


AGENDA BILL

**Beaverton City Council
Beaverton, Oregon**


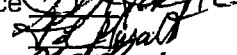
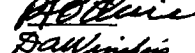


SUBJECT: Contract Award – Cooper Mountain Utility
Master Plan (CIP 4154)

FOR AGENDA OF: 02-04-20 **BILL NO:** 20035

MAYOR'S APPROVAL: 

DEPARTMENT OF ORIGIN: Public Works 

DATE SUBMITTED: 01-21-20

CLEARANCES: City Attorney 
Mayor's Office 
Purchasing 
Finance 
Engineering 

PROCEEDING: CONSENT AGENDA
(CONTRACT REVIEW BOARD)

EXHIBITS: 1. Consultant Scope of Work
and Fees

BUDGET IMPACT

| EXPENDITURE | AMOUNT | APPROPRIATION |
|---------------------|----------------------|----------------|
| REQUIRED \$250,000* | BUDGETED \$220,000** | REQUIRED \$-0- |

*This is the Project Manager's estimated design cost, which will be updated based on the negotiated scope of work and fees

** Account Numbers 505-75-3620-15-683-4154 Water Fund- Water Extra Capacity Supply System (\$100,000); 502-75-3813-15-683-4154 Sewer Fund - 6B Area Cooper Mountain Sewer Infrastructure Program (\$100,000); Storm Fund-Miscellaneous SDC Conveyances Project (\$20,000). Therefore, the total amount of funding from SDCs for the FY 2019-20 adopted budget is \$220,000. City staff will include the remaining budget to fully fund this contract in the future FY 2020-21, FY 2021-22 and FY 2022-23 budget processes.

RECOMMENDED ACTION:

City Council, acting as the Contract Review Board, authorizes the Mayor to sign a contract with Murraysmith, Inc., in the amount negotiated and shown in Exhibit 1, to perform engineering services for the Cooper Mountain Utility Master Plan (CIP 4154) in a form approved by the City Attorney.

HISTORICAL PERSPECTIVE:

In December 2018, Metro voted to expand the Urban Growth Boundary (UGB) to include the remaining 1,232-acre Urban Reserve Area (now known as Cooper Mountain), thereby enabling the City's next 10-20 years of development. The Cooper Mountain project is a priority due to the strong housing demand within the region, and the rate of development within South Cooper Mountain (SCM) is occurring faster than expected. Cooper Mountain is an important future land supply for the City, anticipated to bring at least 3,760 homes and 9,000 people to the City. The Cooper Mountain planning efforts will build upon the results of the 2014 SCM Concept Plan.

The Cooper Mountain expansion will require storm, sewer, and water (potable and non-potable) infrastructure to support housing and associated parks, schools, public facilities, and other development. The Cooper Mountain Utility Master Plan (Utility Master Plan) will be developed by the Proposer in coordination with the Community Plan, which was issued under a separate Request for Proposals (RFP) and associated contract and will be managed by City Community Development Division (CDD) staff. The CDD Community Plan contract award by City Council is also slated for today, February 4, 2020.

Agenda Bill No: 20035

INFORMATION FOR CONSIDERATION:

A request for proposals was advertised in the Daily Journal of Commerce on November 13, 2019. A mandatory pre-proposal conference was held on November 20, 2019, with five (5) subconsultants and six (6) prime consultants in attendance. The City received three (3) proposals on December 17, 2019, from prime consultants Murraysmith, Inc., RH2 Engineering, Inc., and Otak, Inc. The review of the proposals by the selection committee consisting of four (4) City staff did not produce a clear winner due to the similar resulting scores among the three (3) proposals. Therefore, interviews for all three (3) proposers were conducted on January 10, 2020. Based on the interviews, the selection committee selected Murraysmith, Inc., as the top proposer. Staff used a Qualifications-Based Selection (QBS) process to evaluate both the proposals and the interviews.

Public Works Engineering is currently in the process of negotiating the scope of work and associated fees for the Cooper Mountain Utility Master Plan with Murraysmith, Inc. The final scope of work and fees (Exhibit 1) will be provided to City Council prior to the February 4, 2020, meeting. The scope of work for the Utility Master Plan is expected to align with the phasing of the CDD Community Plan, and the current award will be for a portion of the work through the Community Plan Vision and Guiding Principles (Phase 3C, Task C.2) milestone. This division in scoping and award will allow for more effective scope and budget development for later work phases of the Utility Master Plan.



MEMORANDUM

Public Works

To: Mayor Doyle and City Councilors

From: Sheila Sahu, Project Manager 

Date: January 29, 2020

Subject: Cooper Mountain Utility Master Plan – Scope and Fee

The City has completed negotiations with Murraysmith, Inc., for the Cooper Mountain Utility Master Plan (Utility Master Plan) for work for Phases 3A, 3B, and through Phase 3C, Task C.2 of the Community Development Department (CDD) Cooper Mountain Community Plan. The final scope and fee of \$313,380 for the corresponding Utility Master Plan tasks are shown in the attached documents.

It is anticipated that the Utility Master Plan scope will be refined for the remainder of Phase 3C and Phase 3D based on the findings and outcomes of the work completed during 2020 and early 2021. Work tasks and associated fees for these tasks will be added to the scope of work through a future contract amendment for consideration and award by City Council.

SCOPE OF WORK COOPER MOUNTAIN UTILITY PLAN (CMUP) CITY OF BEAVERTON

Background

In December 2018 the regional government Metro approved the City of Beaverton's (City) proposal to include Urban Reserve Area (URA) 6B, referred to as Cooper Mountain, in the Portland metro area Urban Growth Boundary (UGB). As a condition of UGB expansion the City must complete a comprehensive planning process for the Cooper Mountain area including consideration of future land uses, natural resource protection, and utilities. This comprehensive planning process includes both the Cooper Mountain Community Plan (CMCP) being conducted concurrently by Angelo Planning Group (AGP) and the Cooper Mountain Utility Plan (CMUP) described in the following scope of work.

Project Understanding

The CMUP will provide the City with water, sewer, and stormwater utility master plans including capital improvement recommendations and budget-level capital cost estimates. A hydraulic model will be developed or adapted from prior City utility planning work for each utility and used to size facilities, evaluate alternative alignments, and identify existing system deficiencies. All analyses will emphasize compliance with regulatory requirements which will be summarized in the plan along with key intergovernmental agreements (IGAs) such as those with the regional sewer and stormwater agency Clean Water Services (CWS). The CMUP will solicit City and stakeholder input and develop consensus at key points in the master planning process in coordination with the CMCP.

Phasing the CMUP is prudent to ensure utility concepts are adapted to meet City and stakeholder objectives prior to proceeding with more detailed analysis. Phasing also facilitates coordination with the CMCP being developed in parallel. The CMUP will follow the project phases outlined by the CMCP as listed below. This scope of work is limited to Phases 3A, 3B, and 3C.2, which includes project kick-off, data and regulatory review, and utility concept development. Future phases 3C and 3D will be added to the scope of work through a contract amendment.

- Phase 3A – Project Introduction
- Phase 3B – Data Collection and Review
- Phase 3C – Utility Master Plan Development – to be fully detailed in future contract amendment, work related to CMCP 3C.2 is included in this scope
- Phase 3D – Plan Documentation - to be detailed in future contract amendment

Funding for the CMUP comes from the City's dedicated water, sewer, and stormwater utility funds. Although several of the subtasks described in the following scope are common to all utilities, each utility has been assigned a task number to easily identify work associated with that utility. Project management and coordination work required for all utilities under Task 1 will be divided evenly between all utility funds on each monthly progress report as directed by City purchasing staff.

Scope of Services

Murraysmith (Consultant) will perform the following services.

Phase 3A Project Introduction and Coordination

Task 1 Project Management and Meetings

Coordinate all components of the CMUP including project team and subconsultants. Take a proactive role in keeping all tasks on schedule and budget. Consultant will give prior notice and obtain acceptance from City before performing work outside the contract scope and thereby contract budget amount.

Consultant shall ensure full coordination with City staff and be responsive to any email and telephone discussions, in addition to the minimum meetings listed under various tasks in the following scope. Consultant shall be in contact with the City frequently enough to ensure a timely City review of deliverables.

Consultant is expected to work with all stakeholders in a responsible manner. Consultant shall perform the following project management tasks.

- Develop a schedule that incorporates all key activities. Provide updates to the project schedule as needed.
- Manage the project to ensure efficient and coordinated completion of various analysis tasks and obtain City input where needed to facilitate timely task completion.
- Coordinate with the City Project Manager on a regular basis to discuss the status and progress of work activities.
- Document decisions as they occur during the progression of the work. Maintain a decision log throughout the project.
- Coordinate, track, and implement City review and relevant meeting comments.
- Develop and maintain list of comments and response to comments on memos and figures.
- For meetings described below, prepare all project related agendas and meeting minutes. All agendas and the supporting information shall be distributed via emails to the City's

Project Manager at least one business day prior to any meetings. Meeting minutes shall be distributed to all attendees and any other identified parties within five business days of the meeting date.

1.1 Kick-off Meeting

A kick-off meeting will be held, once notice to proceed has been received, to allow the City and the Consultant team to begin working together. Consultant will attend and lead the kick-off meeting with City staff to introduce the project team, establish project objectives, review consultant and City communication protocol, discuss the project scope and examine the project schedule including key delivery dates. The primary focus of this meeting will be a discussion of the City's goals for the project.

1.2 Coordination and Stakeholder Meetings

Meetings will be limited to those specifically identified in this scope. Additional communication will be handled through phone calls and email as needed. Consultant shall perform the following tasks.

- Attend up to four joint CMCP/CMUP coordination meetings, as needed, for key decision making.
- Attend one public engagement summit. This is assumed to be an evening meeting or open house, approximately 3 hours in duration.
- Attend two coordination meetings with CWS to discuss sewer and stormwater existing conditions, regulatory requirements, planning goals, opportunities, constraints and conceptual infrastructure service concepts.

1.3 Progress Reports and Invoicing

Prepare monthly invoices, budget and schedule review, progress updates, and perform general administrative tasks. The project will be managed to maintain the scope, schedule, and budget. At a minimum, updates on project schedule and budget will be provided as part of the monthly invoicing process.

- Provide fifteen monthly billing invoices and project progress reports.
- Monthly project summaries include an overview of the past month's activities and identification of upcoming project activities and milestones in the coming month.

1.4 Quality Assurance and Quality Control (QA/QC)

Manage internal and City reviews of various interim and final work products as outlined in this scope. All interim deliverables (prior to compiled draft documentation) are assumed to be

delivered in electronic format. The Consultant will provide a copy of the QA/QC Plan for the work described in this scope, to include:

- A list of each major deliverable, deliverable review schedule, and the name and position of the independent subject matter expert who will conduct the quality control review of the sub-consultant's deliverables and the Consultant's deliverables.
- A template of the QA/QC process confirmation coversheet that shall be included with the submittal of each version of each major deliverable. At a minimum, the coversheet shall include the QC reviewer signature and the QA reviewer signature.
- An outline of the process for QA/QC of sub-consultant work.
- QA/QC procedures for different types of deliverables, including reports and drawings.

The QA/QC Plan will be submitted to the City for review and approval within 14 days following notice to proceed.

1.5 Develop Project Website and Maintain Project Logs

Develop Microsoft Office 365 SharePoint site to catalog reference documents, meetings minutes, interactive map geodatabase. Maintain site users list and appropriate access levels (read, write, edit, etc.) as agreed with City Project Manager.

On-going maintenance of project logs:

- Action Item Log - Develop key project milestones and develop a list of key action items. Provide updated status of the list of key action items on a monthly basis.
- Review Comment Log - Develop and maintain list of comments and response to comments on analysis and figures
- Decision Log - Document decisions as they occur during the progression of the work. Maintain a decision log throughout the project.
- Meeting Comment Log - Coordinate, track, and implement City and stakeholder review and relevant meeting comments.

Task 1 Deliverables

1. One electronic (pdf) copy of monthly project updates and invoices
2. One electronic (pdf) copy of meeting agenda and minutes from the Project meetings, including decisions and comments on meeting materials.
3. Copies of agenda and minutes also provided on project SharePoint site

Assumptions

1. Each meeting (kickoff and progress) will be up to two hours with the Consultant team project manager, assistant PM and two task leads. Two hours of preparation time and one hour travel time is included.
2. Duration for the first two phases will last through approximately March 2021.
3. City will attend technical advisory committee (TAC) meetings and report relevant information to Consultant.

Phase 3B Data Review, Analysis, and Preliminary Concept Plans

Phase 3B Objectives for all utilities

- Review recent planning work, available mapping, and City and regulatory agency standards and guidelines for each utility to:
 - identify prior work to be incorporated into the CMUP to minimize duplicated effort and promote consistency between the CMUP and related planning documents
 - identify challenges, opportunities, and additional data needs
 - develop comprehensive analysis criteria
- Characterize utility basins and pressure zones
- Evaluate capacity needs for each utility
- Develop preliminary utility backbone concept
- Provide preliminary cost estimates to inform Cooper Mountain Community Plan (CMCP) funding options assessment

Task 2 – Stormwater Utility Planning

2.1 Data Collection and Review

Review available City and Clean Water Services (CWS) resource documents and data to develop a utility plan which is efficiently coordinated with surrounding areas, downstream facilities outside the planning area, and concurrent CMCP and Beaverton Stormwater Master Plan (SWMP) work by others. Develop a formal data request for completion of the CMUP stormwater work. Data will be requested from both the City and CWS. This task assumes the City and CWS will provide clear, concise, and timely data to the Consultant as requested. Data anticipated to be compiled as available or requested from City and CWS staff include, but are not limited to the following:

- December 2014 South Cooper Mountain Concept Plan
- Beaverton Comprehensive Plan, zoning map, and GIS base mapping
- Urban Growth Boundary (UGB) expansion study areas
- Beaverton Intergovernmental Agreement (IGA) with CWS
- CWS Storm Sewer Master Plan
- CWS Design & Construction Standards (R&O 19-5 as Amended by R&O 19-22)
- Beaverton GIS data of existing stormwater conveyance facilities, including manhole rim elevations, pipe invert elevations, material, diameters and lengths.
- Beaverton construction bid tabs
- Known existing stormwater systems information pertinent to storage and flow diversions through as-built drawings or field operations manuals

The Consultant will also be provided information developed through the parallel work of the CMCP, which will include both field and desktop research and analysis on existing conditions, anticipated to include:

- Photo inventory of key views and natural features
- Local wetland inventory delineation report and GIS data
- Natural resource inventory delineation report and GIS data, inclusive of wetlands, streams, riparian areas and upland habitat
- Slope analysis and landslide hazard memo and GIS data

Consultant will meet with City staff to review and verify data and to conduct site inspections of major components to quantify conditions as needed. Field reconnaissance of existing physical features, conditions, and systems will be provided, and any potential need for detailed field surveys to confirm critical elevations will be identified for completion beyond this scope of work. Consultant will coordinate and meet with CMCP Environmental team in the field so that the City will obtain private property right-of-entry one time between both CMCP and CMUP.

2.2 Study Area and Basin Characterization

Review current land use designations and characteristics based on the City's current Comprehensive Plan and information provided by the CMCP to define the study area and its uniqueness relative to stormwater system analyses. Identify unique hydrologic characteristics including soil types, topography, vegetation, and others. Evaluate current and prior planning to document general study area.

Define and characterize stormwater basins within the UGB and designated areas of interest in the Metro Urban Reserve (URA) for the CMUP study area. Other URAs are excluded from the study. A draft of the “Study Area” section of the CMUP will be provided to the City for review.

2.3 General Planning Criteria Review

Consultant will identify general planning criteria that are applicable to the development of the stormwater utility concept, including City and CWS standards.

Consultant will prepare a draft vision statement and guiding principles, incorporating the outcomes from prior tasks. The vision statement will be a short paragraph capturing the overall goals for the CMUP. The guiding principles will be short statements capturing key elements of the vision. The guiding principles will be used as a starting point to develop more specific evaluation criteria in Subtask 2.8 for narrowing plan alternatives and options identified in the process.

2.4 Utility Map Development

Develop a GIS utility map illustrating the existing stormwater facilities, drainage basins delineated in Subtask 2.2, and relevant base mapping layers, such as, digital topography, rights-of-way, tax lots, and land use. It is anticipated that utility maps will incorporate City and CWS GIS utility mapping and base mapping layers from Metro’s Regional Land Information System (RLIS).

Utility maps will be provided through an interactive web-based geodatabase and map which will allow project staff to review data layers dynamically and for specific locations as needed. Static maps will be provided electronically in .pdf format as needed for discussion during preliminary concept development. Display maps required for stakeholder or public meetings are provided in Tasks 1.

2.5 Sensitive Lands and Problem Areas Identification

Identify sensitive lands, streams, buffers, problem areas, utility easements, and rights-of-way to document areas that may hinder development. Assess which of these areas may offer constraints or opportunities for storm/surface water control facilities.

- Sensitive Lands Inventory – City will provide Consultant with National Wetlands Inventory mapping developed under the CMCP and any other available local inventories of sensitive land and wetland areas.
- Hydromodification Assessment – Per Task 2.1, Consultant will coordinate and meet with CMCP Environmental team in the field so that the City will obtain private property right-of-entry one time between both CMCP and CMUP. Additional field based observation of existing stream corridor conditions will determine existing and potential future sensitivity to hydromodification impacts.

- Problem Area Inventory – Consultant will interview City and CWS staff regarding known problem areas.
- Evaluation of Facilities – The evaluation of existing facilities will be performed in close consultation with City staff to ensure that all deficiencies of the existing facilities are identified and that the staff is included in the evaluation process and the development of recommended improvements.

2.6 Utility Opportunities and Constraints Maps

Prepare two utility opportunities and constraints maps and diagrams: one contextual scale showing relevant areas outside the study area and one planning area scale focused within the study area. The Consultant may choose to format these into several maps and diagrams as needed to optimize readability and highlight key areas. This task includes time to coordinate with CMCP consultant on map formatting and symbology for consistency across the Community and Utility Plans. Consultant will review and provide utility input for CMCP Opportunities and Constraints Map and prepare a rough estimate of area required for stormwater management to assist in the CMCP determination of land available for development within the study area.

2.7 Federal, State, and Local Rules and Regulations

Research and discuss the current federal, state, and local rules and regulations that relate to the stormwater utility, in accordance with the requirements of State Facilities Planning Rule OAR 660-011. By City/Agency IGA, CWS is responsible for development and updating of a regional Surface Water Management (SWM) Plan that includes the Beaverton area. By IGA, the City and CWS share responsibilities for plan implementation. Current surface water management guidance is provided by the CWS SWM Plan, the ongoing CWS Healthy Streams Plan, EPA/DEQ Watershed-Based NPDES Discharge Permit, and Tualatin River Floodplain studies with FEMA. Consultant will confirm all issues and interests that have a bearing on the CMUP and incorporate them into the guiding principles developed in Subtask 2.3 and use them to inform specific evaluation criteria developed.

2.8 Major Infrastructure Alternatives Development and Evaluation

The purpose of this task is to evaluate major selected infrastructure improvements and investments early in the planning process. Using the outcomes of this subtask, infrastructure needs will be refined as part of CMCP/CMUP project Phases 3C and 3D.

Review the land use assumptions developed by the CMCP, including:

- Buildable Lands Inventory (BLI) and preliminary assumptions for growth in the planning area.
- Natural resource areas that fall outside of the City-mapped Sensitive Resource Overlay Zone (SROZ) areas.

- Land use assumptions and estimates of transportation network and potential maximum build-out, to be used solely for planning level infrastructure analysis and conveyance pipe sizing.

Develop stormwater treatment and conveyance backbone infrastructure concept based on information gathered in Subtasks 2.1 through 2.3. Coordinate the CMCP development concepts with prior planning information provided under Subtask 2.1 and guiding principles developed in Subtask 2.3. Flow contributions from the study area will be estimated based on development densities from the CMCP assumptions. Estimate the size of service based on development densities and planning criteria identified in Subtask 2.3.

Use CMCP development assumptions to evaluate whether offsite system improvements are needed. If improvements are needed, evaluate alternatives to serve the planning area without offsite improvements. For budgeting purposes, it is assumed that the Consultant will review up to two (2) offsite improvement mitigation alternatives. CWS requirements will be addressed in concept designs developed under this task.

Evaluate alternatives for routing utilities to find the most cost-effective routing while incorporating the City's development policies and minimizing impacts to sensitive areas and roadways. Coordinate early utility concepts developed under this subtask with the transportation corridor routing developed in the 2014 South Cooper Mountain Concept Plan. More detailed coordination with roadway routing from the CMCP will be conducted under Subtask 2.9.

Developing resilient stream corridors by incorporating stormwater management and sewer utilities within the stream corridor will be considered within the context of preservation of natural areas, water quality, flooding, maintenance, recreational amenities, and permitting requirements.

It is anticipated that up to four (4) stormwater infrastructure alternatives will be considered to evaluate options for conveyance routing, and incorporating resilient stream corridors or other low impact development approaches (LIDA) to stormwater management. This subtask includes sufficient figures, tables, and narrative documentation to present alternatives to the joint CMCP/UP Technical Advisory Committee.

The following items are considered beyond the scope of work for this subtask:

- Providing multiple versions of layout and densities for review relative to service alignment.
- Assisting the City in identifying potential funding sources for any required offsite utility improvements.

2.9 Preliminary Stormwater Concept

Prepare stormwater facility layout and develop planning-level cost estimates for proposed facilities. Coordinate study area utility layout with the CMCP work including the roadway layout and proposed development configuration. Where possible, utilities will reside within proposed

right-of-way, trails or vegetated corridors but, may fall within easements where necessary. The stormwater layout for the study area will be coordinated with the receiving downstream systems.

LIDA concepts will be based on the City's and CWS requirements. Hydromodification mitigation will consider a resilient stream corridor approach to the extent feasible. The onsite (within the study area) stormwater management concepts will be coordinated with the offsite stormwater conveyance needs identified in Subtask 2.4. For budgeting purposes, it is assumed that the roadway, trail, and development layout will be established to a level of confidence such that significant modifications to conceptual utility layouts will not be required due to major CMCP changes.

The stormwater facility layout and cost estimates will be documented in a brief technical memorandum with one figure illustrating the proposed facilities. This concept technical memorandum will include an identification of the drainage basins, estimate of impervious areas, estimate of land area required for detention facilities and tool kit describing methods for conveying stormwater runoff and incorporating LIDA techniques.

Task 2 Deliverables

1. Subtask 2.1 – formal data request to City and CWS
2. Subtask 2.2 – draft “Study Area” section of the CMUP for review and confirmation
3. Subtask 2.3 – draft and updated vision statement and guiding principles memorandum
4. Subtask 2.4 – web-based geodatabase and interactive map
5. Subtask 2.5 & 2.6 – contextual scale and study area scale utility opportunities and constraints maps
6. Subtask 2.7 – regulatory summary memorandum
7. Subtask 2.8 – major stormwater infrastructure alternatives (up to 4) map and planning level cost evaluation
8. Subtask 2.9 – preliminary stormwater facility layout technical memorandum and map

Assumptions

1. Clear, concise, and timely data from City and CWS staff as requested
2. Up to four stormwater utility major infrastructure alternatives will be developed and evaluated
3. Data from concurrent CMCP 3B Conclusions Report to be received a minimum of 3 months in advance of utility preliminary concepts described in Subtask 2.9

- a. Natural resource, wetland, and slope hazard inventory
 - b. Buildable lands inventory (BLI) and conceptual land use designations
4. Mapping will be provided by Consultant electronically through the web-based geodatabase and interactive map or as a static .pdf if needed for discussion.
 5. Cost evaluations provided for this task will be consistent with the standards of the Association for the Advancement of Cost Engineering (AACE) Class 5, which are appropriate for concept screening and have an accuracy range of -50 percent on the low end to +100 percent on the high end.

Task 3 – Sewer Utility Planning

3.1 Data Collection and Review

Review available City and Clean Water Services (CWS) resource documents and data to develop a utility plan which is efficiently coordinated with surrounding areas, downstream facilities outside the planning area, and concurrent CMCP work by others. Develop a formal data request for completion of the CMUP sewer work. Data will be requested from both the City and CWS. This task assumes the City and CWS will provide clear, concise, and timely data to the Consultant as requested. Data anticipated to be compiled as available or requested from City and CWS staff include, but are not limited to the following:

- December 2014 South Cooper Mountain Concept Plan
- Beaverton Comprehensive Plan, zoning map
- Urban Growth Boundary (UGB) expansion study areas
- Beaverton Intergovernmental Agreement (IGA) with CWS
- April 2015 Phase 1 Sanitary Sewer Master Plan
- September 2015 Phase 2 and 3 Sanitary Sewer Master Plan
- January 2019 Technical Memorandum regarding South Cooper Mountain and Rural Sewer System Analysis
- July 2019 Sewer Master Plan Update
- GIS general background data: Streets, floodplains and open space designations
- GIS planning data: Taxlots with land use, buildable lands inventory, zoning, transportation analysis zones (TAZ)

- Beaverton GIS data of existing sewer collection facilities, including manhole rim elevations, pipe invert elevations, material, diameters and lengths.
- Beaverton construction bid tabs
- CWS Existing GIS data of existing sewer collection facilities, including manhole rim elevations, pipe invert elevations, material, diameters and lengths, pump stations and force mains.
- CWS Design & Construction Standards (R&O 19-5 as Amended by R&O 19-22)
- Existing sewer systems information pertinent to storage and flow diversions through as-built drawings or field operations manuals
- Current Beaverton sewer collection system hydraulic model and documentation

The Consultant will also be provided information developed through the parallel work of the CMCP, which will include both field and desktop research and analysis on existing conditions, anticipated to include:

- Photo inventory of key views and natural features
- Local wetland inventory delineation report and GIS data
- Natural resource inventory delineation report and GIS data, inclusive of wetlands, streams, riparian areas and upland habitat
- Slope analysis and landslide hazard memo and GIS data

Consultant will meet with City staff to review and verify data and to conduct site inspections of major components to quantify conditions as needed. Field reconnaissance of existing physical features, conditions, and systems will be provided, and any potential need for detailed field surveys to confirm critical elevations will be identified for completion beyond this scope of work. Consultant will coordinate and meet with CMCP Environmental team in the field so that the City will obtain private property right-of-entry one time between both CMCP and CMUP.

3.2 Study Area and Basin Characterization

Consultant shall review current land use designations and characteristics based on the City's current Comprehensive Plan and information provided by the CMCP to define the study area and its uniqueness relative to sewer system analyses. Consultant will evaluate current and prior planning to document general study area.

Sewer basins will be characterized within the UGB and designated areas of interest in the Metro Urban Reserve (URA) for the CMUP study area building on prior work, as applicable, in the 2014 South Cooper Mountain Concept Plan and 2019 Beaverton Sewer Master Plan Update. Other URAs

are excluded from the study. A draft of the “Study Area” section of the CMUP will be provided to the City for review.

3.3 General Planning Criteria Review

Consultant will identify general planning criteria that are applicable to the development of the sewer utility concept, including City and CWS standards.

Consultant will prepare a draft vision statement and guiding principles, incorporating the outcomes from prior tasks. The vision statement will be a short paragraph capturing the overall goals for the CMUP. The guiding principles will be short statements capturing key elements of the vision. The guiding principles will be used as starting point to develop more specific evaluation criteria in Task 3.6 for narrowing plan alternatives and options identified in the process.

In addition to the vision and guiding principles, this subtask will establish design criteria for the hydraulics of infrastructure conveying sewer flows. The design criteria, such as pipe flow depth and daily velocities, will be used to guide the development of alternatives to ensure that they will provide the services required for the study area. The design criteria will be based on Beaverton’s *Engineering Design Manual, CWS Design and Construction Standards: Sanitary Sewer and Surface Water Management*, or Beaverton’s *Sewer Master Plan Update*.

3.4 Utility Map Development

Develop a GIS utility map illustrating the existing City and CWS sewer facilities, sewer system sub-basins delineated within the study area, and relevant base mapping layers, such as, digital topography, rights-of-way, tax lots, and land use. It is anticipated that utility maps will incorporate City and CWS GIS utility mapping and base mapping layers from Metro’s Regional Land Information System (RLIS).

Utility maps will be provided through an interactive web-based geodatabase and map which will allow project staff to review data layers dynamically and for specific locations as needed. Static maps will be provided electronically in .pdf format as needed for discussion during preliminary concept development. Display maps required for stakeholder or public meetings are provided in Task 1.

3.5 Utility Opportunities and Constraints Maps

Prepare two utility opportunities and constraints maps and diagrams: one contextual scale showing relevant areas outside the study area and one planning area scale focused within the study area. The Consultant may choose to format these into several maps and diagrams as needed to optimize readability and highlight key areas. This task includes time to coordinate with CMCP consultant on map formatting and symbology for consistency across the Community and Utility Plans. Consultant will review and provide utility input for CMCP Opportunities and Constraints Map.

3.6 Major Infrastructure Alternatives Development and Evaluation

The purpose of this task is to evaluate major selected infrastructure improvements and investments early in the planning process. Using the outcomes of this subtask, infrastructure needs will be refined as part of CMCP/CMUP project Phases 3C and 3D.

Review the land use assumptions developed by the CMCP, including:

- Buildable Lands Inventory (BLI) and preliminary assumptions for growth in the planning area
- Natural resource areas that fall outside of the City-mapped Sensitive Resource Overlay Zone (SROZ) areas.
- Land use assumptions and estimates of potential transportation network and maximum build-out, to be used solely for planning level infrastructure analysis and conveyance pipe sizing.
- Dwellings and employment estimates that allocate values geographically (in GIS) by transportation analysis zone (TAZ) and sanitary sewer basin (SSB).

Develop sewer conveyance major infrastructure concept based on information gathered in Subtasks 3.1 through 3.5. Coordinate the CMCP development concepts with prior planning information provided under Subtask 3.1 and guiding principles developed in Subtask 3.3. Flow contributions from the study area will be estimated based on development densities from the CMCP assumption. Assumptions regarding per capita sewer use and wet weather flow rates per acre will be consistent with the 2019 Sewer Master Plan Update and standard design values. Estimated pipe diameters, depths and invert elevations will be based on design and planning criteria identified in Subtask 3.3.

Use CMCP development assumptions to evaluate whether offsite system improvements are needed. If improvements are needed, evaluate alternatives, if any, to serve the planning area without offsite improvements. For budgeting purposes, it is assumed that the Consultant will review up to two (2) offsite improvement mitigation alternatives. CWS requirements will be addressed in concept designs developed under this task. The capacity evaluation for Beaverton's downstream collection system will be based on the model developed in conjunction with the *Sewer Master Plan Update*. This task does not include additional calibration of the existing model.

Evaluate alternatives for routing utilities to find the most cost-effective routing while incorporating the City's development policies and minimizing impacts to sensitive areas and roadways. Coordinate early utility concepts developed under this subtask with the transportation corridor routing developed in the 2014 South Cooper Mountain Concept Plan. More detailed coordination with roadway routing from the CMCP will be conducted under Subtask 2.9.

Developing resilient stream corridors by incorporating stormwater management and sewer utilities within the stream corridor will be considered within the context of preservation of natural areas, water quality, flooding, maintenance, recreational amenities, and permitting requirements.

It is anticipated that up to four (4) sewer infrastructure alternatives will be considered to evaluate options for conveyance routing, and incorporating resilient stream corridors. This subtask includes sufficient figures, tables, and narrative documentation to present alternatives to the joint CMCP/UP Technical Advisory Committee.

The following items are considered beyond the scope of work for this subtask:

- Providing multiple versions of layout and densities for review relative to service alignment.
- Assisting the City in identifying potential funding sources for any required offsite utility improvements.

3.7 Preliminary Sewer Concept

Prepare sewer facility layout and develop planning-level cost estimates for proposed facilities. Coordinate study area utility layout with the CMCP work including the roadway layout and proposed development configuration. Where possible, utilities will reside within proposed right-of-way, trails or vegetated corridors but, may fall within easements where necessary. The sewer layout for the study area will be coordinated with the receiving downstream systems.

The onsite (within the study area) sewer management concepts will be coordinated with the offsite sewer conveyance needs identified in Subtask 3.2. For budgeting purposes, it is assumed that the roadway, trail, and development layout will be established to a level of confidence such that significant modifications to conceptual utility layouts will not be required due to major CMCP changes.

The sewer facility layout and cost estimates will be documented in a brief technical memorandum with one figure illustrating the proposed facilities. This concept technical memorandum will include an identification of the sewer sub-basins, estimate of peak dry and peak wet weather flow contribution from the study area, and anticipated impact to downstream CWS sewer facilities.

Task 3 Deliverables

1. Subtask 3.1 – formal data request to City and CWS
2. Subtask 3.2 – draft “Study Area” section of the CMUP for review and confirmation
3. Subtask 3.3 – draft and updated vision statement and guiding principles memorandum
4. Subtask 3.4 – web-based geodatabase and interactive map

5. Subtask 3.5 – contextual scale and study area scale utility opportunities and constraints maps
6. Subtask 3.6 – major sewer infrastructure alternatives (up to 4) map and planning level cost evaluation
7. Subtask 3.7 – preliminary sewer facility layout technical memorandum and map

Assumptions

1. Clear, concise, and timely data from City and CWS staff as requested
2. Up to four sewer utility major infrastructure alternatives will be developed and evaluated
3. Data from concurrent CMCP 3B Conclusions Report to be received a minimum of 3 months in advance of utility preliminary concepts described in Subtask 3.7
 - a. Natural resource, wetland, and slope hazard inventory
 - b. Buildable lands inventory (BLI) and conceptual land use designations
4. Mapping will be provided by Consultant electronically through the web-based geodatabase and interactive map or as a static .pdf if needed for discussion.
5. Cost evaluations provided for this task will be consistent with the standards of the Association for the Advancement of Cost Engineering (AACE) Class 5, which are appropriate for concept screening and have an accuracy range of -50 percent on the low end to +100 percent on the high end.

Task 4 Water and Non-Potable (Purple Pipe) Utility Planning

4.1 Data Collection and Review

Review available City, Joint Water Commission (JWC), and Willamette Water Supply Program (WWSP) resource documents and data to develop a utility plan which is efficiently coordinated with surrounding areas, existing facilities within and outside the planning area, concurrent WWSP, Beaverton non-potable system, and CMCP work by others. Develop a formal data request for completion of the CMUP water work. Data will be requested from the City or coordinated with the City's other consultants as requested, such as, the City's non-potable system program manager. This task assumes the City will provide clear, concise, and timely data to the Consultant as requested. Data anticipated to be compiled as available or requested from City staff include, but are not limited to the following:

- December 2014 South Cooper Mountain Concept Plan
- Beaverton Comprehensive Plan, zoning map, and GIS basemapping
- Urban Growth Boundary (UGB) expansion study areas
- January 2019 Water System Master Plan

- September 2019 Draft South Cooper Mountain Preliminary Service Area Map
- Current Beaverton water distribution system hydraulic model and documentation

The Consultant will also be provided information developed through the parallel work of the CMCP, which will include both field and desktop research and analysis on existing conditions, anticipated to include:

- Photo inventory of key views and natural features
- Local wetland inventory delineation report and GIS data
- Natural resource inventory delineation report and GIS data, inclusive of wetlands, streams, riparian areas and upland habitat
- Slope analysis and landslide hazard memo and GIS data

Consultant will meet with City staff to review and verify data as needed. Any potential need for detailed field surveys to confirm critical location or elevation data will be identified for completion beyond this scope of work.

4.2 Study Area and Pressure Zone Description

Consultant shall review current land use designations and characteristics based on the City's current Comprehensive Plan and information provided by the CMCP to define the study area and its uniqueness relative to water and non-potable system analyses. Consultant will evaluate current and prior planning to document general study area.

Water and non-potable distribution system pressure zones will be identified within the UGB and designated areas of interest in the Metro Urban Reserve (URA) for the CMUP study area based on existing ground topography and existing pressure zone boundaries, supply facilities, and hydraulics. Other URAs are excluded from the study. Pressure zone boundaries will be developed based on prior work in the 2019 Beaverton Water System Master Plan and draft URA6B concept plan mapping developed by the Consultant under a prior contract. A draft of the "Study Area" section of the CMUP will be provided to the City for review.

4.3 General Planning Criteria Review

Consultant will identify general planning criteria that are applicable to the development of the water and non-potable utility concepts, including City standards, resilience recommendations from the 2019 Water System Master Plan, and requirements related to Beaverton's participation in the JWC or WWSP regional supply systems.

Consultant will prepare a draft vision statement and guiding principles, incorporating the outcomes from prior tasks. The vision statement will be a short paragraph capturing the overall goals for the CMUP. The guiding principles will be short statements capturing key elements of the

vision. The guiding principles will be used as starting point to develop more specific evaluation criteria in Subtask 4.6 for narrowing plan alternatives and options identified in the process.

4.4 Utility Map Development

Develop a GIS utility map illustrating the existing City water and non-potable distribution facilities, pressure zones within the study area, and relevant base mapping layers, such as, digital topography, rights-of-way, tax lots, and land use. It is anticipated that utility maps will incorporate City GIS utility mapping and base mapping layers from Metro's Regional Land Information System (RLIS).

Utility maps will be provided through an interactive web-based geodatabase and map which will allow project staff to review data layers dynamically and for specific locations as needed. Static maps will be provided electronically in .pdf format as needed for discussion during preliminary concept development. Display maps required for stakeholder or public meetings are provided in Task 1.

4.5 Utility Opportunities and Constraints Maps

Prepare two utility opportunities and constraints maps and diagrams: one contextual scale showing relevant areas and regional water supply facilities outside the study area and one planning area scale focused within the study area. The Consultant may choose to format these into several maps and diagrams as needed to optimize readability and highlight key areas. This task includes time to coordinate with CMCP consultant on map formatting and symbology for consistency across the Community and Utility Plans. Consultant will review and provide utility input for CMCP Opportunities and Constraints Map.

4.6 Major (Backbone) Infrastructure Alternatives Development and Evaluation

The purpose of this task is to evaluate major selected infrastructure improvements and investments early in the planning process. Using the outcomes of this subtask, infrastructure needs will be refined as part of CMCP/CMUP project Phases 3C and 3D.

Review the land use assumptions developed by the CMCP, including:

- Buildable Lands Inventory (BLI) and preliminary assumptions for growth in the planning area
- Natural resource areas that fall outside of the City-mapped Sensitive Resource Overlay Zone (SROZ) areas.
- Land use assumptions and estimates of potential maximum build-out, to be used solely for planning level infrastructure analysis and distribution pipe sizing.

Develop water and non-potable distribution backbone infrastructure concepts based on information gathered in Subtasks 4.1 through 4.5. Coordinate the CMCP development concepts

with prior planning information provided under Subtask 4.1 and guiding principles developed in Subtask 4.3. Potable water and irrigation demands for the study area will be estimated based on development densities from the CMCP assumptions and irrigated area assumptions from the non-potable system program management, which is under separate contract. Estimate the size of distribution mains based on development densities from the CMCP and planning criteria identified in Subtask 4.3.

Evaluate alternatives for routing utilities to find the most cost-effective routing while incorporating the City's development policies and minimizing impacts to sensitive areas and roadways. Coordinate early utility concepts developed under this subtask with the transportation corridor routing developed in the 2014 South Cooper Mountain Concept Plan. More detailed coordination with roadway routing from the CMCP will be conducted under Subtask 4.3.

It is anticipated that up to two water and two non-potable infrastructure alternatives will be considered to evaluate options for distribution routing, pumping, and storage facilities as needed. This subtask includes sufficient figures, tables, and narrative documentation to present alternatives to the joint CMCP/UP Technical Advisory Committee.

The following items are considered beyond the scope of work for this subtask:

- Providing multiple versions of layout and densities for review relative to distribution alignment and capacity.
- Assisting the City in identifying potential funding sources for any required offsite utility improvements.

4.7 Preliminary Water and Non-Potable Concepts

Prepare water and non-potable facility layout and develop planning-level cost estimates for proposed facilities. Coordinate study area utility layout with the CMCP work including the roadway layout and proposed development configuration. Where possible, utilities will reside within proposed right-of-way, trails or vegetated corridors but, may fall within easements where necessary. The water and non-potable layouts for the study area will be coordinated with existing facilities and pressure zones.

For budgeting purposes, it is assumed that the roadway, trail, and development layout will be established to a level of confidence such that significant modifications to conceptual utility layouts will not be required due to major CMCP changes.

The water and non-potable facility layouts and cost estimates will be documented in a brief technical memorandum with one figure illustrating the proposed facilities for both utilities. This concept technical memorandum will include an identification of the proposed pressure zone boundaries, estimate of water demand from the study area, and anticipated impact to existing facilities.

Task 4 Deliverables

1. Subtask 4.1 – formal data request to City
2. Subtask 4.2 – draft “Study Area” section of the CMUP for review and confirmation
3. Subtask 4.3 – draft and updated vision statement and guiding principles memorandum
4. Subtask 4.4 – web-based geodatabase and interactive map
5. Subtask 4.5 – contextual scale and study area scale utility opportunities and constraints maps
6. Subtask 4.6 – water and non-potable infrastructure backbone alternatives (up to 2 per utility) map and planning level cost evaluation
7. Subtask 4.7 – preliminary water and non-potable facility layout technical memorandum and map

Assumptions

1. Clear, concise, and timely data as requested from City staff and other project consultants if direct coordination is requested by the City
2. Up to two water and two non-potable utility major infrastructure (backbone) alternatives will be developed and evaluated
3. Data from concurrent CMCP 3B Conclusions Report to be received a minimum of 3 months in advance of utility preliminary concepts described in subtask 4.7
 - a. Natural resource, wetland, and slope hazard inventory
 - b. Buildable lands inventory (BLI) and conceptual land use designations
4. Mapping will be provided by Consultant electronically through the web-based geodatabase and interactive map or as a static .pdf if needed for discussion.
5. Cost evaluations provided for this task will be consistent with the standards of the Association for the Advancement of Cost Engineering (AACE) Class 5, which are appropriate for concept screening and have an accuracy range of -50 percent on the low end to +100 percent on the high end.

Phase 3C Utility Master Plan Development

CMCP 3C.2 Vision statement, guiding principles, and evaluation criteria

The guiding principles developed in Tasks 2.9, 3.7, and 4.7 will be used as starting point to develop more specific evaluation criteria for narrowing plan alternatives and options identified in the CMCP.

Consultant will review the CMCP deliverable 3C.2.c draft vision statement and guiding principles, incorporating the outcomes from the CMCP joint Community Advisory Committee and Technical Advisory Committee (CAC/TAC) meetings. The updated CMUP vision statement will be a short paragraph capturing the overall goals for the project. The updated CMUP guiding principles will be short statements capturing key elements of the vision.

CMCP 3C.2 Deliverables

1. No CMUP deliverables are included under this task. Updating of utility vision and guiding principles developed under Subtasks 2.9, 3.7 and 4.7 to incorporate the outcome of the CMCP draft vision statements is included under Subtasks 2.9, 3.7 and 4.7.

CMCP 3C.2 Assumptions

1. No labor is included under this task. Effort to update utility vision and guiding principles deliverables under Subtasks 2.9, 3.7, and 4.7 to incorporate the outcome of the CMCP draft vision statements is included under Subtasks 2.9, 3.7 and 4.7.

Cooper Mountain Utility Plan
City of Beaverton
PROPOSED FEE ESTIMATE

| Task | Days | | | | | | Hours | | | | | Cost | | | Funding | | | | | |
|---|------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|------------------|------------------|------------------|---------------|-----------------|-------------------|------------------|----------|-----------|
| | Design | Construction | Construction | Construction | Construction | Construction | Construction | Construction | Construction | Construction | Construction | Construction | Construction | Construction | Construction | Construction | Construction | Construction | | |
| Task 1 - Project Management and Meetings | | | | | | | | | | | | | | | | | | | | |
| Task 1.1 - Kick-Off Meeting | 5 | 5 | 5 | 5 | | | | | | | | | 20 | \$ 3,830 | \$ 730 | 1.1 | \$ 803 | \$ 45 | \$ - | \$ 4,678 |
| Task 1.2 - Progress Meetings | 30 | 30 | 30 | 30 | | | | | | | | | 120 | \$ 22,980 | \$ 1,460 | 1.1 | \$ 1,606 | \$ 390 | \$ - | \$ 24,976 |
| Task 1.3 - Progress Reports and Billings | 15 | 15 | | | | | | | | | | | 45 | \$ 7,410 | \$ 2,480 | 1.1 | \$ 2,728 | \$ - | \$ - | \$ 10,138 |
| Task 1.4 - Quality Assurance and Quality Control | 30 | | | | | | 34 | | | | | | 64 | \$ 15,240 | \$ 2,170 | 1.1 | \$ 2,387 | \$ - | \$ - | \$ 17,627 |
| Task 1.5 - Maintain Project Logs | 15 | 15 | 15 | 15 | | | | | | | | | 60 | \$ 11,490 | \$ 2,170 | 1.1 | \$ 2,387 | \$ - | \$ - | \$ 13,877 |
| Task 1 Subtotal | 115 | 65 | 50 | 50 | 0 | 0 | 34 | 0 | 0 | 15 | 329 | \$ 64,990 | \$ 9,010 | \$ 9,911 | \$ 495 | \$ - | \$ - | \$ 75,886 | | |
| Task 2 - Stormwater Utility Planning | | | | | | | | | | | | | | | | | | | | |
| Task 2.1 - Data Collection and Review | 1 | | 2 | | 8 | | | | | | | | 11 | \$ 1,862 | | 1.1 | \$ - | \$ 60 | \$ - | \$ 1,922 |
| Task 2.2 - Study Area and Basin Characterization | 1 | | 2 | | 24 | | 4 | | | | | | 31 | \$ 5,454 | | 1.1 | \$ - | \$ - | \$ - | \$ 5,454 |
| Task 2.3 - General Planning Criteria Review | 1 | | 4 | | 10 | | | | | | | | 15 | \$ 2,580 | \$ 1,440 | 1.1 | \$ 1,584 | \$ - | \$ - | \$ 4,164 |
| Task 2.4 - Utility Map Development | 1 | | 2 | | 10 | | | | 2 | | | | 15 | \$ 2,486 | | 1.1 | \$ - | \$ - | \$ 120 | \$ 2,606 |
| Task 2.5 - Sensitive Lands and Problem Areas Identification | 1 | | 2 | | 8 | | | | | | | | 11 | \$ 1,862 | \$ 12,620 | 1.1 | \$ 13,882 | \$ - | \$ - | \$ 15,744 |
| Task 2.6 - Utility Opportunities and Constraints Maps | 1 | | 2 | | 10 | | | | 2 | | | | 15 | \$ 2,486 | \$ 4,860 | 1.1 | \$ 5,346 | \$ - | \$ 120 | \$ 7,952 |
| Task 2.7 - Federal, State, and Local Rules and Regulations | 1 | | 2 | | 8 | | | | | | | | 11 | \$ 1,862 | \$ 16,460 | 1.1 | \$ 18,106 | \$ - | \$ - | \$ 19,968 |
| Task 2.8 - Major Infrastructure Alternatives Development and Evaluation | 1 | | 16 | | 140 | | 4 | | 20 | | | | 181 | \$ 29,594 | \$ 16,900 | 1.1 | \$ 18,590 | \$ - | \$ 1,600 | \$ 49,784 |
| Task 2.9 - Preliminary Stormwater Concept | 1 | | 12 | | 72 | | 4 | | 8 | | | | 97 | \$ 16,250 | \$ 8,880 | 1.1 | \$ 9,768 | \$ - | \$ 800 | \$ 26,818 |
| Task 2 Subtotal | 9 | 0 | 44 | 0 | 290 | 0 | 12 | 0 | 32 | 0 | 387 | \$ 64,488 | \$ 61,160 | \$ 67,278 | \$ 60 | \$ 2,640 | \$ 194,412 | | | |
| Task 3 - Sewer Utility Planning | | | | | | | | | | | | | | | | | | | | |
| Task 3.1 - Data Collection and Review | 1 | | | 2 | | | | | | | | | 8 | \$ 1,800 | | 1.1 | \$ - | \$ 60 | \$ - | \$ 1,860 |
| Task 3.2 - Study Area and Basin Characterization | 1 | | | 2 | 20 | | 4 | | 20 | | | | 47 | \$ 7,904 | | 1.1 | \$ - | \$ - | \$ - | \$ 7,904 |
| Task 3.3 - General Planning Criteria Review | 1 | | | 4 | | | | | 10 | | | | 15 | \$ 2,456 | | 1.1 | \$ - | \$ - | \$ - | \$ 2,456 |
| Task 3.4 - Utility Map Development | 1 | | | 2 | | | | | 10 | 2 | | | 15 | \$ 2,424 | | 1.1 | \$ - | \$ - | \$ - | \$ 2,424 |
| Task 3.5 - Utility Opportunities and Constraints Maps | 1 | | | 2 | | | | | 10 | 2 | | | 15 | \$ 2,424 | | 1.1 | \$ - | \$ - | \$ - | \$ 2,424 |
| Task 3.6 - Major Infrastructure Alternatives Development and Evaluation | 1 | | | 16 | | | 4 | | 140 | 20 | | | 181 | \$ 29,098 | | 1.1 | \$ - | \$ - | \$ 200 | \$ 29,298 |
| Task 3.7 - Preliminary Sewer Concept | 1 | | | 12 | | | 4 | | 72 | 8 | | | 97 | \$ 15,878 | | 1.1 | \$ - | \$ - | \$ 80 | \$ 15,958 |
| Task 3 Subtotal | 7 | 0 | 0 | 40 | 20 | 0 | 12 | 0 | 270 | 32 | 0 | \$ 61,994 | \$ - | \$ - | \$ 80 | \$ 280 | \$ 62,874 | | | |
| Task 4 - Water and Non-Potable Utility Planning | | | | | | | | | | | | | | | | | | | | |
| Task 4.1 - Data Collection and Review | 2 | | | | | 10 | | | | | | | 12 | \$ 1,834 | | 1.1 | \$ - | \$ 60 | \$ - | \$ 1,894 |
| Task 4.2 - Study Area and Pressure Zone Description | 2 | | | | | 10 | | | | | | | 12 | \$ 1,834 | | 1.1 | \$ - | \$ - | \$ - | \$ 1,834 |
| Task 4.3 - General Planning Criteria Review | 4 | | | | | 10 | | | | | | | 14 | \$ 2,238 | | 1.1 | \$ - | \$ - | \$ - | \$ 2,238 |
| Task 4.4 - Utility Map Development | 4 | | | | | 16 | | | | | | | 20 | \$ 3,096 | | 1.1 | \$ - | \$ - | \$ 160 | \$ 3,256 |
| Task 4.5 - Utility Opportunities and Constraints Maps | 6 | | | | | 16 | | | | | | | 22 | \$ 3,500 | | 1.1 | \$ - | \$ - | \$ - | \$ 3,500 |
| Task 4.6 - Major Infrastructure Alternatives Development and Evaluation | 16 | | | | | 60 | | | | 40 | | | 116 | \$ 18,012 | | 1.1 | \$ - | \$ - | \$ 1,000 | \$ 19,012 |
| Task 4.7 - Preliminary Water and Non-Potable Concept | 12 | | | | | 50 | | | | | | | 62 | \$ 9,574 | | 1.1 | \$ - | \$ - | \$ - | \$ 9,574 |
| Task 4 Subtotal | 48 | 0 | 0 | 0 | 0 | 172 | 0 | 0 | 40 | 0 | 258 | \$ 40,088 | \$ - | \$ - | \$ 60 | \$ 1,100 | \$ 41,308 | | | |