

City of Columbus Fee Guidance

Administration of Contracts for Professional Services

Consultant Fee Estimation Guidance

October 1, 2026





TABLE OF CONTENTS

1	PROJECT MANAGEMENT	1
2	ENVIRONMENTAL DOCUMENTATION	3
3	SURVEY AND RIGHT OF WAY	3
4	MISCELLANEOUS	8
5	CALCULATIONS	10
6	UTILITIES	14
7	GEOTECH AND PAVEMENT DESIGN	18
8	PUBLIC INVOLVEMENT PROCESS	20
9	PREPARE COST ESTIMATE	22
10	PRELIMINARY ALIGNMENT PLAN	23
11	PLAN DEVELOPMENT	27
12	SUBMITTAL EFFORTS	58
13	ONGOING SERVICES DURING CONSTRUCTION	62



City of Columbus Fee Guidance

1 Project Management

Task Number / Task name	Unit of Measure	Low	Medium	High
1.1 – Meetings	Per Meeting per person	1.5	1.5	1.5
1.2 – General Oversight	Month	8	16	32
1.3 – QA/QC for Limited Review	Per Submittal	20	30	40
1.4 – Schedule	Per Project	6	6	6

1.1 Meetings

This task includes all meetings and conference calls not contractually specified in other tasks in the task list including preparation and meeting notes.

Hours are per meeting per attendee.

NOTE: Excludes meetings in Task 1.2 General Oversight. There is no difference in the number of hours per meeting and assumed that the number of meetings will dictate the hours. Assumes a meeting duration of 1 hour and 0.5 hours on average for preparation and/or distribution of notes/minutes. This task has no Low/Medium/High delineation.

1.2 General Oversight

This task involves the project management duties including but not limited to the following:

- Responding to questions and providing guidance to the internal team
- Staffing assignments
- Monitor schedule and budget
- Monitor project progress
- Monitor the scope of work
- Subconsultant coordination
- Maintaining project schedule
- Invoicing
- Progress reports
- Client coordination and communications
- General oversight of tasks performed by subconsultants

Hours are per month.

Low – Administrative Assistant support is minimal and generally utilized once per month. Up to two subconsultants and complexity of subconsultant effort is low or routine effort, like survey, or not directly integrated in plan development. Examples of project contributions not directly integrated in plans may include traffic analysis, geotechnical services, utility coordination, etc.

Medium – Administrative Assistant support needed periodically through the month to assist in management of staff subconsultant assignments, monitoring schedule and budget, and invoicing. Three to four subconsultants performing tasks of a complex nature that are directly integrated into the plans.

High – Administrative Assistant support needed weekly through the month to assist in management of staff subconsultant assignments, monitoring schedule and budget, and invoicing. Four or more subconsultants performing tasks of a complex nature that are integrated into a plan set. Projects with condensed schedules.

NOTE:

- Includes project manager and administrative assistant time
- QA/QC and constructability are to be handled in other task items
- Contractually specified meetings and conference calls under Task 1.1 or other tasks are not included
- Hours for months when deliverables are in review shall be reduced by 75%, but no less than 1 hour
- Subconsultants may include general oversight when their portion of the work is considerable or other disciplines are dependent on their work
- When individual subconsultant involvement is expected to be considerable, hours may be increased by a maximum of 50% of the Prime Consultants hours for General Oversight listed in the guidance for the duration of subconsultant involvement which may or may not be for the entirety of the project

1.3 QA/QC for Limited Review

Task includes the QA/QC of design effort completed by other consultants that is integral to completing a portion of the design or plans.

Hours are per submittal.

Complexity – See 1.2.

NOTE:

- This task does not include the QA/QC and constructability for individual task items
- Subconsultants with project contributions that are not directly integrated in plan development are not considered in the determination of complexity. Examples of project contributions not directly integrated in plans may include traffic analysis, geotechnical services, utility coordination, etc
- Complexity should be increased or decreased during portions of the project where effort by the subconsultant is anticipated in the project schedule.

1.4 Schedule

Task includes submittal and update to schedule in Microsoft Project format unless approved in another format by City Project Manager.

Hours are per project.

NOTE:

- This task has no Low/Medium/High delineation.

2 Environmental Documentation

For environmental tasks, refer to ODOT fee guidance

3 Survey and Right of Way

Task Number / Task name	Unit of Measure	Low	Medium	High
3.1 – Project Control, Benchmarks, and Reference Points (Type B Monuments)	Monument	8	8	8
3.2 – Base Mapping (incl. field verify.)	0.1 mile	20	22	26
3.3 – Bridge Survey	Bridge	22	40	70
3.4 – Establish property lines, tax id, & ownerships on base map	Parcel	8	12	16
3.5 Right-of-Way Plans				
3.5.1 – Conceptual Right of Way	Submittal	24	24	24
3.5.2 – Preliminary Legend Sheet	Sheet	8	10	12
3.5.3 – Preliminary Centerline Survey Plat	Sheet	16	20	24
3.5.4 – Preliminary Property Map	Sheet	20	26	32
3.5.5 – Preliminary Summary of Additional Right-of-Way	Owner	3	3	3
3.5.6 – Preliminary Summary of Encroachments	Sheet	0.50	1	2
3.5.7 – Preliminary Topo Plan Sheets	Sheet	18	20	24
3.5.8 – Preliminary Boundary Plan Sheets	Sheet	16	18	20
3.5.9 – Preliminary Legal Descriptions	Legal	2	2	2
3.5.10 – Special/RR Plats	Sheet	32	40	48
3.5.11 – Determine R/W Encroachments	Sheet	0.50	1	1
3.5.12 – Field Review & Verify Property Owners	Sheet	1	1.5	2
3.5.13 – Compliance ROW Plans	Sheet	8	10	10
3.5.14 – Compliance Legal Descriptions and Closure Calculations	Legal	3	4	5
3.5.15 – Final Legal Descriptions	Legal	1	1	2
3.5.16 – Final ROW Plans	Sheet	2	4	6
3.5.17 – Temporary Right of Way Staking	Hours/Parcel	0.50	1	1.25
3.5.18 – Updates to Right of Way During Acquisition	Sheet	1	2	3

3.1 Project Control, Benchmarks, and Reference Points

Task is for establishment of project control, benchmarks and reference points as described in the GDR. Includes marking for Ohio811, constructing the monument per the Standard Construction Drawing RM-1.1, GNSS observations and preparation and submitting of Project Control Reports and Deliverables in accordance with the GDR.

Hours are individual (not crew hours) for each monument required per the Scope as determined by or with coordination of the City Right of Way Coordinator.

Low/Medium/High – Not applicable.

3.2 Base Mapping (incl. field verify.)

Task includes the survey location of all existing Planimetric and Terrain topographic features needed for design of the project and needed to prepare Right of Way Plans to show impacts on properties, including but not limited to, plan view features, all Digital Terrain Modeling (DTM) features needed for defining the existing ground surface for the generation of alignment profiles and cross sections, overhead and underground utility locations, including the Ohio811 design ticket request, existing storm drainage pipes within the design corridor and other special application areas of the project, if applicable, such as special Maintenance of Traffic areas. Also includes all Mapping checks and Mapping Deliverables required for review of the mapping data prior to any design, the completed DTM file(s) and Basemap file(s) per City CADD standards. This task includes the resolution of the existing Centerline of Right of Way alignment(s) and the Existing Right of Way lines defined as linear features with an active profile applied from the DTM surface. Use task 3.4 for resolution of other boundary lines necessary for additional Right of Way acquisition.

Hours are individual (not crew hours) for 0.1 mile of project length.

Low – Project site is Rural or Suburban residential, low volume traffic and generally open site with minimal terrain and/or ingress/egress obstructions suitable for GNSS/RTN/RTK surveys.

Medium – Project site has suburban or urban location with medium traffic volume and speed, minimal traffic sight distance issues and moderate terrain with partially open and average terrain and/or ingress/egress obstructions making GNSS surveying more challenging.

High – Project site is dense residential or commercial corridor, or downtown. May include multi lanes, high volume, or high-speed traffic, a moderate number of terrain and/or ingress/egress obstructions. Difficult terrain, steep slopes, and dense vegetation not suitable for GNSS surveys

NOTE: Task includes property notification

3.3 Bridge Survey

Task Includes the location of the basic bridge features (deck and roadway over the bridge, approach slabs, abutments and piers, if applicable) to show the size and location of the structure in the basemap. The data for the roadway over the bridge will be collected in a manner to create separate Digital Terrain Modeling (DTM) features needed for defining the existing roadway surface for the generation of the existing roadway profiles and cross sections.

Hours are individual (not crew hours) per each bridge over 10ft span in length within the project.

Low – Bridge site is Rural or suburban residential, over a roadway, low volume traffic and generally open site suitable for GNSS/RTN/RTK surveys.

Medium – Bridge is 2 spans, over a roadway, and the site is dense suburban or urban location with low to medium traffic volume and speed for one or both roadways and partially open site with some potential GNSS/RTN/RTK surveys.

High – Bridge is more than 2 spans, or over a waterway, and the site is urban or dense commercial corridor, high-speed, high-volume traffic for one or both roadways or minimal open site with limited potential GNSS/RTN/RTK surveys.

NOTE: If applicable, include hours for bridge engineer to visit the site to verify the basemap.

3.4 Establish property lines, tax id, & ownerships on base map

Task includes resolution of property boundaries; and depiction of easements needed to prepare Plans to City specifications and delineate on the Right of Way Basemap.

Hours are per Parcel.

Low – Recent survey activity. Primarily single unit residential. No complex parcels (ex. industrial, condominiums, or railroads). No large tracts.

Medium – Limited recent survey activity. Includes multifamily and commercial parcels. Limited number of complex parcels (ex. industrial, condominiums, or railroads). Large tracts.

High – Very limited recent survey activity. Large number of multifamily and commercial parcels. Includes complex parcels (ex. industrial, condominiums, or railroads). Large tracts.

3.5 Right of Way Plans

3.5.1 Conceptual Right of Way

This task includes the preparation of the conceptual right of way exhibit and submittal.

Hours are per submittal.

Low/Medium/High – Not applicable.

Note: Effort for resolving centerlines, right-of-way boundaries, and property owners is included in Task 3.1, 3.2, and 3.4. This task is for the documentation of how the centerline and right of way was determined.

3.5.2 Preliminary ROW Legend Sheet

This task includes the preparation of the title sheet for the preliminary right of way submittal.

Hours are per sheet.

Low/Medium/High – Not applicable.

3.5.3 Preliminary Centerline Plat Sheet

This task includes the preparation of the centerline plat sheet for the preliminary right of way submittal.

Hours are per sheet.

Low – One sheet linear project with no intersection, minimal monuments set and/or reset, one centerline for construction & R/W.

Medium – Multiple sheets, realignment that includes multiple centerlines.

High – New Alignment with multiple centerlines.

3.5.4 Preliminary Property Map

This task includes the preparation of the property map sheet for the preliminary right of way submittal.

Hours are per sheet.

Low – Rural or suburban area with up to 10 property owners, one centerline for construction & R/W.

Medium – Suburban or urban area, realignment with up to 20 property owners.

High – Urban area, new alignment and/or realignment, with more than 20 property owners.

3.5.5 Preliminary Summary of Additional Right of Way

This task includes the preparation of summary of additional right of way for the preliminary right of way submittal including estimate of acreage

Hours are per owner.

Low/Medium/High – Not applicable.

3.5.6 Preliminary Summary of Encroachments

This task includes the preparation of summary of encroachments for the preliminary right of way submittal, includes encroachment summary table.

Hours are per sheet.

Low/Medium/High – Not applicable.

3.5.7 Preliminary Topography Sheets

This task includes the preparation of topography sheets for the preliminary right of way submittal. Right of way topography sheets are based on 500' centerline per sheet.

Hours are per sheet.

Low/Med/High – Same as 3.2.

3.5.8 Preliminary Boundary Sheets

This task includes the preparation of boundary sheets for the preliminary right-of-way submittal. Right-of-way boundary sheets are based on 500' centerline per sheet.

Hours are per sheet.

Low/Med/High – Same as 3.2.

3.5.9 Preliminary Legal Description

This task is for the preparation of a sample legal description.

Hours are per legal description.

Low/Medium/High – Not applicable.

Low/Med/High – Same as 3.2.

3.5.10 Special or RR Plats

This task is for the preparation of plats for railroads or other purposes.

Hours are per sheet.

Low – One railroad owner.

Medium – Multiple railroad owners.

High – Multiple railroad owners with multiple crossings.

3.5.11 Determine Right of Way Encroachments

Updates to the summary of encroachments based on preliminary and compliance right of way submittals.

Hours are per owner.

Low/Medium/High – Not applicable.

3.5.12 Field Review & Verify Property Owners

The designer/reviewer are required to visit the project site and perform a field review unless scoped otherwise (Section 3110.3 Field Review Process). The hours DO NOT include travel time to or from the project site.

Hours are per Topography ROW sheet.

Low/Med/High – Same as 3.2.

3.5.13 Compliance Right of Way Plans

Updates to right of way plans per comments in the preliminary right of way submittal on the topo and boundary sheets.

Hours are per sheet.

Low/Medium/High – Not applicable.

3.5.14 Compliance Legal Descriptions and Closure Calculations

This task is for preparation of legal description for the compliance submittal.

Hours are per legal description.

Low/Medium/High – Not applicable.

3.5.15 Final Legal Descriptions

This task is for updates to legal descriptions per compliance submittal comments.

Hours are per legal description.

Low/Medium/High – Not applicable.

3.5.16 Final Right of Way Plans

Updates to right of way plans per comments in the compliance right of way submittal on the topo and detail sheets.

Hours are per sheet.

Low/Med/High – Same as 3.2.

3.5.17 Temporary Right of Way Staking

Right of way staking refers to the delineation of existing and proposed right of way and easement lines and consists of flagged lath or paint marks placed on angle points, corners and property line intersections for use during the appraisal negotiation and the utility relocation process or other purposes. This is NOT intended to be the final pinning of the right of way.

Hours are per parcel to be staked.

Low/Medium/High – Not applicable.

3.5.18 Updates to Right of Way During Acquisition

This task is for updates to right of way plans sheets during the acquisition process.

Hours are per Detailed ROW sheet.

Low/Med/High – Same as 3.2.

4 Miscellaneous

Task Number / Task name	Unit of Measure	Low	Medium	High
4.1 – Railroad Involvement				
4.1.1 – Railroad Coordination		8	20	Project specific
4.1.2 – Railroad Design		Project specific	Project specific	Project specific
4.2 – Perform Airway/Highway Clearance Analysis	/ Project	2	2	2
4.3 – FEMA Coordination/Permit	Per culvert/ bridge	4	10	40
4.4 – Utility Permit Application	TBD	-	-	-

4.1 Railroad Involvement

4.1.1 Railroad Coordination

Task includes coordination with railroad regarding rights-of-entry, permits, and coordination related to preliminary engineering agreements, plan reviews, or other design elements to be coordinated.

Hours are per crossing. One crossing can include multiple parallel

I tracks owned by the same railroad. Parallel tracks owned by separate railroads are considered separate crossings.

Low – Coordination limited to obtaining right-of-entry for survey activities or bridge inspections.

Medium – Coordination related to right-of-entry for survey activities or bridge inspections, as well as, coordination related to license agreements or permits for utilities, etc. which cross railroad right-of-way but do not disturb tracks or railroad property in any other way. Include hours related to exhibits (utility crossing plan and profile, influence line diagrams, etc.) or supporting information needed for coordination but not included in 4.1.2 or any other task.

High – Coordination related to design of improvements, which directly impact the railroad tracks and/or warning devices such as road widening, sidewalk or shared use path additions, or traffic signal-warning device coordination. Tasks may include coordination related to preliminary engineering agreements, plan reviews, and diagnostic reviews. This task may also include coordination with other agencies (e.g. PUCO, ORDC) with jurisdiction over rail crossing modifications. Construction agreements will generally be coordinated by the City.

NOTE: Related permit fees, flagger fees, and fees for additional insurance if required by the railroad should be included in the consultant's proposal as direct expenses. Supplemental Bridge Site Plans for Railroad Crossings are covered under Task 11.14.2. Railroad plats are covered under Right-of-way Plans.

4.1.2 Railroad Design

Task includes design, calculations, and development of plans for railroad-related improvements such as widening of the road crossing, sidewalk or shared-use path crossings, addition/relocation of warning devices, coordination of warning devices and roadway traffic signals (preemption), queue-cutter signals, and grade separation. Example tasks include the following: development of site plans, typical sections, warning device details, general notes/specifications, circuitry plans, grading details for crossings, and

railroad clearance interval calculations. Hours related to plan submissions and coordination of plan reviews should be included in 4.1.1.

The scope and associated hours for this task(s) can be wide-ranging should be negotiated on a project-by-project basis.

4.2 Perform Airway/Highway Clearance Analysis

This task is to determine if a project is within 20,000 ft. of a public-use or military airport or heliport (per ODOT L&D, Volume 3, Section 1407.1). If an applicable airport/heliport is found to be within 20,000 ft. of the proposed project, the hours to prepare FAA Form 7460-1 are to be included under task 4.3 – Prepare FAA Form 7460-1 for Airway/Highway Clearance.

Hours are by project.

4.3 FEMA Coordination / Permit

Task includes determining if proposed encroachments are within FEMA regulated flood zones and identifying flood zone types and quantify the allowable impacts through coordination with the Local Floodplain Coordinators (City and/or Franklin County) and the Ohio Department of Natural Resources as required. Any required modeling will be completed under Task 5.8.

Hours are per culvert/bridge. Typical staffing level Engineer II – Engineer III

Hours are per each culvert / bridge.

Low – FEMA Zone A. SFHA Permit Application only.

Medium – FEMA Zone AE with no rise condition. SFHA Permit application and No-Rise Certificate

High – CLOMR or LOMR Required. FEMA MT-2 forms, Newspaper Notices, Property Notifications, FEMA coordination.

4.4 Utility Permit Application

[Reserved for Future Use]

5 Calculations

Task Number / Task name	Unit of Measure	Low	Medium	High
5.1 – Draft Storm Water Management Report	Per Project	*		
5.2 – Final Storm Water Management Report	Per Project	**		
5.3 – Inlet Spacing Design Calculations	STA	1	1.5	2
5.4 – Storm Sewer Design Calculations	STA	1	1.5	2
5.5 – Ditch Design Calculations	STA	N/A	1	1.5
5.6 – Culvert Design Calculations	Per Culvert	4	8	16
5.7 – SCP / Detention Design Calculations	Per SCP	10	20	60
5.8 – SWPPP Calculations & Report	STA	0.25	0.5	0.75
Add the following hours to the per STA hours above for each outfall requiring sediment treatment:	Per Outfall	12	14	16
5.9 – Complete Bridge / Bridge Hydraulic Study and Scour Analysis	Per Bridge	20	32	40
5.10 – Design Exceptions and Variances				

* 15% of Drainage Hours

** 5% of Drainage Hours

5.1 Draft Storm Water Management Report

Hours included in this task are only for compiling the report and exhibits as outlined in the City's Latest Stormwater Drainage Manual. Hours for completing the calculations are included in the specific calculation tasks.

Hours per project.

Low/Med/High – 15% of Total Drainage Hours.

NOTE: Total Drainage Hours includes all drainage, SCP, FEMA, inlet spacing, structure hydraulic, etc. related tasks (4.3, 5.3, 5.4, 5.5, 5.6, 5.8, 11.3, and 11.6). The draft report is typically submitted at Stage 1.

5.2 Final Storm Water Management Report

Hours included in this task are for addressing comments on Draft report (See 5.1) and updating the report for consistency with contemporaneous plan submissions.

Hours are per project.

Low/Med/High – 5% of Total Drainage Hours.

NOTE: Total Drainage Hours includes all drainage, SCP, FEMA, SWPPP, inlet spacing, structure hydraulic, etc. related tasks (Calculation Tasks 5.3, 5.4, 5.5, 5.6, 5.7, and 5.8, Plan Development Tasks 11.3 & 11.6).

5.3 Inlet Spacing Design Calculations

Hours included in this task include preparation of inlet spacing calculations (a.k.a. spread calcs) in accordance with the City's Stormwater Drainage Manual to determine inlet locations.

Hours are per Station (100 feet) of project length.

Low – Verifying spread calcs for an existing system and/or adding inlets as needed.

Medium – Projects with no sag curve(s) and uniform cross slopes. May include factors such as low speeds, parking lanes, or multiple thru lanes for fewer inlets and/or lower complexity calculations.

High – Projects with sag curve(s) where “check” storm events calcs are needed. May include factors such as high speeds, high traffic volume, high # of thru lanes, or flat grades that lead to a greater number of required inlets and/or increase the complexity of calculations.

NOTE: Hours per Station assume that inlet spacing calculations are performed on both sides of the street; calculations for one side only should be considered less effort.

5.4 Storm Sewer Design Calculations

This task includes preparation of storm sewer capacity/conveyance calculations in accordance with the City’s Stormwater Drainage Manual. Task also includes 2-dimensional CAD-layout of the storm sewer system.

Hours are per Station (100 feet) of project length.

Low – Minimal storm sewer design or utilization of existing trunk sewer. Minimal lateral utility impacts.

Medium – Single trunk Line with well-defined drainage boundaries or project that uses an existing trunk line with lateral utility impacts. New storm trunk line in low-density utility area.

High – System with multiple connecting trunk branches and/or with poorly defined drainage boundaries or a project that installs a new storm trunkline in a high-density utility area with high probability of utility conflicts.

NOTE: Hours assume the storm sewer is contained within the project limits; if offsite storm sewer is needed to provide a proper outlet, additional hours may be needed.

This task is only for Storm Sewer Design Calculation effort. Hours to perform inlet spacing to be included under Task 5.3 - Inlet Spacing Design Calculations. Hours for plan production for storm sewers are included in Task - 11.6.1 – Storm Sewer Profiles.

5.5 Ditch Design Calculations

This task includes preparation of ditch design calculations using CDSS (or similar) to calculate velocities, determine appropriate channel geometry, and calculate shear stress/ determine appropriate erosion control measures.

Hours are per 100 feet of ditch.

Medium – standard side ditches with constant slope and constant width

High – Side ditches with non-standard shape or varying slope.

5.6 Culvert Design Calculations

This task includes preparation of culvert design calculations in accordance with the City’s Stormwater Drainage Manual.

Hours are per each culvert.

Low – New culvert in area with well-defined tributary boundaries. New culvert on new alignment without upstream affected properties. Driveway culverts.

Medium – New/Replacement culvert in area with poorly defined tributary boundaries or multiple barrels. Replacement of existing structure with minimal upstream affected properties.

High – Culvert extensions or culverts in series. Culverts with significant potential to impact upstream properties.

NOTE: This effort assumes use of culvert-specific design software (HY-8, CDSS, etc.) as opposed to Hec-Ras or step backwater methodology. For any culverts/structures needing step backwater methodology effort should be included in Task 5.8 - Complete Bridge / Structure Hydraulic Study and Scour Analysis.

5.7 SCP / Detention Design Calculations

Task includes effort to determine treatment requirements of the project and perform calculations related to the size, scope, and details of the SCP.

Hours are per SCP.

Low – In Lieu Fee, or DPS Regional Basin.

Medium – Vegetated biofilters and/or Vegetated Filter Strips, manufactured systems such as Hydrodynamic Separators.

High – Other SCPs not listed above, including extended detention basins (dry or wet), underground storage, infiltration basin, constructed wetlands, bioretention facilities, sand filters, and permeable pavement.

NOTE: Hours to determine conceptual SCPs for the project are included in Task 10.5. Hours for SCP details shown in the plan, including layout and grading of SCPs, are included in Task 11.6.3 - SCP / Detention Details. Refer to City's Stormwater Drainage Manual for list of approved SCPs. Some SCPs listed above may be allowed only as pre-treatment.

5.8 SWPPP Calculations & Report

Task includes preparation of a Stormwater Pollution Prevention Plan and associated calculations in accordance with the City's Stormwater Drainage Manual.

Hours are per Station (100 ft.) of project length plus additional hours for each outfall location requiring sediment treatment.

Low – No sediment basins.

Medium – Typical SCPs with documentation for control facilities and detention table.

High – Sediment Basins with Grading Plans.

5.9 Complete Bridge / Structure Hydraulic Study and Scour Analysis

Task includes hydraulic model set-up, hydraulic calculations, scour analysis, and reporting. Reporting should follow the criteria established in the City's Stormwater Drainage Manual, supplemented by ODOT's "Location and Design Manual, Volume 2 – Drainage Design" and Bridge Design Manual.

Hours are per structure.

Low – Simple structure crossings with no FEMA analysis, 1D hydraulic model

Medium – Multiple structures and/or FEMA Zone A, 1D or 2D hydraulic model

High – Multiple structures and/or FEMA Zone AE, 1D and/or 2D hydraulic model. Scenarios in which fill will be placed in the floodplain.

NOTE: If a study has more than one alternative, additional hours should be included to modify the model. It is assumed that Temporary Access Fills details are not included in this task. If Temporary Access Fills

are required, consultant to discuss with City of Columbus Project Manager as to how to proceed. In the case of multiple alternatives, scour analysis will be performed for preferred alternative only.

5.10 Design Variances / Design Exceptions

Hours are for each design variance (Columbus requirement) or design exception (ODOT requirement). Multiple exceptions or variances should be scoped separately and delivered on a per-each basis.

Hours may vary based on specific project or site information.

Types of common city variance requests: Driveway, typical section, drainage variance related to green infrastructure, water separation report.

If the project involves ODOT review and approval and an ODOT design exception is required, it will be treated on each basis and hours negotiated on a case-by-case basis. When an ODOT design exception is required, reference the ODOT Consultant Fee Guidance document for further scoping guidance.

Low – Simple variance or design exception request with little supporting documentation or calculations required.

Medium – N/A

High: Complex variance or design exception request that requires detailed support or calculations. Involves multiple departments or jurisdictions for approval.

NOTE:

6 Utilities

Task Number / Task name	Unit of Measure	Low	Medium	High
6.1 – Utility Coordination and Documentation				
6.1.1 – Stage 1	Per Submittal	10	16	24
6.1.2 – Stage 2	Per Submittal	14	30	50
6.1.3 – Stage 3	Per Submittal	16	45	60
6.1.4 - Final	Per Submittal	10	14	20
6.2 – Subsurface Utility Engineering (Level D)	STA	2	4	6
6.3 – Subsurface Utility Engineering (Level C)	STA	20	22	26
6.4 – Subsurface Utility Engineering (Level B)	STA	0.5	0.75	1.5
6.5 – Subsurface Utility Engineering (Level A)	Locate	4	8	12
6.6 – Utility Site Visit				
6.6.1 – Preliminary Engineering	Per Meeting	2	3	4
6.6.2 – Stage 2	Per Meeting	2	3	4
6.6.3 – Stage 3	Per Meeting	1	2	3
6.7 – Joint Use Duct Bank				
6.7.1 – Stage 2	Per Sheet	6	8	12
6.7.2 – Stage 3	Per Sheet	6	8	12

6.1 Utility Coordination and Documentation

Includes utility coordination efforts as noted in the City of Columbus Department of Public Service General Design Requirements and associated manuals including the Utility Manual. This task is assumed to pick up where utility coordination efforts included in Survey Task 3.2 end. This includes but is not limited to:

- Coordination with utility owners to obtain additional easements, plats, plans, or records not obtained during survey. All obtained private utility information should be represented accurately within the project's design plans, profiles, cross sections, storm plans, traffic plans, etc.
- Transmit all utility information and mapping received to City Project Manager and Utility Coordinator.
- Facilitate coordination of the design with the utilities, both existing and proposed, including distribution of the plans to the utilities in conjunction with plan review submissions.
- Facilitation of utility coordination meeting(s) in coordination with City utility coordinator.
- Development and completion of the project Utility Coordination log (excel) and submission with each plan review submission from Stage 1 through the end of the project. Note the log is supposed to document the running history of the utility coordination/contacts, high level conflicts, and resolutions throughout the project development. Depending on complexity, a utility matrix may be used in lieu of coordination log.
- Development and completion of the Joint User Attachment log (excel) and submission at Stage 3 through Final Plans to both the Project Manager and Utility Coordinator.

- Development, completion, and submission of the Draft Utility Note (word) beginning at Stage 1 and continuing every two months and with each plan review submission through the project.
- Review relocation plans provided by private utility owners to confirm design. (Note assumed number of relocation plans in the fee proposal)
- Review relocations plans submitted as Right-of-Way excavation permits submitted to City by private utility owners. If during design a utility needs to place facilities in proposed improvements consultant should review the submitted plan. Upon completion of conflict analysis, consultant should: provide suggestions, comments, or change proposed infrastructure, if possible, to eliminate conflicts with project plan design

Hours are per Submittal.

Low – Physical features and review of utility data shows up to two non-City owned utility joint pole users and a likelihood of a 4 or fewer underground private utilities.

Medium – Physical features and review of utility data shows up to four non-City owned utility joint pole users and a likelihood of a 5 or fewer underground private utilities.

High – Projects with right of way or clearance constraints, projects with railroad involvement, projects located downtown or in historic areas of the City. Project with four or more non-City owned utility joint pole users; more than 5 underground facilities.

6.2 Subsurface Utility Engineering Level D

The two-dimensional representation of utilities within a project's work limits based solely upon facilities inventory information requested of, and provided by, the utility companies and record plans. This level of research may provide an overall feel for the congestion of utilities, but it is often highly limited in terms of accuracy and completeness. Its usefulness should be confined to preliminary project planning and route selection activities.

- Identification and location of Utility Features from visual observations and existing records and plans.
- Considered incidental to Level C efforts.
- Suitable for planning level surveys and plans without excavation (sidewalk replacement, resurfacing, landscaping).

Hours are per Station (100 feet) of project length.

Low/Med/High – Same as 6.1.

NOTE: Hours include effort to enter information into CAD. Assumes private utilities will not provide GIS and plans will need to be digitized from provided schematics and diagrams. The estimated effort in hours do not include travel time to or from the project site.

6.3 Subsurface Utility Engineering Level C

The two-dimensional representation of utilities, within a project's work limits, based upon the correlation of utilities inventory information (Quality Level D) with a survey of visible above ground utility features such as manholes, valve boxes, posts, etc. Level C mapping is based upon survey features identified in the field and supplemented by available mapping provided by utility owners.

This task assumes utility owners within project corridors respond to OHIO811 call for field markings and markings are surveyed under Task 3.2.

- Includes Level D information (existing records) that is tied to surface features – manholes, valves, boxes, catch basins, fire hydrants, etc.
- Surveyed surface features (castings, valves, poles, pedestals etc.) and field designation.

Hours are per Station (100 feet) of project length.

Low/Med/High – Same as 6.1.

NOTE: Level C is the basis for all project surveys and is inherent to Task 3.2 and should not be duplicated. The estimated effort in hours do not include travel time to or from the project site.

6.4 Subsurface Utility Engineering Level B

Quality Level B determines the horizontal location of private utilities identified using electronic methods such as electromagnetic locating, ground penetrating radar, and toning. Assumes that OHIO811 request for markings will be made 14 days prior to field identification.

- Utilities meeting Level B quality locates shall be noted on the plans

Hours are per Station (100 feet) of utility length.

Low/Med/High – Same as 6.1.

NOTE: This task is intended for the use of a subconsultant for the location of private utilities and does not include requests to private utilities to perform their own quality level B locates within a project. Utilities meeting Level B quality shall be noted on the plans. Consultant shall provide exhibit identifying location(s) needing Level B with proposed fee. Hours include path ID, survey, CADD, and research and coordination with the private utility. The estimated effort in hours do not include travel time to or from the project site.

6.5 Subsurface Utility Engineering Level A

The three-dimensional identification of a utility through excavation and survey.

Hours are manhours per locate.

Low – hole depth 0.00 – 8.00'

Medium – hole depth 8.00 – 13.00'

High – hole depth greater than 13.00'

NOTE: Task does not include permits, the restoration of locate holes, traffic control, or vacuum truck or other equipment necessary for excavation. Costs for these items should be included in Exhibit C, Part B. Task includes the hours for research and coordination with utility, excavation of utility, survey of utility, and entering of information into CAD. The estimated effort in hours do not include travel time to or from the project site.

6.6 Utility Site Visit

6.6.1 Preliminary Engineering

This task includes a utility site meeting with project utility coordinator to review plans, identify users, and potential conflicts. This meeting is required per the GDR.

Hours are per meeting.

Low/Med/High – Same as 6.1.

6.6.2 Stage 2

This task includes a utility site meeting with project utility coordinator to review plans, identify users, and conflicts on the project. This meeting is optional dependent on the project and anticipated impacts.

Hours are per meeting.

Low/Med/High – Same as 6.1.

6.6.3 Stage 3

This task includes a utility site meeting with project utility coordinator to verify joint users for completion of the Joint User Attachment Form. This meeting is required per GDR.

Hours are per meeting.

Low/Med/High – Same as 6.1.

6.7 Joint Use Duct Bank

6.7.1 Stage 2

This task includes preparation of sheets, details, and quantities for joint use duct banks.

Hours are per sheet.

Low/Med/High – Same as 6.1.

6.7.2 Stage 3

This task includes updates to plan sheets based on Stage 2 comments.

Hours are per sheet.

Low/Medium/High – Same as 6.1.

7 Geotech and Pavement Design

Task Number / Task name	Unit of Measure	Low	Medium	High
7.1 – Geotechnical Services and Report				
7.2 – Pavement Design Borings				
7.3 – Bridge Borings				
7.4 – Retaining Wall Borings				
7.5 – Other Borings				
7.6 – Pavement Section and Design Report	Segment	8	20	32
7.7 – Certification of Geotechnical Plan Review Letter				
7.7.1 – Stage 2				
7.7.2 – Stage 3				

7.1 Geotechnical Services and Report

Task includes geotechnical services for the project scope (bridge, structures, pavement widening, subgrade recommendations) and accompanying report. Report shall be in ODOT format for projects with subgrade and foundation recommendations and includes both Draft and Final exploration report and geotechnical profiles.

NOTE:

Hours for pavement design determination and recommendations are included in Task 7.6. Task 7.1 does not include hours for preparation of geotechnical plan and profile sheets for geohazards.

Hours, material, and permitting shall be submitted using ODOT's Office of Geotechnical Engineering fee proposal format (Appendix E - Geotechnical Exploration Proposal).

7.2 Pavement Design Borings

Task includes the borings needed to determine pavement design and subgrade recommendations for new roadways and widened pavement. Where existing pavement is to remain, borings should be done to determine existing pavement conditions. Includes laboratory testing of boring samples.

NOTE: Hours, material, and permitting shall be submitted using ODOT's Office of Geotechnical Engineering fee proposal format (Appendix E - Geotechnical Exploration Proposal).

7.3 Bridge Borings

Task includes the borings needed for design of new and existing structures. Includes laboratory testing of boring samples.

NOTE: Hours, material, and permitting shall be submitted using ODOT's Office of Geotechnical Engineering fee proposal format (Appendix E).

7.3 Retaining Wall Borings

Task includes the borings needed to design retaining walls. Includes laboratory testing of boring samples.

NOTE: Hours, material, and permitting shall be submitted using ODOT's Office of Geotechnical Engineering fee proposal format (Appendix E - Geotechnical Exploration Proposal).

7.5 Other Borings

Task includes project specific borings as determined by design consultant and City project manager. Includes laboratory testing of boring samples.

NOTE:

Examples for this task include borings for monitoring groundwater, inclinometers, piezometers, or vibration monitoring.

Hours, material, and permitting shall be submitted using ODOT's Office of Geotechnical Engineering fee proposal format (Appendix E - Geotechnical Exploration Proposal).

7.6 Pavement Section and Design Report

Includes calculations to determine alternative pavement compositions and thicknesses, and preparing a report to present findings, in accordance with City's Non-Residential Pavement Policy. Alternatives could include flexible pavement, rigid pavement, or composite pavement (roller compacted concrete base or Portland cement concrete base) sections. Alternatives could also include full depth reconstruction or reuse of existing pavement courses.

If a pavement section determination is required along a residential street, Public Service will provide the section unless otherwise requested by the City.

Hours are per street or street segment.

Low – One alternative. (Widening / short project length where pavement build up is known and calculations are for confirmation of design).

Medium – 2-3 alternatives.

High – 4-5 alternatives.

NOTE: Task 7.6 shall be included in Geotechnical Report, Task 7.1 as an appendix or subsection of the report.

7.7 Certification of Geotechnical Plan Review Letter

Task includes the review of plans to verify all geotechnical and pavement recommendations have been accurately depicted.

NOTE: Hours, material, and permitting shall be submitted using ODOT's Office of Geotechnical Engineering fee proposal format (Appendix E).

8 Public Involvement Process

Task Number / Task name	Unit of Measure	Low	Medium	High
8.1 – Public Engagement Strategy Meeting	Per Meeting	2	2	2
8.2 – Public Engagement and Education Plan	Per project	8	40	80
8.3 – Engagement Notification	Per Project	32	60	120
8.4 – Stakeholder Engagement	Per Meeting	6	6	6
8.5 – In-Person Public Meeting or Engagement Event	Per Meeting	2	12	20
8.6 – Virtual Public Meeting/Engagement	Per Meeting	N/A	4	8
8.7 – On-Going Public Education	Month	N/A	4	8

8.1 Public Engagement Strategy Meeting

Task includes the strategy meeting(s) to identify affected audiences and possible concerns, inform foundational messaging, and confirm stakeholder/public engagement approach and schedule.

Hours are per meeting per attendee.

This task has no Low/Medium/High delineation.

8.2 Public Engagement and Education Plan

Task includes the development and documentation of engagement strategy including goals, audiences, planned engagement activities, communication tools, and schedule.

Hours are per submittal.

Low – Develop Public Engagement Plan (PEP) Memo, ODOT Path 1 or Path 2 projects.

Medium – Develop full Public Engagement Plan (PEP), ODOT Path 3 or higher projects with D1 or higher environmental documentation.

High – Develop full Public Engagement Plan (PEP), limited cases as approved by City PM.

NOTE: City will provide an anticipated level of engagement with scoping documents.

8.3 Engagement Notification

Task includes the development of notification materials to alert stakeholders and the public of opportunities to provide input based on the planned number of stakeholder and public engagement activities established in Task 8.1. Includes preparation of engagement material (exhibits, outreach database, notification letters, comment form, post cards, websites, media releases, surveys, advertisements, etc) as needed per the project scope and complexity.

Hours are per project.

Complexity – See 8.2.

NOTE:

Assumes one preferred alternative presented to the public. Hours will need to be increased to account for multiple alternatives if the public is selecting a preferred alternative. Materials, postage, exhibits, and other materials to be listed on Exhibit C, Part B.

8.4 Stakeholder Engagement

Task includes the preparation, coordination, attendance, facilitation and documentation of in-person stakeholder engagement activities based on strategy developed in Task 8.2. This task could include briefings, meetings and participation in other stakeholder outreach events (area commission meeting, advisory committees, media events, walking/biking tours). This task includes project team preparation and rehearsal meeting(s).

Hours are per meeting.

This task has no Low/Medium/High delineation.

NOTE: materials developed for the event should be included under Task 8.3.

8.5 In-Person Public Meeting or Engagement Event

Task includes preparation, coordination, attendance, facilitation, and documentation of in-person public meetings, hearings or other public engagement activities based on the strategy developed in Task 8.2. This task could also include briefings, charettes, pop-up/equitable engagement, walking/biking tour, on-site engagement, and other larger meeting formats. This task includes project team preparation and rehearsal meeting(s).

Hours are per meeting.

Low – Open-house public meeting.

Medium – Public meeting with formal presentations.

High – Custom meetings developed and approved by COC PM and Public Communication Team.

8.6 Virtual Public Meeting or Engagement Event

Task includes preparation, coordination, attendance, facilitation, and documentation for virtual public meetings, hearings, or other public engagement activities based on strategy developed in Task 8.2.

Hours are per meeting.

Low – N/A.

Medium – Public meeting with formal presentations.

High – Custom meetings developed and approved by COC PM and Public Communication Team.

8.7 On-going Public Education or Counsel

Task includes the development of news releases, social media, e-newsletters, direct mailings, postcards, posters, door hangers, fliers, paid advertisements, website content, and other engagement and construction notification tools to further notify and inform the public as the project progresses over time.

Hours are per month.

Low – N/A.

Medium – Periodic updates of project and construction progress.

High – Complex projects with multiple phases and regular updates to project and construction progress.

9 Prepare Cost Estimate

Task Number / Task name	Unit of Measure	Low	Medium	High
9.1 – Construction Cost Estimate				
9.1.1 – Preliminary	Project	12	16	20
9.1.2 – Stage 1	Project	20	28	36
9.1.3 – Stage 2	Project	12	18	24
9.1.4 – Stage 3	Project	6	8	10
9.1.5 – Final	Project	6	8	10

9.1 Construction Cost Estimate

9.1.1 Preliminary

Task includes determination of high-level quantities (no subsummaries or general summary at this stage). Estimate hours for roadway items based on general assumptions such as square footage. Drainage and roadway item quantities are approximated.

Hours are per project.

Low – Short work limits (<1,000+/- LF) and/or limited scope of improvements.

Medium – Medium length (1,000 to 2,500+/- LF) and/or moderate scope of improvements.

High – Long length (>2,500 LF) and/or complex scope of improvements.

NOTE: Project complexity could change the Low-Medium-High classification based on the number of disciplines involved in a project. Other influencing factors include rural/suburban/urban conditions, magnitude of drainage improvements, and number of removals. More hours are warranted for multiple alternatives if required.

9.1.2 Stage 1

Task includes calculation of preliminary quantities (no subsummaries or general summary at this stage). Include line-item quantities for pavement courses, drainage pipes and structures, roadway quantities, and removals. Earthwork quantities can be approximate – end area calculations for each cross section are not required. Lump sums, rather than individual line items, are acceptable for some items such as traffic signals and M/T. Unit costs should be checked/updated at each stage based on historical bid data.

Hours are per project.

Low/Medium/High – Same as 9.1.1.

9.1.3 Stage 2

Update Stage 1 quantities and add more detail as design progresses. Generally, all items from the general summary should be included in the estimate. Unit costs should be checked/updated at each stage based on historical bid data.

Hours are per project.

Low/Medium/High – Same as 9.1.1.

9.1.4 Stage 3

Update Stage 2 estimate to reflect quantities as shown on the General Summary. Unit costs should be checked/updated at each stage based on historical bid data.

Hours are per project.

Low/Medium/High – Same as 9.1.1.

9.1.5 Final

Update Stage 3 estimate to reflect final plan quantities as shown on the General Summary. Unit costs should be checked/updated at each stage based on historical bid data. Sign and seal as official “Engineer’s Estimate” for advertisement and bidding.

Hours are per project.

Low/Medium/High – Same as 9.1.1.

10 Preliminary Alignment Plan

Task Number / Task name	Unit of Measure	Low	Medium	High
10.1 – Feasibility Study	Project Specific			
10.2 – Plan & Profile	Project Specific			
10.3 – Preliminary Intersection Geometrics	Intersection	10	18	26
10.4 – Roundabout Intersection Geometrics	Roundabout	60	90	120
10.5 – Cross sections	Project Specific			
10.6 – Conceptual SCP	Project Specific			
10.7 – Traffic Signal Warrant Analysis				
10.7.1 – PC Warrant Software Analysis	Per Intersection	10	16	80
10.7.2 – Traffic Count Data Collection	Per Intersection	8	8	8
10.8 – Miscellaneous Traffic Analysis	Project specific			
10.9 – Lighting Assessment	Per Project	4	10	36
10.10 – Retaining Wall Type Study	Per Wall	80	120	160
10.11 – Bridge Type Study	Per Bridge	100	300	400

NOTE: Preliminary Alignment Plan tasks and associated hours should account for the iterative nature of design. The level of effort is highly dependent on the number of alternatives to be developed and the anticipated number of iterations to develop a design that achieves the City’s goals for the project. The Consultant and City PM should discuss these tasks in detail during fee negotiations to develop a common understanding of expectations.

10.1 Feasibility Study

This will be project specific. Additional tasks may be necessary dependent on study scope.

10.2 Plan & Profile

Develop conceptual horizontal geometry (including pavement markings) for proposed improvements. Prepare a scroll plot exhibit (or Plan & Profile Sheets, if directed) in accordance with Columbus General Design Requirements. If directed, develop vertical profile and show on the scroll plot or on a separate exhibit. Hours for this task will be project-specific with consideration for number of alternatives to be considered/developed, complexity of design, and number of constraints within project area.

10.3 Preliminary Intersection Geometrics

Subtasks include A) Determination of Design Vehicle & Check Vehicle – reference Design Memo 9.04 Turning Radii. B) Geometric design of intersections including curb returns and receiving tapers, where applicable. C) Simulation of design/check vehicle turning movements and associated exhibits, if required. D) Preliminary layout of curb ramps, in accordance with ADA Rules and Regulations, including preliminary layout of traffic signal poles/pushbuttons, if applicable.

Hours are per Intersection.

Low – Use of minimum radius per Design Memo 9.04, no turning movement simulations, unsignalized.

Medium – Unsignalized intersection with turning movement analysis. Signalized intersection with no turning movement simulations (use minimum radius).

High – Signalized intersection with turning movement analysis.

NOTE: Selection of Low, Medium, and High may be influenced by complicating factors, such as right-of-way limitations and conflicting topographic features to be mitigated (e.g., walls, drainage structures, public/private utility infrastructure). Roundabout intersections are not included and should be scoped under the following task.

10.4 Roundabout Intersection Geometrics

Design of horizontal geometrics for roundabouts including the following: selection of design vehicle, vehicle turning movement simulations and exhibits, evaluation of intersection sight distance and exhibits, speed curve analysis and fastest path exhibits. Capacity analysis is not included. Hours for preliminary grading and construction limits should be included in Task 10.2 and/or Task 10.5. Vertical design, grading, and plan details are covered in 11.5.3.

Hours are per roundabout intersection.

Low – Mini roundabout or small urban roundabout with short splitter islands and simple geometry.

Medium – Standard 1x1 or 2x1 roundabout. Generally perpendicular.

High – Roundabout with dedicated left turn lane(s) in the circulatory roadway and/or channelized/by-pass right turn lanes which are separated from through lanes by banana-type splitter islands, etc.

NOTE: Selection of Low, Medium, and High may be influenced by complicating factors, such as expandable design, right-of-way limitations, and conflicting topographic features to be mitigated (e.g., walls, drainage structures, public/private utility infrastructure) and high-speed approaches. 2x2 (or larger) or roundabout with unique geometry such as significant skew angle, turbo elements, or peanut shape may warrant higher-than-high hours.

10.5 Cross Sections

Develop preliminary cross sections for the purposes of evaluating alternatives, determining project footprint and confirming construction limits for existing or proposed right of way. Underground utilities should be shown if information is available and important for evaluating geometrics and grading. Hours for this task will be project-specific with consideration for number of alternatives to be considered/developed, complexity of design, and amount of constraints within project area. Considering those factors, hours should be proportionate to the hours described in Task 11.5.2.

10.6 Conceptual SCP Study

This task includes effort for developing conceptual SCP(s) including calculations, layout, exhibits, cost estimates, and summary memo. This includes a review of the project site to determine available existing right of way (R/W) for placement of potential SCPs. If no existing R/W is available and project plans to acquire R/W, review of area outside of existing R/W to determine if sufficient area to accommodate appropriate SCPs. The level of effort is highly dependent on the number of alternatives to be developed and the anticipated number of iterations to develop a design that achieves the City's goals for the project. The Consultant and City PM should discuss these tasks in detail during fee negotiations to develop a common understanding of expectations.

10.7 Traffic Signal Warrant Analysis

10.7.1 PC Warrant Analysis

This task includes the signal warrant analysis using PC Warrant software.

Hours are per intersection.

Low – Signal warrant study of one intersection based on count data or record information provided by CoC DoTM. This analysis is limited to volume-based warrants #1-3. Use PC Warrants software and include right-turn discount where applicable.

Medium – Signal warrant study of one intersection, including collection of 8-hour turning movement and pedestrian counts at one intersection, limited to volume-based warrants #1-3. Use 8-hr count data to include the expected 8 highest hours for the intersection and PC Warrants software for the analysis. Include right-turn discount where applicable.

High – Full signal warrant study of one intersection, including collection of 8-hour turning movement and pedestrian counts at one intersection, including warrants #1-9. Use 8-hr count data to include the expected 8 highest hours for the intersection and PC Warrants software for the analysis. Include right-turn discount, collection and assessment of crash data, and other analysis as requested to evaluate relevant signal warrants.

10.7.2 Traffic Counts

This task includes traffic counts for traffic analysis.

Hours are per intersection.

Low/Medium/High – Not applicable.

10.8 Miscellaneous Traffic Analysis

This task shall include time needed for the preparation of traffic studies, analyses, calculations, data collection, documentation and reports, etc. Outlined below is a list of items that may be accommodated under this task:

- Capacity analyses using Highway Capacity Software (HCS), Synchro, Transmodler, Sidra, etc.
- Turn lane warrant and length calculations.
- Site Visits / data collection
- Safety Studies.
- Impact Studies.
- Corridor Studies.
- Traffic Signal Coordination.
- Interchange Operation/Modification Studies.
- Speed Studies.
- Parking Studies.
- Pedestrian/Bicycle Studies.
- Accident Studies.
- Safety applications.
- Participation in study-related public engagement.
- Etc.

This list should not be considered exhaustive and other types of traffic studies may be accommodated under this task. Project specific details, overall size, complexity and scope of work assigned under this task are too broad to provide predetermined hour recommendations. Hours proposed under this task shall correspond with the level of effort needed on a project-by-project basis.

10.9 Lighting Assessment

Conduct inspection and field review of existing lighting assets to assess condition and adherence to current guidelines/standards for illuminance, etc. Task may include a preliminary engineering report and photometric analysis. Include kick-off meeting with DOP to ensure everyone is aware of project scope.

Hours are per project.

Low – Conduct inspection and field review of existing lighting assets to assess condition and adherence to current guidelines, standards for illuminance, and kick-off meeting with DOP to ensure everyone is aware of project scope.

Medium – Field review of existing conditions with a memo summary of findings.

High – Field review, photometric analysis, and preliminary engineering report.

10.10 – Retaining Wall Type Study

This task includes preparation of a Retaining Wall Type Study (typically memo format) to identify feasible wall types and compare them to each other. Comparison should include differentiating factors such as cost, constructability, traffic maintenance, right-of-way impacts, and utility conflicts. Study should include representative sections for each wall type; however, walls should primarily be shown on Preliminary Alignment Plan and associated cross sections.

Hours are per wall.

Low – Comparison of up to two wall types.

Medium – Comparing up to three wall types.

High – Comparing up to four wall types.

NOTE: Wall height and types may affect determination of Low/Medium/High.

This task is not intended to cover curb walls (18" or lower in height) or Type A modular retaining walls (4' or lower in height); hours for evaluation of curb walls or Type A modular retaining walls are to be included in cross section grading tasks.

10.11 – Bridge Type Study

This task includes preparation of a study to determine proposed bridge type. If there is a left and right bridge with the same spans and skews, count as one bridge for this task. Left and right horizontally curved bridges, count as two bridges for this task. The hours for this task do not apply to bridge overlay projects, minor bridge rehabilitations, or deck replacement projects.

Typical details and/or plan sheets that are to be included in the Bridge Type Study include a Preliminary Site Plan for each alternative studied, a preliminary transverse section for the Preferred Alternative, and typical preliminary substructure sections for the Preferred Alternative. Additional details may be necessary for unique situations.

Hours are per bridge.

Low – Small span. Primary determination is culvert or single span bridge. All bridge rehabilitations which are scoped for superstructure replacement and retention of existing substructure.

Medium – 2-3 spans or single span with staged construction. Maximum span length is less than 130 ft.

High – 4 spans or more. Maximum span length is greater than 130 ft.

NOTE: Hours may need adjusted for Structure Type Studies that include five or more alternatives, more than 4 spans, span lengths over 150 feet, and/or multiple superstructure types (concrete or steel).

11 Plan Development

Task Number / Task name	Unit of Measure	Low	Medium	High
11.1 – Roadway				
11.1.1 – Title Sheet				
11.1.1.1 – Stage 1	Project	6	8	10
11.1.1.2 – Stage 2	Project	2	3	4
11.1.1.3 – Stage 3	Project	2	3	4
11.1.2 – Schematic				
11.1.2.1 – Stage 1	Project	20	26	32
11.1.2.2 – Stage 2	Project	4	6	8
11.1.2.3 – Stage 3	Project	1	1.5	2
11.1.3 – Typical Sections				
11.1.3.1 – Stage 1	Section	6	10	12
11.1.3.2 – Stage 2	Section	2	4	6
11.1.3.3 – Stage 3	Section	0	1	2
11.1.4 – General Notes				
11.1.4.1 – Stage 1	Project	4	4	4
11.1.4.2 – Stage 2	Project	8	16	24

Task Number / Task name	Unit of Measure	Low	Medium	High
11.1.4.3 – Stage 3	Project	4	8	10
11.2 – Maintenance of Traffic Plans				
11.2.1 – Conceptual MOT				
11.2.1.1 – Stage 1	Phase	8	16	24
11.2.2 – MOT General Notes				
11.2.2.1 – Stage 2	Sheet	2	4	6
11.2.2.2 – Stage 3	Sheet	2	4	6
11.2.3 – MOT Typical Sections				
11.2.3.1 – Stage 2	Typical	2	4	6
11.2.3.2 – Stage 3	Typical	0.5	1	1.5
11.2.4 – Pedestrian Detour				
11.2.4.1 – Stage 2	Detour	-	-	8
11.2.4.2 – Stage 3	Detour	-	-	4
11.2.5 – Bike Lane Detour				
11.2.5.1 – Stage 2	Detour	4	6	8
11.2.5.2 – Stage 3	Detour	2	3	4
11.2.6 – Detour Plan				
11.2.6.1 – Stage 2	Detour	-	12	18
11.2.6.2 – Stage 3	Detour	-	6	10
11.2.7 – MOT Plan Sheets				
11.2.7.1 – Stage 2	Sheet	16	20	24
11.2.7.2 – Stage 3	Sheet	8	10	12
11.2.8 – MOT Subsummary				
11.2.8.1 – Stage 2	/MOT Plan Sheet	0.5	1	1
11.2.8.2 – Stage 3	/MOT Plan Sheet	0.25	0.5	0.5
11.2.9 – Temporary Signal Plans and Details				
11.2.9.1 – Stage 2	N/A	12	18	24
11.2.9.2 – Stage 3	N/A	6	9	12
11.2.10 – MOT Miscellaneous Details				
11.2.10.1 – Stage 2	Sheet	8	8	8
11.2.10.2 – Stage 3	Sheet	2	4	6
11.3 – SWPPP Plan Sheets				
11.3.1 – Stage 2	STA	1	2	4
11.3.2 – Stage 3	STA	0.75	1.5	3
11.4 – Roadway Quantities				
11.4.1 – General Summary				
11.4.1.1 – Stage 2	Sheet	10	14	18
11.4.1.2 – Stage 3	Sheet	8	8	8
11.4.2 – Plan & Profile Sub-summaries				
11.4.2.1 – Stage 2	Sheet	10	14	18

Task Number / Task name	Unit of Measure	Low	Medium	High
11.4.2.2 – Stage 3	Sheet	8	10	12
11.4.3 – Pavement Calculations				
11.4.3.1 – Stage 2	Sheet	8	12	14
11.4.3.2 – Stage 3	Sheet	4	6	10
11.5 – Roadway Plans				
11.5.1 – Plan and Profile				
11.5.1.1 – Stage 1	Sheet	20	25	30
11.5.1.2 – Stage 2	Sheet	8	12	16
11.5.1.3 – Stage 3	Sheet	2	3	4
11.5.2 – Cross Sections				
11.5.2.1 – Stage 1	Section	2	3	3.5
11.5.2.2 – Stage 2	Section	0.75	1.5	1.5
11.5.2.3 – Stage 3	Section	0.25	0.5	1
11.5.3 – Intersection & Curb Ramp Details				
11.5.3.1 – Intersection Details				
11.5.3.1.a – Stage 2	Intersection	12	18	24
11.5.3.1.b – Stage 3	Intersection	1	2	3
11.5.3.2 – Curb Ramp Details				
11.5.3.2.a – Stage 2	Ramp	4	6	7
11.5.3.2.b – Stage 3	Ramp	0	0.5	1
11.5.3.3 – Roundabout Details				
11.5.3.3.a – Stage 1	Intersection	12	20	26
11.5.3.3.b – Stage 2	Intersection	70	90	110
11.5.3.3.c – Stage 3	Intersection	4	6	8
11.5.4 – Driveway Details				
11.5.4.1 – Stage 1	Driveway	2	4	6
11.5.4.2 – Stage 2	Driveway	4	10	14
11.5.4.3 – Stage 3	Driveway	0	1	2
11.5.5 – Superelevation Table				
11.5.5.1 – Stage 1	Sheet	12	18	24
11.5.5.2 – Stage 2	Sheet	1	2	4
11.5.6 – Miscellaneous Grading Details	Project Specific			
11.6 – Drainage and SCP				
11.6.1 – Storm Sewer Profiles				
11.6.1.1 – Stage 1	STA	1	1.5	2
11.6.1.2 – Stage 2	STA	1	2	4
11.6.1.3 – Stage 3	STA	0.5	1	1.5
11.6.2 – Culvert Detail Sheets				
11.6.2.1 – Stage 2	Per Culvert	24	24	70
11.6.2.2 – Stage 3	Per Culvert	16	16	24

Task Number / Task name	Unit of Measure	Low	Medium	High
11.6.3 – SCP / Detention Details				
11.6.3.1 – Stage 1	Per SCP	8	16	40
11.6.3.2 – Stage 2	Per SCP	8	16	36
11.6.3.3 – Stage 3	Per SCP	0	8	12
11.7 – Water Works				
11.7.1 – Water General Notes & Coordinate Table				
11.7.1.1 – Stage 2	Project	12	16	20
11.7.1.2 – Stage 3	Project	2	3	4
11.7.2 – Water Works Plan – New or Relocated Water Mains				
11.7.2.1 – Stage 1	Sheet	8	10	12
11.7.2.2 – Stage 2	Sheet	14	18	22
11.7.2.3 – Stage 3	Sheet	4	6	8
11.7.3 – Water Works Plan – Minor Adjustments				
11.7.3.1 – Stage 1	Adjustment	4	6	8
11.7.3.2 – Stage 2	Adjustment	6	8	10
11.7.3.3 – Stage 3	Adjustment	1	2	3
11.8 – Sanitary Sewer Plans				
11.8.1 – CC-Plans				
11.8.2 – PTI				
11.9 – Traffic Control	Sheet			
11.9.1 – Signing & Pavement Marking Plan				
11.9.1.1 – Stage 1	Sheet	10	14	16
11.9.1.2 – Stage 2	Sheet	6	10	12
11.9.1.3 – Stage 3	Sheet	4	6	8
11.9.2 – Pavement Marking Subsummary				
11.9.2.1 – Stage 2	Project	4	6	10
11.9.2.2 – Stage 3	Project	2	4	6
11.9.3 – Signing Subsummary				
11.9.3.1 – Stage 2	Project	4	6	10
11.9.3.2 – Stage 3	Project	2	4	6
11.9.4 – Signing and Pavement Marking Details and Notes				
11.9.4.1 – Stage 2	Sheet	4	6	8
11.9.4.2 – Stage 3	Sheet	2	4	6
11.10 – Landscape Notes, Plans and Details				
11.10.1 – Tree Survey	per 100 LF Surveyed	0.25	0.5	0.75
11.10.2 – Public Tree Plan				
11.10.2.1 – Public Tree Plan Notes & Details	Per Project	8	8	8
11.10.2.2 – Plan Sheets and Tables				

Task Number / Task name	Unit of Measure	Low	Medium	High
11.10.2.2.a – Stage 2	Per Sheet	8	10	14
11.10.2.2.b – Stage 3	Per Sheet	2	4	6
11.10.3 – Miscellaneous Landscape Details	Project Specific			
11.11 – Traffic Signal Plans				
11.11.1 – Traffic Signal Notes				
11.11.1.1 – Stage 2	Project	6	8	10
11.11.1.2 – Stage 3	Project	4	4	6
11.11.2 – Traffic Signal Quantities				
11.11.2.1 – Stage 2	Signal	4	6	8
11.11.2.2 – Stage 3	Signal	10	14	18
11.11.3 – Traffic Signal Removal Plan				
11.11.3.1 – Stage 2	Signal	8	14	16
11.11.3.2 – Stage 3	Signal	6	8	10
11.11.4 – Traffic Signal Plan Sheets				
11.11.4.1 – Stage 1	Signal	14	16	20
11.11.4.2 – Stage 2	Signal	25	45	55
11.11.4.3 – Stage 3	Signal	8	16	20
11.11.5 – Traffic Signal Details: Wiring Diagram, Timing Chart, Detection Details, Grounding and Bonding, Etc.				
11.11.5.1 – Stage 2	Signal	16	20	25
11.11.5.2 – Stage 3	Signal	8	10	12
11.11.6 – Traffic Signal Support Calculations, Orientation and Fabrication Details				
11.11.6.1 – Stage 3	Signal	10	14	18
11.11.7 – Temporary Interconnect Plans				
11.11.7.1 – Stage 2	Sheet	10	16	20
11.11.7.2 – Stage 3	Sheet	8	10	12
11.11.8 – Interconnect Plan and Details				
11.11.8.1 – Stage 1	Sheet	8	10	14
11.11.8.2 – Stage 2	Sheet	10	16	22
11.11.8.3 – Stage 3	Sheet	6	8	12
11.11.9 – Existing Signals Assessment	Project Specific			
11.12 – Lighting Plan and Details				
11.12.1 – Lighting Notes				
11.12.1.1 – Stage 2	Project	8	10	14
11.12.1.2 – Stage 3	Project	2	4	4
11.12.2 – Lighting Sub-summary and Quantities				
11.12.2.1 – Stage 2	Project	2	3	4
11.12.2.2 – Stage 3	Project	8	14	19

Task Number / Task name	Unit of Measure	Low	Medium	High
11.12.3 – Lighting Photometric Analysis and Plan Sheets				
11.12.3.1 – Stage 2	Sheet	12	12	12
11.12.3.2 – Stage 3	Sheet	4	8	12
11.12.4 – Lighting Demolition Plan				
11.12.4.1 – Stage 2	Sheet	8	10	12
11.12.4.2 – Stage 3	Sheet	2	4	4
11.12.5 – Lighting Plan Details				
11.12.5.1 – Stage 1	Sheet	4	6	8
11.12.5.2 – Stage 2	Sheet	6	8	12
11.12.5.3 – Stage 3	Sheet	6	8	10
11.12.6 – Lighting Plan				
11.12.6.1 – Stage 1	Sheet	4	6	8
11.12.6.2 – Stage 2	Sheet	6	8	12
11.12.5.3 – Stage 3	Sheet	6	8	10
11.12.7 – Power Circuit Layout and Details				
11.12.7.1 – Stage 2	Controller	8	10	14
11.12.7.2 – Stage 3	Controller	4	8	10
11.12.8 – Lighting Plan Calculations				
11.12.8.1 – Stage 1	Controller	1	2	3
11.12.8.2 – Stage 2	Controller	6	10	14
11.12.8.3 – Stage 3	Controller	1	2	3
11.13 – Retaining Walls				
11.13.1 – Retaining Wall Plan and Elevation				
11.13.1.1 – Stage 1	Per Sheet	20	24	24
11.13.2 – Retaining Wall Detail Sheets				
11.13.2.1 – Stage 1	Per Sheet	10	10	10
11.13.2.2 – Stage 2	Per Sheet	15	20	35
11.13.2.3 – Stage 3	Per Sheet	5	5	5
11.14 – Bridge				
11.14.1 – Site Plan				
11.14.1.1 – Stage 1	Per Sheet	20	24	24
11.14.2 – Supplemental Site Plan for Railroad Crossing				
11.14.2.1 – Stage 1	Per Sheet	80	120	160
11.14.3 – Bridge Detail Sheets				
11.14.3.1 – Stage 1	Per Sheet	10	10	10
11.14.3.2 – Stage 2	Per Sheet	15	20	25
11.14.3.3 – Stage 3	Per Sheet	5	5	5
11.15 – Structures General Calculations				

Task Number / Task name	Unit of Measure	Low	Medium	High
11.15.1 – Bridge Rating	Per Bridge	20	30	40+
11.15.2 – Structures Costs				
11.15.2.1 – Stage 1	Per Structure	8	8	8
11.15.2.2 – Stage 2	Per Structure	16	24	32+
11.15.2.3 – Stage 3	Per Structure	4	6	8
11.16 – Structures General Sheets				
11.16.1 – Structures General Notes Sheets				
11.16.1.1 – Stage 2	Per Sheet	16	20	30+
11.16.1.2 – Stage 3	Per Sheet	4	6	8
11.16.2 – Estimated Quantities Sheets				
11.16.2.1 – Stage 2	Per Bridge/Wall	14	--	20
11.16.2.2 – Stage 3	Per Bridge/Wall	2	--	4
11.16.3 – Reinforcing Steel Schedule Sheets				
11.16.3.1 – Stage 3	Per Sheet	20	32	32

NOTE:**11.1 Roadway***11.1.1 Title Sheet**11.1.1.1 – Stage 1*

Initial development of title sheet – assumes sheet creation and population of information as identified in GDR and Sample Plans

Hours are per project.

Low – 1 – Design designation information for up to 2 streets. Project limits are short, or work is minor such as a GE contract for single intersection design / resurfacing / sidewalk project. Projects up to 50 total sheets.

Medium – Design designation information for up to 2-3 streets. Intersection or widening projects with basic alignment. Projects from 51 to 200 total sheets.

High – Design designation information for up to 3 or more streets. Complex work such as urban corridor reconstruction with multiple roads involved. Projects over 200 total sheets. May require a second sheet.

11.1.1.2 – Stage 2

Update title sheet based on Stage 1 comments, update sheet index, add standard drawings.

Hours are per project.

Low/Med/High – See 11.1.1.

11.1.1.3 – Stage 3

Update title sheet based on Stage 2 comments, update sheet index, update standard drawings.

Hours are per project.

Low/Med/High – See 11.1.1.

11.1.2 Schematic

Assume that the hours for creating the proposed horizontal and vertical alignments are included in the preliminary alignment plan and/or plan and profile sections. Assume that more complicated projects will require higher detail resulting in more sheets, which should reflect the additional hours required. Task includes labeling information as shown on sample plans and creation of benchmark / control point table and identification on schematic. Hours should be mostly Technician-level with surveyor input/review of survey control. Roundabout baseline schematic plans should be included in 11.5.3.

Hours are Per Project.

Low – Project limits are short; project complexity is low. Relatively linear geometry, single intersection, sidewalk, resurfacing projects. Minimal / no intersections; work at intersections is non-complex with singular centerlines/baselines.

Medium – Moderate project design complexity; project limits include several intersections and/or multiple centerlines.

High – Complex project design, long project corridor, project limits include a high number of centerlines and/or ramp baselines with spirals or other complex geometry.

11.1.2.1 – Stage 1

Initial development of Schematic sheet – assumes sheet creation and population of information as identified in GDR and Sample Plans.

Hours are per sheet.

Low/Med/High – See 11.1.2.

11.1.2.2 – Stage 2

Update schematic based on Stage 1 comments. Label any new major utilities that are identified during utility coordination.

Hours are per sheet.

Low/Med/High – See 11.1.2.

11.1.3 Typical Sections

Task includes the drafting, labeling and review of existing and proposed typical sections for the project. Show existing pavement section based on borings, cores, and/or available record plans. Show proposed pavement build up based on pavement design. Pavement transitions, superelevation slopes (if required), grading, turn lanes, parking, sidewalks, bike facilities, landscaping, medians, etc. shown in typical sections and labeled at this stage. Typical section details are included in the total hours proposed per section.

11.1.3.1 – Stage 1

Prepare typical sections and details. Sheets should be complete in terms of content, pending City review.

Hours are per typical section.

Low – Resurfacing project, sidewalk / SUP project, no major roadway work, new construction/reconstruction with minimal transitions / tapers per each section.

Medium – Widening and resurfacing/reconstruction with a moderate number of supplemental details to cover variability in section.

High – Complex rehabilitation, widening, multiple transitions/high amount of supplemental details to cover variability in sections.

NOTE: Superelevation tables and calculations are included in Task 11.5.5. Assumes that labeling of transitions is kept simple in all cases - i.e. Typical will indicate the minimum/maximum widths over the station range, they will not label the exact location of every transition as those are indicated on the plan and profile sheets, unless otherwise noted in the GDR.

11.1.3.2 – Stage 2

Update of Typical Sections based on Stage 1 comments.

Hours are per typical section.

Low/Med/High – See 11.1.3.1.

11.1.3.3 – Stage 3

Update of Typical Sections based on Stage 2 comments.

Hours are per typical section.

Low/Med/High – See 11.1.3.1.

11.1.4 General Notes

Task includes preparation of General Notes sheets including Columbus standard notes, other agency notes (if applicable), Special notes, “as per plan” notes, and legend of lines, symbols, and abbreviations. Task includes listing of Environmental Commitments from waterway permitting and/or NEPA process.

11.1.4.1 – Stage 1

Prepare utility contact note and legend (see sample plans).

Hours are per project.

Low/Med/High – Stage 1 hours are the same for all levels of complexity.

11.1.4.2 – Stage 2

Populate sheets with all standard notes, Special notes, and “as per plan” notes. Quantities to be provided within General Notes are not required at this stage and can be left blank.

Hours are per project.

Low – City project only utilizing standard departmental notes with few “special” or “as per plan” notes.

Med – City project only with a moderate amount of “special” or “as per plan” notes.

High – Multijurisdictional notes including two or more agencies and/or a higher number of “special” or “as per plan” notes.

NOTE: Project scope elements like high-type materials (i.e. stone curbs, brick walks, planters, bike racks, etc.), non-standard removals, salvaging of materials, hazardous materials, and environmental commitments, could drive a high number of “special” or “as per plan” notes.

11.1.4.3 – Stage 3

Calculate and list quantities that are to be included with General Notes. Update notes to address Stage 2 comments. For projects with environmental commitments, include effort for information gathering and drafting, such as review of environmental documents to capture all commitments. Typical hours assume that commitments are defined in the environmental document and/or waterway permit.

Hours are per project.

Low/Med/High – See 11.1.4.2.

11.2 Maintenance of Traffic Plans

11.2.1 Conceptual MOT

Development of conceptual MOT plan includes: plan view schematic, sequence of construction with durations, detour & haul route (if needed), and preliminary typical sections. Efforts may include time for one or more meetings with City to discuss MOT concepts. If effort is limited to a memo, this shall be considered a low level of effort.

Hours are per MOT phase.

11.2.1.1 – Stage 1

Low – Use of existing and/or proposed roadway pavement for vehicular traffic and/or pedestrian/bike lane detours. Assumes basic narrative and layout with lane widths labeled. Can involve the use of standard construction drawings in lieu of detailed design. No typical sections required.

Medium – Use of typical sections developed for the roadway plan sheets with only minor modifications for maintenance of traffic needs. Example typical section modifications may include: updating labeling, modifying dimensions, etc. Assumes moderate narrative and up to three phases with one to two typical sections per phase. Work may also include design of portable barrier.

High – Involves creation of a new typical section due to temporary roadway, large drop offs, and/or portable concrete barrier etc. Assumes complex narrative and four or more phases with one to two typical sections per phase. Work may also include design of portable barrier.

NOTE: Complexity may vary based on location and proposed utility and/or signal work. Higher complexity may be based on inclusion of pedestrian/bike facilities within MOT for vehicular traffic. This does not include traffic analysis, projects with ODOT coordination may require additional tasks such as an MOTAA. If MOTAA is required, see ODOT Fee Estimation Guidance.

11.2.2 MOT General Notes

All MOT notes, including sequence of construction.

Hours are per sheet.

11.2.2.1 – Stage 2

Low – Includes use of standard notes provided by DPS with up to two phases of construction.

Medium – Includes use of standard notes provided by DPS with three to four phases of construction.

High – Includes use of standard notes provided by DPS and customized/specialized notes and/or more than four phases of construction.

NOTE: Complexity may vary based on location and proposed utility and/or signal work. Higher complexity may be based on inclusion of pedestrian/bike facilities within MOT for vehicular traffic.

11.2.2.2 – Stage 3

Update/continued refinement of MOT notes. Notes should be complete, including quantities where necessary.

Low – See task 11.2.2.1.

Medium – See task 11.2.2.1.

High – See task 11.2.2.1.

11.2.3 MOT Typical Sections

A typical section showing the phase construction, traffic pattern, pavement markings, channelizing devices, portable barrier, and dimensions. At least one typical per phase unless the geometry of the roadway changes.

Hours are per typical.

11.2.3.1 – Stage 2

Low – Reuse of roadway existing and proposed sections.

Medium – Reuse of roadway existing and proposed sections but involves modifications to them. Examples modifications may include: labeling, dimensions, etc.

High – Involves creation of a new typical section due to temporary roadway, etc.

11.2.3.2 – Stage 3

Continued refinement of Typical Sections developed in Stage 2.

Low – See 11.2.3.1.

Medium – See 11.2.3.1.

High – See 11.2.3.1.

11.2.4 Pedestrian Detour – Notes and Plan

Map and description of the detour, identifying items specific to the detour such as signing, channelizing or fencing. Part of the Pedestrian Detour Plan will be identifying and providing ADA accessible routes.

Hours are per detour.

11.2.4.1 – Stage 2

Low & Medium – Reference to TA 28 and TA 29 of the MUTCD. Assume hours included in MOT Notes.

High – Mapping and detouring within a pedestrian access route that includes additional measures to bring detour route into ADA compliance, custom signs, and/or modifying/adding pedestrian signals.

NOTE: Add language for additional details.

11.2.4.2 – Stage 3

Update/continued refinement of Pedestrian Detour sheets. Sheets should be complete, including quantity labels where necessary.

Low – See 11.2.4.1.

Medium – See 11.2.4.1.

High – See 11.2.4.1.

11.2.5 Bike Detour - Plan

Map and description of the detour, identifying items specific to the detour such as signing, channelizing or fencing. Part of the Bike Detour Plan will be to identifying and creating ADA accessible paths.

Hours are per detour.

11.2.5.1 – Stage 2

Low – Use of typical for bike lane closures and detours.

Medium – Includes low complexity effort with detailed detour.

High – Detailed lane closures, detours and signal modification work (if needed).

NOTE: Add language for additional details.

11.2.5.2 – Stage 3

Update/continued refinement of Bike Detour sheets. Sheets should be complete, including quantity labels where necessary.

Low – See 11.2.5.1.

Medium – See 11.2.5.1.

High – See 11.2.5.1.

11.2.6 Detour Plan - Plan

Hours are per detour.

11.2.6.1 – Stage 2

Low – Use of Standard Construction Drawings (SCD) 1540. Detour route described in MOT Notes.

Medium – Detour route and signage not covered under SCD 1540. Includes map and standard sign layout of the detour.

High – In addition to tasks in Low and Medium, this level of efforts includes one of the following elements: truck turns being checked along detour route, modifications/upgrades along specified detour route, multiple custom signs, and/or one-way streets. Includes map and sign layout of the detour.

11.2.6.2 – Stage 3

Update/continued refinement of Detour Plan sheets. Sheets should be complete, including quantity labels where necessary.

Low – See 11.2.6.1.

Medium – See 11.2.6.1.

High – See 11.2.6.1.

11.2.7 MOT Plan Sheets

Assumes plan sheets developed at consistent scale. Scale to be confirmed at scoping.

Hours are per sheet.

11.2.7.1 – Stage 2

Low – Assumes standard phasing with minor lane shifts and single lane closures and no access considerations.

Medium – Assumes standard phasing with multiple lane shifts and closures and with access considerations.

High – Assumes complex phasing and/or directional roadway closures and with access considerations.

11.2.7.2 – Stage 3

Update/continued refinement of MOT Plan sheets. Sheets should be complete, including quantity labels where necessary.

Low – See 11.2.7.1.

Medium – See 11.2.7.1.

High – See 11.2.7.1.

11.2.8 MOT Subsummary

This includes calculating quantities and pulling from the MOT notes and the MOT plan sheets. The hours are based upon the same number of sheets and level of complexity consistent with Task 11.2.7.

11.2.8.1 – MOT Subsummary Stage 2

Hours are per MOT plan sheet.

11.2.8.2 – MOT Subsummary Stage 3

Update/continued refinement of MOT Subsummary sheets.

Hours are per MOT plan sheet.

11.2.9 Temporary Signal Plans and Details

Basic/Intermediate/Detailed as defined in the City of Columbus Traffic Signal Design Manual, Chapter 3, shall correspond with Low/Medium/High level of effort respectively.

11.2.10 Miscellaneous MOT Details

Details not covered by Misc Details - Plan Insert Sheets or Standard Construction Drawings.

Hours are per sheet.

11.2.10.1 – Stage 2

Low, Medium & High – No differentiation between complexity.

11.2.10.2 – Stage 3

Includes refinement of Stage 2 details.

Low, Medium & High – No differentiation between complexity.

11.3 SWPPP Plan Sheets

This task includes preparing SWPPP plan sheets, general notes, and details.

Hours are per Station (100 ft.) of project length.

Low/Med/High – see Task 5.7.

NOTE: Hours for SWPPP Calculations / Report are under Task 5.7.

11.4 Roadway Quantities

11.4.1 General Summary

Task includes preparation of General Summary in accordance with General Design Requirements and sample plans.

Low – Limited scope of work such as resurfacing or sidewalk/SUP-only projects.

Med – Moderate scope of work including two or fewer of traffic signals, lighting, or utility improvements.

High – Complex scope of work including more than two of the following elements: traffic signals/interconnect, lighting, or utility improvements.

NOTE: Level of complexity could also be affected by multiple jurisdictions/specs, funding splits.

11.4.1.1 – Stage 2

Prepare General Summary table and sheets, populated with item number, description, and unit of measure.

Hours are per sheet.

Low/Med/High – See 11.4.1.

11.4.1.2 – Stage 3

Address Stage 2 Comments. Populate the general summary tables with quantities from subsummaries. Include hours for calculation of any “office calc” quantities which will not be carried from a subsummary. Prepare funding splits, if applicable. Add “See Sheet” references for Special and “as per plan” items.

Hours are per sheet.

Low/Med/High – See 11.4.1.

11.4.2 Plan & Profile Sub-summaries

Task includes measuring quantities and preparing subsummaries to accompany each Plan and Profile sheet. The number of subsummary sheets should generally match the number of Plan and Profile sheets.

See Sample Plans for items covered on the subsummary, such as C, R, DR, F, G, SW, M, P, D, U, W, S, or any other categories not quantified elsewhere in the plan set.

NOTE: Per sheet unit of measure applies to hours even if subsummary tables are included directly on the Plan and Profile sheets, rather than a stand-alone sheet.

11.4.2.1 – Stage 2

Create subsummary table and sheet. Populate table with quantity identifiers (e.g. C1), item numbers, descriptions, and units of measure.

Hours are per sheet.

Low/Med/High – See 11.5.1.

11.4.2.2 – Stage 3

Update tables based on Stage 2 comments. Populate with quantities and limiting stations.

Hours are per sheet.

Low/Med/High – See 11.5.1 Plan and Profile.

11.4.3 Pavement Calculations

11.4.3.1 – Stage 2

Includes setting up calculation sheet, supplemental calculations, review. Number of areas that need to be measured in CADD significantly increase the level of hours/effort.

Hours are per sheet.

Low – Project limits are short, or work is minor such as a task order contract for single intersection design / resurfacing / sidewalk project.

Medium – Intersection or widening projects with basic alignment.

High – Complex work such as urban corridor reconstruction with multiple roads involved.

11.4.3.2 – Stage 3

Includes supplemental calculations, revisions, and review.

Hours are per sheet.

Low/Med/High – See 11.4.3.1.

11.5 Roadway Plans

11.5.1 Plan and Profile

Task includes preparation of plan and profile sheets, in accordance with General Design Requirements and Sample Plans.

Low – Rural/suburban condition, minor widening and/or Walk/SUP, minor amount of topo/drainage/utilities to label, minor/no profile adjustments.

Medium – Moderate corridor complexity with moderate constraints. Urban condition, moderate scope of work, moderate amount of topo/drainage/utilities to show/label, moderate adjustments to street profile, moderate variability in typical section (tapers, etc.).

High – Ultra-urban condition, intense scope of work, intense amount of topo/drainage/utilities to show/label, changes in street profile, moderate-high variability in typical section (tapers, etc.).

NOTE: Separate sheets for plan and profile are considered a single sheet for the purposes of fee estimation. Selection of Low, Medium and High should also consider such factors as number of drives, number of property owners, right-of-way complexity, or other features that would complicate a plan sheet.

11.5.1.1 – Stage 1

As needed, refine horizontal geometry, vertical alignments, and roadway base files that were prepared as part of Preliminary Alignment Plan. Develop/update construction limits, proposed right-of-way, and easements. Prepare sheets with required content, labels, and dimensions.

Hours are per sheet.

Low/Med/High – See 11.5.1.

11.5.1.2 – Stage 2

Update sheets based on Stage 1 comments and Stage 2 design. Sheets should include all required content, including quantity balloons.

Hours are per sheet.

Low/Med/High – See 11.5.1.

11.5.1.3 – Stage 3

Update sheets based on Stage 2 comments and Stage 3 design updates.

Hours are per sheet.

Low/Med/High – See 11.5.1.

11.5.2 Cross Sections

Task includes preparation of cross section sheets, in accordance with General Design Requirements and Sample Plans. Sections are typically at 50' spacing but tighter spacing and/or special sections (e.g. lead walk, stairs, bridge approach, etc.) may be appropriate in some cases – consult with City PM.

11.5.2.1 – Stage 1

As needed, update cross section design prepared previously under Preliminary Alignment Plan. Add all utilities, right-of-way, and other features to sections. Prepare sheets and add required labels.

Hours are per section.

Low/Med/High – See Section 11.5.1.

NOTE: Effort to show/label existing and proposed storm and sanitary sewers and water mains included within this task, but design of these elements should be included in a separate task(s). Hours should reflect a credit for work performed under Task 10.5 which is determined to be useful to Task 11.5. Hours for showing drive profiles on sections are to be included in 11.5.4.

11.5.2.2 – Stage 2

Address Stage 1 comments and update for Stage 2 design. Sheets should include all required content except for earthwork quantities.

Hours are per section.

Low/Med/High – Same as 11.5.2.1.

11.5.2.3 – Stage 3

Address Stage 2 comments and calculate/label earthwork quantities. Prepare earthwork subsummary table if applicable.

Hours are per section.

Low/Med/High – Same as 11.5.2.1.

11.5.3 – Intersection & Curb Ramps Details

Includes intersection grading, curb ramp design, and preparation of detail sheets.

11.5.3.1 – Intersection Details

Grading and plan preparation for public street intersection details and signalized private driveway intersections. Hours for horizontal geometrics and turning simulations should be included in Preliminary Alignment Plan tasks.

Hours are per each Intersection.

Low – T-intersection, 3 or fewer lanes, stop controlled.

Medium – 4-way intersection, stop controlled.

High – 4-way intersection, signalized with cross slope transitions.

NOTE: Effort for unsignalized driveway intersections is covered under Section 11.5.4.

11.5.3.1.a – Stage 2

Perform detailed grading. Prepare sheets with all required content.

Hours are per intersection.

Low/Med/High – See 11.5.3.1.

11.5.3.1.b – Stage 3

Address Stage 2 comments.

Hours are per intersection.

Low/Med/High – See 11.5.3.1.

11.5.3.2 –Curb Ramp Details

Geometric design and grading of curb ramps and preparation of detail sheets (inset on intersection details or on separate sheets).

Hours are per each Curb Ramp.

Low – Unconstrained right-of-way, ample space for curb ramps.

Medium – Presence of constraints such as utility features, fire hydrants, catch basins, limited right-of-way, and/or signal poles impacting ramp design.

High – Presence of additional complex constraints such as buildings, doorways, and/or stairs impacting ramp design.

11.5.3.2.a – Stage 2

Perform detailed grading. Prepare details with all required content.

Hours are per each curb ramp.

Low/Med/High – See 11.5.3.2.

11.5.3.2.b – Stage 3

Address Stage 2 comments.

Hours are per each curb ramp.

Low/Med/High – See 11.5.3.2.

11.5.3.3 – Roundabout Details

Task includes development of detail sheets roundabout intersections including outside curbs, splitter islands, and center island curbs, apron, and mounding. Also include creation of baseline schematic plans and baseline profiles.

Hours are per roundabout intersection.

Low – Mini roundabout or small urban roundabout with short splitter islands and simple geometry.

Medium – Standard 1x1 or 2x1 roundabout. Generally perpendicular.

High – Roundabout with dedicated left turn lane(s) in the circulatory roadway and/or channelized/by-pass right turn lanes which are separated from through lanes by banana-type splitter islands, etc.

NOTE: Selection of Low, Medium, and High may be influenced by complicating factors, such as expandable design, right-of-way limitations, and conflicting topographic features to be mitigated (e.g., walls, drainage structures, public/private utility infrastructure) and high-speed approaches. 2x2 (or larger) or roundabout with unique geometry such as significant skew angle, turbo elements, or peanut shape may exceed the “high” level of effort.

11.5.3.3.a – Stage 1

Create baseline schematic plans.

Hours are per each roundabout intersection.

Low/Med/High – See 11.5.3.3.

11.5.3.3.b – Stage 2

Address Stage 1 comments. Develop/design baseline profiles. Create grading detail sheet and curb elevations for outside curbs, splitter islands, and center island. Create median nose details.

Hours are per each roundabout intersection.

Low/Med/High – See 11.5.3.3.

11.5.3.3.c – Stage 3

Address Stage 2 comments.

Hours are per each roundabout intersection.

Low/Med/High – See 11.5.3.3.

11.5.4 Driveway Details

Include plan view details with dimensions, spot elevations, and slopes. Also include hours for driveway profiles (to be shown on cross sections). For signalized commercial driveways, see Intersection Details.

Hours are per driveway.

Low – Flared residential or commercial driveways where drive profile meets typical sidewalk/SUP elevations without transitioning walk grades. Minimal constraints.

Medium – Driveways with radial returns and/or conditions that make it necessary to transition sidewalk grades from typical on either side of the driveway. Moderate constraints.

High – Driveways with complex geometry such as Right-In/Right/Out or other driveways with complex constraints or complicating factors which could include steep grades, parking lot connections/modifications, or lengths which are anticipated to be greater than 30-35 feet.

11.5.4.1 – Stage 1

Design 2-D layout of driveway and design vertical profile (to be shown on cross sections) to inform construction limits.

Hours are per each drive.

Low/Med/High – See 11.5.4.

11.5.4.2 – Stage 2

Perform detailed grading. Create detail sheet.

Hours are per each drive.

Low/Med/High – See 11.5.4.

11.5.4.3 – Stage 3

Address Stage 2 comments.

Hours are per each drive.

Low/Med/High – See 11.5.4.

11.5.5 Superelevation Table

Includes superelevation calculations, table generation, transition.

Hours are per sheet.

Low – Two Lanes.

Medium – Multiple lanes, non-complex.

High – Multiple lanes, auxiliary lane, bi-furcated section, etc.

NOTE: This task is intended to account for roadways or interchange ramps with superelevated curves or other situations where cross slope transitions are needed outside of intersection areas. Hours related to superelevation-type cross slope transitions at intersections only should be included under Intersection Details.

11.5.5.1 – Stage 1

Prepare superelevation table. Show table on typical sections or separate sheet.

Hours are per sheet.

Low/Med/High – See 11.5.5.

11.5.5.2 – Stage 2

Address Stage 1 comments. Update for Stage 2 design.

Hours are per sheet.

Low/Med/High – See 11.5.5.

11.5.6 Miscellaneous Grading Details

Develop grading details for areas not otherwise covered by above tasks. Examples could include variable sidewalk grading, street parking, details related to variable cross slopes, pedestrian refuge islands, and parking lot modifications.

Level of effort to be determined during scoping on a case-by-case basis.

NOTE: Given the wide range of tasks/situations which could be covered under this task, hours should be negotiated on a case-by-case basis.

11.6 Drainage and SCP

11.6.1 Storm Sewer Profiles

Prepare storm sewer profiles in accordance with GDR and sample plans. Include hours for 3D modeling of storm sewer if applicable. 2D layout is included in Task 5.4.

Hours are by Station (100 feet) of project length.

Low – Minimal storm sewer design or utilization of existing trunk sewer. With minimal lateral utility impacts.

Medium – Single Trunk Line with well-defined tributary boundaries. Or existing trunk line with lateral utility impacts. New Storm in low density utility areas.

High – Multiple Connecting Trunk branches and/or with poorly defined tributary boundaries. Or New Storm line with high density utility areas/conflict areas.

NOTE: Hours to perform the calculations for Storm Sewer Profiles are under Task 5.4. While the City does not require storm sewer profiles to be submitted at Stage 1, it does expect storm sewer to be shown on cross sections; therefore, Stage 1 hours should be provided for modeling, etc. required for showing proposed storm sewer on cross sections.

11.6.2 Culvert Detail Sheets (including headwall and wingwall details)

Task includes preparation of culvert plan and profile sheets, headwall/wingwall details and grading, and culvert-specific general notes.

Hours per each culvert.

Low – Culvert detail utilizing standard construction drawings headwall/wingwalls.

Medium – Culvert detail utilizing modified standard construction drawings for headwalls/ wingwalls. Requires structural/geotechnical wall design and detailing.

High – Culvert detail utilizing custom wingwall design.

NOTE: Hours to perform the design calculations for culverts are under Task 5.5 - Culvert Design Calculations.

11.6.3 SCP / Detention Details

Task includes layout and detailing of SCP features on SCP-specific sheets and/or other plan sheets (Plan & Profile, Cross Sections, Typical Sections, etc.) Locate/layout SCP features. Perform grading of basins. Update cross sections and typical sections to show grading for linear SCPs such as vegetated biofilters. Prepare preliminary site plans if appropriate based upon SCP type.

Hours are per SCP.

Low – Vegetated biofilters, Vegetated filter strips, or other SCPs which do not require SCP-specific sheets or details.

Medium – Manufactured systems such as Hydrodynamic Separators.

High – Other SCPs not listed above, including extended detention basins (dry or wet), underground storage, infiltration basin, constructed wetlands, bioretention facilities, and sand filters.

NOTE: Linear SCPs such as vegetated biofilters or vegetated filter strips which are tributary to a single point (culvert, catch basin, etc.) are considered a single SCP.

Calculations for SCP / Detention Details should be included under Task 5.6.

Efforts for SCP-related planting/landscaping should be included under Task 11.10.

The effort associated with permeable pavement can vary widely and should be negotiated on a project-by-project basis.

Refer to City's Stormwater Drainage Manual for list of approved SCPs. Some SCPs listed above may be allowed only as pre-treatment.

Hours are per SCP.

Low/Med/High – Per 11.6.3.

11.6.3.2 – Stage 2

Address Stage 1 comments. Prepare final SCP site plans, if appropriate based on SCP type. Prepare appropriate notes and details such as outlet structure details, skimmer details, section views, micropool/forebay details, inspection maintenance notes, and subsummary of quantities.

Hours are per SCP.

Low/Med/High – Per 11.6.3.

11.6.3.3 – Stage 3

Address Stage 2 Comments. Complete SCP subsummary of quantities if applicable.

Hours are per SCP.

Low/Med/High – Per 11.6.3.

11.7 Water Works

11.7.1 Water Works Plan - New or Relocated Water Mains

This task includes design and preparation of dedicated plan and profile sheets for new or relocated water mains, greater than 100 feet in length. Relocation of less than 100 feet in length are covered in 11.7.2.

Hours are per sheet, assuming 20' scale plans with approximately 500 linear feet shown on each sheet.

Low – Water mains smaller than 20-inch diameter. Rural/suburban condition with low amount of constraints, low to moderate amount of water services and/or cross connected mains, low amount of topo/drainage/utilities to label.

Medium – Water mains smaller than 20-inch diameter. Urban condition with moderate amount of constraints. Moderate number of water services and/or cross-connected mains, moderate amount of topo/drainage/utilities to label.

High – Water mains smaller than 20-inch diameter. Ultra-Urban condition with a high number of constraints. High number of water services and/or cross-connected mains, large amount of topo/drainage/utilities to label.

NOTE: Relocation of less than 100 feet in length are covered in 11.7.2. See 11.7.3 for water main general notes and coordinate table. Water work involving mains 20 inches and larger which may require additional design elements like custom design blocking and backing, lay schedules, and cathodic protection, may exceed the “high” level of effort and should be scoped in close coordination with Division of Water.

11.7.1.1 – Stage 1

Design of water main adjustment (alignment and profile) to be shown on roadway P&P sheets and cross sections. No dedicated water main sheets at this stage.

Hours are per sheet.

Low/Medium/High – See 11.7.1.

11.7.1.2 – Stage 2

Prepare water main plan and profile sheets. Add quantity balloons. Prepare subsummary. A single subsummary is assumed to cover all water main plan and profile sheets (instead of a subsummary for every plan and profile sheet).

Low/Medium/High – See 11.7.1.

11.7.1.3 – Stage 3

Adjust plans based on Stage 2 comments.

Hours are per sheet.

Low/Medium/High – See 11.7.1.

11.7.2 Water Works Plan – Minor Adjustments

This task covers minor adjustments to water distribution systems such as hydrant relocations and isolated water main relocations, 100 feet or less in length, which require a dedicated profile view.

Hours are per adjustment. For example, one hydrant relocation which requires a dedicated profile view, is considered one adjustment. Lowering a water main at a storm sewer crossing would also be considered one adjustment, if a profile is required.

Low – Low amount of constraints such as topographic features, drainage, utilities, and/or right-of-way limitations.

Medium – Medium amount of constraints such as topographic features, drainage, utilities, and/or right-of-way limitations.

High – Large amount of constraints such as topographic features, drainage, utilities, and/or right-of-way limitations.

NOTE: Adjustments which do not require a profile can be shown on roadway Plan and Profile sheets only and are considered incidental to the hours listed in 11.5.1. See 11.7.3 for water main general notes and coordinate table.

11.7.2.1 – Stage 1

Design of water main adjustment (alignment and profile) to be shown on roadway P&P sheets and cross sections. No dedicated water main sheets at this stage.

Hours are per adjustment.

Low/Medium/High – See 11.7.2.

11.7.2.2 – Stage 2

Prepare plan and profile for each adjustment. Add quantity balloons. Prepare subsummary. Include hours for subsummary under this task, even if water main quantities are included on roadway P&P subsummaries.

Hours are per adjustment.

Low/Medium/High – See 11.7.2.

11.7.2.3 – Stage 3

Adjust plans based on Stage 2 comments.

Hours are per adjustment.

Low/Medium/High – See 11.7.2.

11.7.3 Water Main General Notes & Coordinate Table

This task includes preparation of water main notes sheet with Columbus Division of Water standard notes, any project specific “as per plan” notes, and coordinate table.

Hours are measured per project.

Low – Standard DOW notes. Coordinate table for less than 500 feet of new/relocated watermain.

Medium – Standard DOW notes with or without minor “as per plan” adjustments. Coordinate table for 500-2000 linear feet of new/relocated watermain.

High – Standard DOW notes with or without minor “as per plan” adjustments. Coordinate table for more than 2,000 linear feet of new/relocated watermain.

NOTE: Ultra-urban conditions and complicated alignments or profiles could be considered a higher level of complexity than length would suggest. Water mains 20-inches and larger which may require special blocking, pipe laying schedules, etc. may exceed the “high” level of effort and should be scoped in close coordination with Division of Water.

11.7.3.1 – Stage 2

Select applicable Division of Water standard notes sheets. Prepare project-specific water line as-per-plan notes. Prepare survey coordinate table.

Hours are measured per project.

Low/Med/High – See 11.7.3.

11.7.3.2 – Stage 3

Address Stage 2 comments.

Hours are measured per project.

Low/Med/High – See 11.7.3.

11.8 Sanitary Sewers

Hours for Tasks 11.8.1 – CC-Plans and Task 11.8.2 – PTI will be dependent on scope of sanitary sewer impacts as determined by City Project Manager

11.9 Traffic Control

11.9.1 Signing & Pavement Marking Plan

This task includes designing all sign and pavement marking details necessary for construction of the project on the same sheet.

11.9.1.1 – Stage 1

Create proposed pavement marking and signing base file and sheets necessary for Stage 1 plans.

Hours are per sheet.

Low – Intersection or widening type projects with limited and simple signing and pavement markings. This may include 2 or 3 lane roadways in a low volume, suburban setting. Multimodal type projects (sidewalk, SUP, bike lanes) with minimal signing and pavement markings.

Medium – Intersection or roadway projects with simple to moderate signing and pavement markings. This may include 2 or 3 lane roadways in a medium volume, urban setting. Multimodal type projects (sidewalk, SUP, bike lanes) with moderate signing and pavement markings.

High – Intersection or roadway projects with moderate to complex signing and pavement markings. This may include roadways with more than 3 lanes in a high volume, urban setting. Multimodal type projects (sidewalk, SUP, bike lanes) with complex signing and pavement markings.

11.9.1.2 – Stage 2

Update/continued refinement of the signing and pavement marking sheets. Sheets should be complete, including quantity labels.

Hours are per sheet.

Low – See 11.9.1.1.

Medium – See 11.9.1.1.

High – See 11.9.1.1.

11.9.1.3 – Stage 3

Final revisions to the signing and pavement marking sheets. Sheets should be completed.

Hours are per sheet.

Low – See 11.9.1.1.

Medium – See 11.9.1.1.

High – See 11.9.1.1.

11.9.2 Pavement Marking Subsummary

This task includes development of itemized pavement marking items and quantities.

11.9.2.1 – Stage 2

Create pavement marking subsummary per the General Design Requirements that reference back to quantity labels in 11.9.1.2.

Hours are per sheet.

Low – See 11.9.1.1.

Medium – See 11.9.1.1.

High – See 11.9.1.1.

11.9.2.2 – Stage 3

Update pavement marking subsummary created in 11.9.2.1 and fill out quantity amounts.

Hours are per sheet.

Low – See 11.9.1.1.

Medium – See 11.9.1.1.

High – See 11.9.1.1.

11.9.3 Signing Subsummary

This task includes development of itemized signing items and quantities.

11.9.3.1 – Stage 2

Create signing subsummary per the General Design Requirements that reference back to quantity labels in 11.9.1.2.

Hours are per sheet.

Low – See 11.9.1.1.

Medium – See 11.9.1.1.

High – See 11.9.1.1.

11.9.3.2 – Stage 3

Update signing subsummary created in 11.9.2.1 and fill out quantity amounts.

Hours are per sheet.

Low – See 11.9.1.1.

Medium – See 11.9.1.1.

High – See 11.9.1.1.

11.9.4 Signing and Pavement Marking Details and Notes

Create signing and pavement marking details. This includes details from SignCAD, overhead sign elevation views, special pavement markings and any notes needed.

11.9.4.1 – Stage 2

Create sheet(s) for specific signing and pavement marking details.

Hours are per sheet.

Low – See 11.9.1.1.

Medium – See 11.9.1.1.

High – See 11.9.1.1.

NOTE: Development of list may be required at scoping for anticipated details needed with plans.

11.9.4.2 – Stage 3

Updates to sheet(s) created in 11.9.4.1.

Hours are per sheet.

Low – See 11.9.1.1.

Medium – See 11.9.1.1.

High – See 11.9.1.1.

11.10 Landscape Notes, Plans and Details

11.10.1 Tree Survey

This task includes hours for a landscape professional to survey the size, species, and condition of Public Trees, as defined in the Tree Technical Manual, and to prepare an Existing Tree Data Table for use in the Public Tree Plan described in 11.10.2 below.

Hours are measured per 100 linear feet surveyed.

Low – Low number of public trees.

Medium – Moderate number of public trees.

High – High number of public trees.

NOTE: Public trees are those in existing right-of-way *and* those located within proposed right-of-way. Factors such as difficult terrain and high traffic corridors may justify a higher number of hours for field work.

11.10.2 Public Tree Plan

This task consists of preparing a Public Tree Plan, as described in the Tree Technical Manual, including a site plan showing all Public Trees located within the project work limits, a general notes sheet, and corresponding tree data tables. Complete the Existing Tree Data Table (partially completed in 11.10.1), prepare the Proposed Tree Data Table, and Standard Pay Items Table.

11.10.2.1 – Public Tree Plan Notes & Details

11.10.2.a Stage 2

Create a sheet showing standard notes and details, made available by City.

Notes & Details are measured per Project.

Low/Medium/High – There is no distinction between low, medium, and high effort for this task.

11.10.2.2 – Plans Sheets & Tables

11.10.2.2.a Stage 2

Prepare site plan showing location of public trees relative to proposed work limits and public improvements. Prepare corresponding tree data tables.

Low – Low number of public trees.

Medium – Moderate number of public trees.

High – High number of public trees.

Hours are measured per plan sheet. Tables are considered incidental to the plan sheets.

11.10.2.2.b Stage 3

Address Stage 2 Comments.

Low/Med/High – See 11.10.2.2.a.

Hours are measured per plan sheet. Tables are considered incidental to the plan sheets.

11.10.3 Supplemental Landscape/Hardscape Plans & Details

This task includes design and preparation of street tree plans, landscape plans, and specialty hardscape/streetscape plans as needed to supplement other plan components. The scope and associated hours for this task can be wide-ranging should be negotiated on a project-by-project basis.

11.11 Signal Plans

Low (TRAFFIC SIGNAL) – A low-level traffic signal project generally consists of minor modifications to an existing traffic signal that does not require modifications to existing strain poles/mast arms or the addition of new strain poles/mast arms. The majority of the existing traffic signal, including the controller, remains in its existing location. Examples of low-level signal work may include adding or adjusting detection zones, pull boxes, pedestrian hybrid beacons within suburban/residential areas, pedestrian pushbuttons and/or pedestrian signal heads at an existing signal. There are often minimal utility or right-of-way conflicts. Low-level work within the CBD area may trigger the medium level project tier.

Med (TRAFFIC SIGNAL) – A medium level traffic signal project includes more modifications than a low-level, or a partial/full signal replacement or proposed signal that is considered more straightforward than a high-level project. A medium level project is typically in a suburban/residential area, or otherwise outside the CBD environment excluding pedestrian hybrid beacons which are medium level effort when within the CBD environment. Minimal utility relocation (underground/overhead) and minimal right of way impacts are anticipated.

High (TRAFFIC SIGNAL) – A high-level traffic signal project is typically a full replacement or proposed signal in a dense urban setting, in a CBD area, and/or at a freeway interchange. A significant level of coordination is needed to provide clearance from overhead/underground utilities. Design includes pedestrian features (pedestrian signal heads and pedestrian pushbuttons), vehicle detection, and possibly pre-emption devices. Design often includes utility and right-of-way constraints.

Low (INTERCONNECT) – A low-level interconnect project is generally limited to 24 strand drop cable work, specifying interconnect equipment within a traffic signal cabinet and wireless or cellular communication. Splicing diagrams are limited to the drop cable connections for signal cabinets.

Med (INTERCONNECT) – A medium level interconnect project typically consists of installing new 144 strand trunk cable to a new signalized intersection or modifications to existing 144 strand trunk cable to accommodate new or modified intersections. Splicing diagrams may include drop cable connections for signalized intersection and/or splicing diagrams at adjacent intersections or trunk to trunk connections. A medium level project could involve either an aerial setup or underground conduit installation in an area with minimal underground conflicts.

High (INTERCONNECT) – A high-level interconnect project typically consists of installing new 144 or 288 strand trunk cable, the addition or modifications to node cabinets. High level work may also include multijurisdictional coordination and specifying upgrades or equipment modifications at the City of Columbus Traffic Management Center. This would include installation of new underground conduit banks, or conduit installations in an area with several other underground utilities. Inclusion of Department of Technology cables or coordination would typically categorize a project as high level.

11.11.2 Traffic Signal Quantities

This task includes hours needed to calculate signal and interconnect quantities to be used in cost estimate, included in subsummary, and carried to general summary sheets.

11.11.7 Temporary Interconnect Plans

The low/medium/high level of effort for Interconnect as defined above shall also apply to temporary interconnect plans.

11.11.9 Existing Signals Assessment

This task may or may not be included on any particular project, and hours should be determined on a case-by-case basis for the specific tasks needed. Any tasks included here would involve assessment of existing signals and be separate from any hours listed under other tasks for proposed items. Typical tasks include SWISS calculations on existing poles, existing poles' adherence to current guidelines, etc (example: signal modification where additional signal heads and/or signs are added to existing spans).

11.12 Lighting Plan and Details

This task includes preparation of street lighting notes, quantities, plan sheets, and associated calculations and analyses. The low/medium/high categories described below apply broadly to all subtasks. Different subtasks may have different levels of complexity.

Low – A low level lighting project is a straightforward project that generally consists of minor upgrades to existing roadway lighting (LED fixture upgrade) or the addition of combination lighting to a traffic signal (downtown business district only).

Medium – A medium level project is a larger and more complex project. Projects in the medium category include new roadway lighting with one (1) control center, modifications to existing roadway lighting that involve relocating several poles, the addition of new poles to an existing circuit, or residential post top lighting along a corridor. Low to moderate level of constraints (utilities, right-of-way, etc.).

High – A high level project is a large and complex project. Projects in the high category include interchanges using high mast light towers or a combination of high mast light towers and low mast / conventional light poles, lighting at systems interchanges, lighting on a roadway with multiple control centers. High level of constraints (utilities, right-of-way, etc.).

11.13 Retaining Walls

Develop retaining wall plans and related calculations.

11.13.1 Retaining Wall Plan and Elevation

11.13.1.1 – Stage 1

Develop complete Site Plan. These hours assume that no preliminary site plan was developed for the Retaining Wall Type Study.

Hours are per sheet.

Low – Modular block-type walls.

Medium – MSE-type walls.

High – Tie-back or cantilever-type walls.

11.13.2 Retaining Wall Detail Sheets

11.13.2.1 – Stage 1

Develop list of sheets for each wall as part of fee negotiations. Details provided at Stage 1 should include typical wall sections. Plan and Elevation are excluded from this task.

Hours are per sheet.

NOTE: This task has no Low/Medium/High delineation.

11.13.2.2 - Stage 2

Prepare a sheet description and sheet count for all retaining walls. Indicate the type of wall for each location. Use weighted average for hours/sheet if multiple wall types will be included in a set of plans. This task includes hours to perform calculations to develop the Stage 2 plans.

Low – Modular block-type walls.

Medium – MSE-type walls.

High – Tie-back or cantilever-type walls.

Hours are per sheet.

11.13.2.3 - Stage 3

Hours to update sheets.

Hours are per sheet.

NOTE: This task has no Low/Medium/High delineation.

11.14 Bridge

11.14.1 Site Plan

11.14.1.1 - Stage 1

Update preliminary site plan for Stage 1 design. The site plan developed under this task should be complete in terms of content. This task includes minor updates to site plan for post-Stage 1 submittals.

Hours are per sheet.

Low – Preliminary Site Plan has been developed as part of a Structure Type Study.

Medium – Three or less spans.

High – Four or more spans.

NOTE: Hours assume that a preliminary site plan was developed with the Bridge Type Study; if no preliminary site plan was prepared, additional hours may be justified.

11.14.2 Supplemental Site Plan for Railroad Crossing

11.14.2.1 – Stage

Develop supplemental site plan for railroad crossing per ODOT Bridge Design Manual Criteria. This task includes minor updates to site plan for post-Stage 1 submittals.

Hours are per sheet.

Low – Normal.

Medium – Limits of Site Plan would impact an adjacent bridge.

High – Multiple railroad owners are involved

NOTE: See Section 4 for additional railroad-related tasks.

11.14.3 Bridge Detail Sheets

11.14.3.1 – Stage 1

Develop a list of sheets for each bridge as part of fee negotiation. Stage 1 details include items such as bridge transverse section, phased construction sheets, abutment typical section, pier typical section, etc.

Hours are per sheet.

11.14.3.2 – Stage 2

Develop list of sheets for each bridge as part of fee negotiation. Total Sheet Count should not include Site Plan(s), Estimated Quantities, General Notes and Reinforcing Steel List(s). Include sheets for any temporary works necessary for each bridge. This task also includes any calculations necessary to develop the sheets for Stage 2.

Hours are per sheet.

Low – Straight Bridge, less than 30-degree skew, single super-structure type, constant bridge width.

Medium – Straight Bridge, less than 30-degree skew, multiple super-structure type or variable bridge width.

High – Curved bridge or skew greater than 30 degrees, may have variable bridge width.

11.14.3.3 – Stage 3

Update of Bridge Plan sheets for Stage 2 comments and Stage 3 design updates.

Hours are per sheet.

NOTE: This task has no Low/Medium/High delineation.

11.15 Structures General Calculations

11.15.1 Bridge Rating

Load rate bridge per Section 900 of the latest ODOT BDM. If there is a left and right bridge pair with the same spans and skews, count as one bridge for this task.

Hours are per bridge.

Low – Standard AASHTOWare BrR bridge.

Medium – Multiple structure types within bridge - all compatible with AASHTOWare BrR.

High – Structure type not compatible with AASHTOWare BrR.

NOTE: Submission includes bridge rating file (ex. BrR .xml file) and signed BR100 file at a minimum. If outside assumptions are required, those need to be documented. Most Low/Medium AASHTOWare Ratings will be performed by City staff – coordinate with City PM consultant tasks.

11.15.2 Structures Costs

11.15.2.1 – Stage 1

Update cost estimates prepared as part of Structure Type Studies to reflect Stage 1 design.

Hours are per estimate.

11.15.2.2 – Stage 2

Perform and check quantity take offs for each structure. Develop a cost estimate utilizing City of Columbus or ODOT documentation or other by other means as agreed upon with the Project Manager.

Hours are per structure.

Low – Standard bridge. All quantities can be accounted for in the City of Columbus or ODOT documentation.

Medium – Standard bridge with special construction methods. Quantities are not accounted for in the City of Columbus or ODOT documentation.

High – Non-standard bridge. Quantities are not accounted for in the City of Columbus documentation and co-ordination with vendors/suppliers/contractors is necessary.

NOTE: If there is a left and right structure with the same spans and skews, count as one bridge for this task.

11.15.2.3 – Stage 3

Update Stage 2 cost estimate to reflect Stage 3 quantities and any appropriate changes to unit costs.

Hours are per structure.

NOTE: This task has no Low/Medium/High delineation.

11.16 Structures General Notes Sheets

11.16.1 Structures General Notes Sheets

11.16.1.1 – Stage 2

Prepare General Notes sheets.

Hours are per sheet.

NOTE: This task has no Low/Medium/High delineation.

11.16.1.2 – Stage 3

Update of General Notes sheets based on Stage 2 comments and Stage 3 design updates.

Hours are per sheet.

NOTE: This task has no Low/Medium/High delineation.

11.16.2 Estimated Quantities Sheets

11.16.2.1 – Stage 2

Prepare bridge or wall Estimated Quantity sheet items for review with General Notes and Plans.

Hours are per bridge and/or wall.

Low – Hours for preparation of a single sheet.

High – Hours for preparation of multiple sheets.

11.16.2.2 – Stage 3

Update bridge Estimated Quantity sheet with Stage 3 quantities.

Hours are for each bridge and/or wall.

Low- Hours for preparation of a single sheet.

High- Hours for preparation of multiple sheets.

11.16.3 Reinforcing Steel Schedule Sheets

11.6.3.1 – Stage 3

Reinforcing steel should already be designed. This task is to prepare the sheets.

Hours are per sheet.

NOTE: This task has no Low/Medium/High delineation.

12 Submittal Efforts

Task Number / Task name	Unit of Measure	Low/Medium/High
12.1 – Disposition to Preliminary Alignment Comments / Stage 1 Submittal	Submittal	5% of PALN Hours
12.2 – Disposition to Stage 1 Comments / Stage 2 Submittal	Submittal	5% of St. 1 Hours
12.3 – Disposition to Stage 2 Comments / Stage 3 Submittal	Submittal	5% of St. 2 Hours
12.4 – Disposition to Stage 3 Comments / Backcheck Submittal	Submittal	5% of St. 3 Hours
12.5 – Roadway Backcheck	Project	20% of St.3 Hours
12.6 – MOT Backcheck	Project	20% of St.3 Hours
12.7 – Drainage and SCP Backcheck	Project	20% of St.3 Hours
12.8 – Water Works Backcheck	Project	20% of St.3 Hours
12.9 – Sanitary Backcheck	Project	20% of St.3 Hours
12.10 – Traffic Control Backcheck	Project	20% of St.3 Hours
12.11 – Landscape Backcheck	Project	20% of St.3 Hours
12.12 – Traffic Signal Backcheck	Project	20% of St.3 Hours
12.13 – Lighting Backcheck	Project	20% of St.3 Hours
12.14 – Retaining Wall Backcheck	Project	20% of St.3 Hours
12.15 – Bridge Backcheck	Project	20% of St.3 Hours
12.16 – Structure Backcheck	Project	20% of St.3 Hours
12.17 – Submission of NOI Application	Application	6
12.18 – Signature Submittal	Submittal	8

12.1 Disposition to Preliminary Alignment Comments / Stage 1 Submittal

This task includes time for reviewing plan review comments, determining the appropriate way to address, verifying that the comment has been addressed, and typing a written disposition. Time to actually address the comment should be included in hours associated with preparing the various plan sheets (Section 11). This task also includes hours for compiling deliverables for the subsequent plan submittal and transmitting to the City.

Hours are per submittal.

NOTE: This task has no Low/Medium/High delineation. Estimated hours are a percentage of PALN hours in Section 10 tasks.

12.2 Disposition to Stage 1 Comments / Stage 2 Submittal

See 12.1 Estimated hours are a percentage of Stage 1 hours in Section 11 tasks.

12.3 Disposition to Stage 2 Comments / Stage 3 Submittal

See 12.1. Estimated hours are a percentage of Stage 2 hours in Section 11 tasks.

12.4 Disposition to Stage 3 Comments / Backcheck Submittal

See 12.1. Estimated hours are a percentage of Stage 3 hours in Section 11 tasks. Hours are inclusive of Stage 3 and any Backcheck Submittals. Signature submittal hours should be included separately under 12.18.

12.5 Roadway Backcheck

This task is for addressing backcheck comments on Roadway related tasks.

Hours are a percentage of Stage 3 hours for tasks listed in notes.

NOTE:

- This task has no Low/Medium/High delineation.
- Hours are inclusive of all review submittals after Stage 3.
- Tasks included under 11.4, and 11.5

12.6 MOT Backcheck

This task is for addressing backcheck comments on MOT related tasks.

Hours are a percentage of Stage 3 hours for tasks listed in notes.

NOTE:

- This task has no Low/Medium/High delineation.
- Hours are inclusive of all review submittals after Stage 3.
- Tasks included under 11.2 except 11.2.1, and 11.2.2.

12.7 Drainage and SCP Backcheck

This task is for addressing backcheck comments on Drainage and SCP related tasks.

Hours are a percentage of Stage 3 hours for tasks listed in notes.

NOTE:

- This task has no Low/Medium/High delineation.
- Hours are inclusive of all review submittals after Stage 3.
- Tasks included under 11.3, 11.6.

12.8 Water Works Backcheck

This task is for addressing backcheck comments on Water Work related tasks.

Hours are a percentage of Stage 3 hours for tasks listed in notes.

NOTE:

- This task has no Low/Medium/High delineation.
- Hours are inclusive of all review submittals after Stage 3.
- Tasks included under 11.7.

12.9 Sanitary Backcheck

This task is for addressing backcheck comments on Sanitary related tasks.

Hours are a percentage of Stage 3 hours for tasks listed in notes.

NOTE:

- This task has no Low/Medium/High delineation.
- Hours are inclusive of all review submittals after Stage 3.
- Tasks included under 11.8.

12.10 Traffic Control Backcheck

This task is for addressing backcheck comments on Traffic Control related tasks.

Hours are a percentage of Stage 3 hours for tasks listed in notes.

NOTE:

- This task has no Low/Medium/High delineation.
- Hours are inclusive of all review submittals after Stage 3.
- Tasks included under 11.9.

12.11 Landscape Backcheck

This task is for addressing backcheck comments on Landscape related tasks.

Hours are a percentage of Stage 3 hours for tasks listed in notes.

NOTE:

- This task has no Low/Medium/High delineation.
- Hours are inclusive of all review submittals after Stage 3.
- Tasks included under 11.10.

12.12 Traffic Signal Backcheck

This task is for addressing backcheck comments on Traffic Signal related tasks.

Hours are a percentage of Stage 3 hours for tasks listed in notes.

NOTE:

- This task has no Low/Medium/High delineation.
- Hours are inclusive of all review submittals after Stage 3.
- Tasks included under 11.11.

12.13 Lighting Backcheck

This task is for addressing backcheck comments on Lighting related tasks.

Hours are a percentage of Stage 3 hours for tasks listed in notes.

NOTE:

- This task has no Low/Medium/High delineation.
- Hours are inclusive of all review submittals after Stage 3.
- Tasks included under 11.12.

12.14 Retaining Wall Backcheck

This task is for addressing backcheck comments on Retaining Wall related tasks.

Hours are a percentage of Stage 3 hours for tasks listed in notes.

NOTE:

- This task has no Low/Medium/High delineation.
- Hours are inclusive of all review submittals after Stage 3.
- Tasks included under 11.13.

12.15 Bridge Backcheck

This task is for addressing backcheck comments on Bridge related tasks.

Hours are a percentage of Stage 3 hours for tasks listed in notes.

NOTE:

- This task has no Low/Medium/High delineation.
- Hours are inclusive of all review submittals after Stage 3.
- Tasks included under 11.14.

12.16 Structures Backcheck

This task is for addressing backcheck comments on Structures related tasks.

Hours are a percentage of Stage 3 hours for tasks listed in notes.

NOTE:

- This task has no Low/Medium/High delineation.
- Hours are inclusive of all review submittals after Stage 3.
- Tasks included under 11.15.

12.17 Submission of NOI Application

This task is for completing the NOI application, delegating to City for submittal, and coordinating payment.

Hours are per application.

NOTE: Payment to OEPA for the application shall be included under Other Direct Costs in Exhibit C.

12.18 Signature Submittal

This item includes effort to assemble the Signature Submittal as described in the General Design Requirements including signing and sealing the title sheet, preparing final AutoCAD files, and compiling other deliverables. Hours for preparing, signing, and sealing the Final Engineer's Estimate should be included under 9.1.5.

13 Ongoing Services During Construction

Task Number / Task name	Unit of Measure	Low	Medium	High
13.1 – Pre-bid Questions	Project Specific			
13.2 – On-going Services During Construction	Project Specific			
13.3 – Shop Drawing Review	Project Specific			
13.4 – As-Builts	Per Sheet	0.25	0.5	1
13.5 – Set R/W Pins	Pin Set	1	1	1
13.6 – Set Centerline R/W Pins	Pin Set	2	2	2

13.1 Pre-Bid Questions

Task includes the time for responding to pre-bid questions during the bidding process. Hours for this task are project-specific.

13.2 On-going Services During Construction

Task includes design engineer support during the construction phase of the project. Hours for this task are project-specific.

13.3 Shop Drawing Review

Task includes review of shop drawings and material submittals during the construction phase of the project. Hours for this task are project-specific.

13.4 As-Built

Task includes the preparation of as-built drawings based on inspector redlines to be provided by the City. When included, this task is typically scoped as an If-Authorized task.

Hours are per sheet

Low- Project includes 50 or less plan sheets. (Assuming 0.25 hours per sheet)

Medium- Project includes 50 to 200 plan sheets (Assuming 0.5 hours per sheet)

High: Project includes over 200 plan sheets (Assumes 0.1 hours per sheet)

13.5 Set R/W Pins

Task includes setting pins (or similar) to monument new right-of-way.

Hours are per pin per crew.

Low/Med/High – this task has no low-medium-high designation.

13.6 Set Centerline R/W Pins

This task is for the marking of the location where the contractor shall set monument boxes, and the setting of right of way pins in the placed monument boxes

Hours are per pin per crew

Low/Med/High – this task has no low-medium-high designation.

NOTE: Contractor shall provide MOT for marking monument box locations, and setting pins