

ATTACHMENT A

Contract Statement of Work Delivery Schedule and Summary of Estimate for Services

MEYERS ROAD EXTENSION PROJECT (HIGH SCHOOL AVENUE – OR HWY 213)

City Project #: CI 17-001

Oregon City

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PROJECT UNDERSTANDING AND WORK SCOPE FOR COMPLETE PROJECT

Background

This Project is to extend Meyers Road from the intersection of OR213 to the east to the current terminus connecting to High School Avenue. This project will include improvements to the intersection of Meyers Road and OR213, and widening of OR213.

Existing Conditions

The existing roadway alignment is currently undeveloped land.

Proposed Improvements

The proposed Meyers Road roadway alignment and typical section have been developed to a preliminary level under a separate contract. It is assumed that this alignment will not change and will be used to further develop the project in this final design contract. Approximately 2100-ft of new Roadway will be constructed to include 2 – 12' wide travel lanes, 1 – 12' center turn lane, 2 - 8' wide buffered bike lanes, 2 – 10' planter strips for stormwater treatment, 1 – 7' parking lane on the south side of the roadway, and 2 – 6' sidewalks for an overall cross-section width of 93'. The project will also include separate pedestrian and vehicular connections to the Clackamas Community College (CCC). In addition to the roadway extension, improvements will be necessary for a roadway box culvert to convey an existing waterway that joins with Caufield Creek. The roadway will need to meet City of Oregon City storm water standards. Extension of a 12-inch waterline and 12-inch to 15-inch sanitary sewer line will also be included.

The extension includes a signal upgrade at the intersection of OR213 and Meyers Road, and roadway widening on OR213 from approximately 600 feet north of Meyers Road to approximately 800 feet south of Meyers Road. This widening will result in the addition of a northbound through lane. The roadway and stormwater design for OR213 will require meeting ODOT standards.

SPECIFIC SCOPE OF SERVICES

The following services are for the entire project which is to be completed by OBEC and its consultant team. The deliverables are listed for each task. Tasks include surveying, public involvement, geotechnical investigation, traffic engineering, engineering design, landscape design, and street lighting design, with work continuing through the final design phase. Work performed under this contract will be done in accordance with all applicable federal, state, and local design standards.

The design services work scope outlined is as needed to complete the design including the preparation of plans up to the final design (100%) submittal.

Task 1.0	Project Management and Administration
Task 2.0	Surveying
Task 3.0	Public Involvement Assistance
Task 4.0	Design Studies and Reports
Task 5.0	Environmental Permits
Task 6.0	Utility Location and Coordination
Task 7.0	Preliminary Design (50%)
Task 8.0	Final Design (95% & 100%)
Task 9.0	Bid Support
Task 10.0	Quality Assurance
Task 11.0	Construction Engineering (Reserved)

CONSULTANT RESPONSIBILITIES

TASK 1.0 Project Management and Administration

Task 1.1 Project Management

The duration of the project planning and design effort through the final design level is assumed to be 12 months.

Provide project management and design oversight for the consultant team. Maintain a project decision log using an established format for use in collecting City and ODOT design input, documenting key decisions and tracking the resolution of design issues. Keep the City and ODOT apprised of work progress, project issues, resolutions and changes affecting the design, schedule or project budget by providing a monthly progress report with each monthly invoice. Submit project invoices monthly, including a breakdown of hours spent by each individual on each task. Maintain a comprehensive project file, which must include engineering computations, assumptions, meeting agendas and minutes, working drawings, correspondence and memoranda.

Task 1.1 Deliverables:

- Consultant shall provide monthly invoices and progress reports.

Task 1.2 Schedule

Consultant shall prepare and maintain a milestone delivery schedule in Microsoft Project format. Consultant will revise schedule up to three (3) times based on City input.

Task 1.2 Deliverables:

- Submit Electronic (PDF) copy of the project schedule.

Task 1.3 Project Coordination and Meetings

The proposed approach to project coordination during design is to hold project meetings with key project team members and representatives from Oregon City and others as needed. These will be scheduled and attended by the City's Project Manager. These meetings will have a specific agenda addressing and resolving project issues as they are encountered. Consultant shall prepare an agenda and distribute a meeting summary for each meeting.

Meetings to be conducted include:

- Schedule and attend a two-hour Project Kickoff Meeting with the City, task leaders, and subconsultants (up to 5 staff (2 OBEC, 2 KAI, 1 HC) are included.
- Schedule and attend Project Management Team (PMT) meetings for design phases. Six (6) two-hour meetings with up to two (2) OBEC staff and two (2) KAI staff attending are included.
- Conduct periodic technical team meetings with Oregon City, ODOT and design staff to coordinate the project details. Four (4) two-hour meetings with OBEC and subconsultant team members up to two (2) OBEC staff and two (2) KAI staff are included.
- Conduct design review meetings after the submittal of the 50% and 95% design deliverables. Two (2) two-hour meetings with OBEC and subconsultant team members (up to 4 staff) are included.
- Schedule and attend up to two (2) coordination meetings with the Community College for adjacent improvements. Up to two (2) OBEC staff attending are included.

Task 1.3 Deliverables:

Consultant shall provide:

- Meeting agendas, 2 business days prior to meeting.
- Meeting summaries, decisions and action items 5 business days following meeting.

TASK 2.0 Surveying (David Evans and Associates)

The project limits for topographic surveying are as follows:

- Meyers Road from centerline 100 feet northerly and 100 feet southerly, beginning at the existing Meyers Road, west of High School Avenue to a point 250 feet westerly of the intersection of OR213.
- OR213 from centerline 100 feet westerly and 100 feet easterly, beginning at a point 400 feet northerly of the intersection of Meyers Road and extend 400 feet southerly of the intersection of Meyers Road.
- Connection areas to Clackamas Community College.

Due to the high volume of traffic along OR213 the Consultant shall engage a local certified flagging company to provide traffic control when we need to work within the roads for Task 2.3.

Assumptions:

Right of way and property lines have been established previously under a separate contract and will be provided for use during this final design contract.

Task 2.1 Horizontal and Vertical Control

Control was established under separate contract. Additional control will be set as needed for the topographic survey. The horizontal datum is North American Datum (NAD) 83(2011) epoch 2010 realization and the vertical datum is North American Vertical Datum (NAVD) of 1988 (Geoid 12A). The project coordinates are on Oregon Coordinate Reference System (OCRS), Portland zone.

Task 2.2 Pre-Construction Record of Survey

(Previous work completed under separate contract)

Task 2.3 Topographic Survey and Base Mapping

Consultant shall perform a topographic survey for the project area for the roadway alignment as described in Task 2.0, and the box culvert work or other areas where Consultant's design engineers request information. Project limits are stated above.

Consultant shall prepare a Survey Notification Letter and mail it to the adjoining property owners.

Consultant shall survey existing surface features including but not limited to: face of buildings, fences, utilities, ditches, driveways, structures, culverts, trees, and signs within areas selected for topographic surveys. Consultant shall survey the existing centerline and edge of pavement and existing traffic striping with elevations consistent with the Project vertical datum. Consultant shall tie trees 8 inches or larger in diameter at chest height.

The Consultant will clear all areas of brush and blackberries within the topographic survey project limits as required to collect adequate data and coordinate with adjacent property owners.

Consultant shall gather the field data necessary to show utility locations in the base mapping for the roadway design. Consultant shall request underground utilities to be marked in the field (known as "field locates") within the immediate Project area as identified. Consultant shall use the statewide "One-call" utility notification system and submit a "pre-survey" locate request. All utility operators with buried facilities subscribe to the One-Call system (OUNC-Oregon Utility Notification Center). When surveying marked lines, Consultant shall record in the field notes the utility ownership when describing the line data points. Consultant shall tie all non-tangent markings (i.e. survey shots shall be of sufficient frequency to accurately record each facility's alignment and deviation). Consultant shall indicate aerial line alignments by rotating cell elements for poles, such that the small line that bisects the square or round symbol is arranged to the wire alignment.

Consultant shall measure vertically the lowest wires that cross street or road intersections, and shall calculate a true elevation of those wires. Consultant shall note this in the field notes.

Consultant shall record all visible utility identifications in the field notes. Such numbers shown on power and/or telephone poles, vault tags, telephone pedestals (also known as risers), cabinets, meters, fences or screened enclosures for gas regulators, and sanitary sewer pump stations are examples of what is needed for City or Consultant to communicate with the utility operator, as to what facility may be in conflict with the Project.

Consultant shall locate geotechnical bore holes and wetland field markings and incorporate that data into the topographic base map.

Consultant shall create a Digital Terrain Model (DTM). Consultant's DTM shall depict the actual surface shape in each section. Consultant shall gather topographic data for this Project by techniques consistent with preparing a DTM. Consultant shall use a combination of survey data at break lines, features, and spot locations to develop the DTM model. Consultant shall perform the topographic survey to establish the configuration of the ground and the location of natural and man-made objects.

Consultant shall collect confidence points with the intent to verify surface modeling within triangles created during development of the DTM surface, striving for intervals of no greater than 200 feet. Consultant shall collect confidence points over the DTM at approximately two percent (2%) to five percent (5%) of total contourable points.

Consultant shall produce a confidence report to verify the accuracy of the DTM.

Task 2.3 Deliverables:

The following deliverables are part of this task:

- Survey Notification Letter.
- 1"=50' scale topographic survey base map and DTM in AutoCAD v2015 compatible format
- OUNC locate request
- Copy of original survey field notes
- Confidence Point Report

TASK 3.0 Public Involvement Assistance

The primary purpose of the public involvement task is to provide assistance to the City for public meetings and communications. The project team will work with the City Project Manager to complete the following subtasks:

Task 3.1 Public Informational Meeting

Work with the City and City Project Managers to prepare for and conduct one (1) public open house that will present the design status, project schedule, project impacts and to collect comments on the project. These meetings will be evening open houses near the project site.

The City will arrange each meeting including identifying timing, location and frequency.

Consultant shall prepare up to three (3) exhibit boards up to 36"x48" in size for each meeting depicting relevant design features, the project schedule, and the total project limits and impacts. Consultant shall revise exhibits based on comments from the City assuming up to one (1) revision. Consultant shall print and mount each exhibit, as appropriate for the specific exhibit. Up to two (2) Consultant staff shall attend the meeting which is assumed to last three hours.

Task 3.1 Deliverables:

The following deliverables are part of this task:

- Draft and Final exhibits

TASK 4.0 Design Studies and Reports

Task 4.1 Preliminary Traffic Signal Analysis and Vehicle Classification Counts (Kittelson)

Consultant shall include the study intersection of Meyers Road and OR213 to support the design of the proposed facility.

- Conduct or obtain weekday morning (7-9 a.m.) and evening (4-6 p.m.) peak period traffic counts to include pedestrian counts, bicycle counts, and truck percent, at the following three (3) intersections along OR213:
 - *S Molalla Avenue*
 - *Meyers Road*
 - *Glen Oak Road / S Caulfield Road*
- Conduct 24-hour bi-directional tube count on OR213 between Meyers Road and S Molalla Avenue. The tube count will be conducted for a seven (7) day period and will include hourly traffic volumes, vehicle classifications, and travel speeds.
- Summarize the traffic counts and determine the existing year 2017 traffic volumes at the study intersections for the weekday a.m. and p.m. peak periods.
- It is assumed that the City will provide assigned in-process traffic volumes associated with any planned developments within the project area that may not be reflected within the travel demand forecasts.
- Obtain and review travel demand forecasts for the study intersection from for the model base year and the future design year.
- Conduct sensitivity analysis to determine when the ultimate northbound right-turn lane configuration from OR213 to eastbound Meyers Road will be required.
- Evaluate the buildout year 2019 forecast levels of service and queues at the study intersection during both weekday a.m. and p.m. peak hours.
- Review City provided year 2035 volumes for both a.m. and p.m. peak hours.
- Evaluate the year 2039 (i.e. 20-year buildout) forecast levels of service and queues at the study intersection during both the weekday a.m. and p.m. peak hours.
- Conduct a queuing analysis of projected 2039 weekday a.m. and p.m. peak hour conditions to determine storage length needs at the study intersection.
- Develop an estimate of year 2039 average daily traffic volume on Meyers Road for the purpose of pavement design and the ODOT Application for State Highway Approach.
- Prepare a summary technical memorandum describing the methodology and results of the data collection, operational analyses, and key findings and recommendations.
- Assist with the ODOT Application for State Highway Approach.

Assumptions:

- ODOT to provide signal timing model for three (3) intersections noted above.
- City to provide Meyers Road future volume forecasts.

Task 4.1 Deliverables:

- Draft Traffic Analysis Memorandum
- Final Traffic Analysis Memorandum

Task 4.2 Geotechnical Investigations and Report (Hart Crowser)

Task 4.2.1 Field Exploration

Consultant shall perform geotechnical field explorations, laboratory testing, and engineering analyses to support the final design of Meyers Road, signal foundations, the proposed culvert, and pavement sections. Consultant shall provide final foundation data sheets for the culvert and signal poles. Consultant shall update the preliminary geotechnical investigation report based on the additional geotechnical investigation for the final design.

Consultant shall submit one (1) field exploration work plan including health and safety plan. Other permits, including access, environmental, and work within the ROW will be completed by others.

Consultant shall obtain the required ODOT and City permits for signal pole borings within the ROW.

Consultant shall complete a subsurface exploration program that consists of the following:

- Advance a total of four borings to a depth of approximately 30 feet below ground surface (bgs) for signal pole foundation design at the intersection of Oregon 213 and Meyers Road. Borings will be completed with a truck mounted rig.
- Advance up to 4 borings to a depth of approximately 20 feet bgs for culvert design. Borings will be completed with a track mounted rig.
- Advance up to 10 test pits to depths of between 8 and 15 feet bgs along the proposed extension alignment for pavement design.
- Advance up to 10 dynamic cone penetrometer (DCP) tests at the test pit locations to collect subsurface information for pavement design.
- Perform up to 8 infiltration tests in areas designated by OBEC at depths between 3 and 5 feet bgs. Infiltration tests will be performed in test pits that will be backfilled with onsite soils and tamped back into place. Falling head infiltration testing will be conducted in accordance with the appropriate City standards. .

Field explorations will be conducted during daytime hours using a truck or track-mounted drill rig as described above. Drilling will be conducted using mud rotary drilling techniques. Soil samples will be obtained at 2-1/2 foot to 5-foot intervals using either a standard penetration sampler or a thin-walled Shelby tube. No rock coring is anticipated for the project. Consultant shall excavate test pits using a rubber-tired backhoe with a boom capable of reaching a minimum of 12 feet bgs. Grab samples from the excavated materials will be collected during test pits explorations.

Mobilization and demobilizations for the drilling operations and test pit excavation may take place on or near the existing stub-outs for the proposed roadway extension. Traffic control is only anticipated at the intersection with OR 213 for signal pole borings.

Drill cuttings and drilling mud will be spread on-site rather than removed from the site where possible, but will be drummed and removed within the intersection.

The borings and test pits will be abandoned and backfilled according to Oregon Water Resources Department regulation. Test pits will be backfilled and tamped into place. Future compaction will be required if the test pits are located within structural areas that will support future improvements.

Assumptions:

- The City will negotiate, acquire, and provide all necessary site access and any necessary right of entry permits to the Consultant, based on Consultant's Subsurface Exploration Work Plan.
- The subsurface material is not contaminated and no testing will be performed to investigate the possible presence of toxic or hazardous materials and petroleum products.
- Retaining walls will not be required.
- ROW permits will only be required for signal pole borings. Consultant will acquire the necessary ODOT and City ROW permits.
- Signal pole borings can be completed using a truck mounted drill rig. Culvert borings will be completed with a track mounted rig.

The field explorations schedule will be confirmed within one week of approval of the Filed Exploration Work Plan. Drilling subcontractors are generally scheduled out for weeks if not months, thus drilling has been scheduled for April 27 and 28 and May 4 and 5, 2017. The schedule will be confirmed as soon as we receive verbal NTP to do so. Field explorations will last approximately one to two weeks.

Task 4.2.1 Deliverables/Schedule:

- Consultant shall submit Field Exploration Work Plan within two weeks after NTP.

Task 4.2.2 Laboratory Testing

Consultant shall perform laboratory tests on disturbed and undisturbed soil samples obtained from the explorations to characterize the subgrade soils and to develop soil properties for the box culvert foundations, signal foundations, infiltration system design, and roadway section design. The laboratory testing program may consist of up to thirty moisture content tests; ten Atterberg limits tests, ten sieve analysis tests, one one-dimensional consolidation test, and two corrosion potential analytical tests.

Task 4.2.2 Deliverables/Schedule:

- Consultant shall incorporate results into the Geotechnical Report (Task 4.2.4)

Task 4.2.3 Geotechnical Evaluation and Analyses

Consultant shall perform engineering analysis and develop design parameters and construction recommendations for the project. The engineering evaluation and analyses shall be performed in accordance with the ODOT Geotechnical Design Manual (2010), the ODOT Bridge Design and Drafting Manual (2004 with 2010 Updates), and the AASHTO LRFD Bridge Design Specifications (2010).

Work to be performed under this task includes, but is not limited to the following:

- **Meyers Road and Culvert Crossing:**
 - Evaluate the soils along the project alignment;
 - Evaluate roadway subgrade improvement alternatives based on variable site conditions and provide design and construction recommendations;
 - Perform shallow geotechnical foundation design for the proposed culvert crossing.
- **Roadway Rigid Pavement Section Design:**
 - Refine Portland Cement Concrete pavement section design based on final design traffic as necessary.

Task 4.2.3 Deliverables/Schedule:

- Consultant shall incorporate results into the Geotechnical Report (Task 4.2.4)

Task 4.2.4 Final Design Geotechnical Report

Consultant shall prepare a draft geotechnical and pavement design report for the Meyers Road Project for OBEC, the City, and ODOT to review and comment. A final report will be developed based upon the City review comments. The final design geotechnical report will summarize all field explorations and engineering analyses and provide recommendations for design and construction of the roadways and culvert.

Consultant will attend one meeting to discuss results and conclusions presented in the draft design report with design team.

Task 4.2.4 Deliverables/Schedule:

- One (1) hard copy and one (1) electronic copy of the Draft Geotechnical Pavement Design Report and Draft Foundation Data Sheets for the box culvert. **Target Date: Eight (8) weeks after completion of field explorations**
- One (1) hard copy and one (1) electronic copy of the Final Geotechnical and Pavement Design Report and Final Foundation Data Sheets for the box culvert, three weeks following receipt of comments from City.

Task 4.2.5 Geotechnical Related Plans and Specifications

Consultant shall review all geotechnical related plans for signal poles, roadway, and the culvert. We assume that preparation of 5 foundation data sheets will be required. Consultant shall review and/or develop geotechnical related specifications. Consultant has allowed for consultation during final design and preparation of final plans and specifications to address review comments and to provide any additional information that may be required.

Task 4.2.5 Deliverables/Schedule:

- Foundation Data Sheets in PDF and CAD format. **Target Date: Six week following the field investigation (dependent on civil survey).**
- Consultant shall prepare a memo to address the review comments for plans and specifications – one (1) electronic copy (WORD). **Target Date: One week following receipt of the plans and specifications.**

Task 4.3 Level 1 Hazardous Materials Assessment

HMA services for the site will be completed by OBEC's subconsultant, Hart Crowser (HC). HC will conduct a Level I HMA to assess and identify known or potential environmental conditions within or adjacent to the project alignment (the Area of Potential Effect [APE]) that may impact the project. HC's scope of work for completing the Level I HMA will be in general conformance with the All Appropriate Inquiries Final Rule (AAI Rule) per 40 CFR 312, ASTM Standard Practice for Environmental Site Assessments (ASTM E 1527-13), and generally accepted procedures as outlined in the American Association of State Highway and Transportation Officials (AASHTO) Hazardous Waste Guide for Project Development guidance document (AASHTO, 1990).

HC's scope will include historical characterization, regulatory agency list and file review, site reconnaissance, interviews, data analysis and report preparation. HC's work will address the following potential areas of environmental concern for the project work areas: aboveground storage tanks (ASTs) and underground storage tanks (USTs); contamination of soil, surface water, groundwater, and soil vapor; and solid and hazardous wastes. If obvious during site reconnaissance (no invasive measures will be used), the Level I HMA may also note other environmentally-related information outside of the ASTM standard, such as the potential presence of asbestos-containing materials and water wells.

Assumptions

- Oregon City or OBEC personnel will contact property owners within the APE to explain the project, arrange access and identify representatives of each property and their associated contact information.
- HC's scope of work does not include sampling or testing of soil, water, building materials, etc.

Deliverables

- Draft Level I HMA report (PDF format)
- Final Level I HMA report

Task 4.4a Stormwater Analysis and Report (Meyers Road)

Consultant shall complete a drainage analysis and flow rate calculations in a Stormwater Management Report according to the City's design standards for Meyers Road. Consultant shall delineate the areas of runoff, characterize runoff conditions, discuss existing soil infiltration rates, and recommend appropriate stormwater facilities to address stormwater runoff. Design drainage system to accept off-site flow entering the project. Coordinate with the City to determine appropriate off-site flows.

Consultant shall meet with project team to present the preliminary design results. Revise the drainage analysis to address issues identified in this meeting.

Consultant shall submit the draft Stormwater Management Report for review by the City. Consultant shall respond to review comments, and revise or amend the Stormwater Management Report based on one set of review comments.

Task 4.4 Deliverables:

- One (1) electronic copy in PDF format of Draft Stormwater Management Report
- One (1) electronic copy in PDF format of Final Stormwater Management Report addressing agency comments.

Task 4.4b Stormwater Analysis and Report (OR213)

Consultant shall complete a drainage analysis and flow rate calculations in a Stormwater Management Report according to the ODOT Hydraulics Manual (OHM) for OR213. Consultant shall delineate the areas of runoff, characterize runoff conditions, discuss existing soil infiltration rates, and recommend appropriate stormwater facilities to address stormwater runoff. Design drainage system to accept off-site flow entering the project.

Consultant shall meet with project team to present the preliminary design results. Revise the drainage analysis to address issues identified in this meeting.

Consultant shall submit the draft Stormwater Management Report for review by the City and ODOT. Consultant shall respond to review comments, and revise or amend the Stormwater Management Report based on one set of review comments.

Task 4.4 Deliverables:

- One (1) electronic copy in PDF format of Draft Stormwater Management Report
- One (1) electronic copy in PDF format of Final Stormwater Management Report addressing agency comments.

Task 4.5 Hydraulic Analysis and Memorandum

Consultant shall provide a hydraulic analysis for the Project site. Consultant shall perform the following for the box culvert as necessary to complete the preparation of the Hydraulic deliverables.

Review Existing Data/Site Inspection

Consultant shall visit and inspect the Project site. Consultant shall review existing soil conditions, existing drainage patterns, and existing information from previous studies.

Hydraulic Analysis

Consultant shall develop the design flows and determine the culvert size based on the contributing areas and summarize these findings and recommendations in a Hydraulic Memo.

Hydraulic Memorandum must include:

- A description of the impacts of the recommended box culvert opening on hydrology and hydraulics.
- Site hydrology, flows, velocities and water surface elevations, and a recommendation for the box culvert size.

Consultant shall submit the Hydraulic Memo for review by the City. Consultant shall respond to review comments, and revise or amend Hydraulic Memo as required.

Assumption:

- Analysis for one stream crossing
- A no rise analysis is not required, as the project is not within a FEMA regulated floodway

Task 4.5 Deliverables:

- One (1) electronic copy in MS Word format of Draft Hydraulics Report.
- One (1) electronic copy in MS Word format of Final Hydraulics Report.

Task 4.6 Preliminary Design Report

For the 50% Design, Consultant shall compile and prepare a narrative of the preliminary evaluation with environmental, site and design constraints and opportunities, and present to the City those alternatives that best provide cost-effective, readily constructible solutions for the Project. Consultant shall summarize significant task work completed to-date in a Preliminary Design Report. The narrative shall discuss the findings of the design studies along with recommendations.

Consultant shall prepare cost estimates for the design elements. The estimates will be based on quantity take-offs and current construction costs for each bid item. Consultant shall develop preliminary construction schedule.

Consultant shall summarize the following in the Preliminary Design Report:

- Utility identification & conflict assessment
- Environmental features & constraints
- Geotechnical Recommendations
- Hydraulic Analysis and Recommendations
- Traffic Study and Analysis
- Hazardous Materials Assessment
- Preliminary Cost Estimate
- Signal Design
- Signing and Striping
- Illumination
- Stormwater Management
- Preliminary Waterline and Sanitary Sewer layout
- Preliminary Roadway & Box Culvert Design
- Pavement Analysis and Report
- Erosion and Sediment Control Plan
- Temporary Traffic Control
- Preliminary construction schedule

Consultant shall submit a Design Report to document each discipline's preliminary work and findings.

Assumptions:

- No revisions to the Report will be required as the project will move into final design incorporating City comments accordingly.

Task 4.5 Deliverables:

- Preliminary Design Report with 11 x 17 plan sheets

TASK 5.0 Environmental Permits

Task 5.1 Coordination, Accumulation, and Review of Information

Consultant shall obtain and review existing environmental information related to the Project site. Consultant shall coordinate and communicate with Consultant's subconsultants, project team, and City to begin environmental tasks, verify schedule, and estimate impacts of proposed project. Consultant shall verify that assumptions made in this SOW are valid and shall investigate any data gaps.

Consultant shall list review results, progress of environmental tasks, and estimated Project impacts in the environmental section of the Preliminary Design Report (Task 4.5). Consultant shall identify any data gaps and recommend a proper course of action.

City may, in its sole discretion, prepare written amendments to this WOC to request Consultant's services if further research or action is required to fill identified data gaps

Task 5.1 Consultant Deliverable/Schedule:

- Consultant shall provide a brief narrative discussion and bullet list of the environmental documentation prepared or in progress for the Project to be included in the Preliminary Design Report prepared under Task 4.5.

Task 5.2 Wetland/Waters of the U.S./State & Natural Resources Field Work

Consultant shall complete a wetland field determination and OHWM demarcation for the PSA. Consultant shall complete all field work for development of the natural resources overlay district (NROD) permit.

Consultant shall use available data (including but not limited to: soil surveys, aerial photos, National/Local Wetland Inventory maps (NWI/LWI), and City maps) as well as data gathered in the field to document the presence or absence of wetlands/waters and NROD resources within the project study area (PSA).

Consultant shall:

- Determine wetland boundaries within the PSA in accordance with the criteria and methods described in the *1987 Corps of Engineers Wetland Delineation Manual (Environmental Laboratory Technical Report Y-87-1)* and appropriate Regional Supplements. Delineate NROD boundaries per Oregon City standards and requirements listed in municipal code section 17.49.
- Identify and delineate areas adjacent to the project area acceptable for wetland and NROD mitigation. It is assumed that an acceptable area for wetland and NROD mitigation will be identified during this task and it will be acceptable for the City and resource agencies to satisfy mitigation requirement.
- Place flags in the field to show wetland and upland sample plot locations, the wetland boundaries, NROD boundaries, and boundaries of vegetation groupings. Label and number the flags to identify their function. Identify all species of trees within the project area over 6-inches DBH. Consultant shall survey all trees over 6-inches DBH and survey location of vegetative communities
- Prepare sketch maps of approximate wetland boundaries with numbering of flags or stakes.
- Ensure that field methods used and data collected meet the USACE and DSL technical requirements for wetland delineations and ordinary high water demarcations as well as NROD requirements. Collect and record wetland delineation and NROD data on approved data sheets for possible inclusion with a wetland delineation report and NROD report documentation.
- Place flags in the field to show the OHWM elevation of all jurisdictional surface waters. Assess the OHWM elevation using agency accepted field indicators. The two (2) year flood event elevation (calculated) may be used in the absence of field indicators. Place flags in the field to identify and locate all NROD resources.
- Prepare sketch map of approximate OHWM and NROD boundaries concurrently with the wetland and OHWM field work with sequential numbering of flags or stakes to be provided prior to site survey for Project base mapping.

Task 5.2 Consultant Deliverables and Schedule

Consultant shall prepare and submit:

- Information collected during the field survey delivered with the deliverables for the wetland delineation report and NROD permit as applicable.

Task 5.3 Wetland/Waters of the U.S./State Delineation Report

Consultant shall prepare a Wetland/Waters of the U.S./Delineation Report (Wetland Delineation Report) in accordance with DSL and U.S. Army Corps of Engineers (USACE) requirements and standards. The Wetland Delineation Report must include all required information outlined in Oregon Administrative Rules (OAR) 141-090-035, as well as all wetland data sheets obtained in the field under Task 5.2.

Consultant shall prepare appropriate graphics required by USACE and DSL to accompany the Wetland Delineation Report. This shall include a site location map, tax lot map, National Wetland Inventory or Local Wetland Inventory map (if available), soil survey map, and aerial overlay map. Consultant's Wetland Delineation Report must also include wetland delineation boundary mapping (figures) as finalized by Consultant and as per the requirements of DSL, and a color photographic record depicting existing conditions.

Consultant shall also complete the appropriate DSL cover page for submitting the Wetland Delineation Report to for review and approval. Consultant shall attend one site visit with agency representatives if determined necessary by USACE and/or DSL, and shall respond to their comments.

Consultant will submit the Wetland Delineation Report to DSL and USACE on behalf of the City. City will be responsible for signing the wetland delineation report cover page. City will be responsible for payment of any associated fees.

Task 5.3 Consultant Deliverables and Schedule

Consultant shall prepare and submit:

- Electronic copy (Word) of the Draft Wetland Delineation Report to City for review per the schedule in Task 1.
- Electronic copy (PDF) of the Final Wetland Delineation Report to City two weeks following receipt of draft review comments per the schedule in Task 1.
- Final Wetland Delineation Report to DSL and the USACE per the schedule in Task 1.

Task 5.4 Wetland Functional Assessment Report

Consultant shall prepare a Wetland Functional Assessment Report if wetland impacts are unavoidable. The report shall be submitted as a component of the Joint Permit Application to both USACE and DSL.

Consultant shall calculate wetland impact areas by wetland type, including permanent and temporary impacts, based on the wetland survey and project design. If the impacted wetlands are classified under the Hydrogeomorphic (HGM) classification as within the slopes/flats subclass, the assessment shall be conducted in accordance with the methodologies outlined in the appropriate guidebook for HGM-based assessments. All other wetlands will be assessed using the methodologies outlined in the Oregon Rapid Wetland Assessment Protocol (ORWAP). The Best Professional Judgment method (BPJ) may be used if impacts do not exceed 0.2 acre.

Consultant shall prepare a standalone Functional Assessment Report that includes, at minimum, the following information:

- A description of the impacted wetlands, including the HGM and Cowardin classifications.
- A discussion of the proposed Assessment Unit for each wetland.
- A summary table depicting the results of the HGM or ORWAP assessment.
- A discussion of each assessed function, including rationale for the resulting scores.
- A wetland values assessment for each impacted wetland.
- A discussion of the anticipated functions and values impacts, and the appropriate means by which to mitigate for those impacts.
- A copy of all prepared data sheets for the HGM or ORWAP assessment.

Task 5.4 Consultant Deliverables and Schedule

Consultant shall prepare and submit:

- Electronic copy (Word) of the draft Wetland Functional Assessment Report to City for review per the schedule in Task 1.
- Electronic copy (PDF) of the final Wetland Functional Assessment Report to City two weeks following receipt of draft review comments.
- Copy of Final submitted to the USACE and DSL with the JPA.

Task 5.5 USACE/DSL Joint Permit Application (JPA) and DEQ Section 401 Certification

Consultant shall prepare a complete one JPA meeting all the applicable requirements of the most recent version of the Oregon Department of State Lands Removal-Fill Guide and USACE permit application standards. Consultant shall submit the JPA and Stormwater Management Plan to the Oregon Department of Environmental Quality (DEQ) to obtain Section 401 Water Quality Certification.

City will select the preferred design for the Project prior to the preparation of the JPA.

Consultant shall:

- Prepare JPA for a USACE Section 404 Nationwide Permit and a DSL Individual Permit, to authorize work within the jurisdictional waters and any wetlands found in the project area.
- Provide pre submittal coordination with DEQ to inform them of the project and verify requirements and documentation necessary to apply for Section 401 Water Quality Certification.
- Provide pre-submittal coordination with representatives of the USACE and DSL to confirm permitting requirements and application procedures. Consultant shall coordinate and attend one pre-submittal site visit with DSL and the USACE to discuss the project and address the resource agencies concerns.
- Verify that features and impacts are correctly identified for the permit application.
- Prepare all JPA required drawings, maps, photographs, site descriptions, and visual information required by DSL or the USACE for inclusion in the JPA.
- Prepare narratives and descriptions on Project purpose and need and Project alternatives using project development information provided by City as necessary to complete the JPA.
- Respond to questions or comments raised by the USACE and DSL following the submission of the JPA. This task may include correspondence and clarification of the JPA in the form of telephone calls, letters, or e-mails, to clarify regulatory agency concerns and to facilitate the issuance of the USACE and DSL permits for this Project. No regulatory agency site visit or in person meetings will be required following submittal of the JPA.
- Submit the complete JPA package to the DSL and USACE on behalf of the City.
- Submit to DEQ a copy of the complete Joint Permit Application, Stormwater Management Plan, and provide a transmittal letter to DEQ requesting Section 401 Water Quality Certification for the project.

All required wetland and/or waters mitigation will be satisfied with on-site wetland mitigation construction. It is assumed that on-site wetland mitigation construction will satisfy the requirements of the USACE, DSL, and Oregon City NROD requirements.

Due to the varied nature of post-submittal coordination, it is expected that the Consultant shall not expend more than eight hours for office review and coordination time for post-submittal coordination

with DSL, USACE, and DEQ. City will be responsible for obtaining Land Use Planning Signature on the JPA. City will be responsible for payment of any associated fees for DSL, USACE, and DEQ to review and approve the submittals.

Task 5.5 Consultant Deliverables and Schedule

Consultant shall prepare and submit:

- Electronic copy of the Draft JPA Submittal Package to City for review per Task 1 Project Design Schedule.
- Electronic copy (PDF) of the Final JPA Submittal Package to City 2 weeks following receipt of draft review comments.
- Paper copy of the Final JPA Submittal Package to both the DSL and USACE 2 weeks following receipt of draft review comments.
- Paper copy of the Final JPA and Final Stormwater Management Plan to DEQ 2 weeks following receipt of draft review comments on the JPA.

Task 5.6 Oregon Department of Environmental Quality (DEQ) 1200-C Permit Application

Consultant shall provide pre-submittal coordination with representatives of the DEQ to confirm permitting requirements and application procedures. Consultant coordination includes correspondence in the form of telephone calls, e-mail, letters, and memos to document permit needs. Consultant shall assemble permit application materials including the application forms, plans, drawings, memos, details, and specifications to support the permit application. It is assumed ground disturbance will exceed five acres.

Consultant shall provide support to successfully transfer the 1200-C permit to the eventual construction contractor by providing a detailed technical memorandum to City fully describing all steps, processes, and timeline to transfer the Permit to the Contractor.

City will be responsible for payment of any associated fees. City will acquire Planning Department Signature and City will be listed as applicant on the 1200-C application.

Task 5.6 Consultant Deliverables and Schedule

Consultant shall prepare and submit:

- Electronic copy of the Draft 1200-C Permit Application Package to City for review per Task 1 Project Design Schedule.
- Electronic copy (PDF) of the Final 1200-C Permit Application Package to City 2 weeks following receipt of draft review comments. Submittal to DEQ per schedule developed under Task 1.
- 1200-C Permit Transfer Technical Memorandum to City due per the Project Design Schedule

Task 5.7 - Oregon City Natural Resource Overlay District (NROD) Permit

Consultant shall conduct fieldwork necessary to obtain a natural resource area overlay (NROD) permit pursuant to Oregon City's municipal code 17.49 (revised July 2009). Consultant shall:

- Collect data for all protected water features in the NROD study area.
- Collect slope measurements surrounding each regulated feature.
- Survey existing shrubs and other ground covers and develop a list of dominant species within the vegetated corridor for each regulated feature.

- Provide a functional assessment for each regulated feature.
- Delineate and survey the top of bank for all stream and other wetland features.
- Consultant shall conduct an assessment of potential mitigation areas during the NROD fieldwork. Dominant vegetation, soil types, and topography will be noted. It is assumed that NROD mitigation will also satisfy regulatory agency required mitigation and the mitigation area will not exceed 2 acres, including buffer.
- Delineate and survey boundaries of the NROD area within the study area.

Consultant time and effort needed to collect the required NROD field information is included with the wetland delineation field work under Task 5.2

Consultant shall prepare a draft and final NROD report and mitigation plan report pursuant to the Oregon City Municipal Code 17.49.220 and 17.49.230. Consultant shall submit the NROD report along with the Type II Land Use Application. The NROD Report shall address all of the applicable requirements detailed on the Oregon City Natural Resources Overlay Review Checklist available at the following web address:

http://www.oregoncity.org/sites/default/files/fileattachments/planning/page/4347/nrod_checklist_0.pdf

Consultant shall plan and attend one pre-application meeting with the Planning Department. Consultant shall prepare NROD/Wetland Mitigation Plans and Specifications meeting the applicable requirements detailed in Oregon City Municipal Code Section 17.49.180 and/or Section 17.49.190. Additionally, the wetland mitigation design shall conform to DSL and USACE requirements.

Consultant shall prepare a Wetland Plan Report addressing and meeting all of the applicable requirements detailed under Section 17.49.230 of the Oregon City Municipal Code.

As part of this task, Consultant shall also prepare and submit a tree protection/tree removal permit application meeting all applicable standards and requirements under municipal code section 17.41. The field work for this will be conducted under Task 5.2. Tree removal narrative and tree removal mitigation plan shall be included in the NROD Report.

Assumptions:

- City shall be responsible for payment of all submittal fees.
- It is assumed that the project can be developed to meet all applicable design standards and the NROD will be processed with a Type II permit.
- It is assumed that public hearings in front of the Planning Commission will not be required to process this as a Type II application.

Task 5.7 Deliverables/Schedule:

Consultant shall provide:

- Draft NROD Report submitted for review and comment due per the project schedule developed under Task 1.
- Final NROD Report incorporating review comments due two (2) weeks after receipt of City comments.

Task 5.8 – ESA Compliance Documentation

Consultant shall use the US Army Corps of Engineers (USACE) SLOPES programmatic biological opinion (BO) to evaluate the effects of the project on Endangered Species Act (ESA) listed fish species that may be impacted by the project. Prepare programmatic SLOPES V documentation to obtain the Section 404 permit from the USACE. Coordinate with the USACE, the National Marine Fisheries Service (NMFS), and Oregon Department of Fish and Wildlife (ODFW) to obtain the information required by the USACE and NMFS to complete the programmatic documentation. It is anticipated that one on-site visit with NMFS and the USACE will be required for this task.

Assumptions:

- The project will meet all programmatic biological opinion conditions thus requiring no compensatory mitigation.
- Project will not require geotechnical drilling within wetlands or waters.
- ESA/SLOPES mitigation design and coordination is excluded from this scope.

Task 5.7 Deliverables/Schedule:

Consultant shall provide:

- Draft ESA Compliance Memo submitted for review and comment with Task 5.5.
- Draft ESA Compliance Memo submitted for review and comment with Task 5.5.

TASK 6.0 Utility Location and Coordination

Task 6.1 Preliminary Utility Coordination/Utility Location

Consultant shall obtain maps and as-builts from the utilities, field location and verification of their facilities and establish control to prepare for the potholing of utilities. Consultant shall prepare a contact list identifying a representative of each utility that will be involved in the design process.

A base map will be provided to all utility companies in the project area.

Task 6.1 Deliverables:

- Utility updates to the project basemap due with Task 2.3

Task 6.2 Review Utility Data and On-Going Coordination

Consultant shall review project plans relative to existing utilities to determine possible conflicts with the proposed improvements. A base map will be provided to all utility companies identified within the project area.

Consultant shall coordinate with each utility on a regular basis throughout the preliminary design phase of the project. A contact log will be utilized to document phone conversations and emails with the utility companies.

Consultant shall coordinate with City and affected utilities to determine where any necessary potholing may be required. Consultant shall survey all reference points placed by potholing contractor(s).

Consultant shall coordinate with Bonneville Power Association (BPA) for design approval and assist the City in obtaining a land use agreement from BPA.

Assumptions:

- Potholing will be coordinated and completed by the affected utilities and their contractor(s)
- Up to 6 utilities are present within the project area.
- Project plans will remain the final depiction of all project construction and utility impacts.
- A maximum of 1 day of surveying will be required for potholing efforts.
- Conflict letters, utility relocation coordination, and utility coordination meetings will take place as part of this task.
- Up to two, two hour in person meetings with BPA will be attended by up to two consultant staff.

Task 6.2 Deliverables:

- Updates to the project basemap for surveyed pothole information
- Copy of contact log made available upon request
- Assessment of utility conflicts provided in Preliminary Design Report, Task 7.6

TASK 7.0 Preliminary Design (50%)

The design will consist of the roadway, culvert, utility and related improvements for Meyers Road and OR213. This task is composed of design to the 50% level. Level of detail and expectations for preliminary design are described in subsequent tasks below.

The preliminary design drawings shall be on 11"x17" sheets at scale 1"=40' and shall include:

- Title Sheet (1 sheet)
- Typical sections (2 sheets)
- Meyers Road Plan and profile drawings (4 sheets)
- OR213 Plan and profile drawings (4 sheets)
- Utility plan and profile drawings (4 sheets)
- Preliminary traffic control details (2 sheets)
- Preliminary traffic control plans (6 sheets)
- Erosion control plans (2 sheets)
- Box Culvert Plan and Elevation (1 sheet)
- Landscape Legend and notes (1 sheet)
- Planting plan (4 sheets)
- Stormwater planting details (1 sheet)
- Planting details and planting schedules (3 sheets)
- Irrigation Details (2 sheets)

Task 7.1 Roadway Design

Prepare preliminary drawings based on the conceptual design. The roadway drawings for the preferred alternative shall be included in the 50% Plans and Estimate. The roadway design will meet City requirements for Meyers Road and ODOT requirements for OR213. The preliminary roadway drawings shall be on 11"x17" sheets at scale 1"=40' and shall include:

- Title Sheet (1 sheet)
- Typical sections (2 sheets)

- Meyers Road Plan and profile drawings (4 sheets)
- OR213 Plan and profile drawings (4 sheets)
- Utility plan and profile drawings (4 sheets)
- Preliminary traffic control details (2 sheets)
- Preliminary traffic control plans (6 sheets)
- Erosion control plans (2 sheets)

Task 7.1 Deliverables

- One (1) 11" x 17" hard copy and one (1) electronic copy of preliminary roadway drawings to the City to be included in Task 4.6 deliverables

Task 7.2 Stormwater Design

Consultant shall design stormwater management facilities to City design standards for Meyers Road. Stormwater management facilities for OR213 will be designed to meet requirements set forth in the OHM. Water Quality Treatment shall include investigating the use of surface water treatment. Coordinate surface water treatment measures with the City and ODOT early in design. Consultant shall submit copies of drainage calculations and drainage basin maps for review. This will include determining the need for detention facilities.

Consultant shall design drainage conveyance improvements within Meyers Road to the City's standards. Consultant shall design drainage conveyance improvements within OR213 to ODOT's standards. The drainage system will be sized for the affected drainage basins. Consultant shall include preliminary drainage concepts on the roadway plan and profile sheets at 50% Design based on findings from Task 4.4a and 4.4b. The design information will be limited to main pipe sizes and location along with locating inlets and manholes, and profile grades and elevations.

Consultant shall prepare conceptual plans for the water quality and detention systems. Consultant shall investigate at grade options for detention. Stormwater details will be prepared during 95% design.

Prepare 50% storm drain plans, and cost estimate based on the direction received following project kick-off. Task shall include design, independent checking, and drafting associated with the proposed utilities.

Task 7.2 Deliverables:

- 50% design drawings will be delivered electronically (PDF) as part of 50% Plans and Estimate design package included with task 4.6
- Cost Estimate for drainage quantities will be included with the project estimate

Task 7.3 Traffic Control Plans

Consultant shall prepare preliminary traffic control plans in accordance with Oregon City and ODOT design standards, the MUTCD, and APWA Oregon Standard Specifications for Construction. Plans include the following information: staging plan, lane shifts, lane and shoulder widths, temporary barriers, delineation and signing. Consultant shall develop staging sections at critical areas with dimensions and other relevant information.

Deliverables:

- Plan sheets and estimate as part of task 4.6

Task 7.4 Box Culvert Design

Consultant shall prepare 50% box culvert plans, and cost estimate based on the direction received following project kick-off. Task shall include design, independent checking, and drafting associated with the proposed box culvert.

Assumptions

- The final box culvert type and all preferred design alternatives have been determined in the preliminary design phase.
- Design shall be in accordance with City design standards, AASHTO Design Specifications, and the ODOT BDDM

Task 7.4 Deliverables:

- 50% Design drawing as part of Task 4.6
- Cost estimate for box culvert quantities will be included with the project estimate included with Task 4.6.

Task 7.5 Waterline and Sanitary Sewer Design

OBEC shall develop a preliminary waterline and sanitary sewer design based on City standards. OBEC shall identify optimal locations for the waterline and sanitary sewer in relation to other utilities in the project vicinity. The preliminary design must include discussion of potential pipe materials, geotechnical considerations, right of way considerations, and concept design plans with alignments and elevations.

Assumptions

- Level of effort is based on the assumption that the City will provide pipe sizes required.
- Design shall be in accordance with City design standards.
- Drawings shall be half-size (11"x17") produced in AutoCAD format to City Standards

Prepare 50% waterline and sanitary sewer plans, and cost estimate based on the direction received following project kick-off. Task shall include design, independent checking, and drafting associated with the proposed utilities.

Task 7.5 Deliverables

- 50% design drawings will be delivered electronically (PDF) as part of 50% Plans and Estimate design package included with task 4.6
- Cost Estimate for utility quantities will be included with the project estimate included with task 4.6.

Task 7.6 Traffic Engineering

Consultant shall prepare preliminary traffic drawings based on the preliminary design. The traffic drawings for the preferred alternative shall be included in the 50% Plans and Estimate. The preliminary traffic drawings shall be on 11"x17" sheets at 1"=40' scale matching the roadway design sheet layouts and shall include:

Traffic Signal Plans:

- To include a layout of the traffic signal poles, signal heads, traffic signal controller cabinet, and vehicle detection.
- The design shall meet Oregon City, ODOT, and MUTCD standards.
- Consultant shall locate poles to minimize conflicts with utilities.
- Consultant shall locate the traffic signal poles at the ultimate location as determined with City staff.
- Consultant shall locate pedestrian pushbuttons to meet ODOT & ADA requirements, including collaboration with pedestrian ramp designer.
- Traffic Signal Plan and placeholder Detail Sheets (12 sheets)

Signing & Striping Plans:

- The signing & striping design will be completed per Oregon City, ODOT, and MUTCD standards.
- Consultant shall perform one (1) site visit to conduct a sign inventory and evaluate existing sign conditions to verify compliance with current MUTCD standards.
- Signing & Striping Plan and placeholder Detail Sheets (14 sheets) consisting of:
 - Combined Signing & Striping Plan for Meyers Road
 - Striping Plan for OR213
 - Signing Plan for OR213

Illumination Plans:

- Consultant shall locate the illumination poles to minimize conflicts with trees and utilities.
- Consultant shall perform photometric analysis to achieve light levels as required per the City standards.
- Consultant shall perform one (1) site visit to verify existing equipment and attend one (1) design parameter scoping meeting with City staff.
- Illumination Plan and placeholder Detail Sheets (12 sheets)

Assumptions:

- City of Oregon City to provide any available street lighting as-built drawings.
- The lighting system will be PGE Option A.
- No lighting design is required on OR213

Task 7.6 Deliverables

- One electronic pdf copy of preliminary traffic drawings to be included with Task 4.6.
- Cost Estimate for traffic quantities will be included with the project estimate as part of Task 4.6.

TASK 7.7 Landscape Plans (David Evans & Associates)

Services during each design phase including 50%, 95% and Final will include some or all of the activities required to prepare final construction documents. Plans and technical specifications shall conform to the City of Oregon City's Construction Specifications format. Plans shall be prepared using AutoCAD. Major items include the following:

- Planting plans for planting strips, vegetated stormwater facilities, and seeded areas
- Irrigation system plans

- Planting details and notes
- Irrigation details and notes
- Specifications for plantings, seeding, soil mixtures, mulches and irrigation systems
- Specifications for design and performance of irrigation systems
- Engineers estimates of probable costs

Assumptions:

- There will be 2100 feet of new roadway, with planting strips and stormwater planters along both sides. There will be planted medians as well.
- No landscaping will be included on OR213
- Planting strips will be landscaped to include street trees, groundcovers and seeded areas.
- Stormwater planters will be landscaped according to best management practices and local jurisdictional requirements.
- Planting design will include erosion control seeding and seeding for restoration of private property disturbed by construction.
- Irrigation design will include separate irrigation systems for each property frontage - each with its own point of connection, meter and controller – as requested by the City, assuming that each irrigation system will become the responsibility of the developer once each property is developed.
- The landscape design scope does not include any mitigation plans or permit drawings for work in environmentally regulated areas, such as wetlands or vegetated corridors.
- Civil to locate and detail meter connection. Irrigation plans will show a point of connection to the meter, backflow preventer, main lines, laterals and head locations.
- Assumed sheets list:
 - Legend and notes (1 sheet)
 - Planting plan (4 sheets)
 - Stormwater planter details (1 sheet)
 - Irrigation Plan (4 sheets)
 - Planting details and planting schedules (3 sheets)
 - Irrigation Details (3 sheets)

Task 7.7.1 Prepare 50% Landscape PS&E

Coordinate with OBEC and City staff on project issues including landscaping, plant selection, irrigation equipment manufacturers, PSI at meter, and other pertinent topics.

Deliverables (To be included with Task 4.5)

- Preliminary Engineers estimate of probable construction costs
- Plans
 - Conceptual layout, locations of landscape improvements
 - Draft planting details
 - Table of recommended plant materials
 - Conceptual location of irrigation system zones
 - Draft irrigation details

Task 7.8 Specifications and Estimate

Prepare and compile an estimate of construction costs broken down in standard bid items list utilizing applicable unit prices. Quantities for each item shall be calculated and independently checked by the consultant. The cost estimate will be based on the preliminary design alternative chosen during the preliminary design phase. A preliminary design report shall be prepared to explain the cost estimate and document any revisions required of the original project construction budget. Prepare an outline of the necessary special provisions.

Consultant shall assemble a list of applicable special provision sections for each discipline.

Assumptions

- Cost estimate will be completed with a target accuracy of +/- 30% with a construction contingency of 30% of the total construction costs
- Cost estimate will include all external construction costs including construction engineering costs

Task 7.8 Deliverables:

- Cost estimate will be completed in a Microsoft excel format and delivered electronically as part of task 4.6.
- A list of applicable special provision sections

TASK 8.0 Final Design Plans (95% and 100% Design)

The design will consist of the roadway, box culvert and related improvements for SW Meyers Road Extension for approximately 2100 feet, and OR213 for approximately 1500 feet. Level of detail and expectations for each milestone is described below:

95% Design: The appropriate plans include: plan and profiles, driveway details, storm drainage and water quality plans and details, final design of structures and details, final staging plans, final landscape and irrigation plans and details, final signal plans and details, preliminary street lighting plans and details, final signing and striping plans and details and final waterline and sanitary sewer plans and details.

100% Design: Final signed plans ready for bidding.

Consultant shall update cost estimates for the design elements. Consultant shall prepare special provisions using redline/strikeout and utilizing the 2015 Oregon Standard Specifications for Construction and Oregon City boilerplate special provisions. Consultant shall write additional specifications, as required.

OBEC shall prepare and submit the following plan drawings for submittal to the City and ODOT for review as applicable.

- Title Sheet (1 sheet)
- Index of sheets (1 sheet)
- General Notes (1 sheet)
- Typical Sections (Meyers Road) (2 sheets)
- Typical Sections (OR213) (1 sheet)
- Demolition Plan (3 sheets)

- Roadway Detail Sheets (6 sheets)
- ADA Ramp Details (up to 8 sheets)
- Stormwater Detail Sheets (5 sheets)
- Waterline and Sanitary Sewer Detail sheets (3 sheets)
- Traffic Control Notes and Details (3 sheet)
- Traffic Control Plans (6 sheets)
- Pipe Data Sheet (1 sheet)
- Meyers Roadway Plan and profile drawings (5 sheets)
- Meyers Road Drainage plan and profile drawings (5 sheets)
- OR213 Roadway Plan and Profile drawings (4 sheets)
- OR213 Drainage plan and profile drawings (4 sheets)
- Utility plan and profile drawings (5 sheets)
- Erosion Control Details (2 sheets)
- Erosion Control Plans (4 sheets)
- Box Culvert (4 sheets)

Task 8.1 Roadway Design

95% Design: Consultant shall incorporate all comments received following the 50% design submittal. Consultant shall complete design of curb return profiles, corner islands and intersection grading. Consultant shall finalizing grading limits. Consultant shall prepare advanced construction plans, notes and typical sections to the 95% design level, including earthwork brackets by construction staging.

100% Design: Consultant shall prepare and submit the Final plan drawings for submittal to the City for bidding as applicable. Consultant shall perform an independent design check and Quality Control/Quality Assurance (QC/QA) review of drawings, specifications and quantities in conformance with OBEC's written Quality Program. Consultant shall prepare and submit engineer's construction cost estimate of roadway construction quantities and costs for Final Plans. Consultant shall make corrections as required following City review of 95% Plans, Estimates, and Specifications. Responses to comments shall be documented in a comment log spreadsheet.

Task 8.1 Deliverables:

95% PS&E

- Completed comment form with responses to City and ODOT comments from 50% submittal as part of Task 8.8
- Plans, specifications and estimate as part of Task 8.8

Final PS&E

- Completed comment form with responses to City and ODOT comments from 95% submittal
- Plans, specifications and estimate as part of Task 8.8

Task 8.2 Stormwater Design

95% Design: Consultant shall incorporate all comments received following the 50% design submittal and prepare 95% storm drainage plans, specifications and cost estimate based on the direction received

following the 50% design review meeting. Task shall include design, independent checking, and drafting associated with the proposed utilities.

Final Design: Prepare Final storm drainage plans, specifications and cost estimate based on the direction received following the 95% design review. Task shall include design, independent checking, and drafting associated with the proposed utilities.

Task 8.2 Deliverables:

95% PS&E

- Completed comment form with responses to City and ODOT comments from 50% submittal as part of Task 8.8
- Plans, specifications and estimate as part of Task 8.8

Final PS&E

- Completed comment form with responses to City and ODOT comments from 95% submittal
- Plans, specifications and estimate as part of Task 8.8

Task 8.3 Traffic Control Plans

95% Design: Consultant shall incorporate all comments received following the 50% design submittal and prepare advanced 95% detailed traffic control plans.

Consultant shall incorporate all comments received following the 95% design submittal. Consultant shall prepare final signed plan sheets for bidding purposes.

Final Design: Prepare Final traffic control plans, specifications and cost estimate based on the direction received following the 95% design review. Task shall include design, independent checking, and drafting associated with the proposed traffic control.

Task 8.3 Deliverables:

95% PS&E

- Completed comment form with responses to City and ODOT comments from 50% submittal as part of Task 8.8
- Plans, specifications and estimate as part of Task 8.8

Final PS&E

- Completed comment form with responses to City and ODOT comments from 95% submittal
- Plans, specifications and estimate as part of Task 8.8

Task 8.4 Box Culvert Design

95% Design: Consultant shall incorporate all comments received following the 50% design submittal and prepare 95% box culvert plans, specifications and cost estimate based on the direction received following the 50% design review meeting. Task shall include design, independent checking, and drafting associated with the proposed box culvert.

Assumptions

- Level of effort is based on the assumption that no changes to the box culvert type or cross section will be required following 50% design.

- Design shall be in accordance with City design standards, AASHTO Design Specifications, and the ODOT BDDM

Final Design: Consultant shall incorporate all comments received following the 95% design submittal and prepare final stamped and signed box culvert plans, specifications and cost estimate. Plans and Specifications shall be signed by a qualified professional engineer licensed to practice in the state of Oregon. Final deliverables shall address all outstanding review comments to the satisfaction of the city. Submit final structural computations in a box culvert calculation book, stamped by the design engineer after submittal of the signed construction plans.

Assumptions

- Level of effort is based on the assumption that no changes to the box culvert type or cross section will be required following 95% design.
- Design shall be in accordance with City design standards, AASHTO Design Specifications, and the ODOT BDDM

Task 8.4 Deliverables

95% PS&E

- Completed comment form with responses to City comments from 50% submittal as part of Task 8.8
- Plans, specifications and estimate as part of Task 8.8

Final PS&E

- Completed comment form with responses to City comments from 95% submittal
- Plans, specifications and estimate as part of Task 8.8

Task 8.5 Waterline and Sanitary Sewer Design

95% Design: Consultant shall incorporate all comments received following the 50% design submittal and prepare 95% waterline and sanitary sewer plans, specifications and cost estimate based on the direction received following the 50% design review meeting. Task shall include design, independent checking, and drafting associated with the proposed utilities.

Final Design: Prepare Final waterline and sanitary sewer plans, specifications and cost estimate based on the direction received following the 95% design review. Task shall include design, independent checking, and drafting associated with the proposed utilities.

Task 8.5 Deliverables:

95% PS&E

- Completed comment form with responses to City comments from 50% submittal as part of Task 8.8
- Plans, specifications and estimate as part of Task 8.8

Final PS&E

- Completed comment form with responses to City comments from 95% submittal
- Plans, specifications and estimate as part of Task 8.8

Task 8.6 Traffic Engineering

95% Design: Consultant shall prepare and submit the following plan drawings for submittal to the City & ODOT for review as applicable.

- Traffic Signal Plan and Detail Sheets (12 sheets)
- Signing & Striping Plan and Detail Sheets (14 sheets)
 - Combined Signing & Striping Plan and Detail Sheets for Meyers Road
 - Striping Plan and Detail Sheets for OR213
 - Signing Plan and Detail Sheets for OR213
- Illumination Plan and Detail Sheets (12 sheets)

Consultant shall prepare and submit engineer's traffic-related construction cost estimate of construction quantities and costs for 95% Plans.

Consultant shall prepare and submit project special provisions for traffic related items as required.

Final Design: Consultant shall prepare and submit the Final plan drawings for submittal to the City for bidding as applicable. Consultant shall prepare and submit traffic-related engineer's construction cost estimate of construction quantities and costs for Final Plans. Consultant shall make corrections as required following City & ODOT review of 95% Plans, Estimates, and Specifications. Responses to comments shall be documented in a comment log spreadsheet.

Task 8.6 Deliverables:

95% PS&E

- Completed comment form with responses to City and ODOT comments from 50% submittal as part of Task 8.8
- Plans, specifications and estimate as part of Task 8.8

Final PS&E

- Completed comment form with responses to City and ODOT comments from 95% submittal
- Plans, specifications and estimate as part of Task 8.8

Task 8.7 Landscape Plans

Task 8.7.1 Prepare 95% Landscape PS&E

Deliverables

- Tabulation of comments received on 50% PS&E and corresponding actions taken
- First draft of Special Provisions
- Updated Engineers estimate of probable construction costs
- Plans
 - Draft planting plans for planter strips, stormwater facilities and seeding
 - Updated planting details
 - Draft irrigation plans
 - Updated irrigation details

Task 8.7.2 Prepare Final Landscape PS&E

Deliverables

- Tabulation of comments received on 95% PS&E and corresponding actions taken
- Final Special Provisions
- Final Engineers estimate of probable construction costs
- Final, stamped, landscape plan and detail sheets in PDF format
- Final, stamped, irrigation plan and detail sheets in PDF format
- All AutoCAD files related to final design

Task 8.8 Specifications, Cost Estimate and Submittals

95% Design: Compile 95% specifications and cost estimate for all technical disciplines associated with the project. Prepare Special Provisions utilizing ODOT standard specifications and boiler plate special provisions. Write any additional special provisions needed and prepare construction cost estimates based on the 95% design drawings. Review the city's boiler plate general conditions and bid documents and provide edits, as necessary.

Assumptions

- Cost estimate will be completed with a target accuracy of +/- 10% with a construction contingency of 15% of the total construction costs
- Cost estimate will include all external construction costs including construction engineering costs
- City shall provide all non-technical specifications and general conditions in .doc format for
- review by the consultant

Final Design: Compile final specifications and cost estimate for all technical disciplines associated with the project. Prepare final stamped special provisions and cost estimate based on direction obtained at the 95% review meeting. Address all City and ODOT comments received at the 95% submittal in preparing the final specifications and cost estimate.

Assumptions

- Cost estimate will be completed with a target accuracy of +/- 10% with a construction contingency of 10% of the total construction costs
- Cost estimate will include all external construction costs including construction engineering costs
- City shall be responsible for producing all non-technical specifications and general conditions; consultant shall provide an overall review of non-technical specifications and general conditions and will provide feedback regarding potential sources of conflict with technical specifications.

Task 8.8 Deliverables:

95% PS&E

- Completed comment form with responses to City and ODOT comments from 50% submittal
- 95% Specifications delivered electronically in .doc format
- 95% Cost estimate delivered electronically in .xls format
- One 11 x 17 hard copy and electronic PDF copy of 95% plan set
- One set of review comments on non-technical specifications and general conditions

Final PS&E

- Completed comment form with responses to City and ODOT comments from 95% submittal
- Final technical specifications delivered electronically in .doc format
- Final Cost estimate delivered electronically in .xls format
- One 22 x 34 signed paper copy and one electronic PDF copy of final plan set
- One paper copy of the stamped final specifications

Schedule

- City shall provide non-technical specifications for review 4 weeks prior to Final PS&E Submittal. Consultant shall return review comments 2 weeks prior to Final PS&E Submittal

TASK 9.0 Bid Support

Provide engineering services necessary to facilitate bidding the final PS&E documents for construction.

Task 9.1 Pre-bid Services

Provide engineering services necessary to support the bidding that includes answering questions, attending the pre-bid meeting, and assisting the city with evaluating estimates and selecting a prospective bidder.

Assumptions

- Anticipated level of effort is limited to 20 hours of total engineering services.

Task 9.1 Deliverables:

- None

Schedule

- Respond to any requests for service during the bidding process within two (2) days of request

Task 9.2 Prepare Technical Addenda

Prepare technical addenda, as required, to address contractor questions and resolve documented inconsistencies in the plans and specifications.

Assumptions

- Effort assumes up to two technical addenda
- Each addenda will require modifications of up to 2 plan sheets and 2 specification sheets

Task 9.2 Deliverables:

- Addenda shall be submitted, as required, to the city electronically in .pdf format

Schedule

- Addenda will be provided to city within five (5) days of request

TASK 10.0 Quality Assurance

Provide senior level quality assurance (QA) of all major deliverables in accordance with Consultant's Quality Management Plan (QMP) and project specific Project Quality Plan (PQP). All major

deliverables shall be reviewed internally by senior level discipline experts, a principal level engineer, and construction inspection staff. The QMP has been included as an attachment to the scope of work.

Assumptions

- Complete a formal internal QA process for the following deliverables:
 - Preliminary Design Report
 - 50% PS&E
 - 95% PS&E
 - Final (100%) PS&E
- All QA related comments shall be reviewed and verified to the satisfaction of the reviewer

Task 10.0 Deliverables:

- The QA comment logs, and PQP documentation shall be available to the city, at any time, in electronic format within 5 days of request.

Schedule

- QA will be completed prior to submitting all deliverables listed above for city review.

TASK 11.0 Construction Engineering (RESERVED)

OBEC Consulting Engineers

ESTIMATED COST

OBEC Job No. 0517-0006

TASK		Principal / Vice President	Division Manager 2	Division Manager 1	Engineer 5	Division Manager 1	Engineer 5	Engineer 6	Engineer 2	Engineer 2	CAD Drafter 4	Drafting Supervisor	Engineer 5	Senior Environmental Specialist	Environmental Specialist 1	Project Accountant / Project Controller	Engineer 3	TOTAL HOURS	TOTAL OBEC FEE	David Evans	Hart Crowser	Kittelson	TASK BUDGET
		GNH	JRB	JRK	ALJ	JWC	MEP	XQL	NDP	EEG	SD	DLD	BPW	JPS	BLW	AMM	MGM						
TASK 1.0 PROJECT MANAGEMENT AND ADMINISTRATION																							
1.1	Project Management	8		8	100													116	\$ 16,800	\$ -	\$ 5,340	\$ 4,655	\$26,795
1.2	Schedule				8											4		12	\$ 1,532	\$ -	\$ -	\$ -	\$1,532
1.3	Project Coordination and Meetings				45		4		45								4	98	\$ 11,383	\$ -	\$ 3,700	\$ 11,130	\$26,213
Task Subtotal		8	0	8	153	0	4	0	45	0	0	0	0	0	0	4	4	226	\$ 29,715	\$ -	\$ 9,040	\$ 15,786	\$ 54,541
TASK 2.0 SURVEYING																							
2.1	Horizontal and Vertical Control					8												8	\$ 1,392	\$ 2,412	\$ -	\$ -	\$3,804
2.2	Pre-Construction Record of Survey																	0	\$ -	\$ 110	\$ -	\$ -	\$110
2.3	Topographic Survey and Base Mapping					16												16	\$ 2,784	\$ 61,862	\$ -	\$ -	\$64,646
Task Subtotal		0	0	0	0	24	0	0	0	0	0	0	0	0	0	0	0	24	\$ 4,176	\$ 64,384	\$ -	\$ -	\$ 68,560
TASK 3.0 PUBLIC INVOLVEMENT ASSISTANCE																							
3.1	Public Informational Meeting				6		6				4							16	\$ 2,012	\$ -	\$ -	\$ -	\$2,012
Task Subtotal		0	0	0	6	0	6	0	0	0	4	0	0	0	0	0	0	16	\$ 2,012	\$ -	\$ -	\$ -	\$ 2,012
TASK 4.0 DESIGN STUDIES AND REPORTS																							
4.1	Preliminary Traffic Signal Analysis and Vehicle Classification Counts																	0	\$ -	\$ -	\$ -	\$ 8,554	\$8,554
4.2	Geotechnical Investigations and Report																4	4	\$ 444	\$ -	\$ -	\$ -	\$444
4.2.1	Field Exploration																	0	\$ -	\$ -	\$ 12,035	\$ -	\$12,035
4.2.2	Laboratory Testing																	0	\$ -	\$ -	\$ 665	\$ -	\$665
4.2.3	Geotechnical Evaluations and Analyses																	0	\$ -	\$ -	\$ 5,975	\$ -	\$5,975
4.2.4	Final Design Geotechnical Report																	0	\$ -	\$ -	\$ 6,220	\$ -	\$6,220
4.2.5	Geotechnical Related Plans and Specifications																	0	\$ -	\$ -	\$ 4,315	\$ -	\$4,315
4.3	Level 1 Hazardous Materials Assessment																	0	\$ -	\$ -	\$ 8,060	\$ -	\$8,060
4.4a	Stormwater Analysis and Report (Meyers Road)				4				24		6		4			4		42	\$ 4,382	\$ -	\$ -	\$ -	\$4,382
4.4b	Stormwater Analysis and Report (OR213)				4				24		6		4			4		42	\$ 4,382	\$ -	\$ -	\$ -	\$4,382
4.5	Hydraulic Analysis and Memorandum				4				20		4		4			4		36	\$ 3,812	\$ -	\$ -	\$ -	\$3,812
4.6	Preliminary Design Report				8		4	4	36		16	2	4	4	8	12		98	\$ 10,496	\$ -	\$ -	\$ -	\$10,496
Task Subtotal		0	0	0	20	0	4	4	104	0	32	2	16	4	8	24	4	222	\$ 23,516	\$ -	\$ 37,270	\$ 8,554	\$ 69,340
TASK 5.0 ENVIRONMENTAL PERMITS																							
5.1	Coordination, Accumulation, and Review of Information													42	12			54	\$ 6,036	\$ -	\$ -	\$ -	\$6,036
5.2	Wetland/Waters of the U.S./State & Natural Resources Field work													56	60			116	\$ 11,700	\$ -	\$ -	\$ -	\$11,700
5.3	Wetland/Waters of the U.S./State Delineation Report										12			26	34	2		74	\$ 7,304	\$ -	\$ -	\$ -	\$7,304
5.4	Wetland Functional Assessment Report													16	20	1		37	\$ 3,691	\$ -	\$ -	\$ -	\$3,691
5.5	USACE/DSL Joint Permit Application (JPA) and DEQ Section 401 Cert										16			36	60	3		115	\$ 11,153	\$ -	\$ -	\$ -	\$11,153
5.6	DEQ 1200-C Permit Application													27	41			68	\$ 6,643	\$ -	\$ -	\$ -	\$6,643
5.7	NROD Permit				20						48			144	164			376	\$ 38,172	\$ -	\$ -	\$ -	\$38,172
5.8	ESA Compliance Documentation													14	24			38	\$ 3,672	\$ -	\$ -	\$ -	\$3,672
Task Subtotal		0	0	0	20	0	0	0	0	0	76	0	0	361	415	6	0	878	\$ 88,371	\$ -	\$ -	\$ -	\$ 88,371
TASK 6.0 UTILITY LOCATION AND COORDINATION																							
6.1	Preliminary Utility Coordination / Utility Location										4			48				52	\$ 6,140	\$ -	\$ -	\$ -	\$6,140
6.2	Review Utility Data and On-Going Coordination										4			40				44	\$ 5,180	\$ -	\$ -	\$ -	\$5,180
Task Subtotal		0	0	0	0	0	0	0	0	0	8	0	0	88	0	0	0	96	\$ 11,320	\$ -	\$ -	\$ -	\$ 11,320
TASK 7.0 PRELIMINARY DESIGN (50%)																							
7.1	Roadway Design						64		160		128	7				4		363	\$ 37,460	\$ -	\$ -	\$ -	\$37,460
7.2	Stormwater Design						40		50		50	3						143	\$ 15,348	\$ -	\$ -	\$ -	\$15,348
7.3	Traffic Control Plans						25		54		54	3						136	\$ 14,068	\$ -	\$ -	\$ -	\$14,068
7.4	Box Culvert Design							2			12	2					8	24	\$ 2,616	\$ -	\$ -	\$ -	\$2,616
7.5	Waterline and Sanitary Sewer Design						21		30		30	2						83	\$ 8,828	\$ -	\$ -	\$ -	\$8,828
7.6	Traffic Engineering																	0	\$ -	\$ -	\$ 50,183	\$50,183	
7.7	Landscape Plans																	0	\$ -	\$ 13,480	\$ -	\$ -	\$13,480
7.8	Specifications and Estimate				2		8	1	20							1	1	33	\$ 3,640	\$ -	\$ -	\$ 2,066	\$5,706
Task Subtotal		0	0	0	2	0	158	3	314	0	274	17	0	0	0	5	9	782	\$ 81,960	\$ 13,480	\$ -	\$ 52,249	\$ 147,689
TASK 8.0 FINAL DESIGN (95% AND 100%)																							
8.1	Roadway Design						68		164		157	7						396	\$ 40,695	\$ -	\$ -	\$ -	\$40,695
8.2	Stormwater Design						31		70		72	4						177	\$ 18,250	\$ -	\$ -	\$ -	\$18,250
8.3	Traffic Control Plans						17		30		30	2						79	\$ 8,284	\$ -	\$ -	\$ -	\$8,284
8.4	Box Culvert Design							16			48	4					40	108	\$ 12,072	\$ -	\$ -	\$ -	\$12,072
8.5	Waterline and Sanitary Sewer Design						17		39		38	2						96	\$ 9,899	\$ -	\$ -	\$ -	\$9,899
8.6	Traffic Engineering								20									20	\$ 3,160	\$ -	\$ -	\$ 38,697	\$41,857
8.7	Landscape Plans																	0	\$ -	\$ 26,090	\$ -	\$ -	\$26,090
8.8	Specifications and Cost Estimate and Submittals				8		8	2	48							32	4	102	\$ 11,048	\$ -	\$ -	\$ 5,415	\$16,463
Task Subtotal		0	0	0	8	0	141	38	351	0	345	19	0	0	0	32	44	978	\$ 103,408	\$ 26,090	\$ -	\$ 44,113	\$ 173,611
TASK 9.0 BID SUPPORT																							
9.1	Pre-Bid Services			6	6			2	6							4		24	\$ 3,190	\$ 714	\$ -	\$ -	\$3,904
9.2	Prepare Technical Addenda				4		2	2	8		8							24	\$ 2,652	\$ -	\$ -	\$ 1,830	\$4,482
Task Subtotal		0	0	6	10	0	2	4	14	0	8	0	0	0	0	4	0	48	\$ 5,842	\$ 714	\$ -	\$ 1,830	\$ 8,386
TASK 10.0 QUALITY ASSURANCE																							
10.1	Quality Assurance	8	8	8	8		8					4				4		48	\$ 8,028	\$ 1,172	\$ -	\$ 5,053	\$14,253
Task Subtotal																							

OBEC Expenses	\$0
DEA Expenses	\$3,400
Hart Crowser Expenses	\$23,825
Kittelson Expenses	\$1,855

TOTAL NOT TO EXCEED \$667,163