database as needed.

Consultant shall create and maintain a communications log to track communications with the public. Consultant shall respond to correspondence in the form of letters, emails and phone calls on behalf of Agency as follows: emails within in 2 business days, letters within 5 business days and phone calls within the same business day. Consultant shall provide letters and emails to Agency for review before distribution.

**Deliverables/Schedule:** Consultant shall provide:

* An electronic copy of the draft stakeholder database to Agency within TBD business days of Project kick-off meeting.
* An electronic copy of the final stakeholder database within 5 business days after receiving Agency comments.
* A copy of each written response to APM and assigned Agency Community Affairs representative
* A record of all correspondence in the Project comment log, updates provided to Agency at Agency’s request

## Task 4.2 Communications Materials

Consultant shall prepare text and graphic layout of informational materials to be used during outreach events and available online. Standard ODOT text about the availability of translated materials and ADA accommodations shall be included in in all printed materials and the website. Consultant shall perform all web-related Services required under this SOW in conformance with the **ODOT Web Standards** (available at: <https://www.oregon.gov/ODOT/Pages/Web-Toolkit.aspx>)

Task 4.2.1 Graphics

Consultant shall prepare graphics to be used on the Project. Graphics include the following:

* Header (Name of the Project)
* Logo
* Web button
* User-Friendly Map identifying Project limits and proposed work for each location of work
* Project elements
* Renderings
* Illustrations
* Interactive maps
* Detour Maps

Delete or add more as needed

The graphics must be compatible for print and web formats.

**Deliverables/Schedule:** Consultant shall submit:

* Electronic copy of the draft graphics to the APM and assigned Agency Community Affairs representative on due date as determined by Agency
* Electronic copy of the final graphics to the APM within 5 business days after receiving Agency comments.

### Task 4.2.2 Newsletters, Project Fact Sheets and Fliers

Consultant shall prepare text and provide the graphic layout for the Project fact sheet to use at public events, Project area canvassing, and to post online. The fact sheet shall include a rendering of typical improvements in the Project area.

[Delete if ODOT wants to be the main contact for the project] Consultant shall be listed as the main contact for the public.

Consultant shall create up to TBD Project newsletters. The newsletters must provide a Project overview, map of Project limits, schedule, contact information and will invite people to participate in the in-person and online open house events (if relevant). Consultant shall draft, design and distribute the final newsletters to hit mailboxes 2 weeks prior to open houses (if scheduled). Up to TBD people will receive the mailers and Consultant shall pay printing and mailing fees directly. Consultant shall send electronic notifications out to the Project email list via GovDelivery system

Example of fliers include:

* + Project Fact Sheet for Public Events
  + Project Fact Sheet for Area Canvassing
  + Noise Variance Notices

**Deliverables/Schedule:** Consultant shall provide:

* + Draft and final Fact Sheets (Electronic) with draft due date as determined by Agency; final no later than 2 business days from receipts of Agency comments.
  + Up to TBD update(s) to the Project Fact Sheets with draft and final updated Fact Sheet (Electronic) on due dates as determined by Agency; final no later than 2 business days from receipts of Agency comments.
  + Draft and final newsletters with draft due date as determined by Agency; final no later than 2 business days from receipts of Agency comments. Drafts in electronic format; print quantity to be determined by Agency.
  + Up to TBD update(s) to the Project newsletter with draft and final updated newsletter (Electronic) on due dates as determined by Agency; final no later than 2 business days from receipts of Agency comments.

Task 4.2.3 Translation of Newsletters/Fact Sheets and Fliers

Consultant shall make arrangements with a translation provider to translate fact sheet produced in Task 4.2.2 plus TBD update to the fact sheet into TBD languages chosen by Agency.

**Deliverables/Schedule:** Consultant shall provide:

* Draft and final translated Newsletters/Fact Sheets/Fliers (Electronic) with draft due date as determined by Agency; final no later than 2 business days from receipts of Agency comments.
* Up to TBD versions of TBD Project mailers in languages chosen by Agency.

Task 4.2.4 Interpretive Services [This is typically a contingency. If so, change task number to “C4.2.4” and add “[CONTINGENCY TASK, see Section F]” after task heading.]

Consultant shall provide interpretation services at TBD public event(s) or one-on-one stakeholder meeting.

**Deliverables/Schedule:** Consultant shall provide:

Interpretation services in TBD language at up to TBD meetings

### Task 4.2.5 Display Boards

Consultant shall draft, design and print display boards to show the Project purpose and need, location, and design to be used at the open house.

**Deliverables/Schedule:** Consultant shall provide:

* + Up to TBD draft and final display boards with draft due date as determined by Agency; final no later than 2 business days from receipts of Agency comments on the draft display boards. Drafts provided in electronic format, print copies per number of display boards.

### Task 4.2.6 Website

Consultant shall develop website content and Project updates to be uploaded by Consultant to Agency web platform. Content developed by Consultant shall include a Project overview and specific content, including photos and videos created in Task 4.3.2 [Delete if there is no online open house required] to be coordinated with APM or designee.

Consultant shall provide text, graphics and photos for up to TBD website updates during this phase of work.

Consultant shall prepare web content in conformance with the **ODOT Web Standards** (available at: <https://www.oregon.gov/ODOT/Pages/Web-Toolkit.aspx>) and shall provide draft content to Agency for review prior to posting to the web site.

Consultant shall upload content to Agency platform using SharePoint. Consultant is responsible for providing staff trained in using SharePoint.

**Deliverables/Schedule:** Consultant shall provide:

* Draft and final initial content (Electronic) for website with draft due date as determined by Agency; final no later than 2 business days from receipts of Agency comments
* Draft and final content for TBD website updates (Electronic).

### Task 4.2.7 Social Media Content

Consultant shall develop social media posts for Agency to use on Agency’s twitter and Facebook accounts. Consultant shall provide up to TBD posts with Project information, open house advertisements and traffic impacts

**Deliverables/Schedule:** Consultant shall provide:

* Draft up to TBD tweets (electronic) with draft due date as determined by Agency; final no later than 2 business days from receipt of Agency comments
* Draft up to TBD Facebook posts (electronic) with draft due date as determined by Agency; final no later than 2 business days from receipt of Agency comments

### Task 4.2.8 Media Releases

Consultant shall provide up to TBD media releases about Project information and traffic impacts for the Region 1 Public Information Officer.

**Deliverables/Schedule:** Consultant shall provide:

* Draft up to TBD media releases to be provided to Agency draft due date as determined by Agency; final no later than 2 business days from receipt of Agency comments

## Task 4.3 Highway User Outreach

Consultant shall plan and implement outreach events to provide information and answer questions from highway users about the design, construction impacts and construction schedule prior to the start of construction.

### Task 4.3.1 Open House/Public Event

Up to TBD open houses/public events will be held, with the format being determined in coordination with Agency and based on contact with stakeholders. Consultant shall support Agency in preparing for the event. This includes the development of a meeting plan that includes information about outreach goals, logistics, notification tools, messaging, displays, staffing and the public comment process that will be implemented jointly with Agency. For estimating purposes, up to TBD Consultant staff persons will be present for set up and to answer questions. Communications and notification materials developed in Task 4.2 shall be used at the event. Consultant shall coordinate with the mailing house and newspaper advertising departments for distribution. Following the event, Consultant shall prepare a meeting summary to document attendees and comments received.

**Deliverables/Schedule:** Consultant shall provide:

* + Draft and final Meeting Plan. Draft due no later than TBD weeks before the event.
  + Coordination of room/space rental for events
  + Attendance, participation at event(s)
  + Materials and supplies needed for event(s)
  + Draft and final Event Summary; draft due no later than 5 business days following the event; final no later than 2 business days from receipt of Agency comments
* Summary of each meeting inserted in the Project communications log

### Task C4.3.1 Open House/Public Event **(CONTINGENCY TASK, see Section F)**

If this task is authorized by Agency, Consultant shall provide Services and deliverables as described in Task 4.3.1 for up to 2 additional open house/public event meetings.

### Task 4.3.2 Online Open House

Consultant shall produce an online open house for the Project using Agency’s platform. Consultant shall upload content onto Agency platform and update and maintain content, as needed. The Online Open House must include the following materials:

* Welcome page/site index
* Interactive display boards
* Comment and contact form
* Google Information map

Add as needed

Consultant shall produce TBD videos to be uploaded to the online open house platform. Videos shall be up to TBD minutes. Consultants shall draft the video script for Agency review and approval

Agency will coordinate with Agency staff schedules for filming with Consultant. Consultant shall schedule date, time, and location with Agency prior to filming the video.

**Deliverables/Schedule:** Consultant shall provide:

* Draft online open house materials for Agency review, with draft due date as determined by Agency; final no later than 2 business days from receipt of Agency comments.
* Draft video scripts for Agency review, with draft due date as determined by Agency; final no later than 2 business days from receipt of Agency comments.

Filming, editing and post-processing of videos of TBD videos in (format here) with draft due date as determined by Agency; final no later than TBD business days from receipt of Agency comments.

### Task 4.3.3 Project Area Canvassing

Consultant shall conduct door-to-door outreach to up to TBD stakeholders that may potentially be impacted by Project construction. The purpose of this outreach will be to introduce the Project, identify the appropriate point of contact for future meetings, and assess whether interpretation services may be needed.

Consultant shall identify the canvassing area, to be approved by Agency via email prior to canvassing.

Communications and notification materials developed in Task 4 will be used for canvassing.

**Deliverables/Schedule:** Consultant shall provide:

* Conduct door-to-door outreach to up to TBD properties potentially impacted by Project on date agreed to by Agency.
* Draft and final summary notes; draft due no later than 5 business days following canvassing; final no later than 2 business days from receipt of Agency comments
* Summary of outreach inserted in the Project communications log

### Task 4.3.4 Small Group Briefings; One-on-One Briefing; and Stakeholder Interviews

Consultant shall identify community groups, special interest groups, neighborhood associations or selected stakeholders that require a briefing of the Project, based on the stakeholders identified in the Public Involvement/Communications Plan, to be approved by Agency.

Consultant shall schedule and prepare for briefings to provide Project updates and obtain input. Consultant shall coordinate with Agency on staff schedules for attending briefings.

Consultant shall communicate with the group, secure meeting or spot for ODOT staff on the agenda, and prepare for a meeting or presentation of Project the meetings. Consultant shall utilize informational materials developed under Task 4.2 for meetings and events. For estimating purposes, it is assumed that TBD Consultant staff will attend each briefing each estimated to be TBD hours in duration including travel time.

**Deliverables/Schedule:** Consultant shall provide:

* Scheduling, attendance, and participation at TBD meetings;
* Meeting or presentations materials (as needed)
* Draft summary notes of meeting (including action item / decision log) to be delivered to Agency within 5 business days following the meeting. (1 electronic copy);
* Final summary notes to be delivered to Agency within 5 business days of receipt Agency comments of draft summary notes (1 electronic copy).
* Summary of each meeting inserted in the Project communications log

[Delete below task if no access management in scope]

## Task 4.4 Access Management Outreach

Consultant shall schedule, identify locations for, and coordinate Project team involvement in up to TBD access management meetings with affected property owners and tenants. Consultant shall attend and take meeting minutes at access management meetings. Consultant shall coordinate with Agency on staff schedules for attending access management meetings.

Consultant shall review up to TBD methodology letters.

**Deliverables/Schedule:** Consultant shall provide:

* Schedule up to TBD access management meetings with affected property owners and tenants.
* Meeting notes for up to TBD access management meetings within TBD days of meetings.
* Summary of each meeting inserted in the Project communications log

## Task 4.5 Public Involvement Summary Report

Consultant shall draft and revise a final report following bid opening of the Project to summarize the public outreach activities and the key stakeholder issues identified during Project design. The final report must document commitments made by the Project team regarding communications to stakeholders during construction.

**Deliverables/Schedule:** Consultant shall provide:

* Draft Project Public Involvement Summary Report TBD days after bid opening.
* Final Project Involvement Summary Report within TBD days of Agency comment.

# TASK 5 UTILITIES COORDINATION

Consultant shall perform the coordination of all utility facilities within the Project limits in accordance with the Oregon Utility Relocation Manual (available at: <https://www.oregon.gov/ODOT/ROW/Pages/Utilities.aspx> under “Policies and Guidance”).

If any utility is nonresponsive or uncooperative, Consultant shall notify Agency, and Agency will communicate with the utility to affect a solution.

Agency utility forms library is a comprehensive list of the tools needed during the utility relocation process located at the following location:

<https://www.oregon.gov/ODOT/ROW/Pages/Utility-Forms.aspx>

## Task 5.1 Utility Location and Coordination

Consultant shall perform utility coordination and liaison activities with utility owners/operators for the Project. Consultant shall comply with the current version of the Utility coordination policy requirements as described in the Oregon Utility Relocation Manual. This work includes reviewing utilities that may be in conflict with the Project work and utility relocation coordination with the utility owners to resolve those potential conflicts. Additionally, Consultant shall obtain system mapping from utilities located within the Project limits. Consultant shall use this information to confirm the survey map as developed under Task 2, Surveying.

**Deliverables/Schedule:** Consultant shall provide:

* Existing utility information gathered in Task 5.1 to be included in the survey map / base map
* Record of communications with each utility within the Project limits. Copies of communication record must be provided to APM and LAPM within 3 business days of request.

**Task 5.2 Utility Report**

Consultant shall prepare a draft and final “Utility Report” for those utilities located within the Project limits. The “Utility Report” should include as many of the following items that are known and applicable:

* Description of utilities located within the Project limits
* Utility facility’s structure dimension
* Probable buried depth of cover or aerial lowest height of wire
* General description of utility facility structure material
* Reliance upon other utilities in the vicinity (joint use facility)
* Description of the means used to verify facility location and limits of conflict (test hole data a.k.a. “pothole” verification)
* Proposed Project construction requirements
* Potential utility conflicts
* Probable conflict resolution (relocation or adjustment concept)

**Deliverables/Schedule:** Consultant shall provide:

* Draft Utility Report to be submitted with DAP Package under Task 11
* Final Utility Report to be submitted to APM and LAPM within 2 weeks of the receipt of comments on draft document.

**Task 5.3 Utility Coordination Meetings**

To facilitate the development of each utility relocation plan, Consultant shall organize, conduct, prepare for and attend the following utility coordination meetings with utilities within the Project limits:

* Utility kickoff meeting to begin utility coordination. The meeting must address known facilities, potential for impact, design alternatives to address conflicts, timing requirements for potential relocations, and initial information on reimbursable requirements
* Up to 2 individual meetings with potentially affected utilities.
* 1 on-site group utility meeting, to coordinate relocation plan, construction constraints, means and methods, work sequence and schedule limitations.

Consultant shall prepare a meeting agenda, and meeting minutes summarizing the discussions at the group meeting.

For budgeting purposes it is assumed that up to 2 Consultant staff shall attend each \_#\_ hour meeting, including travel time.

**Deliverables/Schedule:** Consultant shall provide:

* Meeting Agenda and Meeting Minutes for each meeting; agenda due within 2 business days prior to meeting; meeting minutes due within 5 business days after meeting

## Task 5.4 Utility Relocations

Consultant shall coordinate the efforts of the utility agencies in developing and executing a plan for relocating utilities to resolve conflicts with the Project design. As part of that effort, Consultant shall complete the following:

* Preparation of Project Notification Letter(s)/Utility Conflict Notices
* Preparation of Utility Constraint Notice
* Review of Utility Relocation Plans and Preparation of Relocation Time Requirement Letters

### Task 5.4.1 Utility Notices

For those Utilities where no conflict is anticipated, Consultant shall provide a Project Notification (first notice per OAR 734‑055‑045). Consultant shall use the Project Notification letter template located at: <https://www.oregon.gov/ODOT/ROW/Pages/Utility-Forms.aspx> (under “Local Public Agency Resources” heading).

The Project Notification letter must include plan sheets indicating location of existing utilities in relationship to proposed Project.

For those Utilities where a conflict is anticipated, Consultant shall provide a Conflict Noticeletter (first notice per OAR 734‑055‑045). Consultant shall use the Conflict Notice letter located at: <https://www.oregon.gov/ODOT/ROW/Pages/Utility-Forms.aspx> (under “Local Public Agency Resources” heading).

Consultant's coordination schedule must allow each utility a 30 calendar day period to respond with a proposal from date of the notice. Multiple notices or revised notices must be created and delivered to a utility owner when additional facility conflicts become apparent and the utility owner's response time may be shortened to 7 calendar days.

**Deliverables/Schedule:** Consultant shall provide:

* Project Notification letter(s) and Conflict Notice(s) with enclosures to Utilities; due 2 weeks of DAP plans submittal to Agency.
* 1 .pdf of Project Notification/ Utility Conflict letters with enclosures to APM, LAPM and, State Utility Liaison (“SUL”).

### Task 5.4.2 [RESERVED]

### Task 5.4.3 Review Utility Relocation Plans and Relocation Time Requirement Letters

Consultant shall examine all received utility relocation plans for completeness and accuracy. If relocation plans do not resolve utility conflict, Consultant shall provide comments to Utility for correction and re-submittal.

For those utilities that propose to attach to structures, Consultant shall provide guidance (e-mail acceptable) to the utility regarding Agency bridge accommodation policies and request protocol for bridge accommodation (ref. Agency’s Bridge Design/Drafting Manual sec. 3.14.10.3-4 https://www.oregon.gov/ODOT/Bridge/Pages/Bridge-Design-Manual.aspx. )

Consultant shall obtain acceptance or rejection of the utilities request for bridge accommodation from APM or LAPM.

Consultant shall negotiate with each utility a utility construction work schedule that conforms to the Project construction schedule. Consultant shall deliver a Time Requirement Letter (second notice) to each utility owner accepting or modifying the required utility facility construction time.

**Deliverables/Schedule:** Consultant shall provide:

* The final utility relocation plan(s) submitted to the LPA within two weeks after acceptance.
* Time Requirement Letter(s) submitted to each utility, APM, LAPM and SUL four weeks after submittal of Advance Plans to Agency.

## Task 5.5 Utility Reimbursement

Consultant shall follow Agency’s reimbursement process, review bills, and recommend payments as set forth in the Oregon Utility Relocation Manual, Sections 3-2, 3-7, and Section 5.

### Task 5.5.1 Reimbursement Review and Package

Consultant shall review up to 10 reimbursable utility relocation documentation and supporting information submittals for completeness, accuracy, relevance, and reasonableness. Consultant shall submit all accepted reimbursement material to SUL.

Consultant shall base prior rights determinations on Title 23 of the Code of Federal of Regulations (“CFR”), Oregon Administrative Rules (“OAR”) 734-055 and ORS 366.321 and 373.020 and other applicable requirements.

For incomplete, inaccurate, non-relevant or unreasonable information Consultant shall prepare and deliver a written justification for rejection to the utility within 2 weeks following receipt of unacceptable materials.

For each utility that is eligible for reimbursement, Consultant shall provide a “Reimbursement Package” to the SUL, which must include, but not be limited to:

* Land deeds, easements, recorded surveys, X-permits, affidavits of prescription or estoppel rights, and service agreements
* Property Rights Disposition declaration form
* Reimbursement Information Form
* Accepted Utility Relocation detailed cost estimate
* Utility’s consultant agreements
* Utility’s construction PS&E contract bid documents
* Evidence of the utility’s construction bid advertisement and tabulation of responsive bids
* Written request to include utility work into the Construction contract, and
* Approved Utility relocation plan that clearly shows and defines reimbursable and non-reimbursable work Reimbursement Certification form

Using Agency’s Transmittal Request Form (<http://www.oregon.gov/ODOT/ROW/Docs_UtilityForms/transmittal_request_form.doc>), Consultant shall deliver a Reimbursement Package to SUL and e-copy to APM, requesting formal action, such as:

* Notice to Proceed with utility preliminary engineering
* Notice to Proceed with utility contract bid advertisement
* Notice to Proceed with utility purchase of materials
* Notice to Proceed with utility construction

**Deliverables/Schedule:** Consultant shall provide:

* Written Justification document; due within 2 weeks following receipt of unacceptable materials
* 1 hard copy or .pdf of the Utility reimbursement package to SUL and APM 2 weeks following receipt of materials.

### Task 5.5.2 Utility Billing Review, Approval, and Payment Recommendation

Consultant shall affix a date-of-receipt stamp on all utility bill materials received.

Consultant shall check for mathematical accuracy and verify correctness of all utility bills for reimbursable work. Consultant shall, if appropriate, accept all invoices that include actual cost documentation.

Consultant shall reject utility invoices that are lacking sufficient supporting documentation Consultant shall return within 3 business days written correspondence (email acceptable) to the utility, which outlines the insufficient or incorrect billing data. Consultant shall request an amended invoice to reflect the correction of billing errors. Consultant shall copy SUL on all correspondence involving reimbursement issues.

Consultant shall transmit the billing package under Agency’s inter-office memo ( <http://www.oregon.gov/ODOT/ROW/Docs_UtilityForms/utility_billing_memo.doc>) with signature recommending payment, to the SUL for payment processing. All billing correspondence must be attached to the bill when forwarding for payment.

**Deliverables/Schedule:** Consultant shall provide:

* Accepted Utility Billing Package and Payment Recommendation inter-office memo; due within 2 weeks of receiving utility invoicing and documentation.

## Task 5.6 Utility Certification

Consultant shall complete and sign the Utility Certification verifying that all utility work has been completed or that all necessary arrangements have been made for it to be undertaken and completed as required for proper coordination with the physical construction schedule.

If an exception is required, Consultant shall prepare, for the APM’s signature, a Public Interest Finding as part of the Utility Certification including facts regarding the cause for the exception, an action plan and time table in securing a utility agreement (a.k.a. Time Requirements letter).

**Deliverables/Schedule:** Consultant shall provide:

* 1 .pdf copy of the Utility Certification sent to SUL for co-signature due 2 weeks prior to PS&E.
* 1 hard copy of signed Utility Certification form to be incorporated into PS&E package.

# TASK 6 GEOTECHNICAL, GEOLOGIC and PAVEMENT DESIGN SERVICES

Insert general description of geotechnical work.

Consultant shall completed geotechnical and geological Services in accordance with Agency’s latest Geotechnical Design Manual. The findings must be summarized in a Geotechnical Technical Report that includes a Foundation Data Sheet for each intersection. Agency will provide relevant historic geotechnical reports and field investigation data from its prior work for inclusion with the Project Geotechnical Report. Consultant shall perform the following subtasks for the foundation investigation.

## Task 6.1 Site Reconnaissance, Exploration and Testing Work Plan

Consultant shall perform site reconnaissance. The site reconnaissance must include, but is not limited to, the following work:

* Observe surface conditions indicative of subsurface conditions.
* Identify site constraints and staging concerns (for exploration and construction).
* Identify potential exploration locations.
* Meetings with Agency or other parties to discuss, review, and ascertain site conditions relevant to the geotechnical Project work.

The site reconnaissance will facilitate understanding of the site constraints for field explorations, construction, and traffic staging. Proposed boring locations must be staked or painted on the ground.

Consultant shall prepare a Subsurface Exploration Plan (“SEP”) and Laboratory Testing Plan showing the proposed drilling locations, outlining the drilling and sampling procedures, preliminary laboratory testing plan, and the traffic control plan prior to beginning the work. No fieldwork is to be performed, other than initial site reconnaissance before review and approval of the SEP and Laboratory Testing Plan by Agency.

Consultant shall develop a Field Safety Plan (“FSP”) for fieldwork and a Traffic Control Plan (“TCP”) for submittal to Agency prior to the start of work. The traffic control plan must be prepared by a flagging company licensed to work in the State of Oregon. The TCP must address a minor road encroachment as well as a single lane closure for activities associated with drilling exploratory borings from the roadway surface and pavement restoration. Consultant shall review the as-built drawings of all storm water drainage pipes and bridges provided by Agency, and use the One Call Utility Locating System to locate all utilities.

**Deliverables/Schedule:** Consultant shall provide:

* 1 electronic copy of the Subsurface Exploration Plan and Laboratory Testing Plan, including FSP and TCP to Agency at least 2 weeks prior to the beginning of the field work.

## Task 6.2 Field Exploration and Laboratory Testing

Consultant shall perform the geotechnical explorations and reconnaissance at bridge bents, signal poles, light poles, sign bridges, retaining walls and sound walls locations to evaluate subsurface conditions and develop geotechnical recommendations for the foundation designs as shown in the following table

|  |  |  |
| --- | --- | --- |
| SRUCTURE | EST # OF BORINGS | ESTIMATED BORING DEPTH |
| Bridge Bents |  |  |
| Signal Poles |  |  |
| Light Poles |  |  |
| Sign Bridges |  |  |
| Retaining Walls |  |  |
| Sound Walls |  |  |
|  |  |  |

**Drilling:** Consultant shall perform geotechnical field explorations to determine the subsurface conditions for the express purpose of characterizing subsurface conditions within the Project limits and determining the foundation recommendations for the items listed in the table above. Consultant shall perform exploration work in accordance with all Federal, State, and Local regulations. Consultant shall perform the subsurface exploration work in conformance with the SEP as described in Task 6.1. Anticipated boring locations are shown in the following table.

|  |  |
| --- | --- |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

Utilities in the vicinity of the proposed borings must be located through the One-Call system prior to the fieldwork.

Consultant shall provide an engineer or geologist to supervise the field operations and log the borings. Subsurface explorations must be conducted in general accordance with Agency’s latest Geotechnical Design Manual, chapter 3.

[Insert scope for this Project.]

**Infiltration Tests:** Consultant shall conduct infiltration testing at up to TBD locations to evaluate on-site disposal of stormwater.

[Insert scope for this Project.]

**Laboratory Testing:** Consultant shall conduct water contents, sieve analyses, and Atterberg limits tests on soil samples obtained from the borings to classify the soils and estimate their engineering properties. If soft soils are encountered, a consolidation and direct shear test may be performed by Consultant to assist with the engineering studies.

**Deliverables/Schedule:** Consultant shall provide:

* Deliverables for this task are detailed in deliverables for Task 6.5.

## Task C6.3 Additional Field Exploration and Laboratory Testing (CONTINGENCY TASK –see Section F)

Consultant shall conduct additional field investigations for potential light poles, sign bridges, retaining walls, sound walls, and additional pavement borings. The investigation program must be performed in conjunction with the Subsurface Exploration Plan detailed in Task 6.1. Consultant shall perform the additional field investigations described in Task C6.3 and under the drilling approaches described in Tasks 6.1 and 6.2. When possible, Consultant shall coordinate traffic control and other subcontractors, such as drillers, to provide exploration services for additional field investigation and geotechnical subsurface explorations in a cost effective manner. Specific field investigation breakdown is shown in the following table.

|  |  |  |
| --- | --- | --- |
| TEST METHOD | EST # OF TESTS | ESTIMATED BORING DEPTH (FT) |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

Consultant shall perform additional infiltration tests at up to 4 locations to evaluate on-site disposal of stormwater. Infiltration tests will be conducted in accordance with procedures described in the City of Portland Stormwater Standards. The raw field tests results will be provided.

**Deliverables/Schedule:**  Consultant shall provide:

* Deliverables for this task are detailed in deliverables for Task 6.5.

## Task 6.4 Geotechnical Analysis

Consultant shall perform analyses of the field and laboratory test data to develop geotechnical recommendations for retaining wall, foundation design and construction.

Consultant shall provide the analysis and design for the foundation in accordance with Agency’s latest Geotechnical Design Manual, FHWA, AASHTO, (and PBOT leave or remove depending on Project requirements) design guidelines. Geotechnical analysis must include:

* Minimum embedment depth and footing diameter
* Broms or LPile analysis as appropriate for drilled pier type footings
* Bearing capacity of native soils
* Lateral load capacity, sliding resistance, Internal and external stability of any retaining wall structure
* Drainage considerations

**Deliverables/Schedule:**  Consultant shall provide:

* Deliverables for this task are detailed in deliverables for Task 6.5.

## Task 6.5 Geotechnical Report

Consultant shall prepare a Geotechnical Report summarizing the subsurface conditions and seismic hazards, design, and construction recommendations. The Geotechnical Report must summarize the field observations, subsurface conditions, laboratory test data, analysis results, construction issues and geotechnical recommendations for the Project. The Geotechnical Report must be prepared in accordance with the most current version of the ODOT Foundation Design and Report Writing Guidelines.

Consultant shall prepare a Geotechnical Data Sheet at each intersection. A total of 9 Geotechnical Data Sheets (5 for retaining walls, 2 for sign bridges, and 2 for light poles) must be developed for the Project.

Consultant shall provide special provisions relating to the foundation system.

**Deliverables/Schedule:**  Consultant shall provide:

* Geotechnical Report and Foundation Data Sheets to be included in the draft and final DAP (Task 11)

**Task 6.6 Pavement Design**

This task template is the latest from the Pavement Design Unit (Brian Sullivan). It provides the basic information required in the Pavement Design portion of the SOW. To complete this portion of the SOW, add the necessary detail for each project. The information contained in ***Yellow-highlighted bold italics*** text provides some guidance as to where additional detail should be added to the SOW.

**Delete instructions throughout the document before executing Contract/WOC or amendment as follows:**

* From the “Edit” menu (or “Editing” menu on the “Home” ribbon) select “Replace”;
* With cursor in the “Find what” field, click “More” button, then “Format” then “Font” , then in the font field select “Arial” text ;
* Leave the “Replace with” field blank;
* Click “Replace All”. This will delete all yellow highlighted text.]

***(Insert Scope of Pavement Work)***

Consultant, in coordination with Agency pavement engineers, shall develop pavement design criteria, design parameters, pavement rehabilitation and new pavement sections for an acceptable pavement design to be used in this application for the following areas:

List areas

Consultant shall provide all equipment, labor, materials and traffic control required for the field investigation and the development of any new construction, reconstruction, rehabilitation, or temporary detour pavement designs as required under the scope of this SOW. All work related to completing the pavement design(s) must be conducted in accordance with the latest edition of the ODOT Pavement Design Guide, available online at: <https://www.oregon.gov/ODOT/Construction/Documents/pavement_design_guide.pdf>

References are given to specific ODOT Pavement Design Guide Chapters in the sub-tasks below for informational purposes only and does not relieve Consultant of responsibility for meeting all of the requirements contained in the ODOT Pavement Design Guide.

## Task 6.6.1 Traffic Analysis

Agency will provide the traffic data and growth factor for future loadings.

Consultant shall conduct traffic analysis per chapters 4 and 5 of the ODOT Pavement Design Guide, which provides traffic data requirements and analysis procedures.

**Deliverable:**

* Include analysis in the deliverables required under Task X.5.

## Task 6.6.2 Field Reconnaissance

Consultant shall conduct a field reconnaissance visit for planning the necessary field investigation work and to assess the temporary traffic control needs for the field investigation.

**Deliverable:**

* Work plan for field investigation work and traffic control needs

**Task 6.6.3 Field Investigation**

Consultant shall conduct all site investigation work in accordance with the ODOT Pavement Design Guide, Chapter 4, Data Collection, which outlines the minimum level of site investigation work and the equipment calibration requirements. Consultant shall refer to Chapters 5-9 for the specific design requirements related to new construction, reconstruction or pavement rehabilitation, and bridge approaches.

***(Insert specific field investigation work - Consultant should provide this information based on their assessment of the project requirements and the Pavement Design Guide)***

**Deliverable:**

* Include documentation of field investigation in the deliverables required under Task X.5.

**Task 6.6.4 Laboratory Testing**

Consultant shall ensure all necessary laboratory testing is conducted as needed to comply with the requirements of the ODOT Pavement Design Guide and to provide the basis for the necessary inputs required for the pavement design analysis.

***(Insert specific laboratory testing – Consultant should provide this information based on their assessment of the project requirements and the Pavement Design Guide)***

**Deliverable:**

* Include documentation of laboratory testing in the deliverables required under Task X.5.

**Task 6.6.5 Engineering Analysis; Executive Summary and Supporting Documentation**

Consultant shall perform an engineering analysis of the data in accordance with the requirements of the ODOT Pavement Design Guide for the development of the pavement design(s) required under this SOW. Consultant shall prepare a Pavement Design executive summary and supporting documentation to document all phases of the pavement design process in conformance with requirements of ODOT Pavement Design Guide, Chapter 12 and referenced appendices and examples.

**Deliverable:**

* Draft pavement design executive summary and supporting documentation in conformance with ODOT Pavement Design Guide requirements. Submit in electronic format only. Due with DAP submittal.
* Final pavement design executive summary and supporting documentation in conformance with ODOT Pavement Design Guide requirements. Submit in electronic format only. Due with Advance Plans submittal.

# TASK 7 HYDRAULICS & STORMWATER

Consultant shall develop hydraulics studies to facilitate culvert, bridge and stormwater design. Consultant shall perform work under this task in accordance with the guidelines and requirements of the ODOT Hydraulics Manual.

Deliverables for Task 7.1, 7.2 and 7.3 are incorporated in the Hydraulic Report, Task 7.4.

## Task 7.1 Site Investigation and Data Collection/Analysis

Consultant shall perform a site visit to take photographs, gather field measurements, record observations and conduct a topographic survey of the stream. Although door-to-door interviews are not a requirement, Consultant shall interview residents living in the area, if possible, to obtain relevant historic information about observed water levels and extent of flooding near the bridge structure.

Consultant shall record observations with respect to the following:

* Lateral channel stability.
* Stream channel hydraulic roughness.
* Aggradation or degradation of bed material.
* Existing evidence of scour or erosion.
* Collect 2 streambed sediment samples upstream of the bridge for grain size analysis (or conduct pebble counts)

Consultant shall:

* Evaluate site and determine survey data requirements for hydraulic analysis.
* Evaluate site to establish geotechnical/geomorphologic data and sampling requirements.
* Conduct a topographic survey of the stream to obtain data necessary for developing a Hydraulic Engineering Center – River Analysis System (“HEC-RAS”) hydraulic model (including channel profile, channel-floodplain cross-sections, bridge geometry, and other hydraulic controls).
* Determine channel and floodplain hydraulic roughness values (document with photographs).
* Contact County to determine if a Flood Insurance Study (“FIS”) report and Flood Insurance Rate Map are available. If so, Consultant shall obtain copies of the study report and map from the County or FEMA.
* Review local floodplain ordinances to determine if there are any applicable to this water body.
* Determine if applicable stream gauge records exist, and obtain them, if possible.
* Locate and obtain any existing topographic maps of the tributary drainage basin.
* Review geotechnical report with regard to lateral stream stability and scour potential.

## Task 7.2 Hydrologic Analysis

Consultant shall:

* Delineate the tributary drainage basin utilizing available topographic maps.
* Review available hydrologic data sources and determine the most appropriate 2-, 10-, 25-, 50-, 100-, and 500-year design flow for the proposed bridge.
* In the absence of stream specific data utilize the regional regression equations described in the U.S. Geological Survey (“USGS”) magnitude and frequency of floods in Western Oregon to predict design flows.

## Task 7.3 Hydraulic Analysis

Consultant shall:

* Develop a computer model to simulate hydraulic conditions of the water body at the proposed bridge site to determine water surface profiles, velocities, depths, and flow area for the various design flows. Downstream boundary conditions for the model must assume critical or normal depth.
* Compare results of computer model with results of the FIS and assess any differences.
* Create and evaluate a simulation of the existing condition, 2 proposed bridge alternatives, and the natural channel condition.
* Use the US Army Corps of Engineers (“Corps”) HEC-RAS (latest version) model for the hydraulic analysis.

For the selected bridge or culvert alternative, Consultant shall perform the following:

Conduct a scour analysis using methods as described in the FHWA HEC-18, Evaluating Scour at Bridges, following ODOT guidelines, which include evaluation of pier scour and contraction scour.

## Task 7.4 Hydraulic Report

Consultant shall:

* Prepare a draft report summarizing the findings of the hydraulic study with design recommendations for Agency review and comment.
* Revise draft report to reflect any required changes and provide final report.

**Deliverables/Schedule:** Consultant shall provide:

* 1 electronic copy of Draft Hydraulics Report 3 weeks prior to DAP
* 2 paper and 1 electronic copy of Final Hydraulics Report 3 weeks after Final DAP.

## Task 7.5 Stormwater Design Documentation

### Task 7.5.1 Water Resources Impact Assessment

Consultant shall determine water quality treatment and peak flow control requirements. Consultant shall prepare a Water Resources Impact Assessment, which must document whether or not water quality treatment is needed. If the determination is that treatment is required, then the document must note what level (engineered facility or BMP only) of treatment is needed. Consultant shall also determine

Peak flow control requirements.

**Deliverables/Schedule:** Consultant shall provide:

* Draft and final Water Resources Impact Assessment 4 weeks after NTP

### Task 7.5.2 Preliminary Stormwater Recommendations

Consultant shall develop overall recommendations of the basic storm water conveyance system layout, pipe outfall locations, treatment and storage concepts (the “Preliminary Stormwater Recommendations”). These recommendations do not contain facility designs. It is a tool to assist in the selection of the types and locations of the facilities to be designed and is an important tool to assist other personnel (including environmental, R/W and hazardous materials experts). Consultant shall prepare these recommendations after the development of the Water Resources Impact Assessment and a determination of the need for storage, and before the design proceeds.

Consultant shall prepare the Preliminary Stormwater Recommendations in conformance with content requirements and outline set forth in Chapter 4 of the [ODOT Hydraulics Manual](https://www.oregon.gov/ODOT/GeoEnvironmental/Pages/Hydraulics-Manual.aspx), Section 4.6.2 .

**Deliverables/Schedule:** Consultant shall provide:

* Draft and Final Preliminary Stormwater Recommendations 2 weeks prior to Draft DAP

### Task 7.5.3 Standard Stormwater Design Documentation

Consultant shall develop stormwater documentation for standard stormwater designs including, but not limited to, roadway inlets, small storm drains and small channels or ditches. The documentation must accomplish the following:

* Verify that design objectives and standards have been met,
* Provide data about the capacity of the drainage system (this is used to evaluate future requests to discharge additional flow into the system)
* Aid in the maintenance of the facility, the design of modifications to the system, and the hydraulic design of nearby or subsequent facilities.

Consultant shall prepare Standard Stormwater Design Documentation. This includes, but is not limited to:

* Drainage System Map(s) - a small system can be shown by a single map. A larger system requires several maps. These maps show the location and type of the following features.
* “Storm Sewer Design sheets for all storm drains shown on the map(s). The top of manhole and downstream invert elevations are listed on the design sheets. The elevations of other critical components must also be provided, such as gutters, ditch bottoms, upstream pipe inverts, manhole bottoms, etc. This data can be provided by profiles, tables, sketches, etc. Computer output can be provided in lieu of design sheets.

The Standard Stormwater Design Documentation Package must include a cover letter sealed by the engineer of record.

**Deliverables/Schedule:** Consultant shall provide:

* Standard Stormwater Design Documentation

### Task 7.5.4 Stormwater Design Report

Following approval of Preliminary Stormwater Recommendations and after preparation of Advance Plans, Consultant shall prepare ta Stormwater Design Report in accordance with the content requirements and outline set forth in [Chapter 4 of the ODOT Hydraulics Manual](https://www.oregon.gov/ODOT/GeoEnvironmental/Docs_Hydraulics_Manual/Hydraulics-04.pdf) (Section 4.6.4). The facility design(s) incorporated in the Final Plans must comply with the information in the Stormwater Design Report unless approval for any change has been obtained from the engineer of record for the Stormwater Design Report. **Deliverables/Schedule:** Consultant shall provide:

* Stormwater Design Report 3 weeks prior to the submittal of Final Plans .
* Also submit a copy in .pdf format to Geo-Environmental’s Senior Hydraulics Engineer by completing the Project Report - Submittal Form 734-5056 located at the following website (under Additional Resources): <https://www.oregon.gov/ODOT/GeoEnvironmental/Pages/Hydraulics.aspx>

### Task 7.5.5 Stormwater Design Supporting Data

Consultant shall assemble Stormwater Design Supporting Data package which must include, but is not limited to, the data described or referenced in Chapter 4 of the ODOT Hydraulics Manual (Section 4.6.5).

**Deliverables/Schedule:** Consultant shall provide:

* Stormwater Design Supporting Data (submit with Stormwater Design Report)

### Task 7.5.6 Stormwater Operation & Maintenance Manual

Consultant shall develop a facility operation and maintenance manual for the Project stormwater facilities (“Stormwater O&M Manual”). The Stormwater O&M Manual must be developed using Agency templates referenced in the ODOT Hydraulics Manual. The content requirements and outline set forth in the ODOT Hydraulics Manual (Chapter 4.6.6) must be followed unless agreed to by the APM.

**Deliverables/Schedule:** Consultant shall provide:

* Draft and Final Stormwater Operation & Maintenance Manual (Draft submitted with Stormwater Design Report – Task 7.5.4)

## Task 7.6 Stormwater Conveyance and Treatment Plans

Consultant shall prepare Stormwater Conveyance and Treatment Plans for DAP, Preliminary Plans, Advance Plans and Final Plans deliverables as covered by Task 11.5 and Tasks 14.1, 14.2, 14.3 and 14.4. These plans must be developed in accordance with the ODOT Hydraulics Manual and include Drainage Plan and Profile sheets, Drainage Detail Sheets and Pipe Data Sheets.

**Deliverables/Schedule:** Consultant shall provide:

* DAP Stormwater conveyance and Treatment Plan Sheets delivered with Task 11.5
* Preliminary Stormwater conveyance and Treatment Plan Sheets delivered with Task 14.1
* Advance Stormwater conveyance and Treatment Plan Sheets delivered with Task 14.2
* Final Stormwater conveyance and Treatment Plan Sheets delivered with Task 14.3

# TASK 8 HIGHWAY DESIGIN

## Task 8.1 Roadside Inventory

Consultant shall complete a roadside inventory using Agency provided Excel spreadsheet.  This data will typically be two-dimensional and require a digital picture.  Consultant shall relate the digital picture to the feature in the roadside inventory spreadsheet.  The roadside inventory must conform to Agency standards as defined in the ODOT Highway Design Manual.

**Deliverables/Schedule:**  Consultant shall provide as required by Agency or within 8 weeks from NTP:

* 1 electronic copy of the Roadside Inventory recorded in Agency approved Roadside Inventory spreadsheet;
* An electronic copy of all digital pictures taken of features.

## Task 8.2 ADA Curb Ramp PS&E

Consultant shall provide a design that brings existing curb ramps up to current ADA standards as implemented by Agency. Guidance is provided at:

<http://www.oregon.gov/ODOT/Engineering/Pages/Accessibility.aspx>

Consultant shall prepare plan sheets showing curb ramp details for curb ramps at the following locations:

List locations

The detailed plan sheets must comply with the relevant requirements of Agency Standard Drawings RD 752, RD753, RD754, RD755, RD756, RD757, RD759, DET1720, DET1721 and applicable Agency ADA Inspection Forms 734-5020(A-G). The plans must show design finished grade elevations and slopes at concrete joints and along the concrete curb and gutter and shall show saw-cut locations where the new ADA Curb Ramp joins existing sidewalk.

**ADA Ramps DAP Submittal**

Consultant shall prepare DAP-level ADA design to identify R/W needs, utility conflicts, cost and other feasibility issues related to updating ADA curb ramps to current standards. Consultant shall develop concept-level design for each ADA curb ramp location affected by the Project so that R/W acquisition is minimized or avoided, and the identification of utility, drainage conflicts, and cost can be identified early in the Project. Consultant shall prepare an ADA Curb Ramp Design Checklist and Ramp Cost Estimate which must be submitted with the draft DAP. Refer to Agency Right of Way Technical Bulletin RW15-02(B)

**Preliminary Plans, Advance Plans and Final Plans**

Consultant shall refine plan sheets for the subsequent plan review sets.

**Deliverables/Schedule:** Consultant shall provide:

* ADA curb ramps design identifying R/W constraints and conflicts with utilities or other feature; ADA Curb Ramp Design Checklist and Ramp Cost Estimate to be submitted with DAP submittal (Task 11.5 submittal)
* Preliminary ADA ramp plans delivered with Task 14.1submittal
* Advance ADA ramp plans delivered with Task 14.2 submittal
* Final ADA ramp plans delivered with Task 14.3 submittal

**Task C8.2.1 Additional ADA Curb Ramp PS&E (CONTINGENCY TASK-See Section F**)

If this task is authorized, Consultant shall provide design Services as needed to bring additional curb ramps up to current ADA standards as implemented by Agency. Consultant prepare designs for an additional TBD ramps according to the criteria and deliverables outlined in Task 8.2.

**Deliverables/Schedule:** Consultant shall provide:

* Preliminary ADA ramp plans delivered with Task 14.1 submittal
* Advance ADA ramp plans delivered with Task 14.2 submittal
* Final ADA ramp plans delivered with Task 14.3 submittal

## Task 8.3 Roadway Design

Consultant shall describe the design criteria and identify all design exceptions for the Project. Consultant shall present the draft design criteria in a table or matrix format listing all conditions, assumptions and minimum standards for all design elements of the Project.

Consultant shall prepare the roadway design and plan sheets to support the DAP, which establishes the geometric boundaries of the Project footprint, and allows for concurrent R/W, environmental permitting and the development of construction contract documents to occur. The plan sheets must be developed in accordance with Agency CPDG. The expected sheets included with the DAP submittal include, but are not limited to, the following:

1. Title Sheet
2. Index
3. Sheet Layout Key
4. Typical Sections
5. Alignment and RW Sheets
6. General Construction Plans
7. Profile Sheets

Consultant shall prepare Preliminary Plans (roughly 60% completion), Advance Plans (roughly 90% completion) and Final Plan submittals (100% completion). These deliverables must include all the plan sheets required in the Final PS&E submittal (see Task 14).

**Deliverables/Schedule:** Consultant shall provide:

* Design Criteria Sheet
* Roadway DAP Plans (to be provided as part of Task 11.5).
* Preliminary Roadway Plan (to be provided as part of Task 14.1).
* Advance Roadway Plans (to be provided as part of Task 14.2).
* Final Roadway Design elements shall be included in the Final Plans, Specifications and Estimate submitted in Task 14.3.

# TASK 9 BRIDGE AND STRUCTURES DESIGN

## Task 9.1 Bridge Design

Consultant shall complete bridge designs in accordance with Agency’s latest edition of the Bridge Design and Drafting Manual and submit the designs as part of the DAP Package, Preliminary Plans, Advance Plans and Final Plans for the Project.

### Task 9.1.1 Bridge Type, Size & Location(“TS&L”) Report

Consultant shall review the hydraulics, foundation, environmental documentation and detour/staging options and shall collaboratively develop up to TBD TS&L design alternates based on hydraulic requirements, floodway requirements, environmental impacts, roadway geometry requirements, and cost to be presented in the Bridge TS&L Report.

Consultant shall prepare preliminary design calculations for superstructure and substructure elements for the replacement structure recommended in the Bridge TS&L Report. Consultant shall utilize recommendations from the Geotechnical Preliminary Technical Memorandum prepared in Task 4.1 for substructure and foundation design.

Consultant shall prepare the Bridge TS&L conceptual drawings for up to TBD bridge replacement alternatives including plan, elevation and typical sections totaling up to TBD sheets. The TS&L Report must summarize the work completed within this task, be incorporated into the Task 11 DAP and must include a cover sheet stamped by Consultant’s professional engineer providing oversight of the work.

**Deliverables/Schedule:** Consultant shall provide:

* Draft Bridge TS&L Report including narrative, cost estimate, and plan, elevation and typical sections drawings for up to TBD replacement alternatives. Report must be summarized and included in the Draft DAP.
* Final Bridge TS&L Report including narrative, cost estimate, and plan, elevation and typical sections drawings. Report must be summarized and included in the Final DAP.

### Task 9.1.2 Bridge PS&E

Consultant shall prepare structural analysis calculations and prepare construction plans, specifications, and cost estimate for the Preliminary Plans, Advance Plans and Final Plans submittals in accordance with Agency’s latest edition of the Bridge Design and Drafting Manual for this work.

Consultant shall identify boilerplate special provisions using the most current SPLIST.docm document *(available in a zip file on the* [*ODOT Specifications Unit webpage*](https://www.oregon.gov/ODOT/Business/Pages/Boilerplate-SP-2018.aspx?wp1660=p:3&wp106=p:1#g_d2220711_1d7e_4ef7_9e4a_e797399b9d8d)*, under “Boilerplate Sets by Effective Date”)* or as directed. When there is no boilerplate special provision, Consultant shall provide draft special provision. Consultant shall obtain concurrence for all unapproved boilerplate specification language from the applicable [ODOT Technical Resource](https://www.oregon.gov/ODOT/Business/Documents/technical_resource_list.pdf) and from the ODOT State Specifications Engineer. Consultant shall complete the Engineer’s Estimate for all bid items with calculated quantities and shall prepare a Construction Schedule.

For the Final Design submittal, Consultant shall complete the appropriate Bridge QC Checklist found in BDDM A3.5. A list of responsibilities at this milestone for the Bridge Reviewer, Designer and Checker can be found in BDDM A3.4.

**Deliverables/Schedule:** Consultant shall provide:

* Preliminary bridge plans, cost estimate and special provisions submitted with the preliminary plans submittal (Task 14.1)
* Advance bridge plans, cost estimate, special provisions and construction schedule submitted with the Advance Plan submittal (Task 14.2)
* Final bridge plans, cost estimate, final special provisions and final construction schedule submitted with the Final Plans submittal (Task 14.3)
* Design Calculation Book (electronic format) containing the design/check calculations.

## Task 9.2 Retaining Wall / Sound Wall Design

Consultant shall complete retaining wall and sound wall design work for the Project which must be submitted as part of the DAP Package, Preliminary Plans, Advance Plans and Final Plans. Design procedures must follow Agency’s latest edition of the Geotechnical Design Manual. The following is a list of the retaining walls anticipated to be on the Project.

List - TBD

### Task 9.2.1 Retaining Wall Alternatives Analysis

The purpose of this subtask is to provide for the evaluation of alternative retaining wall types for the Project, considering non-propriety and proprietary wall types in accordance with Agency’s latest edition of the Geotechnical Design Manual for this work.

Consultant shall prepare alternatives analysis for each retaining wall anticipated. The alternatives analysis must show a simple plan and evaluation drawings for each wall alternate showing the overall length, height, and anticipated type of wall that is likely to be feasible and cost-effective. One plan drawing may be used for the wall types, with alternatives shown on a section drawing. Consultant shall provide an appropriate wall type for each wall, which must avoid, where feasible, impacts to R/W, including temporary construction easements. Future maintenance operations shall be considered during design.

**Deliverables/Schedule:** Consultant shall provide:

* Conceptual plan and elevation drawings, narrative describing alternatives considered, type of wall that is recommended and preliminary cost estimate for each retaining wall. Plans for the selected alternative shall be submitted with the Draft and Final DAP (Task 11.5).

### Task 9.2.2 Sound Wall Evaluation

Based on Agency-prepared NTR, Consultant shall complete the following to confirm the earlier noise impact analysis and mitigation recommendations are still applicable to the Project:

* Review ODOT’s NTR to determine where and what noise mitigation was recommended.
* Review the design of the Project for significant design changes that have occurred since the date of the original NTR and noise mitigation recommendation.
* If significant design changes have occurred, Consultant shall discuss with Agency’s Noise Specialist and prepare a Final Noise Wall Analysis memo to document whether or not those changes have the capacity to affect the originally proposed noise mitigation (i.e. render it ineffective or unnecessary.)
* If the design has significantly changed, Consultant shall re-analyze (via TNM modeling) the area in question to determine if the number and location of the traffic noise impacts have changed, the wall(s) proposed is still feasible and reasonable. The abatement analysis determines the final noise barrier design. Consultant shall include in the Final Noise Wall Analysis memo any design revision recommendations to Agency.
* Model up to 3 iterations of wall location changes. Each iteration requires prior authorization by the APM. Consultant shall report the results of each modeling run in a short memo, comparing the insertion loss with the last round of barrier analysis.

Consultant shall identify properties that would benefit from the mitigation so that residents and owners can be surveyed as to their wishes concerning mitigation. If required by NEPA, Consultant shall conduct survey/voting process, using Agency approved template

After Consultant receives Agency’s comments on the draft Noise Wall Analysis memo, Consultant shall submit a final Noise Wall Analysis Memo to APM.

**Deliverables/Schedule:** Consultant shall provide:

* Draft Noise Wall Analysis Memo to be submitted with the Draft DAP (Task 11.5)
* Final Noise Wall Analysis Memo to be submitted with the Final DAP (Task 11.5)

### Task 9.2.3 Retaining Wall / Sound Wall PS&E

Consultant shall refine the selected conceptual retaining wall plans and details and shall include all sheets anticipated in the Preliminary Plans. Consultant shall further refine the Preliminary Plans as needed to prepare Advance Plans and Final Plans for the Retaining/Sound Wall.

Consultant shall prepare special provisions and cost estimate for retaining walls.

**Deliverables/Schedule:** Consultant shall provide:

* Preliminary retaining wall/sound wall plans, special provisions and cost estimate submitted with the preliminary plans submittal (Task 14.1)
* Advance retaining wall/sound wall plans, cost estimate, special provisions and construction schedule submitted with the Advance Plan submittal (Task 14.2)
* Final retaining wall/sound wall plans, cost estimate, final special provisions submitted with the Final Plans submittal (Task 14.3)

## Task 9.3 Traffic Structures Design

Consultant shall prepare traffic structures designs for the Project which must be submitted as part of the DAP Package, Preliminary Plans, Advance Plans and Final Plans. Design procedures must follow Agency’s latest Traffic Structures Design Manual for this work and the latest edition of the AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals.

### Task 9.3.1 Traffic Structure Alternatives Analysis

Consultant shall evaluate alternative designs if new sign structures are required or existing sign structures are determined as structurally deficient.

Consultant shall prepare alternatives analysis for each new and impacted sign structure working with the site-specific geometry and constraints. Consultant shall analyze TBD sign panel configuration areas and determine, if applicable, the potential for reuse of the existing structures. Consultant shall provide a recommendation at each sign location based on the structure evaluation.

**Deliverables/Schedule:**  Consultant shall provide:

* Calculations, concept drawings, and narrative describing structural evaluation findings and preliminary cost estimates to be submitted with the Draft and Final DAP (Task 11.5)

### Task 9.3.2 Traffic Structures Design

Consultant shall refine the selected structures alternatives and prepare construction plans, specifications, and cost estimate for the Preliminary Plans, Advance Plans and Final Plans submittals for sign bridges, cantilevered sign supports or tower poles for large direction signs, VMS sing or other ITS features.

The following structures are included in the work of this Task (list structures).

Consultant’s signal, sign, illumination and ITS designers shall collaborate together as well as with Consultant’s geotechnical designers and utility coordinators on the location and type of structures needed for required traffic features and the data necessary for assessment and design in accordance with ODOT procedures. Consultant shall prepare layout and elevation drawings showing footings and structural elements as well as clearances and identify and resolve layout or clearance issues.

Consultant shall perform structural analyses of TBD signal and ramp meter pole foundations using completed field and laboratory test data and recommendations from the Geotechnical Preliminary Technical Memorandum prepared in Task 4.1 for foundation design and construction. Structural analysis must include, but is not limited to:

* Minimum embedment depth and drilled shaft diameter selected from ODOT standard foundation drawing.
* Footing reinforcement and anchor bolt analysis.
* Confirmation that the structural loads from the current signal design shown in the contract plans are less than the capacity of the selected ODOT standard foundation.
* Pole foundations will be single mast arm designs. Dual mast or future build-out designs are not included in this scope and fee.
* Compressive and flexural strength of the drilled shaft.

Consultant shall prepare calculation book according to Agency’s latest Traffic Structures Design Manual.

**Deliverables/Schedule:** Consultant shall provide:

* Preliminary traffic structures plans, cost estimate, and special provisions submitted with the Advance Plan submittal (Task14.1).
* Advance traffic structures plans, cost estimate, and special provisions submitted with the Advance Plan submittal (Task14.2).
* Final traffic structures plans, cost estimate and final special provisions submitted with the Final Plans submittal (Task 14.3)
* Prepare stamped traffic structure foundation calculations and other components within a calculation book to be delivered with Final Plans (Task 14.3).

#### Task C9.4. Additional Sign Bridge Design **(CONTINGENCY TASK-See Section F**)

*Consultant shall provide for the design of up to 2 additional new sign bridges or cantilever signs.*

**Deliverables/Schedule:**  Consultant shall provide:

* Traffic structures plans, cost estimate, and special provisions submitted with the TBD

# TASK 10 TRAFFIC ENGINEERING & MANAGEMENT

## Task 10.1 Transportation Technical Analysis (Planning and NEPA)

### Task 10.1.1 Transportation Safety Evaluation

Consultant shall prepare a multi-modal safety analysis for the corridor by identifying safety issues and collision rates. The results of the analysis must be included in the Transportation Technical Report (Task 3.3).

Agency will send Consultant 5 years of the most recent crash data highlighting collisions for all modes, including time of day, crash type, crash severity, crash cause/factors, collision type and reported location. Consultant shall compile all information into a report summarizing crash severity, crash locations and crash frequency. Consultant shall identify hot spots of safety issues and propose a list of potential mitigations to address the issues.

Agency will provide a list of construction activities in the study area to compare against crash locations and timeframes. Consultant shall use the HSM predictive methodology to assess the build alternative’s ability to improve safety conditions on the local system for all modes (not on the freeway) at intersections changing with the build alternative. The freeway safety assessment shall apply previous work on this Project and update to current years.

Consultant shall conduct up to 2 meetings with Agency at important milestones of developing the safety analysis as well as coordinating the review of findings, finalize analysis and discuss results. Up to 3 Consultant staff shall attend the meetings for up to 2 hours per meeting at Agency’s Region 1 offices.

**Deliverables/Schedule:** Consultant shall provide:

* Documentation in Transportation Technical Report (Task 3.3)

**Schedule:**

xx weeks from NTP

### Task 10.1.2 Future Demand Forecasting

The purpose of this task is to prepare 2040 Travel Demand Forecasts for the corridor to provide a future no-build baseline for the transportation analysis.

Agency will provide Consultant 2010 and 2040 VISUM models for the a.m. peak two-hours, and p.m. peak two-hours. The models must be the travel demand no-peak spreading model. Consultant shall review the models and provide additional local roadway connections in study area, or capacity and speed settings in the study area, as needed in the models to create a reliable volume set representative of the no-build baseline scenario. Consultant shall follow the standard NCHRP 255 guidelines for volume development. Consultant shall post process the volumes created from VISUM using demand constraints and the Agency accepted hours of congestion peak spreading methodology to determine an appropriate demand for the study area. Consultant shall develop hourly volumes for each time period under this task, including AM and PM, existing year, build year, future year, build and no-build. Analysis will cover AM and PM peak two-hours only.

Agency will send Consultant existing am and pm peak two-hour traffic volume, classification, bicycle and pedestrian counts necessary to complete the traffic, air and noise analysis. Agency will also provide Consultant available travel time data for the study area to use in the analysis. Consultant assumes this data is complete and will not require any additional traffic counts or processing.

Consultant shall collect 24 hour tube counts for the noise analysis as part of this task. Consultant shall prepare a brief memo summarizing forecasting methodology.

**Deliverables/Schedule:** Consultant shall provide:

* Draft Summary memo of forecasting methodology 3 weeks after NTP is received.
* Final Summary memo of forecasting methodology 2 weeks after receipt of Agency comments.

### Task 10.1.3 Intersection Analysis

Consultant shall evaluate existing signalized intersections including existing conditions and a future no-build to determine the effect of the proposed preferred alternative.

Consultant shall utilize existing data and other existing information to be provided by Agency. Consultant shall conduct sub-team meeting with Agency after reviewing data to identify data gaps, agree upon methodology and identify any key issues. Consultant shall collect blue tooth information to inform route changes.

Consultant shall analyze the existing traffic operations in the corridor by performing a Synchro analysis of signalized intersections in the corridor covering the AM and PM peak 2-hour periods. Consultant shall also provide an analysis of the future no-build scenario using volumes covering the AM and PM peak two-hour periods and analyze signalized intersections in the corridor study area. For intersections that do not meet current Agency standards, potential mitigations may be suggested.

Consultant shall apply the 2010 Highway Capacity Methodology to perform level of service analysis for the Project corridor. Consultant shall perform a 95th percentile queuing analysis using SimTraffic or VISSIM. Consultant shall provide an excel table showing the intersection volumes and V/C utilizing Synchro and SimTraffic or VISSIM. Consultant shall also, using linear interpolation, calculate the year each intersection does not meet the HDM design life v/c.

Consultant shall conduct up to 4 meetings with Agency at important milestones of developing the analysis as well as after completing the tasks to review findings, finalize analysis and discuss results. Up to 3 Consultant staff shall attend the meetings for up to 2 hours per meeting at Consultant offices.

**Deliverables/Schedule:** Consultant shall provide:

* Documentation in Transportation Technical Report (Task 3.3)

**Schedule:**

XX weeks from NTP

### Task 10.1.4 Freeway Operations Performance Analysis

Consultant shall utilize existing data to be provided by Agency. Consultant shall conduct sub-team meeting with Agency after reviewing data to identify data gaps, agree upon methodology and identify any key issues. Consultant shall provide I-205 study area travel times, hours of congestion, vehicle hours of delay, speeds and emergency braking in the corridor using VISSIM for the build year (2020) and future year (2040). Consultant shall update the HCS analysis at each merge and weave location.

**Meetings:**

Up to 2 check-in meetings, each 2 hours in length. 2 meetings to be held at Agency Region 1 Offices.

**Deliverables/Schedule:** Consultant shall provide:

* Documentation in Transportation Technical Report (Task 3.3)

**Schedule:**

XX weeks from NTP

### Task 10.1.5 Active Transportation

The purpose of this task is to evaluate the mobility, safety and comfort for bikes and pedestrians in the corridor.

Consultant shall conduct an inventory of all bicycle and pedestrian facilities in the study area, as well as the classifications and planned improvements connecting to city facilities along the corridor. Consultant shall identify any sidewalk or bike lane gaps shall be identified and mapped in GIS. Consultant shall perform MMLOS at all intersections. Consultant shall obtain pedestrian counts. Consultant shall perform the analysis using NCHRP 562 methodology and include existing and future no-build conditions.

**Meetings:**

Up to 3meetings/phone conferences with local agencies and Agency 1 each for up to 30 minutes with up to 1 Consultant

**Deliverables/Schedule:** Consultant shall provide:

* Documentation in Transportation Technical Report (Task 3.3)

**Schedule:**

16 weeks from NTP

### Task 10.1.6 Transit Assessment

Consultant shall evaluate the frequency and coverage of transit in the corridor including access to transit. Evaluate temporary and permanent impacts.

Consultant shall compile all relevant transit data from Tri-Met, including boarding and alighting data, the transit lines operating in the corridor, frequency of service, existing and projected ridership and routes to access transit (including any gaps), transit generators and destinations in the corridor. Consultant shall attend 1 meeting with Agency and Tri-Met staff to discuss potential operational changes to the routes in the corridor. Results will be compiled in the Transportation Technical Report (Task 3.3).

**Meetings:**

1 sub-team meeting with 2 Consultant staff at Agency offices for 2 hours.

1 meeting with TriMet staff including 2 Consultant staff and Agency staff for 1 hour.

**Deliverables/Schedule:** Consultant shall provide:

* Documentation in Transportation Technical Report (Task 3.3)

### Task 10.1.7 Access Management

Consultant shall clearly identify locations of accesses and potential alternate routes to access properties on the corridor. Identify potential access related impacts to properties in the study area.

Agency will supply Consultant with Access Control Research and a list of permitted approaches in the interchange vicinity. Consultant shall review, research and create a map of existing approaches and permitting status, including modification, relocation or removal of approaches that would restrict turn movements at permitted driveways. Consultant shall identify alternative reasonable access to impacted properties.

**Meetings:**

2 sub-team meetings with 2 Consultant staff at Agency offices for 2 hours each.

**Deliverables/Schedule:** Consultant shall provide:

Documentation in Transportation Technical Report (Task 3.3) due XX weeks from NTP

## Task 10.2 Traffic Analysis Memorandum

Consultant shall prepare a traffic analysis memorandum that summarizes available pertinent traffic information to use in preparing the Project design.

Consultant shall collect peak period (AM and PM peak) traffic counts and evaluate the proposed lane geometry at the intersections of XXX and XXX (use this scope if needed)

Consultant shall also develop future (year 20xx) traffic volume forecasts using the current travel demand model for the region. Using existing and future traffic volumes, Consultant shall evaluate capacity at each of the 4 intersections during both AM and PM peak periods. Vehicle queuing shall also be evaluated to determine appropriate storage for turn lanes. Left turn phasing analysis will be conducted per Agency guidelines to determine the most appropriate phasing type at each signalized intersection. Results of analysis will be used to support any necessary signal approval requests.

Consultant shall prepare a draft memorandum, with the section listed below, summarizing the results of the findings. Consultant shall prepare a final memorandum based on draft review comments from Agency.

* The traffic analysis memorandum must include the following sections: Project Purpose
* Analysis of the most recent 5-year crash history along the corridor
* Crash rate for the entire Project section
* Identification of the top 10% SPIS sites
* Identification of the Functional Classification of the highway in accordance with the Oregon Highway Plan and Highway Design Manual
* List the Posted Speed
* Provide the Annual Average Daily Traffic Volume (AADT) for Current Year and Design Year
* Provide the Truck Percentage

**Deliverables/Schedule:** Consultant shall provide:

* Draft Traffic Analysis Memorandum, to be included with the DAP (Task 11)
* Final Traffic Analysis Memorandum 2 weeks following Agency comments.

## Task 10.3 Transportation Management Plan (TMP) and Temporary Pedestrian Accessible Route Plan (“TPARP”)

Consultant shall develop the Transportation Operation (“TO”) strategies of the TMP and the TPARP for this Project. Consultant shall develop the TO strategies of the TMP and TPARP in conjunction with the Traffic Control Plans, Task 10.6 and Public Involvement – Public Information, Task 4. The TO strategies of the TMP and the TPARP will facilitate the Project development team’s understanding of how traffic and pedestrians will be managed and provide the necessary background information that supports decisions made during Project development.

Consultant shall perform the following activities as part preparing the Draft Transportation Management Plan:

1. Identify preliminary staging/traffic control concepts based on discussions and coordination with Agency, the Division of Motor Carrier and other stakeholders.
2. Prepare the Decision Tree (ODOT Form 734-5042d) which identifies a range of traffic control strategies available to the team through each stage of construction. This form is available at the following location: <ftp://ftp.odot.state.or.us/techserv/construction/Construction%20Forms/5042.pdf>
3. Identify other construction projects that may impact this Project.
4. Identify other mobility issues.

Consultant shall then prepare the Draft Transportation Management Plan, which must include the following elements and submit with the Draft DAP (Task 11.5):

* Project Background
* Project Boundaries
* Provide Construction Staging/Traffic Control Narrative
* “Decision Tree” ODOT Form 734-5042d
* Identify Mobility Issues
* Identify Traffic Mitigation Measures as appropriate
* Identify other Construction projects that may impact this Project
* Work Zone Lane Closure Restrictions (Provided by Agency)
* TO strategies to implement on this Project

Consultant shall prepare a TPARP that covers how pedestrians, including people with disabilities, will be expected to travel through the work zone used during construction of the Project. The Agency’s reference covering the development of TPARPs is Technical Services Bulletin TSB17-01(D)

**Deliverables/Schedule:** Consultant shall provide:

* Draft TMP and TPARP to be included in the Draft DAP (Task 11.5)
* Final TMP and Final TPARP to be included in the Advance Plans (Task 14.2)

## Task 10.4 Access Management Strategy and Letters

Consultant shall provide relevant property owner and design information (truck turning movements, etc.) to support Agency in preparation of an Access Management Strategy and an Official Project Access List (“OPAL”) for the Project corridor. The initial Access Management Strategy and OPAL, if provided by Agency, shall be summarized in the DAP. Agency-provided OPAL shall be submitted with the Final PS&E documents.

Consultant shall coordinate with Agency AM Traffic Engineer and Region AM Engineer to develop a methodology letter and final notification letter for affected properties for this Project.

**Deliverables/Schedule:** Consultant shall provide:

* OPAL to be submitted as part of Task 11 deliverables
* Access Management Strategy concept document: 1 electronic file version (Microsoft Word). The Draft Access Management Strategy concept to be submitted as part of Task 11 deliverables
* Final Access Management Strategy: 1 electronic file version (Microsoft Word) to be submitted as part of Task 14 deliverables
* A draft and final methodology letter to be submitted as part of Task 11 deliverables.
* A draft and final notification letter to be submitted as part of Task 14 deliverables

## Task 10.5 Crosswalk Closure Requests

It is Agency’s policy to provide accessible crosswalks unless the crosswalk is officially closed to all pedestrians. Agency will allow crosswalks to be closed if the crossing or the roadway constitutes a safety issues for the pedestrian. Crosswalk closure requires an engineering study and approval by the State Traffic-Roadway Engineer.

Consultant shall develop the engineering study information and the crosswalk closure request. The closure requests required under this task include: a) crossing where there are unapproved marked cross-walks and b) approved crosswalks that may need to be closed due to safety requirements. Consultant shall follow the procedures in Guidelines for Official Crosswalk Closings and in Agency’s latest Traffic Manual.

Consultant shall provide engineering analysis of pedestrian routes and shall prepare up to X crosswalk closure requests for the following intersections.

* List intersections

Consultant shall prepare an engineering study that includes:

* A narrative substantiating a geometric design or operational concern that adversely impacts pedestrian safety.
* Discussion of reasonable alternate ADA accessible routes between the two points of the crossing that are being closed.
* A description of proposed closure treatments.

**Deliverables/Schedule:** Consultant shall provide:

* Draft Engineering Study and Crosswalk Closure Requests with the Draft DAP (Task 11.5)
* Final Engineering Study and Crosswalk Closure Requests 2 weeks following Agency comments.

## Task 10.6 Traffic Control Plans (“TCP”)

Consultant shall provide for TCPs needed for the Project.

The TCPs are used to describe how the existing roadway area is divided up between live traffic and the construction site. Plan sheets also identify the type, quantity and location for temporary traffic control devices. TCPs must include but are not limited to the following information: staging plan, lane shifts, lane and shoulder widths, lane closures, road closures, temporary detour, temporary diversion, temporary striping, temporary signing, cutting sections at critical areas with dimensions and other relevant information.

Consultant shall identify each stage of the Project and how traffic will be shifted within the Project limits for that stage.

Consultant shall prepare detour plans necessary to construct the Project. Consultant shall develop detour plans (as needed) showing the routing of traffic for as needed for stages of the Project.

Consultant shall prepare the TCPs in accordance with the Agency’s latest Traffic Control Plans Design Manual and Contract Plans Development Guide, applicable Agency Standard Drawings, and the Manual on Uniform Traffic Control Devices (“MUTCD”. The TCPs must include the details of providing pedestrians, including people with disabilities, accessibility during construction as covered by the TPARP.

**Deliverables/Schedule:** Consultant shall provide:

* Identification of construction stages and how traffic will be managed at each stage. Draft detour plans as needed for each stage and Concept TCPs to be submitted at the Draft DAP (Task 11.5)
* Preliminary TCPs, special provisions and cost estimate submitted as part of Task 14.1
* Advance TCPs, special provisions and cost estimate submitted as part of Task 14.2
* Final TCPs, special provisions and cost estimate submitted as part of Task 14.3

## Task 10.7 Traffic Signal Design

Consultant shall develop the design for traffic signals, including new or replacement traffic signals, flashing beacons, ramp meters, signal interconnect systems, emergency vehicle preemption systems, and other signal-related features in conformance with Agency’s latest Traffic Signal Design Manual. All traffic control devices installed in the State of Oregon are required to conform to the MUTCD and the Oregon Supplements as to the MUTCD as established by ORS 810.200 and OAR 734-020-0005.

Consultant shall perform the required Services at the following locations:

**Signal Foundations**

Consultant shall utilize data from the Geotechnical Report to develop recommended foundation sized and depths for new signal poles at each intersection and for new ramp meter poles at each location. Foundation design criteria shall be included on the Signal Plans.

**Ramp Meters**

[List locations here]

**Signal Interconnects**

Consultant shall conduct field evaluation of the corridor to determine the best solutions for traffic signal interconnect. Consideration shall be given to the use of fiber optic, wireless, or copper. Interconnect may be either underground or overhead. Consultant shall evaluate each site in the field and meet with Agency and City of Portland to discuss proposed solutions.

Consultant shall design interconnect attachments to utility poles and prepare/submit permit applications for pole attachments. No wireless path analysis will be conducted. No interconnect plans (aside from the concept plans) will be prepared for the DAP.

**Illumination on Signal Poles**

Consultant shall conduct lighting analysis at each intersection to determine luminaire locations, wattages and orientation and develop the subsequent designs based on standard Agency signal poles and foundations. Luminaires at signalized intersections must be included on the signal mast arm poles. Consultant shall prepare signal approval request forms for each location as needed.

**DAP Plans**

Key outcomes of the DAP deliverable include confirming that additional R/W or easements will not be necessary to install traffic signals and obtaining Traffic Control Device Approval from the State Traffic Engineer, if applicable. The DAP Plans must include Signal and ITS Concept Plans with the following level of details:

1. Signal appurtenances symbolically shown; do not detail with bubble notes at this stage.
2. Signal plan sheet
   1. Number of lanes & lane use
   2. Crosswalks/Crosswalk closures
   3. ADA ramps (i.e. basic style to be used to identify the amount of R/W needed to accommodate proper placement).
   4. Normal Signal Phasing diagram
   5. Location of mast arm poles, strain poles, pedestals, controller cabinet, and service cabinet (used to identify the amount of R/W needed to accommodate proper placement).
   6. Location of potential commercial power source
   7. Existing and proposed R/W lines shown
3. Identification of lane reductions occurring within ½ mile of the intersection and verification that the length before reduction can accommodate standard traffic control devices/signal operation (used to identify the amount of R/W needed to accommodate proper placement).
4. Placeholder signal plan sheets that will be needed with appropriate titles and intersection info (legend, detector plan, interconnect plan, existing utilities, details, removal, railroad preemption plan sheet, etc.)

No temporary signal plans will be prepared for the DAP submittal. For the Preliminary, Advance and Final Designs, Consultant shall prepare Signal and ITS Plans and shall develop an estimate of cost and special provisions as required.

**Deliverables/Schedule:**  Consultant shall provide:

* Concept Signal and ITS Plans and Cost Estimate submitted with DAP deliverable (Task 11.5)
* Preliminary signal and ITS plans, special provisions and cost estimate to be included as part of Task 14.1 deliverables.
* Advance signal and ITS plans, special provisions and cost estimate to be included as part of Task 14.2 deliverables
* Final signal and ITS plans, special provisions and cost estimate to be included as part of Task 14.3 deliverables

## Task 10.8 Sign Design

Consultant shall perform the design work for this task in conformance with the Agency’s latest Traffic Sign Design Manual, the MUTCD and Oregon Supplements to the MUTCD (OAR 734-020-005) and with the Sign Policy and Guidelines for the State Highway System.

Signing Plans must include but are not limited to the following: permanent signing plan, signing details, and sign post and data table. Existing signs within the Project limits must be shown on the plans and signing details using a recent Signing Inventory prepared by Agency. Existing signs outside the Project limits must be shown on the plans and signing details only if modified; plans for these signs must show modified signs only.

During the DAP Phase of work, Consultant shall review existing signs and supports for compliance with the MUTCD and identify which should be replaced. Consultant shall develop a concept roll map so that costs and requirements for R/W can be determined.

For the Preliminary Plans, Advance Plans and Final Plans, Consultant shall provide signing plan, sign details sheets and sign post data table sheets. Consultant shall develop an estimate of permanent signing costs and shall develop special provisions as required.

**Deliverables/Schedule:** Consultant shall provide:

* Concept Sign roll Map and Cost Estimate submitted with DAP deliverable (Task 11.5)
* Preliminary sign plans, special provisions and cost estimate to be included as part of Task 14.1 deliverables.
* Advance sign plans, special provisions and cost estimate to be included as part of Task 14.2 deliverables
* Final sign plans, special provisions and cost estimate to be included as part of Task 14.3 deliverables

## Task 10.9 Striping Design

Consultant shall prepare striping plans in accordance with guidance in the latest Traffic Line Manual, and Traffic Manual, MUTCD, the Oregon Supplement to the MUTCD, the Oregon Standard Drawings, and Standard Details. Permanent Striping plans must include but are not limited to roadway alignment, stationing, channelization information, tapers, centerlines, lane lines, shoulder width information, and dimensions.

Consultant shall develop striping plans, special provisions and cost estimate.

**Deliverables/Schedule:** Consultant shall provide:

* Preliminary striping plans, special provisions and cost estimate to be included as part of Task 14.1 deliverables.
* Advance striping plans, special provisions and cost estimate to be included as part of Task 14.2 deliverables.
* Final striping plans, special provisions and cost estimate to be included as part of Task 14.3 deliverables.

## Task 10.10 Illumination Design

Consultant shall prepare illumination plans in accordance with guidance in Agency’s latest Lighting Policy and Guidelines and Traffic Lighting Design Manual, IES Lighting Handbook, applicable Oregon Standard Drawings, Oregon Standard Details, and the Agency’s latest Oregon Standard Specifications for Construction. Illumination plans must include but are not limited to the following: Illumination Legend and Light Pole Table, Illumination pole layout/locations, conduits, junction boxes, and wiring necessary to complete the illumination system. Consultant shall perform voltage drop calculations for sizing of conductors and conduit systems. Illumination plans must include removal and replacement of 1 cobra-head light pole and 2 high-mast light poles.

Consultant shall provide structural design for high-mast illumination pole consistent with previous Agency designs, but upgraded to be consistent with current design standards. The high-mast light pole must follow current structural requirements for Agency facilities. Agency will provide reactions and foundation drilled shaft diameter for the high mast tower foundations.

Consultant shall develop illumination plans, special provisions and cost estimate. Cost estimates must be based on Agency bid items and current average unit cost data from Estimator Bid Catalogs. Special provisions must be based on the current version of the Agency standard boiler plates for Common Provisions for Electrical Systems and Highway Illumination.

**Deliverables/Schedule:**  Consultant shall provide:

* Lighting requirements summarized and included in the draft and final DAP.
* Preliminary illumination plans, special provisions and cost estimate to be included as part of Task 14.1 deliverables.
* Advance illumination plans, special provisions and cost estimate to be included as part of Task 14.2 deliverables.
* Final illumination plans, special provisions and cost estimate to be included as part of Task 14.3 deliverables.

# TASK 11 DESIGN ACCEPTANCE PACKAGE (“DAP”)

The purpose of the DAP is to confirm the Project footprint, the required design exceptions and any required environmental permits prior to preparing the Preliminary Plans, Advance Plans, and Final Plans.

This task includes compiling the DAP Plans prepared under other tasks, preparation of the DAP Narrative, DAP Estimate and construction schedule as well as responding and finalizing work products in response to Agency review comments.

## Task 11.1 Compile Design Verification Package (“DVP”)

Consultant shall compile the DVP showing all key elements influencing scope and budget, including Agency-provided design elements, and prepare the DVP for submittal to Agency.

Drawings submitted with the DVP must be marked as "Design Verification Plans for Review." Both the DVP and the plans appendix must bear the responsible engineer’s seal. Consultant shall prepare the Plan Title sheet in accordance with Agency standards and provide an index to the drawing set.

Agency will provide comments on the DVP to Consultant within 2 weeks of receipt. Consultant shall compile and address Agency comments on the design as they are received and communicate the disposition to Agency. Consultant shall provide written response to address review comments received from Agency on the Project design. Consultant shall attend a DVW (covered by Task 1.4.5) to address resolution of Agency review comments.

**Deliverable/Schedule:**Consultant shall provide:

* DVP submittal package by 10/27/16
* 1 electronic copy of the preliminary plans, narratives, and reports for the DVP package including Traffic Management Strategy, Draft Storm Water approach, Proposed Traffic Structure locations, proposed retaining wall and sound wall locations and paving limits.
* 1 electronic copy in MicroStation and Inroads CADD files of the DVP package.
* Written response to review comments at or prior to the DAW.

## Task 11.2 Prepare Draft DAP Narrative

Consultant shall prepare a Draft DAP Narrative for the preferred alternative. The narrative must reference and address all of the reports, technical memoranda and plans/drawings as specified below. Plans and drawings must be attached as appendices to the Draft DAP Narrative in the DAP submittal package.

* Description of the purpose, need, and design solution for the Project;
* Summary of existing conditions, (i.e., Project location, highway classification, lanes, ADT, posted speed, roadside inventory, and other design standards pertinent to the Project);
* Schedule to PS&E and construction bid letting.
* Outline of Project constraints such as topography, geology, hydrology, environmental, permits, R/W, utilities and cost (NOTE: these may be executive summaries prepared by Consultant for other deliverables associated with this Project);
* Traffic Engineering Narrative:
  + Traffic analysis results
  + Traffic signal and lighting requirements
  + Traffic signal interconnect needs
  + Signage and striping requirements;
  + Temporary traffic control requirements
* Access Management narrative
  + Impacted driveways and mitigate measures
  + Official Project Access List (OPAL) (Agency provided)
  + Access Management Strategy (AM Strat) (Agency provided)
* Environmental Narrative
  + Environmental impacts and mitigation measures
  + Environmental permitting requirements
* Survey Control Data
* List of utility conflicts and utility contact information;
* R/W Narrative;
  + R/W needs
  + Summary of funding and identification of any budget issues
  + Jurisdiction/ownership of proposed acquisitions
  + Recommendations on how ODOT takes title of proposed acquisitions
  + Mention of any post-project relinquishments
  + Identification of existing encroachments and plan for resolution
  + Identification of any cost savings opportunities (e.g. avoiding signs, protecting trees)
* Drainage needs;
* Constructability Recommendations
* Level 1 Hazardous Materials Corridor Study;
* Local permit needs;
* Construction cost estimate.

**Deliverables/Schedule:** Consultant shall provide:

* Draft DAP Narrative submitted with Task 11.5 submittal

## Task 11.3 Prepare Design Exception Requests

Consultant shall prepare up to TBD draft Design Exception Requests for the Project. The Design Exception Requests shall be prepared using the standard Design Exception Request form defined in the Highway Design Manual.

For design exceptions involving ADA curb ramps, Consultant shall use the ADA Curb Ramp Design Exception Request form.

Agency will provide comments on the draft Design Exception Requests within 2 weeks of the submittal to Agency. The final Design Exception Requests for the Project shall be submitted no later than 2 weeks after receipt of comments. Agency will coordinate approval of the Design Exception Requests.

**Deliverables/Schedule:** Consultant shall provide:

* 1 paper copy and 1 electronic copy (WORD and .pdf format) of draft Design Exception Request within 3 weeks of Final DAP.
* 1 paper copy and 1 electronic copy (WORD and .pdf format) of final Design Exception Request no later than 2 weeks after receipt of comments.

## Task 11.4 Prepare Construction Schedule and Estimate / Conduct Constructability Review

Consultant shall prepare a preliminary construction schedule that identifies the overall timeframe that may be required for construction, as well as to identify construction activities and sequencing that could potentially make the Project more difficult to build.

The level of detail in the Construction Schedule should be sufficient to clearly identify the major work elements that make up the critical path for construction, as well as identifying work that must be done at specific times of the year.

Consultant shall conduct a Constructability Review. This will consist of a team of construction specialist that will review design drawings, including conceptual staging plans. The team shall confer with each other on potential conflicts and problems and will look for opportunities to improve the design to make it easier and possibly less expensive to build. Consultant shall prepare a narrative providing recommendations as part of the draft DAP.

Consultant shall prepare preliminary cost estimates for the remaining elements of the Project and develop a comprehensive Preliminary Project Cost Estimate. The estimate must be based on standard Agency bid items and current average unit cost data from Estimator Bid Catalogs. The estimate must include appropriate percentages for CA/CEI and contingencies at the DAP development stage.

**Deliverables/Schedule:** Consultant shall provide:

* Draft Construction Schedule submitted with the Draft DAP (Task 11.5)
* Constructability narrative submitted with the Draft DAP (Task 11.5)
* 1 electronic copy (MS Excel® and .pdf) of Draft Preliminary Cost Estimate submitted as part of draft and final DAP (tasks 11.5)

## Task 11.5 Compile Draft DAP, Respond to Review Comments and Compile Final DAP

Consultant shall compile the Draft DAP plans from all disciplines and prepare the Draft DAP for submittal to Agency.

Drawings submitted with the Draft DAP must be marked as "Design Acceptance Plans for Review." Both the Draft DAP and the plans appendix must bear the responsible engineer’s seal. Consultant shall prepare the Plan Title sheet in accordance with Agency standards and provide an index to the drawing set.

Agency will provide comments on the Draft DAP to Consultant within 2 weeks of receipt. Consultant shall compile and address Agency comments on the design as they are received and communicate the disposition to Agency. Consultant shall provide written response to address review comments received from Agency on the Project design. Consultant shall attend a DAW (covered by Task 1.4.6) to address resolution of Agency review comments.

Consultant shall submit the Final DAP addressing the comments received from Agency and comments received at the DAW. The Final DAP must reflect all final design decisions reached at this stage in the development of the Project.

**Deliverable/Schedule:**Consultant shall provide:

* Draft DAP submittal package by TBD which includes 1 electronic copy of the plans, narratives, and reports for the Draft DAP package.
* 1 electronic copy in MicroStation and Inroads CADD files of the Draft DAP plans.
* Written response to review comments at or prior to the DAW.
* 1 electronic copy in .pdf file format of all plans, narratives, and reports for the Final DAP 4 weeks after the DAW.
* 1 electronic copy in MicroStation and Inroads CADD files of the Final DAP plans 4 weeks after the DAW.

# TASK 12 ROADSIDE DEVELOPMENT

## Task 12.1 Erosion Control Design

Consultant shall prepare Preliminary Plans (roughly 60% completion), Advance Plans (roughly 90% completion) and Final Plan submittals (100% completion). These deliverables should have all the plan sheets that are expected to be included in the final PS&E submittal.

Best Management Practices as identified in the ODOT Erosion and Sediment Control Manual (2005 version) shall be utilized to the greatest extent possible. Plan formatting must follow Agency CPDG.

Consultant shall prepare base sheets making sure that critical existing topography, proposed grades, existing and proposed utilities, existing and proposed stormwater, and existing vegetation is shown and shall show BMPs that mitigate disturbance impacts. BMP shall focus on the use of compost as one of the primary tools used to manage and control erosion.

Consultant shall prepare special provisions and cost estimate related to erosion control.

**Deliverables/Schedule:** Consultant shall provide:

* Advance erosion control plans, special provisions and cost estimate submitted under Task 14.2.
* Final erosion control plans, special provisions and cost estimate submitted under Task 14.3.

## Task 12.2 Wetland Mitigation Plans (Reserved)

## Task 12.3 Roadside Development Plans (Reserved)

Consultant shall prepare Preliminary Plans (roughly 60% completion), Advance Plans (roughly 90% completion) and Final Plan submittals (100% completion). These deliverables must have all the plan sheets that are expected to be included in the final PS&E submittal. Plan formatting should follow Agency CPDG.

Consultant shall prepare base sheets making sure that critical existing topography, proposed grades, existing and proposed utilities, existing and proposed stormwater, and existing vegetation is shown.

Consultant shall coordinate with Agency Regional Maintenance on landscaping issues.

**Deliverables/Schedule:**  Consultant shall provide:

* Roadside Development DAP Plans to be provided as part of Task 11.5.
* Preliminary Roadside Development Plans to be provided as part of Task 14.1.
* Advance Roadside Development Plans to be provided as part of Task 14.2.
* Final Roadside Development Design elements shall be included in the Final Plans, Specifications and Estimate submitted in Task 14.3.

# TASK 13 RIGHT OF WAY (“R/W”)

Consultant shall provide all labor, equipment and materials to provide R/W services on behalf of Agency as further described and outlined in this task and sub-tasks or as necessary to support Project delivery.

All R/W Services provided by Consultant shall be in conformance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, and all amendments thereto (“Uniform Act”), ODOT Right-of-Way Manual, ODOT Guide to Appraising Real Property, and sections of the ODOT Right-of-Way and Rail/Utility Coordination Contractor Services Guide, referred to as the Contractor Services Guide in the remainder of this document.

Consultant shall ensure all staff performing Services have been qualified by Agency Region Right-of-Way Program Manager, or their designee, in advance of beginning work on any sub-task.

Invoices must include separate line-item amount(s) forR/W budget tasks or sub-tasks. **A separate written authorization and notice to proceed is required from Agency Region R/W Program Manager or their designee for all R/W budgettasks/sub-tasks.**

Consultant shall be authorized to enter information in the internal ODOT R/W software system (“RITS”) to complete necessary activities for the deliverables under this task. If Consultant requires training in the use of RITS, said training will be provided by Agency but not billed to Agency.

**Assumptions:**

* For estimating purposes, the Project will impact TBD parcels.
* Agency will supply the necessary access to RITS via remote access VPN token or web-based permissions.

## Task 13.1 R/W Services Administration (PE & R/W budget)

Consultant shall perform R/W Services administration per Section I of the Contractor Services Guide, Right-of-Way Services Administration. Consultant shall coordinate work under this task with Agency Region R/W Program Manager or designee:

Region 1 Right-of-Way Office (Portland Metro)

Kat Halpenny, Region 1 R/W Program Manager and

Barry Sullivan, Right of Way Project Manager

123 NW Flanders Street, Portland, Oregon 97209-4012

Phone: (503)-731-3162

Fax: (503)-731-8531

Agency will provide Consultant information regarding previous contacts with landowners that may be affected by the proposed Project. Agency will provide any previously procured preliminary title reports, preliminary relocation interviews, and notes from discussions with ODOT engineers regarding potential R/W impacts. This information will be provided for planning purposes only.

Consultant shall perform a QC review of all Appraisals, Offer-Benefit Packages, Relocation Benefit Claims, and Final Reports. All electronic property files in RITS will be reviewed by Consultant and Agency for completeness and accuracy prior completion.

## Task 13.3 R/W Cost Estimating, Programming Estimate, and Title Reports (PE budget)

Consultant shall perform R/W cost estimating to support Project development and alternatives analysis. Consultant shall provide preliminary R/W cost estimates for up to TBD parcels that may be impacted by the Project. Consultant shall develop preliminary estimates in accordance with Agency’s R/W Manual.

Once the R/W footprint has been identified, Consultant shall order preliminary title reports for each property impacted, upload reports into RITS, and provide copies to party responsible for R/W Engineering (see Task 2.5 & 2.6). Consultant shall review preliminary title reports for complete documentation of title vesting and notify Right of Way Project Manager of major title encumbrances.

Consultant shall develop R/W Programming Estimate in accordance with Agency’s Right-of-Way Manual, federal requirements and Agency’s Contractor Services Guide for submittal through RITS to Region Right-of-Way Project Manager for obtaining authorization of R/W tasks.

**Assumptions:**

* Programming Estimate shall follow or be concurrent with approved R/W legal descriptions and exhibit maps (see Task 2.5 & 2.6).

**Deliverables/Schedule:** Consultant shall provide:

* Prepare preliminary R/W cost estimates as needed
* Provide/upload digital copies of each Preliminary Title Report including vesting deed(s) and additional documents identified in the title exceptions for each property to be acquired within 30 calendar days of R/W footprint being established.
* Prepare a Programming Cost Estimate spreadsheet outlining detailed acquisition costs for each Project-impacted property for each design alternative. Submit in RITS for authorization within 15 calendar days of approved legal descriptions. Programming Estimate may be prepared in phases, depending on Project need.

## Task C13.4 Rights of Entry (PE budget) (CONTINGENCY TASK – see Section F)

Consultant shall contact property owners to obtain up to TBD rights of entry for permitting engineering and environmental investigations. Each owner will be given a copy of the right of entry and description or exhibit of the area needed for access. Consultant shall coordinate with Agency if condemnation for entry is necessary.

**Deliverables/Schedule:** Consultant shall provide:

* Deliver signed Right of Entry for each property owner affected uploaded in RITS

## Task 13.5 General Information Notice & Utility/Access Coordination (R/W budget)

Consultant shall, upon receipt of authorization to proceed with R/W Acquisition tasks, generate from RITS and deliver the General Information Notice, acquisition and relocation brochures, and a copy of the applicable portion of the R/W Acquisition map (marked Preliminary and showing the parcel(s) to be purchased) to owners and occupants of affected properties. ***Notice is to be sent certified mail and proof of delivery uploaded into RITS. Delivery of General Information Notice shall be included in the appraiser Report of Personal Interview***

**Deliverables/Schedule:** Consultant shall provide:

* Document mailing General Information Notice package for each property owner and occupant(s) in RITS and in Report of Personal Interview including certified mail tracking numbers within 15 calendar days of authorization for R/W tasks.
* Document receipt of General Information Notice for each property owner and tenant(s) in RITS by uploading return receipt card or USPS.com tracking printout and document delivery receipt in Report of Personal Interview. If proof of delivery not received from post office, verbal confirmation of receipt by owner / tenant should be documented in the Report of Personal Interview.

## Task 13.6 Document Requests / Subject To Requests (PE)

Consultant shall acquire all title vested in the “State of Oregon, by and through its Department of Transportation” in accordance with ODOT’s Right-of-Way Manual, Acquisition Chapter, Clearance of Title Section and Contractor Services Guide.

**Deliverables/Schedule:** Consultant shall provide:

* Submit a Document Request through RITS for Agency preparation of appropriate documents for each parcel file within 15 calendar days of approved appraisal review
* Submit for Agency approval, any requests to take title “subject to” prior to submitting Document Request

## Task 13.7 Real Estate Appraisals (R/W budget)

The following subtasks provide for Real Estate Appraisals.

### Task 13.7.1 Real Estate Appraisals

Consultant shall provide Real Estate Appraisals conforming to standards contained in the ODOT Right-of-Way Manual, the Contractor Services Guide, the Guide to Appraising Real Property for Use in Oregon State Transportation Projects, and the Uniform Appraisal Standards for Federal Land Acquisitions, and in accordance with applicable State and Federal laws. Appraisals must be prepared using Agency approved forms or formats. Appraisals must be conducted by appraisers experienced in Eminent Domain and listed as an Agency Right-of-Way Section approved appraiser.

Consultant shall confer with Agency as to the number and type of appraisals to be completed as per R/W Manual 4.555.

All specialty reports, equipment and fixture reports, and costs to cure shall be submitted for Agency review and approval prior to being incorporated into appraisal reports.

Appraisers shall provide not fewer than 15 calendar days written notice to owners of a planned appraisal inspection and shall provide the property owner or designated representative, if any, an invitation to accompany the appraiser on inspection of the property for appraisal purposes. ***This notice is to be sent by certified mail and proof of delivery documented in RITS; delivery of 15 Day Notice shall be included in the appraiser Report of Personal Interview.***

***Consultant shall discuss with Region Right-of-Way Project Manager all access modifications/closures, utility relocations, and building / structure impacts prior to and during appraisal assignments to ensure appraisal specifications and assumptions are accurate based on Project intent, the potential of eminent domain use if negotiations are unsuccessful and meet Agency approval.***

**Assumptions:**

* Consultant will appraise up to x parcels.
* Agency may elect to complete some or all appraisals in-house.
* All appraisals will be uploaded into RITS and sent to Agency’s appraisal review unit to ensure that appraisal standards have been met and to establish just compensation.

**Deliverables/Schedule:** Consultant shall provide:

* Appraisal – provided electronically in RITS within 12 weeks of authorization for R/W tasks
* Value Finding/ Taking and Damages Appraisal (for simple takings), OR
* Detailed Before & After Appraisal (for complex takings)
* Specialty reports, if necessary, prior to incorporation in appraisal reports
* Report Of Personal Interview – including date and place of contact, parties of interest contacted, a statement that 15 Day Notice of Appraisal Inspection was mailed and delivered, and record of other activities conducted during the Appraisal within 7 calendar days of appraisal recommendation
* 15 Day Notice Of Appraisal Inspection - Copy of 15-day letter to owner before appraisal inspection and proof of certified mail delivery uploaded into RITS within 7 calendar days of appraisal recommendation

### Task C13.7.2 Real Estate Appraisals (**CONTINGENCY TASK – see Section F**)

Consultant shall provide Real Estate Appraisals conforming to standards contained in the ODOT Right-of-Way Manual, the Contractor Services Guide, the Guide to Appraising Real Property for Use in Oregon State Transportation Projects, and the Uniform Appraisal Standards for Federal Land Acquisitions, and in accordance with applicable Rules and Statutes. Appraisals must be prepared using Agency approved forms or formats. Appraisals must be conducted by appraisers experienced in Eminent Domain and listed as an ODOT Right-of-Way Section approved appraiser.

Consultant shall confer with Agency as to the number and type of appraisals to be completed as per R/W Manual 4.555.

All specialty reports, equipment and fixture reports, and costs to cure shall be submitted for Agency review and approval prior to being incorporated into appraisal reports.

Appraisers shall provide not fewer than 15 calendar days written notice to owners of a planned appraisal inspection and shall provide the property owner or designated representative, if any, an invitation to accompany the appraiser on inspection of the property for appraisal purposes. ***This notice is to be sent by certified mail and proof of delivery documented in RITS; delivery of 15 Day Notice shall be included in the appraiser Report of Personal Interview.***

***Consultant shall discuss with Region Right-of-Way Project Manager all access modifications/closures, utility relocations, and building / structure impacts prior to and during appraisal assignments to ensure appraisal specifications and assumptions are accurate based on Project intent, the potential of eminent domain use if negotiations are unsuccessful and meet Agency approval.***

**Assumptions:**

* Consultant will appraise up to xx parcels.
* Agency may elect to complete some or all appraisals in-house.
* All appraisals will be uploaded into RITS and sent to Agency’s appraisal review unit to ensure that appraisal standards have been met and to establish just compensation.

**Deliverables/Schedule:** Consultant shall provide:

* Appraisal – provided electronically in RITS within 12 weeks of authorization for R/W tasks
* Value Finding/ Taking and Damages Appraisal (for simple takings), OR
* Detailed Before & After Appraisal (for complex takings)
* Specialty reports, if necessary, prior to incorporation in appraisal reports
* Report Of Personal Interview – including date and place of contact, parties of interest contacted, a statement that 15 Day Notice of Appraisal Inspection was mailed and delivered, and record of other activities conducted during the Appraisal within 7 calendar days of appraisal recommendation
* 15 Day Notice Of Appraisal Inspection - Copy of 15-day letter to owner before appraisal inspection and proof of certified mail delivery uploaded into RITS within 7 calendar days of appraisal recommendation

## Task 13.8 Negotiation and Offer (R/W budget)

All R/W shall be acquired in the name of Agency. Consultant shall conduct negotiations, on behalf of Agency, in good faith and in compliance with all federal and state laws and regulations. Consultant shall conduct negotiations for acquisition of real property based on Appraisal Review and in accordance with the Right-of-Way Manual, the Contractor Services Guide, and applicable State and Federal laws.

Consultants shall prepare and present to Agency the draft offer benefit packages in RITS. All offers will be made on Agency letterhead, will include Agency contact information, and will be signed by Agency R/W Project Manager. These packages shall include, but are not limited to, acquisition and relocation brochures, offer-benefit letter, acquisition and relocation summary statements, Terms of State’s Offer signed by Region 1 Right-of-Way Program Manager, copy of appraisal, map of acquisition, applicable plan sheets, instruments of conveyance and W-9 form.

***Consultant shall make all offers in person or by certified mail. Proof of delivery shall be documented in the Report of Personal Interview, file, and uploaded into RITS.*** Property owners considering a donation must be informed in writing of their right to just compensation; such property owners may elect to donate by signing a donation document.

Consultant shall make no less than 3 attempts to acquire the R/W expeditiously by negotiation. Consultant shall provide property owners with reasonable opportunity to consider the offer (statutorily 40 calendar days) and to present information the owner believes is relevant to determining the value of the property.

* IF the offer is ACCEPTED, Consultant shall present a Final Report Packet covering the acquisition of R/W to Agency for final approval, payment, conveyance of title and recording. (See Task 13.11 - Closings)
* IF a counter offer is received, Consultant shall submit the proposed COUNTER OFFER (exceeding the estimate of just compensation) with a justification letter and owner supplied supporting documentation to Agency for approval. If accepted see above.
* IF an acceptable agreement is not reached, then Consultant shall prepare and submit to Agency a Recommendation for Condemnation Packet in RITS 19 weeks prior to PS&E. (See Task 13.10 – R/W Condemnation).

Consultant shall maintain written diaries of contact with property owners and tenants to record events such as – delivery of required notices, efforts to achieve amicable settlements, owner’s suggestions for changes in plans, and responses to owner’s counterproposals. Consultant shall clear any encumbrances indicated on the Office Title Report provided by Agency.

**Assumptions:**

* Consultant will negotiate up to TBD files.
* Agency may elect to complete some or all negotiations in-house.
* Copies of all file documents will be uploaded into RITS and retained by Consultant for 7 years or for such period as may be necessary to resolve any pending matters.

**Deliverables/Schedule:** Consultant shall provide:

* Draft Offer Packet for review for each file within 2 weeks of receipt of Agency’s determination of just compensation
* Final draft Offer Packet for review and signature within 1 week of receipt of Agency comments
* Documentation of Offer Packet sent certified mail or delivered for each file into RITS within 7 calendar days of offer
* Counteroffers with justification letter for review / approval by Agency
* Final Report or R/C packet – See Tasks 10.10 & 10.11 as applicable

## 

## Task C13.9 Relocation (CONTINGENCY TASK – see Section F) (R/W budget)

Relocations shall take place in a timely manner in accordance with regulatory notification time frames and terms, and are completed following the Uniform Act, State law (ORS 35.500-35.530), the ODOT Right-of-Way Manual, and Contractor Services Guide. Consultant shall assess eligibility for up to 4 personal property only relocations.

Agency may elect to complete some or all relocations in-house.

Consultant requirements under relocation include but are not limited to the following:

* Conduct occupant interviews, provide relocation advisory assistance and determine/present relocation benefits. Generate / upload in RITS as appropriate.
* Prepare relocation reports, studies, moving agreements and claims using Agency forms/formats and submit to Agency for review, approval and payment through RITS.
* Relocation studies required for presentation of benefits at the time of offer must be pre-approved through RITS workflow prior to presentation of the offer.
* A Move Agreement, pre-approved through RITS workflow, must be on file prior to submission of relocation claims.
* Support and assist Agency with Relocation Appeals according to the Right-of-Way Manual and Contractor Services Guide.
* Submit a completed Relocation Closing Report for each relocation file through RITS.
* Prepare and independently review for accuracy and compliance, relocation claims using Agency forms/formats, and submit claims to Agency for payment through RITS.
* Maintain Report of Personal Interview in RITS

**Assumptions:**

* Personal property relocations only, no business relocations will be required.

**Deliverables/Schedule:** Consultant shall provide:

* Occupant Interviews in RITS (uploaded)
* Submit Move Agreements, relocation reports and studies for approval through RITS
* Submit Relocation claims for payment through RITS
* Submit Relocation Closing Reports through RITS

## Task 13.10 R/W Condemnation Support (R/W budget)

Consultant shall, after a good faith effort has been made to acquire R/W at Agency’s determination of just compensation, attempt to negotiate an approved administrative settlement. Consultant shall not advance the time of condemnation, or defer negotiations, condemnation, or the deposit of funds with the court, or take other coercive action in order to induce an agreement on the price to be paid for the property (49 CFR 24.102(h)).

Agency may initiate Condemnation proceedings and perform closings as appropriate. Consultant shall provide needed Condemnation support to Agency until all files are settled or resolved through trial proceedings.

If settlement with the property owner is NOT reached, Consultant shall accomplish the following tasks:

* Prepare and submit Recommendation for Condemnation in accordance with the Right-of-Way Manual and Contractor Services Guide 19 weeks prior to Project PS&E through RITS.
* With Agency authorization, send Final Offer Letter to the property owner in accordance with the ODOT Right-of-Way Manual.
* Support and assist Agency (limited to the hours estimated) with mediation and condemnation proceedings, and assist property owner with necessary relocation according to the Right-of-Way Manual and Contractor Services Guide as required by Agency.

**Deliverable/Schedule:** Consultant shall provide:

* Recommendation for Condemnation 19 weeks prior to PS&E submittal
* Final Offer Letter to the property owner

## Task 13.11 Closings (R/W budget)

Closings and related Services include, but are not limited to: satisfaction of liens, calculation of final settlement figures and preparation of closing documents, except that no deed, conveyance document or agreement obtained by Consultant will be binding UNTIL IT HAS BEEN APPROVED IN WRITING BY Agency.

Consultant shall submit closing packets to Agency for payment. All documents with original signatures or private identifying information shall be physically delivered to Agency upon generating Final Report

Agency will review the packet, request corrections or amendments, or close the transaction and make final payment.

**Deliverable/Schedule:** Consultant shall provide:

* A Final Report Packet through RITS for each parcel file after signed property conveyance documents/agreements are obtained no later than 4 weeks prior to Project PS&E date. If requested following Agency review, provide corrections and amendments promptly.

## 

## Task 13.12 Certification (R/W budget)

Consultant shall certify that R/W has been acquired and affected personal property has been relocated in full compliance with the Uniform Act as amended, other applicable federal, State and civil rights laws, and Section XII of the Contractor Services Guide.

**Assumptions:**

* Agency will review all files prior to certification.
* Consultant will provide Certification for parcels acquired by Consultant.

**Deliverables/Schedule:** Consultant shall provide:

* R/W Certification to Region Right-of-Way Program Manager 2 weeks prior to PS&E (TBD). If it is anticipated that there will be any holdouts past PS&E, Certification must be provided to Agency 75 calendar days prior to contract bid letting date with estimated possession dates (for FHWA review).
* Written update of holdout parcel availability status as requested by Agency.
* R/W Re-Certification when possession of all holdouts has been obtained within 7 calendar days of possession (if there are holdouts on original R/W Certification).

## Task 13.13 R/W Coordination during Construction (RESERVED)

## Task C13.14 Additional R/W Files (CONTINGENCY TASK – see Section F) (R/W budget)

*Consultant shall provide complete R/W Services for additional R/W files as identified during the DAP Phase of the Project. Potential files are associated with the* TBD*. For each authorized additional file, Consultant shall provide deliverables as per the requirements of the following tasks: 2.6, 13.3, 13.4, 13.5, 13.6, 13.7, 13.8, 13.10, 13.11 and 13.12.* ***Deliverables/Schedule:*** *Consultant shall provide:*

*All deliverables to be submitted on the same schedule as identified for tasks 2.6, 13.3, 13.4, 13.5, 13.6, 13.7, 13.8, 13.10, 13.11 and 13.12*

# TASK 14 PLANS, SPECIFICATIONS & ESTIMATE (PS&E)

The purpose of this task is to compile plan development at Preliminary, Advance and Final milestone deliverables to provide Agency an opportunity to review comment and provide direction on work.

**Plan Development**

Consultant shall compile the milestone deliverables performed under other tasks. The plans must be in conformance with the following Agency documents and guides

Contract Plans Manual (Still in development April 25, 2017)

<https://www.oregon.gov/ODOT/Engineering/Pages/Drafting.aspx>

Contract Plans Development Guide

<https://www.oregon.gov/ODOT/Engineering/Pages/CP-Development-Guide.aspx>

PS&E Delivery Manual (July 2017)

<https://www.oregon.gov/ODOT/Business/OPLManuals/PSE_Delivery_Manual.pdf>

Relevant Agency signal, striping, and sign design manuals or guides,

<http://www.oregon.gov/ODOT/Engineering/Pages/Manuals.aspx>

Any language in the Contract Plan Develop Guide (CPDG), addressing plan review or other administrative tasks, that is in conflict with the language of this WOC is superseded by this WOC.

**Special Provisions**

Consultant shall follow the requirements described in the Specification and Writing Style Manual to prepare special provisions. The manual is available on the web at:

<https://www.oregon.gov/ODOT/Business/OPLManuals/Specification_Writing_Style_Manual.pdf>

Consultant shall prepare the Special Provisions Document Assembly Request (SPDAR) applicable to this Project for submittal. The SPDAR, along with the 2018 Boilerplate Special Provisions is located at the following site and can be downloaded under the section “Boilerplate Sets by Effective Date.”

<https://www.oregon.gov/ODOT/Business/Pages/Boilerplate-SP-2018.aspx>

Any changes to the ODOT 2018 Standard Specifications or boilerplate special provisions will need approval from the relevant Stakeholder Name for the Section as listed in the Technical Resource List also found at this site.

<http://wwworegon.gov/ODOT/Business/Pages/Boilerplate-SP-2018.aspx>

## Task 14.1 Preliminary Design

### Task 14.1.1 Compile Preliminary Design Package

Consultant shall compile the Preliminary Plans performed under other tasks.

**Number of sheets shown in parenthesis (Scale based on 11”x17” sheet size)**

* Preliminary Roadway Plans; Specs and Estimate
  + Title Sheet (1) Not to Scale (NTS)
  + Index and List of Std Drawings (1) NTS
  + Sheet Layout Key (1)
  + Typical Sections
  + Details
  + Alignment and RW Sheets (1”=50’)
  + General Construction Plan Sheets (X) (1”=50’)
  + Profile Sheets (TBD )
* Preliminary Bridge Plans; Specs and Estimate
  + Bridge Details
* Preliminary Traffic Structures Plans; Specs and Estimate
  + Traffic Structures Sheets
* Preliminary Retaining Wall Plans; Specs and Estimate
* Wall Location Sheet
* Preliminary Soundwall Plans; Specs and Estimate
* Preliminary Geotechnical Plans; Specs; Estimate and Final Geotech Report
* Preliminary Hazardous Materials Plans; Specs; Estimate and Report (Phase 2)
* Preliminary Material Source and Disposal Site Plans; Specs and Estimate
* Preliminary Roadside Development Plans; Specs and Estimate
* Preliminary Wetland Mitigation Plans; Specs and Estimate
* Preliminary Erosion Control Plans; Specs and Estimate
  + Erosion Control Plans (X)
  + Erosion Control Detail Sheets (1) NTS
* Preliminary Hydraulics/Utilities Plans; Specs and Estimate
  + Drainage Plans (X) (1”=40’)
  + Drainage Details (X)
  + Pipe Data Sheet (1) NTS
* Preliminary Water Quality and Detention Plans; Specs and
* Preliminary Traffic Control Plans; Specs and Estimate
* Preliminary Sign Plans; Specs and Estimate
* Preliminary Striping Plans; Specs and Estimate
* Preliminary Signal Plans; Specs and Estimate
* Preliminary Illumination Plans; Specs and Estimate

The estimated total number of plan sheets for this Project is TBD**.**

**Engineer’s Estimate**

Consultant shall prepare the Engineer’s Estimate in Agency format using Agency’s Project bid items historical bid prices. Consultant shall keep the Estimate confidential and distribute it only as directed by Agency.

**Deliverables/Schedule:** Consultant shall provide within 10 weeks of Final DAP:

* 3 complete 11” x 17” paper sets and 1 .pdf of Advance Plans in conformance with the description above.
* 1 electronic copy of the MicroStation and Inroads CADD files of the plans.
* 3 paper copies of a detailed cost estimate and 1 .pdf based on the Advance Plans and consistent with Agency’s current format (in place at time of NTP).
* 1 construction cost estimate consistent with Agency’s current format (AASHTOWare Project Estimator).
* 1 construction schedule (1 electronic copy)
* 1 hardcopy and 1 electronic set of special provisions in Microsoft Word format.
* 1 hardcopy and 1 electronic file (.pdf) of Constructability Issues Log
* QC certification submitted with Plans, Specifications and Estimate

### Task 14.1.2 Respond to Preliminary Design Review Comments

Agency will provide comments on the Preliminary Plans at the Preliminary Plans Review Meeting (Task 1.4.6). Consultant shall resolve issues and provide a written response to the review comments.

**Deliverables/Schedule:** Consultant shall submit:

* Written response to Preliminary Plans Review Comments within 10 business days of the Preliminary Plans Review Meeting

## Task 14.2 Advance Plans

Task 14.2.1 Compile Advance Plans Package

Consultant shall compile the Advance Plans performed under other tasks.

Consultant’s Advance Plans must include all of the plan sheets that are intended to be in the construction bid package. Advance Plans must be of sufficient detail to enable an independent quantity check if desired.

The number of sheets anticipated is the same as the Preliminary Plan list from Task 14.1 with the addition of the following sheets:

The estimated total number of plan sheets for this submittal is TBD**.**

**Deliverables/Schedule:** Consultant shall provide within 10 weeks of Final DAP:

* 3 complete 11” x 17” paper sets and 1 .pdf of Advance Plans in conformance with the description above.
* 1 electronic copy of the MicroStation and Inroads CADD files of the plans.
* 3 paper copies of a detailed cost estimate and 1 .pdf based on the Advance Plans and consistent with Agency’s current format (in place at time of NTP).
* 1 construction cost estimate consistent with Agency’s current format (AASHTOWare Project Estimator).
* 1 construction schedule (1 electronic copy)
* 1 hardcopy and 1 electronic set of special provisions in Microsoft Word format.
* 1 hardcopy and 1 electronic file (.pdf) of Constructability Issues Log
* QC certification submitted with Plans, Specifications and Estimate

### Task 14.2.2 Respond to Advance Design Review Comments

Agency will provide comments on the Advance Plans at the Advance Plans Review Meeting (Task 1.4.7). Consultant shall resolve issues and provide a written response to the review comments.

**Deliverables/Schedule:** Consultant shall submit:

* Written response to Advance Plans Review Comments within 10 business days after the Preliminary Plans Review Meeting

## Task 14.3 Final Design

### Task 14.3.1 Compile Final Design Package

Consultant shall update the design elements to reflect review comments and changes from the Advance Plan review and bring the design level to Final Plans suitable for advertisement and bidding. Consultant shall:

* Update Plans and add detail to address comments on the Advance Plans.
* Update Construction Schedule.
* Update cost estimate to address comments on the Advance Plans
* Update specifications to address comments on the Advance Plans
* Review utility impacts, and property impacts for conformance with R/W negotiations (if needed)

**Deliverables/Schedule:**Consultant shall provide all of the following by TBD:

* 1 copy of signed and completed Final PS&E Submittal Checklist (1 paper copy) with copies of all Submittal Package Requirements in the format as indicated on the Final PS&E Submittal Checklist
* 1 hardcopy and 1 electronic set of the special provisions in Microsoft Word format.
* 1 Mylar set and 1 paper set of 11” x 17” Final Plans (Stamped and signed).
* 1 electronic copy of the MicroStation and Inroads CADD files of the plans.
* 1 construction cost estimate consistent with Agency’s current format (AASHTOWare Project Estimator).
* 1 construction schedule.
* 1 Constructability Issues Log
* 1 complete electronic package of final DAP, additional technical reporting (if any) completed after DAP, and electronic design files for use by Agency’s construction office.
* QC certification submitted with Plans, Specifications and Estimate.

### Task 14.3.2 Respond to Final Design Review Comments

Agency will provide comments on the Final Plans at the Final Plans Review Meeting (Task 1.4.8). Consultant shall resolve issues and provide a written response to the review comments.

**Deliverables/Schedule:** Consultant shall submit:

* Written response to Final Plans Review Comments within 10 business days of the Final Plans Review Meeting

## Task 14.4 PS&E Submittal Package and EBids Handoff Package

### Task 14.4.1 Compile PS&E Submittal Package

Consultant shall develop the Final PS&E from the Advance Plans prepared under Task 14.3. Consultant shall make modifications to the plans and specifications to address Advance Plan review comments received from Agency. The Final PS&E Submittal Package must be complete and include applicable items on the PS&E Checklist (Attachment D).

Consultant shall make revisions to the above listed items based on comments received at Final Design review meeting with Agency staff. Consultant shall provide plan sheets and the specifications that are stamped and signed by Consultant’s appropriate Professional Engineer. Consultant shall deliver the final documents in a “camera ready” format to APM for printing. (Prior to submittal, confirm grey shaded areas on plans are dark enough for image duplication.). Each pay item identified on the Project plans must have a corresponding specification that states the method of measurement and payment for that pay item. Consultant shall prepare the Final PS&E Estimate and a Construction Schedule that will serve as a basis for allowable contract time.

Consultant shall update the special provisions according to the comments received in the Advance Plan review meeting and to account for refinements to the design. The special provisions must be cross referenced to the construction cost estimate to verify that each bid item is covered by either the ODOT Standard Specifications or a special provision.

As required in task 1.5 (confirm this is budgeted in only one place – task 1.5 or task 14.4), Consultant shall perform an internal Quality Control (“QC”) Review on the Final Plans design submittal. Consultant shall coordinate and perform QC checks on plans, design revisions and computations, estimates, and other deliverables. Consultant shall coordinate between design disciplines so that the design is in conformance with applicable Agency design standards, and that prior review comments have been incorporated into the design. Consultant shall follow the requirements of the QA / QC guide on file with Agency and shall submit documentation of QA / QC process with QC deliverables under this WOC.

Consultant shall prepare the final bid schedule and enter the data into Agency's AASHTOWare Project Estimator. Agency will use Final PS&E Estimate prepared by Consultant to prepare the official Final Engineering Estimate. Agency will make copies of the final documents and distribute to construction contractors.

Consultant shall submit Pre-PS&E package on plain paper for review by Agency prior to issuing signed Mylar set. Agency will review the plans for conformance to review comments and conduct Pre PS&E Package Submittal Meetings (See Task 1.4.5) to review completeness and establish points of contact during the bidding process.

**Deliverables/Schedule:**Consultant shall submit the following items within timeframes required by the APM/Agency.

* 3 complete 11” x 17” paper sets of final review and final PS&E Plans in conformance with the description above.
* 3 copies of a detailed cost estimate based on the final review and final PS&E Plans and consistent with Agency’s current format.
* 1 hardcopy and 1 electronic set of the special provisions in Microsoft Word format.
* 1 construction cost estimate consistent with Agency’s current format (AASHTOWare Project Estimator).
* 1 construction schedule.
* 1 copy of signed and completed final PS&E submittal checklist (1 paper copy) with copies of all PS&E Submittal Package Requirements in the format as indicated on the final PS&E submittal checklist by Monday, TBD.
* 1 Mylar set and 1 paper set of 11” x 17” final Plans (stamped and signed).
* QC certification submitted with plans, specifications and estimate.

### Task 14.4.2 Preparation of eBIDS Handoff Package

* [Delete task language and mark as “RESERVED” if not applicable to the project; OR
* Label this task as “CONTINGENCY TASK, see Section F” if it is not known at time of WOC/Contract execution whether or not it is needed.]

Consultant shall prepare draft and final eBIDS Handoff Packages for Agency’s electronic bidding process. Required deliverables and data formats are provided on the [eBIDS Handoff Package Checklist](ftp://ftp.odot.state.or.us/techserv/roadway/web_drawings/HDM/2011%20HDM%20Rewrite/eBIDS-Deliverables.xlsx), as described in [Appendix M](ftp://ftp.odot.state.or.us/techserv/roadway/web_drawings/HDM/2011%20HDM%20Rewrite/2012%20Appendix%20M%20Digital%20Design%20Packages.pdf) and [Chapter 16](ftp://ftp.odot.state.or.us/techserv/roadway/web_drawings/HDM/2011%20HDM%20Rewrite/2012%20Chapter%2016%203D%20Roadway%20Design.pdf) of the Highway Design Manual. Consultant shall list each fileon the eBIDS Handoff Package Checklist with a filename and description of data provided for each file.

**Deliverables/Schedule:** Consultant shall provide:

* eBIDS Hand-off Package draft Submittal – submitted to Agency within 10 calendar days of completion of Final (Pre-Mylar) Plans – Consultant to verify the accuracy and completeness of the eBIDS Hand-off Package, as described in [Chapter 16](ftp://ftp.odot.state.or.us/techserv/roadway/web_drawings/HDM/2011%20HDM%20Rewrite/2012%20Chapter%2016%203D%20Roadway%20Design.pdf) of the Highway Design Manual prior to submitting to Agency.

## Task 14.5 Construction Survey Handoff

* [Delete task language and mark as “RESERVED” if not applicable to the project; OR
* Label this task as “CONTINGENCY TASK, see Section F” if it is not known at time of WOC/Contract execution whether or not it is needed.]

Consultant shall coordinate with Agency, LPA and awarded construction contractor’s staff to determine the deliverables listed on the [Construction Survey Handoff Deliverable Checklist](ftp://ftp.odot.state.or.us/techserv/roadway/web_drawings/HDM/2011%20HDM%20Rewrite/Construction-Deliverables.xlsx). Consultant shall prepare draft and final Construction Survey Handoff Package to include those deliverables, as determined by Agency, LPA and awarded construction contractor correspondence, further described in [Appendix M](ftp://ftp.odot.state.or.us/techserv/roadway/web_drawings/HDM/2011%20HDM%20Rewrite/2012%20Appendix%20M%20Digital%20Design%20Packages.pdf) and [Chapter 16](ftp://ftp.odot.state.or.us/techserv/roadway/web_drawings/HDM/2011%20HDM%20Reftp:/ftp.odot.state.or.us/techserv/roadway/web_drawings/HDM/2011%20HDM%20Rewrite/2012%20Chapter%2016%203D%20Roadway%20Design.pdfwrite/2012%20Chapter%2016%203D%20Roadway%20Design.pdf) of the Highway Design Manual.

Consultant shall coordinate with Agency and participate in roadway digital data quality control review of draft Construction Survey Hand-off Package in accordance with guidelines provided in [Appendix N](ftp://ftp.odot.state.or.us/techserv/roadway/web_drawings/HDM/2011%20HDM%20Rewrite/2012%20Appendix%20N%20Digital%20Design%20Quality%20Control.pdf) of the Highway Design Manual.

**Deliverables/Schedule:** Consultant shall provide:

* Proposed Construction Survey Hand-off Deliverables draft Submittal – Submit [Construction Survey Handoff Deliverable Checklist](ftp://ftp.odot.state.or.us/techserv/roadway/web_drawings/HDM/2011%20HDM%20Rewrite/Construction-Deliverables.xlsx) with Consultant’s proposed deliverables to Agency and LPA no later 30 days after Bid Opening. Consultant shall respond to comments from Agency and LPA and awarded contractor and make corrections to the list of proposed deliverables prior to completing the draft Construction Survey Handoff Package.
* Construction Survey Hand-off Package draft Submittal – Consultant shall prepare Construction Survey Handoff Package deliverables previously determined by Agency, LPA and the awarded construction contractor, in accordance with [Chapter 16](ftp://ftp.odot.state.or.us/techserv/roadway/web_drawings/HDM/2011%20HDM%20Rewrite/2012%20Chapter%2016%203D%20Roadway%20Design.pdf) and [Appendix N](ftp://ftp.odot.state.or.us/techserv/roadway/web_drawings/HDM/2011%20HDM%20Rewrite/2012%20Appendix%20N%20Digital%20Design%20Quality%20Control.pdf) of the Highway Design Manual. Consultant shall submit the draft Construction Survey Handoff Package to Agency and LPA at Agency’s Issue of Notice to Proceed to Contractor or 30 days after Bid Opening, whichever occurs first.
* Construction Survey Hand-off Package Final Submittal – Consultant shall respond to Agency, LPA and awarded contractor’s comments on the draft Construction Survey Handoff package and make changes, corrections, develop files, etc., in accordance with [Chapter 16](ftp://ftp.odot.state.or.us/techserv/roadway/web_drawings/HDM/2011%20HDM%20Rewrite/2012%20Chapter%2016%203D%20Roadway%20Design.pdf) and [Appendix N](ftp://ftp.odot.state.or.us/techserv/roadway/web_drawings/HDM/2011%20HDM%20Rewrite/2012%20Appendix%20N%20Digital%20Design%20Quality%20Control.pdf) of the Highway Design Manual. Consultant shall submit the Final Construction Survey Handoff package to Agency and LPA no later than 1 week prior to Pre-Survey Meeting with contractor or the Pre-Construction Meeting with the contractor, whichever occurs first.

# TASK 15 BID AND AWARD ASSISTANCE

## Task 15.1 Pre-bid Meeting (Reserved)

## Task 15.2 Questions during Bidding

Consultant’s Project Manager, or Consultant’s designee(s) approved by Agency, shall answer questions regarding the bid documents and bid process from Agency. Consultant shall perform these Services in accordance with Agency procurement policies and procedures, administrative rules and statutes. Consultant shall, during the bidding process, manage the communications with Agency’s construction office.

**Deliverables/Schedule:** Consultant shall provide:

* Written log of questions and responses received from Agency Construction office 5 business days after bid opening.

## Task C15.3 Addenda to the Bid Documents (CONTINGENCY TASK – see Section F)

If authorized by NTP from APM, Consultant shall prepare up to xx bid addenda to provide interpretation of construction documents. Consultant shall prepare addenda within Agency procurement policies and procedures, administrative rules and statutes.

Consultant shall prepare and deliver the addenda text in a Microsoft Word file. Consultant shall prepare and deliver drawings as stamped 11” x 17” Mylar plans. Consultant shall coordinate reviews of addenda by APM prior to submittal to ODOT Specifications Manager. Consultant shall not be responsible for distributing addenda to bidders. Agency will issue and distribute all addenda.

**Deliverables/Schedule:**Consultant shall provide:

* Bid document addenda; stamped Mylar drawings; or special provision revisions. Due within 5 calendar days from NTP unless a different timeframe is agreed to and stated in the NTP.

# TASK 16 VALUE ENGINEERING STUDY [Optional task, include when applicable]

(version date: 1/3/20)

Contact the Agency VE/Project Risk Engineer to evaluate if the value engineering study will be Agency or Consultant led.

This task provides the basic information required in the Value Engineering Study portion of the SOW. Add the necessary detail for each Project in blue highlighted areas. **Insert specific workshop durations and/or number of disciplines, after consulting with Agency VE/Project Risk Engineering. Otherwise, the following must be included without any additions, deletions or revisions.**

Consultant shall conduct a Project Value Engineering (“VE”) study prior to completion of DAP. The VE study includes a 5 day VE workshop that follows the 6 phases (Information, Function Analysis, Creative, Evaluation, Development and Presentation) of SAVE International’s standard VE Job Plan. To perform this task, Consultant’s team must include a Certified Value Specialist (“CVS”) who is certified by SAVE International and who is not involved with the Project design.

Agency will supply the required discipline subject matter experts necessary to form the VE team for the Project VE workshop. The VE kick-off and workshop meetings will be held at Agency’s offices in Region XX.

**Task 16.1 Pre-VE Workshop**

No less than 60 calendar days prior to the VE workshop, Consultant shall inform the Agency Project Manager, in writing, of the dates of the VE workshop to allow for recruitment and scheduling of Agency supplied subject matter experts necessary to form the VE team.

No less than 14 calendar days prior to the VE workshop, Consultant shall coordinate with the CVS to provide Project information (e.g. plans, specifications, schedule, estimate, risk analysis, and other project documents typically produced during project development) as needed to allow the VE team to review the project for potential for adding value.

Consultant’s discipline leads shall participate in this process to provide background information to the CVS.

7 calendar days prior to the VE workshop, Consultant shall provide a pre-workshop memorandum (prepared by the CVS) to the VE team members which includes: study dates, location, VE workshop agenda, details concerning logistics, expectations of the team members related to participation and attendance, a synopsis of the value methodology, a link to Project documents and a one page summary describing key Project design criteria.

**Deliverables and Schedule:**

* VE workshop dates (electronic copy – e-mail) delivered to the APM no less than 60 calendar days prior to the VE workshop
* Pre-workshop memorandum (electronic copy – PDF) delivered to VE team members 7 calendar days prior to the VE Workshop

**Task 16.2 VE Workshop**

Up to 6 (as determined by Agency) Consultant discipline leads responsible for the preliminary engineering and design of the Project, including but not limited to: bridge and structures, roadway, traffic, stormwater, geotechnical, and environmental, shall attend and participate in the VE workshop kick-off meeting, led by the CVS, to present the design to the VE team members. Following the VE workshop kick-off meeting, Consultant shall lead a Project site visit meeting, attended by the CVS and VE team, to identity existing conditions, strategies, and solutions. Both of these activities shall occur during the information phase of the VE workshop.

During the Function Analysis, Creative, Evaluation, and Development phases of the VE workshop, Consultant, and the selected Consultant discipline leads who presented during the information phase, shall be available by phone for discussion and input.

During the presentation phase, up to 6 (as determined by Agency) Consultant discipline leads including but not limited to: bridge and structures, roadway, traffic, stormwater, geotechnical, and environmental shall attend and participate in the VE recommendations presentation meeting, led by the CVS.

**Deliverables (per schedule provided under Pre-VE Workshop task):**

* VE workshop kick-off meeting and Project site visit.
* 5 day VE workshop (led by CVS, with phone consultation by PM and discipline leads as needed.)
* CVS Presentation of VE findings to Agency and Agency invitees on final day of VE Workshop.
* Electronic copy of PowerPoint and other presentation materials)

**Task 16.3 VE Report**

Consultant, shall provide a draft VE report (prepared by the CVS) and submit to Agency for review. Agency will provide draft review comments to Consultant within 14 calendar days. Consultant shall provide a final VE report (prepared by the CVS) based on comments received from Agency’s review of the draft VE report.

**Deliverables and schedule:**

* Draft VE report (electronic copy – PDF) delivered to Agency 14 calendar after VE workshop
* Final VE report (electronic – PDF and 6 hard copies) delivered to Agency 7 calendar days after receipt of Agency draft review comments

**Task 16.4 VE Implementation Meeting**

Consultant shall schedule, prepare the agenda for, and lead a VE implementation meeting within 4 weeks of submission of the final VE report. The meeting must include Agency technical review staff and Consultant discipline leads. This meeting is to discuss and document the implementation disposition of VE recommendations identified in the VE study. Following the conclusion of this meeting, Consultant shall prepare a VE recommendation implementation plan that identifies the disposition of each VE recommendation as accepted, conditionally accepted, or rejected.

**Deliverables and Schedule**:

* Implementation plan that includes disposition of the VE recommendations (electronic copy – PDF and 6 hard copies) delivered to the Agency 14 days after the implementation meeting
* Final implementation report discussing the execution of the implementation plan (electronic copy – PDF and 6 hard copies) delivered to Agency at the completion of DAP

**Task C16.5 Additional Subject Matter Expert(s) for VE Workshop (CONTIGENCY TASK – see Section F)**

Consultant shall supply discipline specific subject matter experts that are not directly involved in the planning or design of the Project to form or supplement the VE team, as requested by Agency.

The disciplines potentially requiring subject matter experts include, but are not limited to: bridge, roadway, traffic, geotechnical, environmental, and constructability. Up to 8 (as determined by Agency) Consultant staff shall attend and participate in the 5 day VE workshop (50 hours), plus preparation and travel time.

**Deliverables and Schedule:**

* Subject matter experts attend and participate in a 5 day VE workshop per the schedule included in Agency’s NTP for this contingency task.

**TASK 17 COST RISK ASSESSMENT (CRA)**

**(**A CRA is required for all projects over $25 million. Delete if not applicable)

This template provides the basic information required in the Cost Risk Assessment (CRA) portion of the SOW. Contact the Agency VE/Project Risk Engineer to determine if the CRA will be Agency or Consultant led.

**Evaluation of Qualifications:** If the Project will include a Consultant led CRA process, the RFP/Mini-RFP for the Project design must include evaluation of Consultant’s qualifications and experience to successfully provide CRA services. **Include the following (or similar language approved by the Agency VE/Project Risk Engineer) in the solicitation:**

*Proposer’s team must include a qualified facilitator with experience conducting quantitative risk assessment workshops and a risk modeler experienced in performing probabilistic risk modeling utilizing the Monte Carlo simulation technique.* *The Proposal must include a brief description of at least 3 quantitative risk assessment workshops, completed in the last \_\_ years, demonstrating the experience of the proposed CRA facilitator and the risk modeler. The CRA facilitator and risk modeler may be the same individual. Proposer shall submit, as separate electronic PDF documents submitted with the Proposal, a minimum of 2work samples of quantitative risk assessment reports completed by the Proposed CRA facilitator and risk modeler. These work samples must include:*

* *Estimate validation process*
* *Risk elicitation*
* *Qualitative risk analysis*
* *Quantitative risk analysis strategy*
* *Figure depicting Quantitative risk modeling output*
* *Risk ranking strategies*
* *Use and clarity of executive summary in final risk report*

***[The required work samples are not counted toward the Proposal page limit.]***

**General Instructions for SOW Template**

To complete the CRA SOW, add the necessary project-specific detail in blue highlighted areas below. The information contained in ***Yellow-highlighted bold italics*** text provides some guidance as to where additional detail should be added to the SOW.

* Yellow highlight indicates instructions or notes that are deleted before finalizing the SOW for a WOC/Contract.
* Blue highlight indicates fields or provision that need to be reviewed and updated with project-specific information/requirements.
* Quantities. When entering quantities, the best practice is to use only the Arabic numeral and not spell out the numeral followed by the digit in parenthesis; i.e. - “3 weeks after NTP”.
* Delete text of any tasks that do not apply to the Project and label as “RESERVED” next to the task title. Contingency tasks that do not apply to a given Project can be deleted without marking as “RESERVED”, provided task numbering is revised if necessary.
* Send suggested revisions/updates to Kim Rice, OPO Technical Development Coordinator.

**Delete instructions throughout the document before executing Contract/WOC or amendment as follows:**

* From the “Edit” menu (or “Editing” menu on the “Home” ribbon) select “Replace”;
* With cursor in the “Find what” field, click “More” button, then “Format” then “Font” , then in the font field select “Arial” text ;
* Leave the “Replace with” field blank;
* **Click “Replace All”. This will delete all yellow highlighted text.]**

**(Specify if the CRA is Agency or Consultant led, after consulting with Agency VE/Project Risk Engineer. Insert specific meeting location. Otherwise, the following must be included without any additions, deletions or revisions)**

Agency/Consultant shall conduct a Cost Risk Assessment (“CRA”) prior to completion of DAP. A CRA is a process to evaluate quality and completeness of the Project cost estimate, quantify project risks, and provide a risk based cost estimate. It includes a workshop with the Project Delivery Team (“PDT”) to identify, assess, quantitatively analyze Project risks, and modeling of the quantified Project risks to produce a probabilistic risk-based Project cost estimate.

**(If this is Consultant led CRA delete the following sentence)**

Agency will supply the CRA facilitator and perform the risk modeling duties.

**(If this is Agency led CRA delete the following paragraph)**

To perform this task, Consultant’s team must provide a qualified facilitator with experience conducting quantitative risk assessment workshops and a risk modeler experienced in performing probabilistic risk modeling utilizing the Monte Carlo simulation technique. The CRA facilitator and risk modeler may be the same individual.

**Task 17.1 Pre-CRA Workshop Activities**

**(Insert specific durations, after consulting with Agency VE/Project Risk Engineer. Otherwise, the following must be included without any additions, deletions or revisions)**

At the end of Project initiation, Consultant shall coordinate with APM to determine the dates of the CRA workshop.

No less than 28 calendar days prior to the CRA workshop, Consultant shall inform the APM, in writing, of the dates of the CRA workshop to allow for recruitment and scheduling of Agency supplied SMEs and/or stakeholders necessary to perform base cost estimate validation, risk elicitation, risk quantification, and risk response strategies, as needed.

The CRA process depends on an unbiased and accurate Project cost and schedule estimate. No less than 21 calendar days prior to the CRA workshop, Consultant shall provide a draft of the current Project cost estimate, including estimate supporting documentation such as plans, quantity take-offs, and estimate assumptions, for the purposes of Agency review and validation of the Project cost estimate through Agency’s Project Controls Office. Agency will provide draft cost estimate review comments to Consultant within 7 calendar days.

If the Project cost estimate is found to be unreasonably inaccurate or lacking sufficient detail, such as missing bid items, using obsolete bid items, loading contingency into individual bid items, or using lump sum values to cover a large range of bid items, Consultant shall revise the Project cost estimate based on comments received from Agency’s review and submit the final current Project cost estimate to Agency no less than 3 calendar days prior to the CRA workshop for final review.

**(If this is a Consultant led CRA delete the following paragraph)**

No less than 14 calendar days prior to the CRA workshop, Consultant shall provide the current project risk register, pursuant to [Highway Directive DES 01-02](https://www.oregon.gov/ODOT/Engineering/Doc_TechnicalGuidance/DES-01-02.pdf), to the APM in preparation of the CRA workshop.

No less than 7 calendar days prior to the CRA workshop, Agency will/Consultant shall provide a pre-workshop memorandum to all parties involved with the CRA that includes: study dates, location, CRA workshop agenda, details concerning logistics, expectations of the team members related to participation and attendance, and a link to ProjectWise for Project documents.

**Deliverables and Schedule:**

* CRA workshop dates (electronic copy – e-mail) delivered to the APM no less than 28 calendar days prior to the CRA workshop
* Project cost estimate, including cost estimate supporting documentation (electronic copy – e-mail) delivered to the APM no less than 21 calendar days prior to the CRA workshop

**(If this is a Consultant led CRA delete the following bullet)**

* Current project risk register (electronic copy –Excel file) delivered to the APM no less than 14 calendar days prior to the CRA Workshop

**(If this is an Agency led CRA delete the following bullet)**

* Pre-workshop memorandum (electronic copy – PDF) delivered to all parties involved 7 calendar days prior to the CRA Workshop
* If necessary, revised cost estimate, including documentation detailing revisions, (electronic copy – Excel file/PDF) delivered to the APM no less than 3 calendar days prior to the CRA workshop

**Task 17.2 CRA Workshop Prep Meeting**

**(Insert specific meeting location, and delete “and CRA facilitator” if Agency led. Otherwise, the following must be included without any additions, deletions or revisions)**

1 day prior to the CRA workshop, Consultant shall facilitate a CRA workshop prep meeting at Agency’s offices in Region XX. Consultant PM and CRA facilitator shall attend the CRA workshop prep meeting assumed to be 6 hours in length excluding travel time. Agency attendees will include CRA facilitator, APM and Agency subject matter experts (“SMEs”). The primary objectives of this prep meeting are:

* Discuss overview of the CRA workshop
* Review of the Project scope
* Review of major Project risks identified prior to the workshop
* Identify Project disciplines for risk analysis
* Determine how much time to devote to each discipline for risk analysis with SMEs
* Review and development of Project schedule flowchart
* Final overview of the validated Project cost estimate
* Discuss base variability and market conditions
* Confirm workshop attendee’s and agenda

**Deliverables and Schedule:**

* Provide Roll Map including key Project elements
* Provide meeting agenda (electronic copy – PDF) to APM 7 calendar days prior to the date of the meeting
* Provide draft summary notes, including action item/ decision log, (electronic copy – PDF) within 7 calendar days of meeting
* Provide final summary notes (electronic copy – PDF) within 7 calendar days of receipt of all Agency comments

**Task 17.3 CRA Workshop**

**(Insert specific workshop durations and/or number of disciplines, after consulting with Agency VE/Project Risk Engineer. Otherwise, the following must be included without any additions, deletions or revisions)**

The CRA includes a 2 full day workshop held at Agency’s offices in Region XX. Workshop participants must include Agency/Consultant CRA facilitator, with Consultant Project team, augmented with Agency staff and, if approved by Agency, additional Consultant SMEs as determined by Agency. The workshop must include, at minimum, the following activities:

* Project overview
* Base cost estimate overview
* Review of CRA process to workshop participants
* Base schedule review
* Risk elicitation including risk description and documented assumptions regarding the risk
* Pre-risk response SME judgment regarding the risk’s probability of occurrence and impact to Project in terms of cost and schedule
* Development of a detailed risk response strategy
* Determination of the risk owner
* Post-risk response SME judgment regarding the risk and its probability of occurrence and impact to Project in terms of cost, scope, and schedule based on the actions of the response strategy

All Consultant discipline leads responsible for the preliminary engineering and design of the Project, which may include but is not limited to: bridge and structures, roadway, traffic, right of way, utilities, hydraulics, geotechnical, and environmental, shall attend and participate in the CRA workshop.

**Deliverables and Schedule**

* Consultant shall provide XX Consultant discipline leads to attend and participate in a 2 day CRA workshop on the dates agreed upon by Agency.

**(If this is Agency led CRA, delete the following Task X.4 CRA RISK MODELING AND REPORT *in its* entirety)**

**Task 17.4 CRA Risk Modeling and Report**

Consultant shall develop a model, based on quantitative risk assessment data collected from the workshop, using the Monte Carlo simulation technique to produce a probabilistic risk based total Project cost estimate. Consultant shall document the model development, and the minimum following inputs:

* Base variability
* Anticipated market conditions
* Inflation or deflation rate
* Assumed market escalation, including documentation justifying assumptions
* All risk markups including: mobilization, preliminary engineering, construction engineering, and change order contingency
* Year of expenditure (inflation points)
* Risk correlation

Consultant shall provide a draft CRA report and submit to Agency for review. Agency will provide draft review comments to Consultant within 14 calendar days. Consultant shall provide a final CRA report based on comments received from Agency’s review of the draft CRA report within in 14 calendar days. The report shall include a “one-pager” that highlights key Project information, key risks (high probability/high impact, low probability/ high impact risks), and a Monte Carlo simulation generated histogram that provides a range of probable Project cost estimates in year of expenditure.

Consultant shall also include all model development documentation in the draft and final CRA report.

**Deliverables and schedule:**

* Draft CRA report (electronic copy – Microsoft word so changes can be tracked) delivered to Agency within 14 calendar after CRA workshop
* Final CRA report (electronic – PDF and 6 hard copies) delivered to Agency within 7 calendar days after receipt of Agency draft review comments

**Task C17.5 CRA Implementation Meeting (CONTIGENCY TASK – see Section F)**

**(Insert specific durations, after consulting with Agency VE/Project Risk Engineer. Otherwise, the following must be included without any additions, deletions or revisions)**

Consultant shall schedule, prepare the agenda for, and lead a CRA implementation meeting within 90 calendar days of submission of the final CRA report. Agency technical review staff and Consultant discipline leads who participated in the CRA must attend this meeting assumed to be 4 hours in length excluding travel time. Consultant shall prepare and plan to discuss and document the actual implementation of risk response strategies identified in the CRA workshop.

**Deliverables and Schedule**:

* Provide meeting agenda (electronic copy – PDF) to APM 7 calendar days prior to the date of the implementation meeting
* Consultant shall provide Consultant discipline leads to attend and participate in the implementation meeting on the dates agreed upon by Agency
* Provide draft summary notes, including action item/ decision log, (electronic copy – PDF) within 7 calendar days of meeting
* Provide final summary notes (electronic copy – PDF) within 7 calendar days of receipt of all Agency comments
* Final implementation report discussing the execution of the implementation plan (electronic copy – PDF and 6 hard copies) delivered to Agency no later than 21 calendar days after the CRA implementation meeting.

**Task C17.6 Additional Subject Matter Expert(S) For CRA Workshop (CONTIGENCY TASK – see Section F)**

**(Insert specific workshop durations and/or number of disciplines, after consulting with Agency VE/Project Risk Engineer. Otherwise, the following must be included without any additions, deletions or revisions)**

Consultant shall supply discipline specific SMEs that are not directly involved in the planning or design of the Project to form or supplement the CRA SMEs, as requested by Agency.

Consultant shall provide a resume demonstrating the experience and expertise of each proposed SME. These resumes must include:

* Description of engineering design experience
* Description of transportation infrastructure construction experience
* Description of specialized expertise relating to transportation infrastructure
* List of 5 specific complex transportation infrastructure projects with a description of proposed SMEs role.

Agency will make the final determination on if a proposed SME will attend the CRA workshop.

The disciplines potentially requiring SMEs include, but are not limited to: bridge and structures, roadway, traffic, geotechnical, environmental, and constructability. Up to 3 (as determined by Agency) Consultant staff shall attend and participate in the 2 day CRA workshop, plus preparation and travel time.

**Deliverables and Schedule:**

* SMEs attend and participate in a 2 day CRA workshop per the schedule included in Agency’s NTP for this contingency task.

The following sample language is for use when CA/CEI services are awarded to a firm that did not complete the design (or when Agency completed the design). Otherwise, Public Involvement/Outreach is included as task 4 in this SOW.

**TASK CE-6 PUBLIC INVOLVEMENT DURING CONSTRUCTION**

### Task CE-6.1 Public Involvement Schedule

### Task CE-6.2 Public Involvement and Communications Plan (“PICP”) Update

### Task CE-6.3 Public Involvement Summary Report

### Task CE-6.4 Public Involvement Coordination Meetings

Consultant shall conduct, prepare for and facilitate up to 3 coordination meetings with Agency’s Community Affairs Coordinator, on dates and times as determined by Agency to develop the public involvement plan for the Project. The meetings will be held at the Region 1 headquarters office in Portland, Oregon. For estimating purposes, it is assumed that 2 Consultant staff shall attend the meetings, which are estimated to be 2 hours in duration, including travel time.

Task CE-6.4 Deliverables:

* Meeting agenda 3 business days prior to each meeting.
* Meeting summary notes within 5 business days following each meeting.

### 

### **Task CE-6.5 Outreach Materials**

**Task CE-6.5.1 Newsletters**

Consultant shall prepare up to 1 Project newsletter for use at stakeholder interviews, meetings, briefings, and other uses as determined by Agency. Consultant shall print up to 6,000 copies of each newsletter. for mailing to up to 6,000 addresses of residents and businesses in and adjacent to construction areas. Consultant shall also email the newsletter(s) to the stakeholder database. The newsletter mailings and emails must be distributed prior to construction.

**Task CE-6.5.2 Noise Variance Notification**

Consultant shall produce 1 noise variance notice prior to commencing work to area businesses identified according to the noise variance, as required by the City of Troutdale for Agency’s night time noise variance application, to inform them of night time construction work. The notice must advise businesses of the current night work schedule, the nature of the work and the anticipated noise sources that may be heard during work activities. The notice must include a number to reach a live person during any construction times to have concerns addressed in a timely manner. The notice must include Agency’s nighttime noise hotline, as determined by Agency, and the contact number for Agency staff during regular business hours. Consultant shall produce 1 re-notification if required (if there are complaints to the noise control office).

Consultant shall print and mail up to 1,000 copies of each noise variance notification (mailing area approximately half a mile radius surrounding each construction site in the Project area).

**Task CE-6.5.3 Project Fact Sheet Handouts**

**Task CE-6.5.4 Key Messages**

**Task CE-6.5.5 Spanish Translation of Key Materials**

Consultant shall prepare Spanish translation for 1 newsletter for the Project. Consultant shall print up to 50 color copies of each document and post to the Project web site.

**Task CE-6.5.6 Targeted Stakeholder Database**

Consultant shall maintain a stakeholder database that will be used to inform and update impacted businesses, residents, neighborhoods, organizations/jurisdictions in the Project area.

**Task CE-6.5.7 Website**

Consultant shall continue to provide support for the ODOT-hosted Project web site [www.i-84troutdale.org](http://www.i-84troutdale.org). For estimation purposes, Consultant shall provide text for up to 2 website updates during construction.

**Task CE-6.5.8 Detour Maps**

Consultant shall develop user-friendly maps (graphic) of the Project detours and existing pedestrian routes to be included in the outreach materials and for use on the Project web page.

**Task CE-6.5 Deliverables:**

* Up to 2 drafts and 1 final newsletter, as agreed upon between APM and PM.
* 1 Spanish translations of a newsletter.
* Targeted Stakeholder database, due within 30 days of NTP.
* 2 website updates, upon Agency request.
* Up to 6 draft and final electronic detour maps with 1 draft and final map depicting the pedestrian detour route.

### **Task CE-6.6 Highway User Outreach**

Agency will host the twitter account and coordinate distribution of traditional media releases. Consultant shall provide information for Agency twitter and media releases to promote public open houses and communicate other information.

**Deliverables/Schedule: Consultant shall provide:**

* Draft up to 5 tweets (electronic) with draft due date as determined by Agency; final no later than 2 business days after receipt of Agency comments
* Draft up to 6 media releases to be provided to Agency 2 full weeks prior to open houses or special presentations at neighborhood and business associations.
* Draft and finalize FAQs (electronic) with draft due date as determined by Agency, final no later than 2 business days after receipt of Agency comments.

**Task CE-6.6.1 Public Comment Log Management**

Consultant shall continue to maintain and update a communications log, to track Project team communications with the public throughout construction.

**Task CE-6.6.2 Public Event**

Up to 1 public event must be held, with the format being determined in coordination with Agency and based on contact with stakeholders. The event must be held shortly before construction begins. Consultant shall support Agency in preparing for the event. Consultant shall develop a meeting plan that includes information about outreach goals, logistics, notification tool, messaging, displays, staffing and the public comment process that will be implemented. It is assumed that Agency and up to 3 Consultant staff will be present for meeting set up and to answer questions. It is also assumed that communications and notification materials developed during design and in Task 6.5 must be used at the event.

Following the event, Consultant shall prepare a meeting summary to document attendees and comments received. Consultant shall make arrangements with the venue for the event, subject to Agency approval. Agency will pay for fees associated with the venue (if necessary).

**Task CE-6.6.3 Project Area Canvassing and Targeted Outreach**

Consultant shall conduct door-to-door outreach to 30 businesses that may be impacted by Project construction.

**Task CE-6.6.4 Online Open House**

Consultant shall develop 1 online open house to help provide information to a regional audience. The online open house must repurpose existing Project information developed under the other Project tasks and shall include up to 5 stations, each including text and supporting visuals. A simple feedback form must be included where users can provide comments and sign up for Project information. The open house will be hosted on the ODOT online open house site (http://openhouse.oregondot.org) and linked from Agency-hosted Project website.

Consultant shall draft video scripts in collaboration with Agency and produce up to 5 videos of no more than 2 minutes each. Videos must include, but are not limited to, footage of impacted areas as well as interviews with Agency expert staff that address issues such as timelines, traffic impacts, and construction impacts.

**Task CE-6.6.5 Targeted Email Updates**

Consultant shall develop and send, to the stakeholder database, up to 30 targeted email updates to help provide information about construction impacts.

**Task CE-6.6 Deliverables:**

* Deliver 1 electronic copy of the final Public Comment log upon Project completion.
* Draft and final Meeting Plan; draft due no later than 4 weeks before event, with final due no later than 2 business days from receipt of Agency comments on the draft.
* Coordinate room/space rental for 1 public event and obtain Agency approval.
* Draft and final Event Summary; draft due no later than 8 calendar days following each event, with final no later than 2 business days from receipt of Agency comments to the draft.
* Conduct door-to-door outreach to up to 30 businesses potentially impacted by construction.
* Draft and final Online Open House event summary; draft due no later than 8 calendar days following each event; final no later than 2 business days from receipt of Agency comments on the draft.
* Draft and final targeted email updates; draft due as requested by Agency; final due no later than 2 business days from receipt of Agency comments on the draft.

## Acronyms and Definitions

Update acronyms and definitions for each project as applicable to terms used in the SOW.

|  |  |
| --- | --- |
| 3-R | Resurfacing, Restoration, and Rehabilitation |
| 4-R | Reconstruction |
| AASHTO | American Association of State Highway and Transportation Officials |
| ACM | Asbestos Containing Materials |
| AHERA | Asbestos Hazards Emergency Response Act |
| ASCII | American Standard Code for Information Interchange |
| ADA | Americans with Disabilities Act |
| Agency | The Oregon Department of Transportation |
| ALG | Bentley InRoads File |
| API | Area of Potential Impact |
| APM | Agency Project Manager |
| Basemap | Digital mapping files used as a base for mapping existing site features and proposed designs (also called "location" or "strip" maps). |
| BOC | Breakdown of Cost |
| CA | Contract Administrator |
| CA/CEI | Construction Contract Administration, Construction Engineering and Inspection |
| CE | Categorical Exclusion |
| CE/PCE Procedures | Agency’s “ODOT NEPA Manual 420 – Categorical Exclusions and Programmatic Categorical Exclusions” procedures, available at: <https://www.oregon.gov/odot/GeoEnvironmental/Pages/NEPA-Manual.aspx> (found on the “ODOT NEPA Program website” <https://www.oregon.gov/odot/GeoEnvironmental/Pages/NEPA.aspx>)  [Required for task 3.2] |
| Class 2 Projects | NEPA Categorical Exclusion Projects [Required for task 3.2] |
| Confidence Points | Random points measured in the field within the boundary of a digital terrain model, used to verify the accuracy of the DTM and to provide evidence prior to construction that the DTM is a reasonable representation of the original ground. Utilized for computation and pay quantities. Confidence points are used to verify that a constructed grade has been built according to the design DTM. |
| Control Network | An array of control stations. |
| Control Station | Any item identified in Project records as having a position and elevation on the Project datum and intended to be used to control the many phases of construction work |
| CPDG | Contract Plans Development Guide |
| DAP | Design Acceptance Package |
| DAW | Design Acceptance Workshop |
| DBE | Disadvantaged Business Enterprise |
| DEQ | Oregon Department of Environmental Quality |
| DGN | Bentley Microstation Design Model |
| DLC | Donation Land Claim |
| DOE | Determination of Eligibility |
| DSL | Oregon Division of State Lands |
| DTM | Digital Terrain Model |
| DVW | Design Verification Workshop |
| EDM | Electronic Distance Measuring |
| ESA | Endangered Species Act [Required for task 3.2] |
| FEMA | Federal Emergency Management Administration |
| FHWA | Federal Highway Administration |
| FOE | Finding of Effect |
| FSP | Field Safety Plan |
| FTP | File Transfer Protocol |
| GDM | Geotechnical Design Manual |
| GLO | General Land Office |
| GPS | Global Positioning System |
| HASP | Health and Safety Plan |
| HDS | High Definition Scanning |
| HMCS | Hazardous Materials Corridor Study |
| IDW | Investigative Derived Waste |
| IQAP | Inspection Quality Assurance Program |
| LDPC | Local Datum Plane Coordinate |
| LOS | Level of Service |
| LPA | Local Public Agency |
| NAAQS | National Ambient Air Quality Standards |
| NEPA | National Environmental Policy Act [Required for task 3.2] |
| NMFS | National Marine Fisheries Services |
| NRHP | National Register of Historic Places |
| NTP | Notice to Proceed |
| MUTCD | Manual on Uniform Traffic Control Devices |
| NTE | Not to Exceed |
| NTP | Notice to Proceed |
| NTR | Noise Technical Report |
| OAR | Oregon Administrative Rule |
| OCR | ODOT Office of Civil Rights |
| ODOT | Oregon Department of Transportation |
| OPAL | Official Project Access List |
| OPL | Office of Pre-Letting (ODOT) |
|  |  |
| ORS | Oregon Revised Statutes |
| Environmental Prospectus | Environmental Prospectus [Required for task 3.2] |
| PCB | Polychlorinated Biphenyl |
| PCE | Programmatic Categorical Exclusion [Required for task 3.2] |
| PCS | Project Control System |
| .pdf | Portable Document File |
| PDT | Project Development Team |
| PE | Preliminary Engineering |
| PLS | Professional Land Surveyor |
| PLSS | Public Land Survey System |
| PM | Project Manager |
| P.O.T | Point on Tangent |
| PSC | Point of Spiral to Curve |
| PSI | Preliminary Site Investigation |
| P.T | Point of Tangent |
| SFM | Survey Filing Map |
| PS&E | Plans Specifications and Estimate |
| QA | Quality Assurance |
| QC | Quality Control |
| QCC | Quality Control Checklist |
| QP | Quality Plan or Quality Assurance/Quality Control Plan |
| RUS | Region Utility Specialist |
| R/W | Right of Way |
| Reference Stakes | Stakes set away from, but with information relating back to the intended location |
| RTK | Static, Rapid Static or Real time Kinematics |
| RTP/TIP | Regional Transportation Plan / Transportation Improvement Plan |
| SFM | Survey Filing Maps |
| SHPO | State Historic Preservation Office |
| SI | International System of Units and Conversion Factors (abbreviated SI from Systeme Internationale d’Unites, the French version of the name |
| Slope Catch | The location where a design slope intersects the existing ground and where excavation or embankment work should begin to provide the intended earthwork |
| SOW | Statement of Work |
| STU | Shovel Test Unit |
| SUL | State Utility Liaison |
| Survey Monument | Any natural or man-made item specified or identified in a property deed, boundary survey, government document, or other instrument of public record, when the purpose of said item is to mark or reference a property boundary, geographical location, elevation, or other position |
| Surveyor | Individual licensed in the State of Oregon as a Professional Land Surveyor, and designated by the Consultant as placed in "responsible charge" of the survey work as defined in ORS 672.002(6)(b). |
| TCP | Traffic Control Plan |
| TMP | Transportation Management Plan |
| VE | Value Engineering |
| WOC | Work Order Contract |
| WZTA | Work Zone Traffic Analysis |
|  |  |

1. Anderson, Grant S., Cynthia S.Y. Lee, Gregg G. Fleming. FHWA Traffic Noise Model, ® Version 1.0: User's Guide. Report No. FHWA-PD-96-009 and DOT-VNTSC-FHWA-98-1. Cambridge, MA: John A. Volpe National Transportation Systems Center, Acoustics Facility, January 1998. [↑](#footnote-ref-2)