



**CITY COUNCIL WORKSHOP MEETING AGENDA**  
**Tuesday, January 22, 2019, 4:30 PM**  
**City Hall, 616 NE 4th Avenue**





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**I. CALL TO ORDER**

**II. ROLL CALL**

**III. PUBLIC COMMENTS**

**IV. WORKSHOP TOPICS**

- A. Finance Department Staffing Plan  
Presenter: Jennifer Gorsuch, Administrative Services Director  
 [Staff Report](#)
- B. 2019 STEP Tank Pumping Contract Extension  
Presenter: Sam Adams, Utilities Manager  
 [Staff Report](#)  
[2019 Bid Proposal](#)  
[2019 STEP Pumping Extension Agreement](#)
- C. General Sewer Plan Update Professional Services with Carollo Engineering  
Presenter: Sam Adams, Utilities Manager  
 [Staff Report](#)  
[Wastewater Engineering Report Scope](#)  
[General Sewer Plan Scope](#)  
[Operations and Maintenance Manual Scope](#)
- D. Lacamas Creek Sewer Pump Station Design Consultant Contract  
Presenter: James Carothers, Engineering Manager  
 [Staff Report](#)  
[Lacamas Creek Pump Station Design Scope and Budget](#)
- E. Two Hour Parking Spaces on NE Birch Street  
Presenter: James Carothers, Engineering Manager  
 [Staff Report](#)  
[Camas Family Health Center Owner's Parking Request](#)
- F. Public Works Miscellaneous and Updates  
Details: This is a placeholder for miscellaneous or emergent items.  
Presenter: Steve Wall, Public Works Director

- G. Community Development Miscellaneous and Updates  
Details: This is a placeholder for miscellaneous or emergent items.  
Presenter: Phil Bourquin, Community Development Director
- H. City Administrator Miscellaneous Updates and Scheduling  
Details: This is a placeholder for miscellaneous or scheduling items.  
Presenter: Pete Capell, City Administrator

## **V. COUNCIL COMMENTS AND REPORTS**

## **VI. PUBLIC COMMENTS**

## **VII. ADJOURNMENT**

NOTE: The City welcomes public meeting citizen participation. For accommodations; call 360.834.6864.



## Staff Report

January 22, 2019 Council Workshop

### Finance Department Staffing Plan

Staff Contact	Phone	Email
Jennifer Gorsuch, Admin. Services	360-817-7013	<a href="mailto:jgorsuch@cityofcamas.us">jgorsuch@cityofcamas.us</a>

#### INTRODUCTION/PURPOSE/SUMMARY:

The Finance Department is facing a staff shortage and preparing for upcoming retirements.

As you are aware, one of our Accounting Assistants is out on medical leave and has been since late October. At this time she is focusing on her recovery and we are hopeful that she will be able to return in the early Spring. We have one of the Financial Assistants working out of class to assist with the functions of this employee.

With year-end and audit season upon us, there is a need to accelerate the replacement positions in the department.

Staff would like to promote the Financial Assistant currently working out of class to take over the payroll duties, to relieve the Accountant, who has been handling them since late October. This frees up the Accountant to work on the CAFR and year-end duties. This essentially double-fills the position of the Accounting Assistant who is retiring at the end of June. We would then backfill the open Financial Assistant position.

Staff is also asking Council to allow the new Accounting Assistant position which Council which was scheduled for 2020 as part of the new monthly utility billing, to be filled in 2019. The new position would be filled to cross-train with Mark Warner before he retires in May.

Pam O'Brien, our Accounting Manager is retiring at the end of June. Recruitment efforts will begin after the Finance job descriptions are reviewed and updated, and authorized by Council.

Additionally, with all these changes during a very busy season for Finance, the Finance Accounting Consultant, Teresa Johnson, is provided backup help with capital accounting and CAFR preparation.

**BUDGET IMPACT:** The movement of the Accounting Assistant from the 2020 budget to the 2019 budget and the double-filling taking place earlier than expected will require a budget adjustment in the Spring Omnibus.

**RECOMMENDATION/RECOMMENDED ACTION/ACTION REQUESTED:** Staff recommends that Council authorize the overfilling, backfilling, and advancing the Accounting Assistant from the 2020 budget to the 2019 budget.



## Staff Report

*January 22, 2019 Council Workshop Meeting*

Staff Contact	Phone	Email
Sam Adams, Utilities Manager	360.817.1563	sadams@cityofcamas.us

**INTRODUCTION/PURPOSE/SUMMARY:** The City has elected to extend the 2018 STEP tank pumping contract with Haag & Shaw Inc. into 2019. Per contract, the City may extend the contract for another year based on contractor previous performance. The contract allows for an increase in contractor pricing for 2019 based on the December 2018 Consumer Price Index which was 3.6%. Haag and Shaw Inc. has agreed to provide services at the increased pricing.

**BUDGET IMPACT:** \$73,431.03 cost. The Water/Sewer fund has budget available to complete this work.

**RECOMMENDATION/RECOMMENDED ACTION/ACTION REQUESTED:** This item is for Council information only. Staff recommends this item be placed on the February 4, 2019 Consent Agenda for Council's consideration.

**2019 BID EXTENSION PROPOSAL**

To the Office of the City Clerk  
Camas, Washington

The undersigned hereby certifies that they have examined the location of STEP/STEF tank pumping maps

**2019 STEP & STEF Tank Pumping Extension  
Project No. S1014**

and the existing 2018 bidding documents and contract governing the work embraced in this extension apply, and the method by which payment will be made for said work is understood. The undersigned hereby proposes to undertake and complete the work embraced in this improvement, or as much thereof as can be completed with the money available in accordance with the said bidding documents and contract with a Consumer Price Index of 3.6% increase applied to the 2018 bid prices, and the following schedule of rates and prices:

(Note: Unit prices for all items, all extensions, and total amount of bid should be shown. All entries must be typed or entered in ink.)

Item	Quantity	Description	Unit	Unit Price	Total
<b>Base Bid items :</b>					
1.	470	Residential STEP & STEF Tank Pumping	Each	\$ <u>130.54</u>	\$ <u>61,353.80</u>
2.	15	Emergency Residential STEP & STEF Tank Pumping	Each	\$ <u>295.26</u>	\$ <u>4,428.90</u>
3.	15	Commercial STEP & STEF Tank Pumping	1,000 Gallon	\$ <u>130.54</u>	\$ <u>1,958.10</u>
Subtotal Base Bid					\$ <u>67,740.80</u>
8.4% Sales Tax					\$ <u>5,690.23</u>
Total Base Bid					\$ <u>73,431.03</u>

  
\_\_\_\_\_  
**Signature of Owner or Authorized Corporate Officer**  
(This is required for a valid bid.)

**The City of Camas reserves the right to reject any or all proposals if found to be higher than the estimated cost and to waive any formality or technicality in any proposal in the interest of the City. The City of Camas also reserves the right to delete any or all portions of individual bid items.**

## **2019 STEP TANK PUMPING CONTRACT EXTENSION**

THIS AGREEMENT, made and entered into this \_\_\_\_\_ day of \_\_\_\_\_, 2019, between the City of Camas under and by virtue of Title 35 RCW (cities and towns), as amended and, \_\_\_\_\_, hereinafter called the Contractor.

WITNESSETH:

That in consideration of the terms and conditions contained herein and attached and made a part of this agreement, the parties hereto covenant and agree as follows:

I. The Contractor shall do all work and furnish all tools, materials and equipment for **2019 STEP & STEF Tank Pumping**, City of Camas Project No. **S1014**, in accordance with and as described in the attached plans and specifications, and the standard specifications of the Washington State Department of Transportation which are by the reference incorporated herein and made part hereof and, shall perform any changes in the work in accord with the Contract Documents.

The Contractor shall provide and bear the expense of all equipment, work and labor, of any sort whatsoever that may be required for the transfer of materials and for constructing and completing the work provided for in these Contract Documents except those items mentioned therein to be furnished by the City of Camas.

II. The City of Camas hereby promises and agrees with the Contractor to employ, and does employ the Contractor to provide the materials and to do and cause to be done the above described work and to complete and finish the same in accord with the attached plans and specifications and the terms and conditions herein contained and hereby contracts to pay for the same according to the attached specifications and the schedule of unit or itemized prices at the time and in manner and upon the conditions provided for in this contract.

III. The Contractor for himself/herself, and for his/her heirs, executors, administrators, successors, assigns, does hereby agree to the full performance of all the covenants herein contained upon the part of the Contractor.

IV. The Contractor shall defend, indemnify and hold the City of Camas, its officers, officials, employees and volunteers harmless from any and all claims, injuries, damages, losses or suits including attorney fees, arising out of or in connection with the performance of this agreement, except for injuries caused by the sole negligence of the City of Camas.

Should a court of competent jurisdiction determine that this Agreement is subject to RCW 4.24.115, then in the event of liability for damages arising out of bodily injury to persons or damages to property caused by or resulting from the concurrent negligence of the Contractor and the City, its officers, officials, employees, and volunteers, the Contractor's liability hereunder shall be only to the extent of the Contractor's negligence. It is further specifically and expressly understood that the indemnification provided herein constitutes the Contractor's waiver of immunity under

Industrial Insurance, Title 51 RCW, solely for the purposes of this indemnification. This waiver has been mutually negotiated by the parties. The provisions of this section shall survive the expiration or termination of this Agreement.

V. The Contractor shall provide a material, labor, and equipment guarantee for the work performed under this contract for a period of one year from the Date of Acceptance as shown on the Notice of Completion for Public Works Projects. All work shall be free of defect in workmanship or materials. Upon notice, the Contractor shall make all repairs promptly at no cost to the City. Failure to repair or replace defects in a manner satisfactory to the Engineer will constitute a breach of this contract.

VI. The Contractor is obligated to pay Prevailing Wages as determined by the Washington State Department of Labor and Industries Prevailing Wages, Rates for Clark County effective January 1, 2019.

VII. As provided by Title VI of the Civil Rights Act of 1964, and the Civil Rights Restoration Act of 1987, the contractor, with regard to the work performed by it during the contract, shall not discriminate on the grounds of race, color, sex or national origin in the selection and retention of sub-contractors, including procurement of materials and leases of equipment.

VIII. It is further provided that no liability shall attach to the City of Camas by reason of entering into this contract, except as provided herein.

IX. This Contract is an extension of the 2018 Contract for project **S1014** as is mutually agreed upon by both the City and the Contractor. Using the same Bid Items listed in the 2018 Proposal, the unit bid prices for the year 2019 have been increased by a percentage rate equal to the Portland, Oregon Metropolitan Area Consumer Price Index (CPI) as reported December, 2018 which was +3.6%. See Appendix A of this Contract document for Bid Items prices.

The Contractor agrees to pay wages equal to or more than the Washington State Prevailing Wage Rates as prepared by the Department of Labor and Industries on or about January 1, 2019. A second filing and approval of an *Intent to Pay Prevailing Wages* and an *Affidavit of Wages Paid* shall be completed and approved for the year 2019 through the Washington State Department of Labor and Industries.

IN WITNESS WHEREOF, the Contractor has executed this instrument, on the day and year first below written and the Mayor of the City of Camas has caused this instrument to be executed by and in the name of the said City of Camas the day and year first above written.

Executed by the Contractor \_\_\_\_\_, 2019.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
Contractor

Executed by the Local Agency \_\_\_\_\_, 2019.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
Mayor Shannon Turk





## Staff Report

January 22, 2019 Council Workshop Meeting

Staff Contact	Phone	Email
Sam Adams, Utilities Manager	360.817.1563	sadams@cityofcamas.us

INTRODUCTION/PURPOSE/SUMMARY: The City through a competitive process selected Carollo Engineering to provide professional services to update our existing General Sewer Plan. The scope of work has been broken down into three separate categories for ease of tracking and work flow. Each category of work builds upon each other but are separate documents. The three categories are the Engineering Report, General Sewer Plan and the Operations and Maintenance Manual. Carollo Engineering has submitted three scopes of work for \$249,468, \$281,218 and \$114,239 respectively. This work is expected to take two years to complete.

BUDGET IMPACT: Total cost of the project would be \$644,925. The Sewer Fund Rate Model for 2019 through 2023 includes \$450,000 for this work effort. The remaining \$195,000 will come from the Sewer Fund Balance (reserves), which will still be at appropriate levels to provide appropriate coverage. As the General Sewer Plan is the guiding document for the Sewer Utility as a whole, staff feels the amount and use of reserves is justified. Staff would continue tracking revenues vs. expenses to limit any long-term impacts from the increased amount of the project.

RECOMMENDATION/RECOMMENDED ACTION/ACTION REQUESTED: This item is for Council's information only. Staff recommends this item be placed on the February 4, 2019 Consent Agenda for Council's consideration.

# **EXHIBIT A**

## **SCOPE OF SERVICES**

### **CITY OF CAMAS**

#### **WASTEWATER TREATMENT ENGINEERING REPORT**

##### **Phase 1**

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## **SCOPE OF SERVICES**

The following Scope of Services has been developed to assist the City of Camas (City) with its Wastewater Treatment Engineering Report (Engineering Report). The objective of this project is to determine short and long term improvements to the City's Wastewater Treatment Facility (WWTF) to optimize existing operations and meet future system growth. The Engineering Report is divided into two Phases. This scope includes the Phase 1 effort and outlines the effort for Phase 2 (as stated and highlighted in grey). Phase 1 gathers the necessary information for evaluating the WWTF, evaluates unit process capacities to identify deficiencies, and identifies short and long term improvement alternatives. A conceptual budget for selected alternatives will be provided to assist with City financial planning. Phase 2 will further develop alternatives and generate a detailed Capital Improvement Plan. Phase 2 also includes an Engineering Report for the WWTF that meets WAC 173-240-060 and shall be submitted upon completion to Ecology for comment and approval.

The following tasks under this Scope of Services have been prepared based on Carollo Engineer's (Consultant) current understanding of the proposed project, previous experience by the Consultant team members, and discussions with City staff.

## **PROJECT BACKGROUND**

The City operates and maintains a wastewater collection system, serving the City and its Urban Growth Boundary. Wastewater is collected and treated by the City. The Wastewater Treatment Facility (Facility) is an activated sludge wastewater treatment plant that discharges to the Columbia River. Its treatment process includes: influent screens, primary clarifiers, MLE biological treatment system with selector zones, tertiary filters, and UV disinfection.

The City completed 2010 its last General Sewer Plan in 2010 (Grey and Osborn's General Sewer / Wastewater Engineering Report (2010 Plan)). Since that time, the City has continued to address Inflow and infiltration (I/I), begun to develop the infrastructure needed to serve the North Shore area, and made condition related at the treatment plant. The project is divided into three efforts and the resulting documents:

- General Sewer Plan Update (Plan),
- Wastewater Treatment Engineering Report (Engineering Report), and
- Wastewater Treatment Facility Operations and Maintenance Plan Update (O&M Plan).

This scope covers the O&M Plan, which constitutes Tasks 1000 (Project Management) and 3000 (Wastewater Treatment Plant Engineering Report), outlined in the following sections.

## PROJECT ASSUMPTIONS

- Carollo Engineers, Inc. and its subconsultants and work performed by them will be referred to as “Consultant” in this document.
- The City of Camas and its staff will be referred to as “City” in this document.
- State of Washington Department of Ecology and its staff will be referred to as “Ecology” in this document.
- All meetings will be held at the City offices. Some workshops will be held via web conference, as specified below.
- Draft Chapters and Technical Memoranda will be provided electronically (PDF and/or Microsoft Word, as directed by City).
- Meeting notes and related materials will be transmitted electronically in PDF format via email.
- The City will print and produce additional copies of all documents as necessary for its use.
- The City will provide available information related to the project and as requested by the Consultant in a timely manner.
- Web conferencing and teleconferencing will be used to discuss project coordination and for some presentations to the City in lieu of the meetings at the City.
- The Tasks scope and budget were generated based on Carollo completing the Plan.

## TASKS

To meet the objectives of this scope of services, the Consultant shall complete the tasks as summarized in the table below and discussed in detail in the text that follows.

Task	Title
TASK 1000	PROJECT MANAGEMENT
Task 1013	Project Administration (Phase 1)
TASK 3000	WASTEWATER TREATMENT PLANT ENGINEERING REPORT
Task 3010	Information Gathering (Phase 1)
Task 3020	Unit Process Capacities (Phase 1)
Task 3030	WWTP Improvements (Phase 1 and Phase 2 Summary)
Task 3040	Engineering Report (Phase 2 Summary only)

## **TASK 1000 – Project Management**

This task includes managing the work of the project team from notice to proceed to project closeout, planning for and carrying out regular communication with the City, and planning for and carrying out quality management activities.

### **Task 1010 Subtasks**

#### **Activities**

##### *1013. Project Administration.*

Prepare and administer subcontracts with Consultant team members.

Manage the project team to track time and budget, work elements accomplished, work items planned for the next period, manpower, scope changes, time and budget needed to complete the project.

Prepare twelve (12) monthly project progress reports to accompany each monthly invoice; identify accomplishments for the month, planned work next month, and identify current or potential problems or changes. The reports will also include a narrative describing progress measured against budget and schedule. In the event of schedule or budget lag, the report will indicate a plan to get the project in line with the schedule and budget.

Create and maintain a working project schedule based on the schedule in the General Sewer Plan PMP.

Review project status, including scope, budget, and schedule as part of scheduled meetings.

#### **Meetings**

- None.

#### **Deliverables**

- Twelve (12) monthly progress reports
- Preliminary schedule, and no more than two (2) updates
- Meeting agendas and notes

#### **City Input**

- None.

#### **Assumptions**

- The project is anticipated to take twelve (12) months.

## **TASK 3000 – WASTEWATER TREATMENT FACILITY ENGINEERING REPORT**

The City WWTF has historically experienced unreliable treatment capacity in the secondary treatment processes due to a combination of long SRT and low influent BOD. Short term improvements to optimize this system is the first objective of this Engineering Report. In addition the effect of longer term increases in flow and loads will be assessed along with improvement alternatives and finally a Capital Improvement Plan to outline necessary shorter (1-3 years) and longer term improvements

### **Task 3010 – Information Gathering**

The objective of this task is to assemble and review information on the current plant process assets and performance. Results of this Task will provide a basis of evaluation for Task 3020 and 3030.

#### **Task 3010 Subtasks**

##### **Activities**

3011. *Data Request.* Review the following information provided by the City:

- Existing as-built documentation
- The past 3-5 years of process data including plant influent and effluent data as well as data relating to individual unit process performance
- Operational protocols for all plant facilities
- Summary of recent plant upgrades and short term planned upgrades
- Current NPDES permits and any additional ECOLOGY requirements
- Current and future approach to managing and monitoring industrial discharges to the plant
- Plant assets condition assessment
- Existing Hydraulic/Biological Models
- Existing O&M Manual
- Plant Performance and Facility Data from Georgia Pacific

3012. *Georgia Pacific Plant Tour* – Accompany City on 2-hour tour of existing GP intake treatment and discharge facilities. The Tour along with a review of existing facility information will form the evaluation basis to assess the value of these facilities to the City to accommodate future flows and loads.

3013. *Meeting No. 1 - Information Gathering.* Upon completion of the data review conduct a 2-hour plant walk-through of the WWTF and a 2-hour walk through of Georgia Pacific Facility followed by a 4-hour workshop with City Staff to achieve the following objectives:

- Confirm Engineers review of the information provided by the City and highlight any additional data needs.
- Obtain City operational input on current plant process treatment deficiencies and historical process/operational changes implemented to mitigate the deficiencies.

- Build consensus on the approach to modeling/evaluating the current and future process capacity of the facilities including redundancy criteria/modeling approach/unit process capacity criteria
- Build Consensus of regulatory basis of evaluation
- Select any reserve industrial capacity for inclusion in flow and loads analysis

### **Meetings**

- Meeting No. 1 - Information Gathering
- Georgia Pacific Plant Tour

### **Deliverables**

- Draft and Final Meeting Agenda
- Workshop Materials
- Draft and Final Meeting Notes

### **Assumptions**

- Task 3010 will be documented in the Meeting Notes and Workshop Materials prior to inclusion in the Report
- Condition assessment of existing facilities is not included in the scope.
- Negotiation of future permit with Ecology is not included in the Scope.

### **Task 3020 – Unit Process Capacities**

Evaluates plant unit process capacities under current and future flow and loads. Develops trigger plots for each unit process to identify timing of necessary improvements.

#### **Task 3020 Subtasks**

##### **Activities**

3021. *Hydraulic Modeling.* Review existing hydraulic model. Develop plant hydraulic model to assess current and future unit process flow limitations for all liquid stream processes.
- Model will be based on as-built information provided by City and the existing hydraulic model provided by City in electronic format of native software.
  - On-site surveying or flow measurement is not included.
  - Model will assume existing hydraulic model accurately represents hydraulic losses under current flow conditions.
  - Head loss estimates for unit processes will be taken from manufacturer's data or existing models where applicable.
  - Model will be reviewed with City during Meeting No. 18
  - Computational Fluid Dynamic Modeling (CFD) of plant facilities is not included in the scope.

3022. *Secondary System Biological Model.* Develop plant wide Biowin Model for estimating unit process treatment capacity of the Secondary Treatment Train based current secondary flow and load conditions and operational configuration. Calibrate using current process data and predict secondary process performance under future flows and loads.
- Future process performance for existing unit process will be determined in Subtask 3024.
  - Outputs from Biowin model be used to estimate unit process treatment capacity of solids stream treatment train.
3023. *Meeting No. 2 - Hydraulic and Biowin Modeling.* Facilitate a workshop to review the results of the hydraulic and Biowin modeling efforts with the City. Objectives of the meeting are as follows:
- Confirm assumptions and results of hydraulic modeling effort.
  - Identify any consistencies with previous models.
  - Confirm assumptions, calibration and results Biowin Model.
3024. *Unit Capacity Analysis.* Evaluate the existing capacity of current unit processes operated under current protocols. Capacity estimates of unit processes will be developed from historical data, industry practices, Carollo process performance data base, and Biowin and hydraulic model results where applicable. Identify short term and long term deficiencies in each unit process, including process deficiencies identified in Task 3010. Develop trigger plots for each unit process highlighting estimated time period when unit process capacity will be exceeded.
- Trigger plots based on flow and loads to be developed for both hydraulic and treatment where applicable.
  - Short term deficiencies unless capacity related are not included in trigger plots
  - Mixing zone analysis of the existing outfall is not included in the Scope.
  - Hydraulic capacity of the existing outfall is included in the scope
3025. *Meeting No. 3 – Unit Capacity Analysis.* Facilitate a meeting to review and confirm the unit process capacity analysis and trigger plots. Objectives included the following
- Confirm results of unit process capacity analysis and trigger plots
  - Highlight short term deficiencies that are not capacity related
3026. *Future Plant Needs for Alternative Analysis.* Based on the outcome of Meeting No. 3, identify the future plant needs to be evaluated in the Alternatives Analysis. The intent of this task is to work in collaboration in a Webinar with the City to define the specific plant processes/facilities to be evaluated in Task 3030. No new analyses are anticipated during this task.
3027. *Technical Memorandum 1 – Unit Process Analysis.* Prepare Draft Modeling and Unit Process TM to document the unit process analysis for the City's review. TM to include City review comments will be addressed in a comment response log for the City's final approval. Comments will be incorporated into a Final TM.

## Meetings

- Meeting No. 2 - Hydraulic and Biowin Modeling Review.
- Meeting No. 3 – Unit Capacity Analysis.

## Deliverables

- Draft and Final TM No. 1 – Unit Process Analysis
- Draft and Final Meeting No. 2 and No. 3 Agenda and Meeting Notes
- Meeting Materials

## Assumptions

- Each Meeting will be 3 hours in length and held at the City of Camas.
- All City Stakeholder shall be in attendance for Meeting No. 19

## Task 3030 – WWTF CIP Development

Develop alternatives to meet the short and long term process deficiencies identified in Task 3020. Evaluate alternatives and select preferred alternatives. Develop conceptual design for preferred alternatives. Outline implementation plan for 20-Year CIP.

### Task 3030 Subtasks

#### Activities

3031. *Alternatives Evaluation Criteria:* Develop alternatives evaluation criteria with City for future evaluation of alternatives. Outline prospective criteria to be weighted during Meeting No. 20. Discuss prospective criteria with City on telecom prior to Meeting No. 20.
3032. *Short Term Alternatives Identification:* From the results of TM 2 select short term areas of improvement to be addressed in subsequent sections. Identify a maximum of 2 (two) alternatives to mitigate each area of deficiency. It is assumed these improvements in total will have a project cost less than \$500,000. More expansive short term efforts will be included in Activity 3032. Each alternative or set of alternatives will be developed to a level of detail described below:
- Conceptual design of lay-outs and components
  - Description of preliminary control philosophy
  - Process Flow Diagram
  - Description of any additional testing or evaluation required at plant facilities to further develop
  - Conceptual design cost estimate (Level 4) for budgeting purposes
3033. *Long Term Alternatives Identification:* From the results of TM 2 select long term areas of improvement to be addressed in subsequent sections. Identify a maximum of 4 (four) alternatives to mitigate each area of improvement based on industry practice or Carollo internal experience. Incorporate results of 3033 into workshop materials for Meeting



No. 20. Each alternative or set of alternatives will be developed to a level of detail described below:

- General sizing of components based on required capacity
- Picture board lay-out of facilities on site plan indicating alternatives footprint. A maximum of 4 four site plans will be developed
- Planning level process flow diagram for a maximum of 4 (four) plant wide alternatives
- Planning level relative magnitude costs based on treatment cost curves for budgeting purposes
- Project timing based on future flow and load projections.

3034. *Meeting No 4 – Alternatives Identification and screening.* Weight alternative evaluation criteria. Conduct a preliminary review of proposed long term alternatives to select the alternatives for further evaluation under Activity 3036. Objectives of this meeting:

- Select 2 or 3 (two or three) alternatives to address long term capacity deficiencies to develop further in Activity 3035
- Finalize alternatives evaluation criteria

3035. *Technical Memorandum 2 – Alternative Analysis.* Prepare Draft Alternative Analysis TM to document the short term and long term alternatives. The TM will provide a description of identified alternatives, recommended project timing, and conceptual costs for budget planning (calculated in the tasks above). TM to include City review comments will be addressed in a comment response log for the City's final approval. Comments will be incorporated into a Final TM.

## **Phase 2 Tasks**

**Phase 2 Scope included in Activities 3036, 3037 and 3038 will be further detailed upon inclusion in Project. Engineering Report cannot be completed prior to completion of these activities. No level of effort has been included in the Budget.**

3036. ***Phase 2 Alternatives Development:*** Further develop longer term alternatives for evaluation in subsequent Activities. Develop capital costs and non-cost criteria. Select the preferred set of improvements. Includes one meeting for preferred alternative selection

3037. ***Phase 2 Conceptual Design:*** Develop 10% conceptual design for the preferred improvements. This design will form the basis of future preliminary and final design projects Develop life-cycle and capital costs for each preferred improvement. Includes one meeting for review of conceptual design.

3038. ***Phase 2 CIP.*** Develop with City a CIP to package and implement the improvements developed in prior activities. Includes one meeting to confirm implementation plan.

## **Meetings**

- Meeting No 4 – Improvement Planning.

## **Deliverables**

- Draft and Final TM No. 2 – Alternative Analysis
- Draft and Final Meeting No. 4 Agenda and Meeting Notes
- Meeting Materials

## **Assumptions**

- Phase 1
- Phase 2 scope and budget of Task 3036, 3037 and 3038 will be determined at a later date.
- Meeting No. 4 will be 3 hours in length and held at the City of Camas.

## **Phase 2 Task 3040 – Engineering Report**

**Phase 2 scope activities to develop an Engineering Report to meet Ecology requirements. This task cannot be completed prior to completion of Task 3036, 3037 and 3038 activities. No level of effort has been included in the Budget.**

This Task will develop Engineering Report (Report) for the WWTF that meets WAC 173-240-060 and shall be submitted upon completion to Ecology for comment and approval. The CIP developed in this Report will form the basis for future improvements at the WWTF over the 20-year Planning Period. The Report will consist of the following Chapters

Chapter 1: Executive Summary: Summarize the activities and results of the Report

Chapter 2: Introduction: Outline motivation and objectives of Engineering Report, alternatives evaluation criteria and cost assumptions.

Chapter 3: Flow and Loads; Present results of flow and load analysis from the Sewer Plan

Chapter 5: Condition Assessment: Include condition assessment documentation provided by City.

Chapter 5: Regulatory Requirements; Detail the regulatory basis for the Report for both liquid and solid streams and delineate any applicable permitting requirements based on selected improvements.

Chapter 6: Capacity Analysis: Document the evaluation of unit treatment capacity based on current and future flow and loads.

Chapter 7: Liquid Stream Improvements: Detail the evaluated short and long term liquid stream alternatives, the selected improvements and associated costs.

Chapter 8: Solids Stream Improvements: Detail the evaluated short and long term solids stream alternatives, the selected improvements and associated costs.

Chapter 9: Capital Improvements Plan: Outline the scope, Capital and life-cycle costs, and implementation plan for the proposed improvements.

## **Task 3040 Subtasks**

### **Activities**

3039. **Phase 2 Executive Summary.** The Consultant will prepare an Executive Summary to be included with the Plan and update and revise information developed on project into Engineering Report Chapters.
3040. **Phase 2 City Review Draft Engineering Report.** Develop a City Review Draft Engineering Report from the General Sewer Plan, TM No. 1 and TM No.2 to meet Ecology's Engineering Report requirements. It will be developed as a City Review Draft and reviewed by City Staff.
3041. **Phase 2 Meeting No. 5 – City Review Engineering Report Draft.** Facilitate a meeting to review the City's comments on the City Review Draft Plan.
3042. **Phase 2 Meeting No. 6 – Council Meeting.** Upon completion of the City Review Draft, the Plan will be presented to the City at City Council. The City will lead the meeting with support by the Consultant.
3043. **Phase 2 Agency Review Engineering Report Draft.** City comments on the City Review Draft will be incorporated into an Agency Review Engineering Report Draft. The City will submit Agency Review Draft to adjacent sewer providers, Clark County, and Ecology.
3044. **Phase 2 Meeting No. 7 - Agency Review Engineering Report Meeting.** The Consultant will attend one (1) agency review meeting. The City will develop written responses received during Agency Review Draft Plan process. The Consultant will incorporate comments into a comment response log and into the Final Plan.
3045. **Phase 2 Final Engineering Report.** The City will lead the City Engineering Report approval process. The Final Engineering Report will be submitted to the City Council for approval. The Consultant's Professional Engineer will stamp the Final Engineering Report. Deliverables will include 2 hardcopies, electronic copy in Word, a searchable PDF File with bookmarks.

### **Assumptions**

- All City Staff comments will be received together for inclusion in the Agency Review Draft.
- No additional draft plans will be developed.

<b>Phase 1 Meeting Summary</b>
Meeting No. 1 - Information Gathering.
Georgia Pacific Plant Tour.
Meeting No. 2 - Hydraulic and Biowin Modeling Review.
Meeting No. 3 – Unit Capacity Analysis.
Meeting No. 4 – Improvement Planning.

<b>Phase 1 Deliverable Summary</b>
Meeting agenda, materials, and minutes.
Twelve (12) monthly progress reports.
Preliminary schedule, and no more than two (2) updates.
Draft and Final TM No. 1 – Unit Process Analysis.
Draft and Final TM No. 2 – Alternative Analysis.
All final electronic documents, spreadsheets, presentations, modeling and GIS data.

TASK / DESCRIPTION		Quantity	Manager, Lara	Kammereck	Treatment QA/QC	Project Manager, Dan Reisinger	Senior Professional, Alan Straub	Project Professional	Professional	Staff Professional,	Biological Modeling - Principal	E&C Staff Professional	E&C Principal	Structural Principal	Designer, Technician, GIS,	Clerical/WP	Total Hours	Carollo Labor Cost	SUBCONSULTANTS			OTHER DIRECT COSTS			TOTAL COST
																			Sub Base Cost	Sub Markup 10%	Total Sub Cost	Travel and Printing	PECE \$11.70	Total ODC	
Total Labor Rate		\$ 226	\$ 226	\$ 176	\$ 195	\$ 176	\$ 160	\$ 135	\$ 195	\$ 165	\$ 226	\$ 226	\$ 137	\$ 95											
Task 1010 - Project Management																									
1013	Project Administration	24				60	80		12							12	188	\$ 34,644	\$ -	\$ -	\$ -	\$ 140	\$ 140	\$ 281	\$ 34,925
1010	Subtotal - Task 1010	24	0	60	80	0	12	0	0	0	0	0	0	0	0	12	188	\$ 34,644	\$ -	\$ -	\$ -	\$ 140	\$ 140	\$ 281	\$ 34,925
Task 3010 - Information Gathering																									
3011	Data Request and Review						24		12		12					12	60	\$ 10,080	\$ -	\$ -	\$ -	\$ -	\$ 702	\$ 702	\$ 10,782
3012	GP Plant Tour						8										8	\$ 1,560	\$ -	\$ -	\$ -	\$ -	\$ 94	\$ 94	\$ 1,654
3013	Meeting No. 1 - Information Gathering					4	16			32	8					2	62	\$ 9,894	\$ -	\$ -	\$ -	\$ 1,000	\$ 725	\$ 1,725	\$ 11,619
3010	Subtotal - Task 3010	0	0	4	48	0	12	32	20	0	0	0	0	0	0	14	130	\$ 21,534	\$ -	\$ -	\$ -	\$ 1,000	\$ 1,521	\$ 2,521	\$ 24,055
Task 3020 - Unit Process Capacities																									
3021	Hydraulic Modeling			16	2	16	80			20							134	\$ 23,868	\$ -	\$ -	\$ -	\$ -	\$ 1,568	\$ 1,568	\$ 25,436
3022	Secondary System Biological Model			16	2	12	20			20	80						150	\$ 28,128	\$ -	\$ -	\$ -	\$ -	\$ 1,755	\$ 1,755	\$ 29,883
3023	Meeting No. 2 - Hydraulic and Biowin Modeling					6	8			16	6				4	4	44	\$ 6,874	\$ -	\$ -	\$ -	\$ 1,000	\$ 515	\$ 1,515	\$ 8,389
3024	Unit Capacity Analysis			4	2	24	80			12	40						162	\$ 29,436	\$ -	\$ -	\$ -	\$ -	\$ 1,895	\$ 1,895	\$ 31,331
3025	Meeting No. 3 - Unit Capacity Analysis					6	16			24	6				4	4	60	\$ 9,514	\$ -	\$ -	\$ -	\$ 1,000	\$ 702	\$ 1,702	\$ 11,216
3026	Future Plant Needs for Alternative Analysis					4	8			4	2				4		22	\$ 3,742	\$ -	\$ -	\$ -	\$ 1,000	\$ 257	\$ 1,257	\$ 4,999
3027	Technical Memorandum 1 - Unit Process Analysis			4	24	16			32						8	4	88	\$ 14,844	\$ -	\$ -	\$ -	\$ -	\$ 1,030	\$ 1,030	\$ 15,874
3020	Subtotal - Task 3020	0	40	46	100	180	32	96	134	0	0	0	0	20	12		660	\$ 116,406	\$ -	\$ -	\$ -	\$ 3,000	\$ 7,722	\$ 10,722	\$ 127,128
Task 3030 - WTF Improvements																									
3031	Alternative Evaluation Criteria			2	4	12				10							28	\$ 4,846	\$ -	\$ -	\$ -	\$ -	\$ 328	\$ 328	\$ 5,174
3032	Short Term Alternatives Identification			4	2	32				24	12		8	8	4	4	98	\$ 17,620	\$ -	\$ -	\$ -	\$ -	\$ 1,147	\$ 1,147	\$ 18,767
3033	Long Term Alternatives Identification			4	2	24				30	16		8	8	16	4	112	\$ 19,294	\$ -	\$ -	\$ -	\$ -	\$ 1,310	\$ 1,310	\$ 20,604
3033	Meeting No. 4 - Alternatives Identification					2	8			16	8					2	36	\$ 5,822	\$ -	\$ -	\$ -	\$ 1,000	\$ 421	\$ 1,421	\$ 7,243
3034	Technical Memorandum 2 - Alternative Analysis			4	4	16				24					8	8	64	\$ 9,824	\$ -	\$ -	\$ -	\$ 1,000	\$ 749	\$ 1,749	\$ 11,573
3030	Subtotal	0	14	14	92	0	0	104	36	0	16	16	28	18			338	\$ 57,406	\$ -	\$ -	\$ -	\$ 2,000	\$ 3,955	\$ 5,955	\$ 63,361
Total - Task 3000		24	54	124	320	180	56	232	190	0	16	16	48	56			1,316	\$ 229,990	\$ -	\$ -	\$ -	\$ 6,140	\$ 13,338	\$ 19,478	\$ 249,468

# **EXHIBIT A**

## **SCOPE OF SERVICES**

### **CITY OF CAMAS SANITARY SEWER MASTER PLAN**

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## **SCOPE OF SERVICES**

The following Scope of Services has been developed to assist the City of Camas (City) with its General Sewer Plan Update (Plan). The objective of this project is to evaluate City's sewer collection system infrastructure and summarize findings from the Wastewater Treatment Engineering Report (Engineering Plan); resulting in a defensible and affordable Capital Improvement Plan for all aspects of the sewer system. The following tasks under this Scope of Services have been prepared based on Carollo Engineer's (Consultant) current understanding of the proposed project, previous experience by the Consultant team members, and discussions with City staff.

## **PROJECT BACKGROUND**

The City operates and maintains a wastewater collection system, serving the City and its Urban Growth Boundary. Wastewater is collected and treated by the City. The City's collection system is characterized as being made up of three parts:

- Septic Tank Effluent (STE) systems
- Gravity Sewers
- Large industrial customers.

There are currently 26 pump stations in the collection system serving a mix of STE and Gravity Sewers.

The Wastewater Treatment Facility (Facility) is an activated sludge wastewater treatment plant that discharges to the Columbia River. Its treatment process includes: influent screens, primary clarifiers, MLE biological treatment system with selector zones, tertiary filters, and UV disinfection.

The City completed 2010 its last General Sewer Plan in 2010 (Grey and Osborn's General Sewer / Wastewater Engineering Report (2010 Plan)). Since that time, the City has continued to address Inflow and infiltration (I/I), begun to develop the infrastructure needed to serve the North Shore area, and made condition related at the treatment plant. The project is divided into three efforts and the resulting documents:

- General Sewer Plan Update (Plan),
- Wastewater Treatment Engineering Report (Engineering Report), and
- Wastewater Treatment Facility Operations and Maintenance Plan Update (O&M Plan).

This scope covers the General Sewer Plan, which constitutes Tasks 1000 (Project Management) and 2000 (Master Plan), outlined in the following sections.

## PROJECT ASSUMPTIONS

- Carollo Engineers, Inc. and its subconsultants and work performed by them will be referred to as “Consultant” in this document.
- The City of Camas and its staff will be referred to as “City” in this document.
- ADS Inc. and its staff will be referred to as “ADS” in this document.
- FCS GROUP and its staff will be referred to as “FCS” in this document.
- State of Washington Department of Ecology and its staff will be referred to as “Ecology” in this document.
- All meetings will be held at the City offices. Some workshops will be held via web conference, as specified below.
- Draft Chapters and Technical Memoranda will be provided electronically (PDF and/or Microsoft Word, as directed by City).
- Meeting notes and related materials will be transmitted electronically in PDF format via email.
- The City will print and produce additional copies of all documents as necessary for its use.
- The City will provide available information related to the project and as requested by the Consultant in a timely manner.
- Web conferencing and teleconferencing will be used to discuss project coordination and for some presentations to the City in lieu of the meetings at the City.
- The Tasks scope and budget were based on Carollo completing the Engineering Report.

## TASKS

To meet the objectives of this scope of services, the Consultant shall complete the tasks as summarized in the table below and discussed in detail in the text that follows.

Task	Title
TASK 1000	PROJECT MANAGEMENT
Task 1011	Project Management Plan
Task 1012	Meeting No. 1 – Kick-off and Data Analysis
Task 1013	Project Administration
TASK 2000	MASTER PLAN
Task 2010	Introduction
Task 2020	Regulations, Policies, and Criteria
Task 2030	Basis of Planning
Task 2040	Existing System
Task 2050	I/I Program

<b>Task</b>	<b>Title</b>
Task 2060	Collection System
Task 2070	Wastewater Treatment Facility
Task 2080	Operation and Maintenance
Task 2090	Capital Improvement Plan
Task 2100	Financial Analysis
Task 2110	Plan Integration

### **General Sewer Plan**

<b>Chapter</b>	<b>Title</b>
<b>General Sewer Plan</b>	
Chapter 1	Introduction
Chapter 2	Regulations, Policies, and Criteria
Chapter 3	Basis of Planning
Chapter 4	Existing System
Chapter 5	I/I Program
Chapter 6	Collection System
Chapter 7	Wastewater Treatment Facility
Chapter 8	Operation and Maintenance
Chapter 9	Capital Improvement Plan
Chapter 10	Financial Analysis
Appendix	
Appendix A	Approvals
Appendix B	Agency Comment Letters and Responses
Appendix C	Demographic Projections
Appendix D	Flow Monitoring Report
Appendix E	Hydraulic Model Update and Calibration TM
Appendix F	I/I Program Reports
Appendix G	Local Limits Program Reports
Appendix H	Wastewater Treatment Plant Permits
Appendix I	Wastewater Treatment Engineering Report
Appendix J	Spill Response Plan
Appendix K	CIP Project Sheet
Appendix L	Financial Backup
Appendix M	O&M APE Examples



## **TASK 1000 – Project Management**

This task includes managing the work of the project team from notice to proceed to project closeout, planning for and carrying out regular communication with the City, and planning for and carrying out quality management activities.

### **Task 1010 Subtasks**

#### **Activities**

1011. *Project Management Plan.* Prepare a Project Management Plan (PMP) that describes project roles and responsibilities, lists contact information for the project team, describes communication protocols, quality management, and includes the scope of services, schedule, and budget. Quality Management includes, but is not limited to, the following elements:
- a. Project Manager overview of all primary documents to verify technical consistency and compliance with contract requirements.
  - b. Organization of the work into logical deliverables with qualified staff for each task assigned to the work.
  - c. Resolution of all review comments with a comment response log summarizing key comments and the manner in which each was addressed in the work.
- The PMP will be introduced and discussed with the Consultant and City project team at the Project Kick-off Meeting. A revised final PMP will be delivered after the Project Kick-off Meeting.
1012. *Meeting No. 1 - Kick-off and Data Analysis.* Facilitate a meeting to kick-off the General Sewer Plan and review the initial data request.
1013. *Project Administration.*
- a. Prepare and administer subcontracts with Consultant team members.
  - b. Manage the project team to track time and budget, work elements accomplished, work items planned for the next period, manpower, scope changes, time and budget needed to complete the project.
  - c. Prepare eighteen (18) monthly project progress reports to accompany each monthly invoice; identify accomplishments for the month, planned work next month, and identify current or potential problems or changes. The reports will also include a narrative describing progress measured against budget and schedule. In the event of schedule or budget lag, the report will indicate a plan to get the project in line with the schedule and budget.
  - d. Create and maintain a working project schedule based on the schedule in the PMP.
  - e. Review project status, including scope, budget, and schedule as part of scheduled meetings.

#### **Meetings**

- Meeting No. 1 - Kick-off & Data Analysis

## **Deliverables**

- Draft and Final PMP
- Eighteen (18) monthly progress reports
- Preliminary schedule, and no more than two (2) updates
- Meeting agendas and notes

## **City Input**

- Contact information for project staff.
- Review of PMP.

## **Assumptions**

- The PMP will be updated once after City review of the draft PMP.
- The project is anticipated to take eighteen (18) months.

## **TASK 2000 – GENERAL SEWER PLAN**

This task will update the City's General Sewer Plan (GSP). It includes a summary of policies and criteria, updated sewer flow and load projections, hydraulic model calibration, collection system analysis, I/I Program summary, collection system analysis, wastewater treatment plant analysis, development of a Capital Improvement Plan, and Financial Analysis. A City Draft GSP, Agency Draft GSP, and Final GSP will be developed to aid in review and acceptance of the GSP.

## **Task 2010 – Introduction**

The purpose of this task is to provide an introduction to the Plan documenting the purpose, review and approvals, and direction to pertinent information. The task effort will be documented in Chapter 1 – Introduction.

## **Task 2010 Subtasks**

### **Activities**

2011. *Regulatory Information Reference.* Prepare a table that provides reference in the Plan to each regulatory required information in the Plan. The intent of this reference is to aid the agency reviewers in conducting an efficient and thorough review of the Plan.
2012. *Draft Chapter 1 - Introduction.* Prepare Draft Chapter 1 for the City's review and approval. Chapter will include the purpose and need for the plan, review and approvals, and direction to pertinent information. City review comments will be addressed in a comment response log for the City's final approval. Comments will be incorporated into the Chapter as part of the City Review Draft Plan.

## **Meetings**

- No meeting under this task.

## **Deliverables**

- Draft Chapter 1 - Introduction
- Comment Response Log for Chapter 1

## **City Input**

- Review of Draft Chapter 1.

## **Assumptions**

- None.

## **Task 2020 – Regulations, Policies, & Criteria**

The purpose of this task is to document applicable regulations, summarize policies impacting long-term sewer planning, and defining planning criteria. The task effort will be documented in Chapter 2 – Regulations, Policies, & Criteria.

### **Task 2020 Subtasks**

#### **Activities**

2021. *Applicable Regulations.* Review and update regulatory requirements presented in Chapter 4 of the 2010 Plan. Include a summary of requirements from the City's Wastewater Treatment Plan NPDES Permit WA002049. Text will be included as part of Chapter 2.
2022. *Policies & Criteria.* Obtain any existing level of service policies, financial policies, planning criteria, and design standards from the City. Review policies and criteria and make recommendations for additional or revised criteria and service area goals that best fit the needs of the City. Establish the design storm used for the capacity evaluation. Review current and potential future design standards for the sewer system, including design depth to pipe diameter (d/D) standards. Criteria will include allowable pipeline d/D values during peak flows, minimum velocities, minimum/maximum slope, and pumping requirements.
2023. *Meeting No. 2 – Policies and Criteria.* Facilitate a meeting to review City policies and criteria.
2024. *Draft Chapter 2 - Regulations, Policies, & Criteria.* Prepare Draft Chapter 2 for the City's review and approval. City review comments will be addressed in a comment response log for the City's final approval. Comments will be incorporated into the Chapter as part of the City Review Draft Plan.

#### **Meetings**

- Meeting No. 2 – Policies and Criteria

## **Deliverables**

- Draft Chapter 2 – Regulations, Policies, and Criteria
- Comment Response Log for Chapter 2
- Meeting Agenda and Minutes

## City Input

- Review of Chapter 2 – Regulations, Policies, and Criteria.

## Assumptions

- The City can provide all elements listed above.

## Task 2030 – Basis of Planning

The purpose of this task is to establish planning criteria and all planning assumptions for use in evaluation of the wastewater collection system. The planning area assumed for this Plan includes the current utility services boundary and the North Shore expansion area. The task efforts will be documented in Chapter 3 – Basis of Planning.

### Task 2030 Subtasks

#### Activities

2031. *Data Gap Analysis.* Review previously completed documents relating to the wastewater collection system, review existing system maps and mapping data, and identify data gaps required for completing the Plan. Subtasks include the following:
- a. Prepare and submit a data request in the form of an excel spreadsheet to the City for tracking data needs. The initial request may include Geographic Information Systems (GIS) data, base maps, land use and zoning data, current service area population/employment, demographic data (as necessary). The request will include ADS flow monitoring data and historical pump run time data at Pump Stations, lift station flow data (if available), major industrial discharges, WWTF influent flow monitoring for at least 10 years. Additional information includes level of service policies, planning criteria, design standards, and financial data from the City.
2032. *Service Area Boundaries.* Map the City's service area boundaries to be considered in the Plan for the existing system service area ("Existing"), the 20-year timeframe ("20-Year"), and the ultimate ("Build-out") planning periods. City to review and confirm the service area boundaries.
2033. *Demographic Analysis.* Develop service area and land use maps using GIS data. Review current population, land use, and zoning to establish the historical demographics and to develop future demographics for the service area. Establish land use data per basin for the existing system service area ("Existing"), the 20-year timeframe ("20-Year"), and the ultimate ("Build-out") planning periods. Demographics within the 20-Year timeframe will be based on the Water System Master Plan.
2034. *Industrial Flows and Loads.* Summarize Industrial flows and loads based on information provided by the City. City to provide a list of establishments producing industrial wastewater, the quantity of wastewater and periods of production, and the character of the industrial wastewater insofar as it may affect the sewer system or treatment plant. City to provide estimate of future industrial expansion.

2035. *Review Flow Monitoring & Report.* The City will contract with ADS to conduct flow monitoring. Delineate flow monitoring basins and calculate pipe length statistics based on City GIS to aid in ADS's I/I Analysis. Flow monitoring basins and statistics will be provided in an email to ADS. ADS will provide raw data, and a full report on flow and I/I Analysis for each metered basin. This data will be verified by the Consultant and used for flow development and model calibration. The flow monitoring program will take place in the winter of 2018/2019 and is anticipated to capture dry and wet weather flows, including storm events required to meet calibration standards.
2036. *Meeting No. 3 - Flow Monitoring Results.* Facilitate a webinar meeting to review flow monitoring data and results with ADS and the City.
2037. *Flow Projections:* Flow projections are based on demographic assumptions and the data obtained from flow monitoring.
- a. *Flow Data Review.* Compare base sanitary flows estimated from existing land use to dry weather flow calculated through the flow monitoring for each basin. Existing land use and currently served areas will be used to estimate flow factors in gallons per acre per land use category. The flow factors will be customized to match the observed existing Average Dry Weather Flow (ADWF) and will be used to develop flow projections. Pump Station runtime data and City pump-down curves will be used to proportion ADWF throughout basins, where available.
  - b. *Base Flow Projections:* Develop base sanitary flows for three planning periods: existing conditions, 20-year, and Build-out scenarios.
  - c. *Infiltration & Inflow Projections.* Estimate I/I flow rates for each sewer basin based on current and future land use and area-specific I/I factors. Developed I/I flow rates will be compared to I/I flow rate estimates per monitored basin. Develop I/I flow rates for each pump station basin to be included in the Model Calibration under Task 2060. Develop I/I flow rates for new areas to be added to the system.
  - d. *Flow Projections.* Future flows, including base flows, I/I, and industrial point flows, will be projected based on service area growth. Future flows will be assessed for each sewer and pump station basin for the selected planning periods. This data will be used for establishing future capacity requirements of the conveyance system under Task 2060.
2038. *Meeting No. 4 – Flow Projections.* Facilitate a webinar meeting to review flow projections with the City. Confirm flow projections are consistent with City understanding of the current and future system. Flows will be summarized by basin and at the Facility.
2039. *Wastewater Loading:* Consultant shall review historic biochemical oxygen demand (BOD) and total suspended solids (TSS) wastewater load contributing to the wastewater treatment plant. Unit loading factors will be developed using existing flow and population data to provide a basis for projected future loading within the service area. The unit loading factors will be established on an Equivalent Residential Units (ERU) basis for both residential and employment units. It is anticipated different loading factors will be developed for STE and gravity customers. Additionally, individual loading factors will be developed for up to five of the City's largest industries based on available information. Load projections will be summarized by Basin and at the Facility. Resulting load projections will be used for Engineering Report.

2040. *Meeting No. 5 –Load Projections.* Facilitate a webinar to review flow projections with the City. Confirm flow projections are consistent with City understanding of the current and future system. Loads will be summarized by basin and at the Facility.
2041. *Draft Chapter 3 - Basis of Planning.* Prepare Draft Chapter 3 for the City's review and approval. City review comments will be addressed in a comment response log for the City's final approval. Comments will be incorporated into the Chapter as part of the City Review Draft Plan.

### **Meetings**

- Meeting No. 3 – Flow Monitoring Results (Webinar).
- Meeting No. 4 – Flow Projections (Webinar).
- Meeting No. 5 – Flow and Load Projections.

### **Deliverables**

- Data Request
- Provide ADS Draft and Final Flow Monitoring Data and Report to Carollo.
- Flow Monitoring Basin Information
- Comments on the Flow Monitoring Report
- Draft Chapter 3 - Basis of Planning
- Comment Response Log for Chapter 3
- Meeting Agenda and Minutes

### **City Input**

- Provide data as listed above.
- City will confirm the service area boundaries.
- The City will contract with ADS to conduct flow monitoring. The Consultant will not review or manage the flow monitoring, except in final report format.
- Involve City planning staff to provide direction on where development is planned.
- Review of Chapter 3 - Basis of Planning.

### **Assumptions**

- No more than 5 flow monitoring sites will be installed.
- The City can provide all elements listed above.

## **Task 2040 – Existing System**

The purpose of this task is to document and create an inventory of all facilities in the existing wastewater collection system.

### **Task 2040 Subtasks**

#### **Activities**

##### **2041. Data Request:**

- a. GIS: City boundary, UGA boundary, Water Systems (e.g. City, Group A and Group B). Existing and future Sewer Service Area. City Critical Areas. County Critical Areas. Existing collection System (i.e., gravity mains, manholes, force mains, STEP mains, pump and lift station locations, etc.), proposed collection system, and the treatment plant.

##### **2042. Study Area. Update and incorporate study area information in Chapter 4 - Existing System. This information was previously presented in the 2010 Plan as Chapter 2 – Study Area. Update Background Information.**

- a. Consultant will prepare updated text and prepare a map showing the topography for the revised Service Area for topography, soils, and climate.
- b. The Consultant will generate maps of critical maps with the existing and future sewer system for the City's five critical areas types: Wetlands, Critical Aquifer Recharge Areas, Frequently Flooded Areas, Geologically Hazardous Areas, and Fish and Wildlife Habitat Conservation Areas. It is anticipated that the City will provide a text summary of Critical Areas ordinance.
- c. Generate a map of the sewer system overlaying the Water System, including location of wells or other private sources of water supply. Discussion of the location of all facilities as they are related to both existing and proposed domestic wastewater treatment facilities.
- d. Map any existing domestic or industrial wastewater treatment facilities within twenty (20) miles of the general plan area and within the same topographical drainage basin containing the general plan area. It is assumed this information will be provided by the City.

##### **2043. *Existing System.* Review the components of major sewer collectors and pump stations using data from the City's GIS, available pipe database, discussions with staff, and previous studies. Incorporate information from the City's 2010 Plan. Subtasks include the following:**

- a. Update chapter text, tables, and figures summarizing the City's collection and conveyance system. Summarize the boundaries of sewer service basins and pump station basins (if different). Provide descriptions for each of the City's sewage pump stations, and force mains. Provide total length of pipe based on diameter and material, if available.
- b. Summarize improvements to the City's wastewater collection system that have been completed since the 2010 Plan, based on discussions with City Staff.

- c. Develop figures for the Plan of the existing system infrastructure using the City's GIS data.

2044. *Draft Chapter 4 – Existing System Draft.* Prepare Chapter 4 – Existing System to document the study area and existing sewer system. City review comments will be addressed in a comment response log for the City's final approval. Comments will be incorporated into the Chapter as part of the City Review Draft Plan.

### **Meetings**

- No meeting under this task.

### **Deliverables**

- Draft Chapter 4 – Existing System.
- Comment Response Log for Chapter 4.

### **City Input**

- Review sewer system maps for accuracy.
- Discuss pump station operation with City staff.
- City will provide GIS of all water systems in Sewer Service Area.
- Text summary of the Critical Area Ordinance.
- Review of Chapter 4 – Existing System.

### **Assumptions**

- No condition assessment of the existing system will be performed under this task. Condition assessment evaluation can be performed under Task C -Additional Tasks Contingent on Change Order.

## **Task 2050 – I/I Program**

The purpose of this task is to document the City's I/I Program. Future I/I rates with and without the Program will be estimated for use in the Collection System evaluation.

### **Task 2050 Subtasks**

#### **Activities**

2051. *Summarize Existing I/I Program.* Summarize the existing I/I Program from City provided annual reports. Tabulate City I/I projects by year and I/I reduction. Create a map of historical I/I projects, if data is available. Identify future activities to be conducted by the I/I Program. *Draft Chapter 5 – I/I Program.*
2052. Prepare Draft Chapter 5 to document the I/I Program for the City's review. City review comments will be addressed in a comment response log for the City's final approval. Comments will be incorporated into a City Review Draft Plan.



## **Meetings**

- No meetings under this task.

## **Deliverables**

- Draft Chapter 5 – I/I Program.
- Meeting Agenda and Minutes.

## **City Input**

- Annual I/I reports.
- Review of Chapter 5 – I/I Program.

## **Assumptions**

- The I/I analysis will be based on the City's annual I/I reports. No new data will be evaluated.

## **Task 2060 – Collection System**

The purpose of this task is to evaluate existing and future capacity, identify system deficiencies, and provide recommendations to resolve deficiencies. Recommended projects will be included in the CIP.

### **Task 2060 Subtasks**

#### **Activities**

2061. Hydraulic Model Development and Calibration.

- a. Upgrade the City's Danish Hydraulic Institute (DHI) MOUSE model to DHI MIKE Urban model. Update the City's piping and pumping facilities. Model pipe data will be updated from the City's GIS data. The data will be imported into the model and the pipe connectivity for all nodes will be confirmed. Model extents will include:
  - 1) STE System: Major STE Forcemain and pump stations. The flows will be added to the model geographically by mini-basin for the existing, projected 20-year and build-out conditions.
  - 2) Gravity System: The model will include all pipes greater than 6-inches. The flows will be added to the model geographically by mini-basin for the existing, projected 20-year and build-out conditions.
  - 3) North Shore: Constructed and planned North Shore Sewer infrastructure based on prior City effort. The flows will be added to the model geographically by mini-basin for the existing, projected 20-year and build-out conditions.
- b. Calibration will focus on a quantitative approach based on the recommendations for hydraulic model verification contained in the "Code of Practice for the Hydraulic Modeling of Sewer Systems", version 3.001, published by the Wastewater Planning Group, a section of the Chartered Institution of Water and Environmental Management

and the Consultants expertise. These recommended calibration criteria include, but are not limited to, the following:

- 1) The comparison period between observed and modeled events should last until flow has substantially returned to winter DWF.
  - 2) Observed and modeled hydrographs should meet the criteria for at least two out of three events.
  - 3) The peak flow should be in the range +25% to -10%.
  - 4) The volume of flow should be in the range of +20% to -10%.
- c. The existing dry and wet weather flows as described in a previous task will be calibrated based upon the flow monitoring data, and rainfall data provided by the flow monitoring program as well as additional data available from the City's SCADA system for up to 5 meter locations in the collection system. Existing flow depths and velocities will also be checked and calibrated.
  - d. Calibrate the model to dry weather flow conditions. Flow monitoring data will provide custom hourly diurnal curves that establish the daily flow patterns for each metering basin. Model parameters will be adjusted, as needed, to best match the flow monitoring and SCADA data. It is assumed that the City will provide SCADA data in electronic format.
  - e. Calibrate the model for wet weather conditions. Rainfall information will aid in developing the required rainfall-derived infiltration/inflow (RDI/I) estimations that enter the collection system during a storm event. It is recommended that the use of a single calibration period incorporating a number of independent rainfall events should be considered whenever possible. Model results will be reviewed and adjusted, as needed, to best match the flow monitoring, rainfall and SCADA data.
  - f. The flows from any unmetered basins will be developed as best possible using a mass balance between the available existing meters, pump SCADA data, and the flow meter, and proportioned as best as possible based on development type, age, pipe material, and extent of collection system components.
2062. *Meeting No. 6 - Hydraulic Model Development.* Facilitate a webinar to review the hydraulic model development and resolve outstanding questions.
2063. *Draft and Final Technical Memorandum No. 1 - Hydraulic Model Development.* Prepare Draft TM to document the hydraulic model update and calibration for the City's review. City review comments will be addressed in a comment response log for the City's final approval. Comments will be incorporated into a Final TM.
2064. *Capacity Evaluation.* Perform a hydraulic capacity analysis under the design storm for each basin using the calibrated model, and projected peak flow rates and system expansion developed in Task 200. The analysis will be performed for existing, 10-year, 20-year, and build-out scenarios only, and will assist in identifying any system deficiencies and improvements required to resolve deficiencies. Subtasks include the following:
- a. Review related reports and studies for related capacity analyses and recommendations.
  - b. Estimate the available capacity of each basin given existing infrastructure while meeting all performance criteria.

- c. Develop a future hydraulic modeling scenario that evaluates the impact of wastewater flows associated with future growth, as well as redevelopment projects on the collection system. Maps will be developed showing current and future deficiencies.
- d. Review and document resulting capacity deficiencies for 20-year and Build-out conditions. Use the hydraulic model to confirm the sizing of the backbone facilities to serve the North Shore.
- e. Evaluate the capacities of the pump stations in the hydraulic model for their ability to convey peak flows under firm capacity for existing and 20-year and Build-out conditions. Pump stations not in the hydraulic model are assumed to have sufficient capacity.
- f. Update capacity deficiencies based on City field investigations or additional information, as needed.

- 2065. *Meeting No. 7 - Capacity Evaluation.* Facilitate a workshop to review deficiencies identified in the capacity evaluation. City staff will confirm known deficiencies and identify any areas for additional City lead investigation (field visit, reference as-builts, etc.).
- 2066. *Capacity Improvements.* Develop infrastructure recommendations to resolve deficiencies. Improvements will be sized for meeting build-out conditions and City criteria.
- 2067. *Meeting No. 8 - Capacity Improvements.* Facilitate a workshop to review capacity related collection system improvements. Highlight recommended improvements on system maps for discussion with City staff
- 2068. Estimate RUL for Sewer Mains. Calculate the RUL of each pipe considering the value of replacing versus maintaining the pipe for the entire gravity collection system. It is expected that RUL will be based on sewer main age, material, and previously identified deficiencies, as available from the City. The RUL will be used to recommend the extent of the City's pipeline replacement during the planning period.
- 2069. Meeting No. 9 – RUL and Condition Assessment Webinar. Review and confirm RUL data and results in a Webinar. Discuss potential improvements and timing for projects identified in the condition assessment. GIS maps will be created to identify the location of these improvements.
- 2070. *Draft Chapter 6 – Collection System.* Prepare Draft Chapter 6 to document the I/I Program for the City's review. City review comments will be addressed in a comment response log for the City's final approval. Comments will be incorporated into a City Review Draft Plan.

## **Meetings**

- Meeting No. 6 - Hydraulic Model Development (Webinar).
- Meeting No. 7 - Capacity Evaluation.
- Meeting No. 8 - Capacity Improvements.
- Meeting No. 9 – RUL and Condition Assessment.

## **Deliverables**

- Draft TM No. 1 - Hydraulic Model Development.
- Final TM No. 1 - Hydraulic Model Development.
- Draft Chapter 6 – Collection System.
- Comment Response Log for Chapter 6.
- Meeting Agenda and Minutes.
- Updated hydraulic model.

## **City Input**

- Select a hydraulic model to use.
- Review of Draft TM - Hydraulic Model Development.
- Confirm performance criteria to use to evaluate the existing system.
- Review of Chapter 6 – Collection System.

## **Assumptions**

- The City's existing model and GIS pipe data is assumed to have full connectivity, correct topology, and correct elevations. If the data is found to be lacking, the Consultant will notify the City and put modeling efforts on hold until updated data to be provided.
- At the completion of the master planning process all hydraulic and hydrologic model files will be provided to the City.
- Pump stations not in the hydraulic model are assumed to have sufficient capacity.
- The Consultant will not provide the software program or license. The Consultant will use its own version of the software for this project.

## **Task 2070 – Wastewater Treatment Facility**

Under this task, the Consultant will summarize wastewater treatment facility information from the Task 300 Engineering Report.

### **Task 2070 Subtasks**

#### **Activities**

2071. *WTF Historical operations.* Summarize WTF historical operations from the Engineering Report. It is anticipated
2072. *WTF Unit Capacity.* Summarize the unit capacity of the treatment plant from the Engineering Report. Discuss the adequacy of the treatment
2073. *Alternative Analysis.* Summarize the alternative analysis to resolve WTF deficiencies from the Engineering Report.
2074. *Identified Improvements.* Summarize improvements identified in the Engineering Report.

2075. *Evaluation of Reuse*. Summarize considerations of reuse from the 2010 Plan. It is anticipated that the subtask will include new analysis.
2076. *Draft Chapter 7 – Wastewater Treatment Facility*. Prepare Draft Chapter 7 to document the Wastewater Treatment Facility for the City's review. It is anticipated the chapter will provide a summary of the Wastewater Engineering Report. No new analyses are anticipated. City review comments will be addressed in a comment response log for the City's final approval. Comments will be incorporated into a City Review Draft Plan.

### **Meetings**

- No meeting under this task.

### **Deliverables**

- Draft Chapter 7 – Wastewater Treatment Facility
- Comment Response Log for Chapter 7
- Meeting Agenda and Minutes

### **City Input**

- Review of Chapter 7 - Wastewater Treatment Facility

## **TASK 2080 – Operation and Maintenance**

This task summarizes the City's current O&M program, organization structure, and future program needs. The chapter establishes the duties, O&M program, and documents and discusses problem areas.

### **Task 2080 Subtasks**

#### **Activities**

2081. *Data Request*. Data required to summarize and evaluate the City's current O&M program will be requested. Data may include:
- Organization structure.
  - Staffing levels and positions.
  - Summary of ongoing maintenance activities and operational tasks.
  - Current O&M funding.
  - Planned or future O&M programs.
  - Record keeping procedures.
  - Sewer main age and material.
2082. *Summarize O&M Programs and Problem Areas*. Summarize the City's O&M program, including both preventative and corrective maintenance. This includes the planned and scheduled activities, such as treatment plant preventative maintenance, biosolids management, lift station inspection and maintenance, manhole inspection and maintenance, video inspection, root cutting, grease removal, and hydraulic line cleaning.

Summarize O&M problem areas based on City provided data, such accumulation of solids or access issues. Maps will be prepared to aid in the review of O&M problem areas. Summarize customer-oriented programs, such as fats, oils, and grease (FOG), and the City's procedure to address suggestions/complaints. This task assumes the City will provide written materials for use in summarizing the existing O&M Program. The task assumes the Consultant will not prepare new summaries or documentation.

2083. *Evaluate O&M Programs.* Conceptually evaluate the ability of existing O&M programs to address problem areas within the short-term and long-term planning horizons with City staff in a workshop. Propose updated or new programs, if necessary, to address problem areas within the planning period. The purpose of this task is to aid the City in establishing the quantity of work needed and subsequent cost of the ongoing O&M programs. A detailed evaluation of individual programs is not envisioned in this task.
2084. *Meeting No. 10 – O&M Program Workshop.* Facilitate a workshop to discuss the City's O&M Programs. Meeting materials will be provided to aid in the discussion.
2085. *Draft Chapter 8 - Operation and Maintenance.* Prepare Draft Chapter 8 for the City's review and approval. City review comments will be addressed in a comment response log for the City's final approval. Comments will be incorporated into the Chapter as part of the City Review Draft Plan.

### **Meetings**

- Meeting No. 10 – Operations and Maintenance.

### **Deliverables**

- Draft Chapter 8 – Operation and Maintenance.
- Comment Response Log for Chapter 8.
- Meeting Agenda, Materials, and Minutes.

### **City Input**

- Review of Chapter 8 – Operation and Maintenance
- Provide a summary of existing O&M program.

### **Assumptions**

- City will provide.

## **Task 2090 – Capital Improvement Plan**

Under this task, the Consultant will prepare a Capital Improvement Plan (CIP) for implementing recommended projects outlined in the previous tasks.

### **Task 2090 Subtasks**

#### **Activities**

- 2091. *Project Prioritization.* Prioritize condition-related and capacity-related projects identified in the previous tasks with City staff for inclusion in the CIP. Include I/I Reduction recommendations as they overlap with recommended condition-related improvements.
- 2092. *Cost Estimating.* Develop planning level cost estimates for all recommended projects using costs provided in other planning efforts. City to provide recent costs for completed projects. Cost estimates for construction, site acquisition, engineering, permitting, and other contingencies will be prepared; all costs will be given in 2019 dollars.
- 2093. *CIP Schedule.* Schedule identified projects for the three planning periods: existing, 20-year, and Build-out conditions. A summary table will present all CIP projects, year for construction, and estimated costs, and will be organized according to a recommended phasing plan.
- 2094. *Electronic CIP.* Develop an electronic CIP tool using Excel to assist the City with future budgeting. Each major project will be listed on a separate tab including project description, justification, estimated cost, and recommended year for implementation. City staff will be provided the ability to adjust indirect costs and escalation factors. A copy of the electronic CIP will be provided to City staff. Hardcopies of the project cut-sheets will be included as an appendix. The Consultant will train City staff on using the CIP Tool.
- 2095. *System Maps.* Develop maps showing recommended future system pipes and facilities. Maps will include recommended projects color-coded by CIP phase and annotated with project identification numbers.
- 2096. *Meeting No. 11 - CIP Review.* Facilitate a meeting to review the CIP.
- 2097. *Draft Chapter 9 - Capital Improvement Plan.* Prepare Draft Chapter 9 for the City's review and approval. City review comments will be addressed in a comment response log for the City's final approval. Comments will be incorporated into the Chapter as part of the City Review Draft Plan.
- 2098. *Financial Summary.* Provide a discussion, including table, that shows the cost per service in terms of both debt service and operation and maintenance costs, of all facilities (existing and proposed) during the planning period. It is anticipated the discussion will be based on the Task 2100 effort; no analyses will be conducted.

#### **Meetings**

- Meeting No. 11 - CIP Review

## **Deliverables**

- Draft Chapter 9 - Capital Improvement Plan
- Comment Response Log for Chapter 9
- Meeting Agenda and Minutes

## **City Input**

- Review of Chapter 9 - Capital Improvement Plan.

## **Task 2100 – Financial Analysis**

The City's financial analysts, FCS, will evaluate the impacts of the resulting capital improvement program (CIP) on the Sewer utility's rates and system development charges (SDCs:

### **Task 2100 Subtasks**

#### **Activities**

*2101. Data Collection / Validation:* FCS will provide a data needs list encompassing historical and projected financial, operational, billing and planning information. The provided data will be reviewed, analyzed and validated for inclusion in the study process. Detailed customer statistics will not be analyzed as part of this effort. The City's 2017/2018 rate study customer data analysis will be utilized for this update.

*2102. Revenue Requirement Update:* This task establishes a sustainable, multi-year (5-20 year) financial management plan that meets the projected total financial needs of the sewer utility through generation of sufficient, sustainable revenue.

Annual cash flow needs will be analyzed by identifying expenses incurred to operate and manage the sewer system including:

- Cost increases resulting from staffing changes, enhanced programs or initiatives.
- Capital project needs (renewal/replacement, upgrades and expansion) identified in the upcoming GSP update.
- New and existing debt repayment obligations.
- Fiscal policy achievement related to operating and capital reserve targets, system reinvestment funding or rate funded capital, and coverage requirements.

Projected revenue will consider the sensitivities of changes in economic, weather and demand trends in order to mitigate volatility and stabilize revenue. Rate implementation scenarios will be generated to evaluate the impact of changes to key variables such as funding sources, growth rates, capital project need and timing, or others identified by the City. The budget includes three (3) alternative scenarios for the sewer utility.

The resulting revenue requirement and multi-year rate strategy developed will meet the City's specified financial metrics, goals and objectives and deliver a self-sustaining, individual utility financial planning toolset.



2103. *Rate Design:* No structural changes are included as part of this scope of services. Any changes to the previous rate strategy, which was identified in the last rate study, will be applied on an across the board basis.

2104. *System Development Charges:* An SDC is a one-time charge imposed as a condition of service on new development or on expanded connection to the system. The charge represents a prorated share of the capital investment made to provide system capacity. The SDC is calculated based on the intent and structure of the Revised Code of Washington (RCW) statute for Water-Wastewater Cities (RCW 35.092.025). In general, each connection shall bear a proportional share of the cost of the system capacity required.

This task will focus on updating the City's existing SDC for the sewer utility. The SDC shall reflect an updated inventory of existing system assets, the most recent approved capital improvement program costs related to growth and current expectations for future population/customer growth as identified as part of the GSP update.

2105. *Meetings and Presentations:* Two (2) review meetings are included to go over assumptions and results of the revenue requirement update. These meetings will be performed over an interactive conference call.

One (1) City Council workshop to share results of the updated revenue requirements and SDCs.

Any additional meetings can be added on a time and materials basis at the request from the City.

2106. *Documentation:* A written technical memorandum documenting the study process, methodology, key assumptions, results and recommendations will be provided. Included will be one (1) electronic copy of the memo and modeling tool, which will also act as the technical appendix.

## **Meetings**

- Meeting No. 12 – Financial Review Webinar
- Meeting No. 13 – Financial Review Webinar
- Meeting No. 14 – Financial Analysis Council Presentation

## **Deliverables**

- Draft and Final Financial Analysis Technical Memorandum

## **City Input**

- Provide and validate financial data.
- Review of financial assumptions and analysis results.

## **Assumptions**

- No structural changes are included as part of this scope of services.
- No Plan Chapter will be prepared for this Task.

## **Task 2110 – Plan Preparation**

This task includes the compilation of all previous tasks mentioned in this scope of services, including incorporating all prepared chapters into a draft and final updated Wastewater Collection System Master Plan. This task includes assisting the City to coordinate plan review from Ecology. Under this task, the Consultant will assist the City with a public commenting period. Comments received from the public review meetings, adjacent sewer providers, Clark County, and Ecology will be incorporated into the updated Plan for City Council's approval and adoption.

### **Task 2110 Subtasks**

#### **Activities**

- 2111. *Executive Summary.* The Consultant will prepare an Executive Summary to be included with the Plan.
- 2112. *City Review Draft.* The Plan will be developed as a City Review Draft and reviewed by City Staff. Under this task, the Plan will be prepared incorporating the previous chapters according to the summary table above.
- 2113. *Meeting No. 15 – City Review Draft.* Facilitate a meeting to review the City's comments on the City Review Draft Plan.
- 2114. *Meeting No. 16 – Council Meeting.* Upon completion of the City Review Draft, the Plan will be presented to the City at City Council. The City will lead the meeting with support by the Consultant.
- 2115. *Agency Review Draft.* City comments on the City Review Draft will be incorporated into an Agency Review Draft. The City will submit Agency Review Draft to adjacent sewer providers, Clark County, and Ecology.
- 2116. *Meeting No. 17 - Agency Review Meeting.* The Consultant will attend one (1) agency review meeting. The City will develop written responses received during Agency Review Draft Plan process. The Consultant will incorporate comments into a comment response log and into the Final Plan.
- 2117. *Final Plan.* The City will lead the City Plan approval process. The Final Plan will be submitted to the City Council for approval. The Consultant's Professional Engineer will stamp the Final Plan.

#### **Meetings**

- Meeting No. 16 – City Review Draft
- Meeting No. 17 – Council Meeting
- Meeting No. 18 - Agency Review Meeting

#### **Deliverables**

- Draft and Final Executive Summary
- Draft Master Plan - City Review Draft
- Draft Master Plan - Agency Review Draft

- Consultant will incorporate Agency comments into an Agency Review Comment Response Log.
- Final Master Plan (2 hardcopies, electronic copy in Word, a searchable PDF File with bookmarks)
- All final electronic documents, spreadsheets, presentations, modeling and GIS data

### **City Input**

- Review of Executive Summary, City Review Draft, Agency Review Draft.

### **Assumptions**

- All City Staff comments will be received together for inclusion in the Agency Review Draft.
- No additional draft plans will be developed.

<b>Report Summary</b>
Meeting No. 1 - Kick-off & Data Analysis.
Meeting No. 2 – Policies and Criteria
Meeting No. 3 – Flow Monitoring Results (Webinar).
Meeting No. 4 – Flow Projections (Webinar).
Meeting No. 5 – Flow and Load Projections.
Meeting No. 6 – Hydraulic Model Development.
Meeting No. 7 - Capacity Evaluation.
Meeting No. 8 - Capacity Improvements.
Meeting No. 9 – RUL and Condition Assessment.
Meeting No. 10 - O&M Program Workshop.
Meeting No. 11 - CIP Review.
Meeting No. 12 – Financial Review Webinar
Meeting No. 13 – Financial Review Webinar
Meeting No. 14 – Financial Analysis Council Presentation
Meeting No. 15 - City Review Draft.
Meeting No. 16 - Council Meeting.
Meeting No. 17 - Agency Review Meeting.

<b>Deliverable Summary</b>
Draft and Final PMP.
Eighteen (18) monthly progress reports.
Preliminary schedule, and no more than two (2) updates.
Data Requests
Meeting agendas and notes.
Comment Response Logs
Draft Chapter 1 – Introduction.
Draft Chapter 2 – Regulations, Policies, and Criteria.
Provide ADS Draft and Final Flow Monitoring Data and Report to Carollo.
Flow Monitoring Basin Information.
Comments on the Flow Monitoring Report.
Draft Chapter 3 - Basis of Planning.
Draft Chapter 4 – Existing System.
Draft Chapter 5 – I/I Program.
Draft TM No. 1 - Hydraulic Model Development.
Final TM No. 1 - Hydraulic Model Development.
Draft Chapter 6 – Collection System.
Updated hydraulic model.
Draft Chapter 7 – Wastewater Treatment Facility.
Draft Chapter 8 – Operation and Maintenance.
Draft Chapter 9 - Capital Improvement Plan.
Draft and Final Financial Analysis Technical Memorandum.
Draft and Final Executive Summary.
Draft Master Plan - City Review Draft.
Draft Master Plan - Agency Review Draft.
Final Master Plan (2 hardcopies, electronic copy in Word, a searchable PDF File with bookmarks).
All final electronic documents, spreadsheets, presentations, modeling and GIS data.

General Sewer Plan - Cost Estimate

TASK / DESCRIPTION		Quantity	Manager, Lara Kammerack	Treatment QA/QC	Project Manager, Dan Reisinger	Senior Professional, Alan Straub	Project Professional	Professional	Staff Professional,	Biological Modeling - Principal	E&C Staff Professional	E&C Principal	Structural Principal	Designer, Technician, GIS,	Clerical/WP	Total Hours	Carollo Labor Cost	SUBCONSULTANTS				OTHER DIRECT COSTS			TOTAL COST
																		Sub Hours	Sub Base Cost	Sub Markup 10%	Total Sub Cost	Travel and Printing	PECE \$11.70	Total ODC	
Total Labor Rate		\$ 226	\$ 226	\$ 176	\$ 195	\$ 176	\$ 160	\$ 135	\$ 195	\$ 165	\$ 226	\$ 226	\$ 137	\$ 95											
Task 1010 - Project Management																									
1011	Project Management Plan	1			4										2	7	\$ 1,120	0	\$ -	\$ -	\$ -	\$ 23	\$ 23	\$ 47	\$ 1,167
1012	Meeting No. 1 - Kick-off and Data Analysis				8	8									2	18	\$ 3,158	0	\$ -	\$ -	\$ -	\$ 300	\$ 300	\$ 600	\$ 3,758
1013	Project Administration	16			40	8		18							18	100	\$ 16,806	0	\$ -	\$ -	\$ -	\$ 211	\$ 211	\$ 421	\$ 17,227
1010	Subtotal - Task 1010	17	0	52	16	0	18	0	0	0	0	0	0	0	22	125	\$ 21,084	0	\$ -	\$ -	\$ -	\$ 534	\$ 534	\$ 1,068	\$ 22,152
Task 2010 - Introduction																-									
2011	Regulatory Information Reference				1				4							5	\$ 716	0	\$ -	\$ -	\$ -	\$ -	\$ 59	\$ 59	\$ 775
2012	Draft Chapter 1 - Introduction	1			2	1			8						4	16	\$ 2,233	0	\$ -	\$ -	\$ -	\$ 47	\$ 187	\$ 234	\$ 2,467
2010	Subtotal - Task 2010	1	0	3	1	0	0	12	0	0	0	0	0	0	4	21	\$ 2,949	0	\$ -	\$ -	\$ -	\$ 47	\$ 246	\$ 293	\$ 3,242
Task 2020 - Regulations, Policies, & Criteria																									
2021	Applicable Regulations				4	4			16							24	\$ 3,644	0	\$ -	\$ -	\$ -	\$ -	\$ 281	\$ 281	\$ 3,925
2022	Policies & Criteria								24							24	\$ 3,240	0	\$ -	\$ -	\$ -	\$ -	\$ 281	\$ 281	\$ 3,521
2023	Meeting No. 2 - Policies and Criteria				4	4			8						2	18	\$ 2,754	0	\$ -	\$ -	\$ -	\$ 50	\$ 211	\$ 261	\$ 3,015
2024	Draft Chapter 2 - Regulations, Policies, & Criteria	1			2	2			24						4	33	\$ 4,588	0	\$ -	\$ -	\$ -	\$ -	\$ 386	\$ 386	\$ 4,974
2020	Subtotal - Task 2020	1	0	10	10	0	0	72	0	0	0	0	0	0	6	99	\$ 14,226	0	\$ -	\$ -	\$ -	\$ 50	\$ 1,158	\$ 1,208	\$ 15,434
Task 2030 - Basis of Planning																									
2031	Data Gap Analysis				2				8					2		12	\$ 1,706	0	\$ -	\$ -	\$ -	\$ -	\$ 140	\$ 140	\$ 1,846
2032	Service Area Boundaries				1				2					4		7	\$ 994	0	\$ -	\$ -	\$ -	\$ -	\$ 82	\$ 82	\$ 1,076
2033	Demographic Analysis				4			1	8					4		17	\$ 2,492	0	\$ -	\$ -	\$ -	\$ -	\$ 199	\$ 199	\$ 2,691
2034	Industrial Flows and Loads				1	8			8							17	\$ 2,816	0	\$ -	\$ -	\$ -	\$ -	\$ 199	\$ 199	\$ 3,015
2035	Review Flow Monitoring & Report				8				16					8		32	\$ 4,664	0	\$ -	\$ -	\$ -	\$ -	\$ 374	\$ 374	\$ 5,038
2036	Meeting No. 3 - Flow Monitoring Results				2											2	\$ 352	0	\$ -	\$ -	\$ -	\$ -	\$ 23	\$ 23	\$ 375
2037	Flow Projections							8	24					8		40	\$ 5,616	0	\$ -	\$ -	\$ -	\$ -	\$ 468	\$ 468	\$ 6,084
2038	Meeting No. 4 - Flow Projections				1			2	4						2	9	\$ 1,226	0	\$ -	\$ -	\$ -	\$ -	\$ 105	\$ 105	\$ 1,331
2039	Wastewater Loading				1	8		2	24	24				8		67	\$ 11,072	0	\$ -	\$ -	\$ -	\$ -	\$ 784	\$ 784	\$ 11,856
2040	Meeting No. 5 - Load Projections					4		4	8	16					2	34	\$ 5,810	0	\$ -	\$ -	\$ -	\$ 300	\$ 398	\$ 698	\$ 6,508
2041	Draft Chapter 3 - Basis of Planning	1			2	2			24					4	4	37	\$ 5,136	0	\$ -	\$ -	\$ -	\$ -	\$ 433	\$ 433	\$ 5,569
2030	Subtotal - Task 2030	1	0	22	22	0	17	126	40	0	0	0	0	38	8	274	\$ 41,884	0	\$ -	\$ -	\$ -	\$ 300	\$ 3,206	\$ 3,506	\$ 45,390
Task 2040 - Existing System																									
2041	Data Request				2				4							6	\$ 892	0	\$ -	\$ -	\$ -	\$ -	\$ 70	\$ 70	\$ 962
2042	Study Area							2	4					16		22	\$ 3,052	0	\$ -	\$ -	\$ -	\$ -	\$ 257	\$ 257	\$ 3,309
2043	Existing System				2	4		4	36					16		62	\$ 8,824	0	\$ -	\$ -	\$ -	\$ -	\$ 725	\$ 725	\$ 9,549
2044	Draft Chapter 4 - Existing System Draft	1			2	4		4	24						4	39	\$ 5,618	0	\$ -	\$ -	\$ -	\$ -	\$ 456	\$ 456	\$ 6,074
2040	Subtotal - Task 2040	1	0	6	8	0	10	68	0	0	0	0	0	32	4	129	\$ 18,386	0	\$ -	\$ -	\$ -	\$ -	\$ 1,509	\$ 1,509	\$ 19,895
Task 2050 - I/I Program																									
2051	Summarize Existing I/I Program							2	8							10	\$ 1,400	0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,400
2052	Draft Chapter 5 - I/I Program	1			1			2	8						4	16	\$ 2,182	0	\$ -	\$ -	\$ -	\$ 47	\$ 47	\$ 94	\$ 2,276
2050	Subtotal - Task 2050	1	0	1	0	0	4	16	0	0	0	0	0	0	4	26	\$ 3,582	0	\$ -	\$ -	\$ -	\$ 47	\$ 47	\$ 94	\$ 3,676

General Sewer Plan - Cost Estimate

TASK / DESCRIPTION		Quantity	Manager, Lara Kammerack	Treatment QA/QC	Project Manager, Dan Reisinger	Senior Professional, Alan Straub	Project Professional	Professional	Staff Professional,	Biological Modeling - Principal	E&C Staff Professional	E&C Principal	Structural Principal	Designer, Technician, GIS,	Clerical/WP	Total Hours	Carollo Labor Cost	SUBCONSULTANTS				OTHER DIRECT COSTS			TOTAL COST	
																		Sub Hours	Sub Base Cost	Sub Markup 10%	Total Sub Cost	Travel and Printing	PECE \$11.70	Total ODC		
Total Labor Rate		\$ 226	\$ 226	\$ 176	\$ 195	\$ 176	\$ 160	\$ 135	\$ 195	\$ 165	\$ 226	\$ 226	\$ 137	\$ 95												
Task 2060 - Collection System																										
2061	Hydraulic Model Development and Calibration			4			12	32	40					16		104	\$ 15,528	0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,217	\$ 1,217	\$ 16,745
2062	Meeting No. 6 – Hydraulic Model Development			4					8						2	14	\$ 1,974	0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 164	\$ 164	\$ 2,138
2063	Draft and Final Technical Memorandum No. 1			2			1	4	16					4	2	29	\$ 4,066	0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 339	\$ 339	\$ 4,405
2064	Capacity Evaluation			2			2	8	16							28	\$ 4,144	0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 328	\$ 328	\$ 4,472
2065	Meeting No. 7 - Capacity Evaluation			4					8						2	14	\$ 1,974	0	\$ -	\$ -	\$ -	\$ -	\$ 300	\$ 164	\$ 464	\$ 2,438
2066	Capacity Improvements			2			8	16	40							66	\$ 9,720	0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 772	\$ 772	\$ 10,492
2067	Meeting No. 8 - Capacity Improvements			8					12						2	22	\$ 3,218	0	\$ -	\$ -	\$ -	\$ -	\$ 300	\$ 257	\$ 557	\$ 3,775
2068	Estimate RUL from Sewer Mains			8				0	16					16		40	\$ 5,760	0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 468	\$ 468	\$ 6,228
2069	Meeting No. 9 - RUL and Condition Assessment			2				0	4					4	2	12	\$ 1,630	0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 140	\$ 140	\$ 1,770
2070	Draft Chapter 6 - Collection System	1		2			1	8	24						4	40	\$ 5,654	0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 468	\$ 468	\$ 6,122
2060	Subtotal - Task 2060	1	0	38	0	24	68	184	0	0	0	0	40	14		369	\$ 53,668	0	\$ -	\$ -	\$ -	\$ -	\$ 600	\$ 4,317	\$ 4,917	\$ 58,585
Task 2070 - Wastewater Treatment Facility																										
2071	Summarize Engineering Report					2			8							10	\$ 1,470	0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 117	\$ 117	\$ 1,587
2072	Document of Prior Reuse Study					2			2							4	\$ 660	0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 47	\$ 47	\$ 707
2073	Draft Chapter 7 - Wastewater Treatment Facility	1		2		8			2					4	4	21	\$ 3,336	0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 246	\$ 246	\$ 3,582
2070	Subtotal - Task 2070	1	0	2	12	0	0	12	0	0	0	0	4	4		35	\$ 5,466	0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 410	\$ 410	\$ 5,876
Task 2080 - Operation and Maintenance																										
2081	Data Request			2					4							6	\$ 892	0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 70	\$ 70	\$ 962
2082	Summarize O&M Programs and Problem Areas			4		4			12					16		36	\$ 5,296	0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 421	\$ 421	\$ 5,717
2083	Evaluate O&M Programs			4		4			8							16	\$ 2,564	0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 187	\$ 187	\$ 2,751
2084	Meeting No. 10 - O&M Program Workshop			4		4			8						2	18	\$ 2,754	0	\$ -	\$ -	\$ -	\$ -	\$ 300	\$ 211	\$ 511	\$ 3,265
2085	Draft Chapter 9 - Operation and Maintenance	1		4		4			16						4	29	\$ 4,250	0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 339	\$ 339	\$ 4,589
2080	Subtotal - Task 2080	1	0	18	16	0	0	48	0	0	0	0	16	6		105	\$ 15,756	0	\$ -	\$ -	\$ -	\$ -	\$ 300	\$ 1,229	\$ 1,529	\$ 17,285
Task 2090 - Capital Improvement Plan																										
2091	Project Prioritization					4			8					8		20	\$ 2,956	0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 234	\$ 234	\$ 3,190
2092	Cost Estimating			4		4		8	24							40	\$ 6,004	0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 468	\$ 468	\$ 6,472
2093	CIP Schedule			4		4			8							16	\$ 2,564	0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 187	\$ 187	\$ 2,751
2094	Electronic CIP			4		4			16					8		32	\$ 4,740	0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 374	\$ 374	\$ 5,114
2095	System Maps			2		1		0	8					16		27	\$ 3,819	0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 316	\$ 316	\$ 4,135
2096	Meeting No. 11 - CIP Review			4		4		0	4						2	14	\$ 2,214	0	\$ -	\$ -	\$ -	\$ -	\$ 300	\$ 164	\$ 464	\$ 2,678
2097	Financial Summary			12		1										13	\$ 2,307	0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 152	\$ 152	\$ 2,459
2098	Draft Chapter 9 - Capital Improvement Plan	1		2		4		4	16						4	31	\$ 4,538	0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 363	\$ 363	\$ 4,901
2090	Subtotal - Task 2090	1	0	32	26	0	12	84	0	0	0	0	32	6		193	\$ 29,142	0	\$ -	\$ -	\$ -	\$ -	\$ 300	\$ 2,258	\$ 2,558	\$ 31,700

General Sewer Plan - Cost Estimate

TASK / DESCRIPTION		Quality Manager, Lara Kammerack	Treatment QA/QC	Project Manager, Dan Reisinger	Senior Professional, Alan Straub	Project Professional	Professional	Staff Professional,	Biological Modeling - Principal	EI&C Staff Professional	EI&C Principal	Structural Principal	Designer, Technician, GIS,	Clerical/WP	Total Hours	Carollo Labor Cost	SUBCONSULTANTS				OTHER DIRECT COSTS			TOTAL COST
																	Sub Hours	Sub Base Cost	Sub Markup 10%	Total Sub Cost	Travel and Printing	PECE \$11.70	Total ODC	
Total Labor Rate		\$ 226	\$ 226	\$ 176	\$ 195	\$ 176	\$ 160	\$ 135	\$ 195	\$ 165	\$ 226	\$ 226	\$ 137	\$ 95										
Task 2100 - Financial Analysis																								
2101	Data collection			1				2							3	\$ 446	4	\$ 450	\$ 45	\$ 495	\$ -	\$ 35	\$ 35	\$ 976
2102	Revenue Requiremnet Analysis														-	\$ -	26	\$ 4,180	\$ 418	\$ 4,598	\$ -	\$ -	\$ -	\$ 4,598
2103	Rate Design														-	\$ -	7	\$ 1,200	\$ 120	\$ 1,320	\$ -	\$ -	\$ -	\$ 1,320
2104	System Development Charges														-	\$ -	24	\$ 4,000	\$ 400	\$ 4,400	\$ -	\$ -	\$ -	\$ 4,400
2105	Meetings/Presentations			4				4							8	\$ 1,244	32	\$ 2,360	\$ 236	\$ 2,596	\$ -	\$ 94	\$ 94	\$ 3,934
2106	Documentation	1		4				2						2	9	\$ 1,390	24	\$ 3,690	\$ 369	\$ 4,059	\$ -	\$ 105	\$ 105	\$ 5,554
2100	Subtotal - Task 2100	1	0	9	0	0	0	8	0	0	0	0	0	2	20	\$ 3,080	117	\$ 15,880	\$1,588	\$ 17,468	\$ -	\$ 234	\$ 234	\$ 20,782
Task 2110 - Plan Preparation																								
2111	Executive Summary			2	2			4							8	\$ 1,282	0	\$ -	\$ -	\$ -	\$ -	\$ 94	\$ 94	\$ 1,376
2112	City Review Draft			8	4		4	24						24	64	\$ 8,348	0	\$ -	\$ -	\$ -	\$ -	\$ 749	\$ 749	\$ 9,097
2113	Meeting No. 12 - City Review Draft			4				4						2	10	\$ 1,434	0	\$ -	\$ -	\$ -	\$ 300	\$ 117	\$ 417	\$ 1,851
2114	Meeting No. 13 - Council Meeting			8	8			12						2	30	\$ 4,778	0	\$ -	\$ -	\$ -	\$ 300	\$ 351	\$ 651	\$ 5,429
2115	Agency Review Draft	4		8	2			16						24	54	\$ 7,142	0	\$ -	\$ -	\$ -	\$ 1,500	\$ 632	\$ 2,132	\$ 9,274
2116	Meeting No. 14 - Agency Review Meeting			4	2									2	8	\$ 1,284	0	\$ -	\$ -	\$ -	\$ -	\$ 94	\$ 94	\$ 1,378
2117	Final Plan	2		8	2			16						24	52	\$ 6,690	0	\$ -	\$ -	\$ -	\$ 1,500	\$ 608	\$ 2,108	\$ 8,798
2110	Subtotal - Task 2110	6	0	42	20	0	4	76	0	0	0	0	0	78	226	\$ 30,958	0	\$ -	\$ -	\$ -	\$ 3,600	\$ 2,644	\$ 6,244	\$ 37,202
2000	Total - Task 2000	33	0	235	131	24	133	706	40	0	0	0	162	158	1,622	\$ 240,181	117	\$ 15,880	\$1,588	\$ 17,468	\$ 5,778	\$ 17,792	\$23,569	\$281,218

# **EXHIBIT A**

## **SCOPE OF SERVICES**

### **CITY OF CAMAS**

### **WASTEWATER TREATMENT FACILITY OPERATIONS AND MAINTENANCE PLAN UPDATE**

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## **SCOPE OF SERVICES**

The following Scope of Services has been developed to assist the City of Camas (City) with its Wastewater Treatment Facility Operations and Maintenance Plan Update (O&M Manual). The objective of this project is to develop Area Process Expectations (APE) for each major treatment process to create a functional documentation for the City operators. The following tasks under this Scope of Services have been prepared based on Carollo Engineer's (Consultant) current understanding of the proposed project, previous experience by the Consultant team members, and discussions with City staff.

## **PROJECT BACKGROUND**

The City operates and maintains a wastewater collection system, serving the City and its Urban Growth Boundary. Wastewater is collected and treated by the City. The City's collection system is characterized as being made up of three parts:

- Septic Tank Effluent (STE) systems
- Gravity Sewers
- Large industrial customers.

There are currently 26 pump stations in the collection system serving a mix of STE and Gravity Sewers.

The Wastewater Treatment Facility (Facility) is an activated sludge wastewater treatment plant that discharges to the Columbia River. Its treatment process includes: influent screens, primary clarifiers, MLE biological treatment system with selector zones, tertiary filters, and UV disinfection.

The City completed 2010 its last General Sewer Plan in 2010 (Grey and Osborn's General Sewer / Wastewater Engineering Report (2010 Plan)). Since that time, the City has continued to address Inflow and infiltration (I/I), begun to develop the infrastructure needed to serve the North Shore area, and made condition related at the treatment plant. The project is divided into three efforts and the resulting documents:

- General Sewer Plan Update (Plan),
- Wastewater Treatment Engineering Report (Engineering Report), and
- Wastewater Treatment Facility Operations and Maintenance Plan Update (O&M Plan).

This scope covers the O&M Plan, which constitutes Tasks 1000 (Project Management) and 4000 (Wastewater Treatment Operations and Management Plan), outlined in the following sections.



## PROJECT ASSUMPTIONS

- Carollo Engineers, Inc. and its subconsultants and work performed by them will be referred to as “Consultant” in this document.
- The City of Camas and its staff will be referred to as “City” in this document.
- State of Washington Department of Ecology and its staff will be referred to as “Ecology” in this document.
- All meetings will be held at the City offices. Some workshops will be held via web conference, as specified below.
- Draft Chapters and Technical Memoranda will be provided electronically (PDF and/or Microsoft Word, as directed by City).
- Meeting notes and related materials will be transmitted electronically in PDF format via email.
- The City will print and produce additional copies of all documents as necessary for its use.
- The City will provide available information related to the project and as requested by the Consultant in a timely manner.
- Web conferencing and teleconferencing will be used to discuss project coordination and for some presentations to the City in lieu of the meetings at the City.
- The Task scope and budget were generated based on Carollo completing the Engineering Report.

## TASKS

To meet the objectives of this scope of services, the Consultant shall complete the following tasks.

### **TASK 1000 – Project Management**

This task includes managing the work of the project team from notice to proceed to project closeout, planning for and carrying out regular communication with the City, and planning for and carrying out quality management activities.

### **Task 1010 Subtasks**

#### **Activities**

##### *1013. Project Administration.*

- a. Prepare and administer subcontracts with Consultant team members.
- b. Manage the project team to track time and budget, work elements accomplished, work items planned for the next period, manpower, scope changes, time and budget needed to complete the project.
- c. Prepare Six (6) monthly project progress reports to accompany each monthly invoice; identify accomplishments for the month, planned work next month, and identify current or potential problems or changes. The reports will also include a narrative describing

progress measured against budget and schedule. In the event of schedule or budget lag, the report will indicate a plan to get the project in line with the schedule and budget.

- d. Create and maintain a working project schedule based on the schedule in the PMP.
- e. Review project status, including scope, budget, and schedule as part of scheduled meetings.

### **Meetings**

- None.

### **Deliverables**

- Draft and Final PMP
- Six (6) monthly progress reports
- Preliminary schedule, and no more than two (2) updates
- Meeting agendas and notes

### **City Input**

- Contact information for project staff.

### **Assumptions**

- The project is anticipated to take six (6) months.

## **TASK 4000– Operation and Maintenance Plan Update**

Develop Key objectives that shall be met for each O&M process area as part of this project are summarized below:

- 1) Inventory and document existing plant operational and maintenance knowledge, and process management procedures in the Area Process Expectations (APE) format.
- 2) Combine APE documentation in an O&M Chapter that is functional for O&M staff and acceptable to ECOLOGY when combined with Standard Operating Protocols to be produced by City

## **TASKS**

The purpose of these tasks is to develop and finalize O&M Chapters for the process and site systems listed in Table 1 below. Each Task is composed of multiple O&M Chapters that include one or more APE. The APEs assumed in this Scope of Services are defined in Table 1. The elements included in each O&M Chapter will be similar to those shown in Exhibit D with the addition of an introduction to the process area. All materials will be provided in electronic format.

<b>Table 1</b>		
<b>Task</b>	<b>O&amp;M Chapter</b>	<b>APEs</b>
4010 Headworks	Headworks	Headworks
4020 Primary Treatment	Primary Clarifiers	Primary Clarifiers Primary Clarifier Sludge Pump Station
	Grit Separation	Grit Cyclone And Classifiers
	Gravity Thickeners	Gravity Thickeners
4030 Secondary Treatment	Fine Bubble Aeration System	Blower Building Air Distribution System
	South Secondary Clarifiers	South Secondary Clarifiers South RAS/WAS Pump Station
4040 Tertiary Treatment and Disinfection	Filters	Filters
	UV Disinfection System	UV Disinfection System
4050 Solids Stabilization	Aerobic Digestion	Aerobic Digestion
	Heating Hot Water Loop	Primary Hot Water Loop
	Dryer	Dryer Heating
4060 Solids Processing	Dewatering	Centrifuge
	Thickening	Gravity Belt Thickener
4070 Plant Water	Plant Water Distribution System	Plant Water Distribution System

The following four subtasks will be included under each chapter identified in Table 1:

1. O&M Information Gathering.
2. APE Development.
3. O&M Chapter Development.

A description of these subtasks is provided below.

#### **4011-4071 O&M Information Gathering**

The purpose of this subtask is to gather all pertinent O&M information from WWTF Staff for development and production of a draft O&M Chapter. The subtask has three stages of information exchange for each task. First, the City will provide all existing O&M documentation in each task. Second, the Consultant will develop and submit to the City, preliminary process area specific O&M Chapter templates. Third, the City and the Consultant will review and complete the preliminary templates during the information-gathering workshops. The specific tasks completed under this subtask are as follows:

- Develop preliminary APE process graphics and table templates for each O&M Chapter.

- Conduct one Information Gathering Workshop with City staff for each task in Table 1 (total of 7).
- Participate in one detailed process area walkthrough for each task in Table 1 (total of 7).

### **Assumptions**

- City will deliver as-built documentation and SCADA screen shots for each O&M Chapter per the Schedule C the Project Schedule.
- City will provide lead operators to lead process area walkthroughs as part of the Information Gathering Workshops.
- All deliverables will be submitted to the City a minimum of one week prior to the Information Gathering Workshops.

### **Deliverables**

- Seven (7) draft and final agenda.
- Seven (7) workshop minutes and action items.
- Preliminary APE graphic and table templates.
- Twenty-nine (29) draft process flow diagrams. Note multiple APEs may be included in a single process flow diagram

### **4012-4072 APE Development Subtask**

The purpose of this subtask is to develop a draft APE to be included in the draft O&M Chapter. The tasks completed under this subtask are as follows:

- Develop the following documentation to be included in the APE:
  - Process Flow Diagram;
  - Process Flow Graphic;
  - Process Management Graphic
  - Process Expectations Table;
  - Process Control Points Table
  - Process Operator Assignments Tables;
- Produce a draft APE.
- The draft APE will be reviewed as part of the draft O&M Chapter review.

### **Deliverables**

- Seventeen (17) Draft APEs.

### **4013-4073 O&M Chapter Development Subtask**

The purpose of this subtask is to develop draft and final O&M Chapters. The structure of the O&M Chapters will be similar to the information in Exhibit D. This subtask will be completed in three stages for each Task. First, the Consultant will produce a draft O&M Chapter by combining the APE for each process area in a Task. Second, the City will review the draft O&M Chapter and provide comments during the Review Meeting; third, the Consultant will produce a final O&M

Chapter for each process area in a Task. The specific tasks completed under this subtask are as follows:

- Produce draft O&M Chapters.
- Conduct O&M Chapter Review Meetings.
- Incorporate City comments on Draft O&M Chapters into Final O&M Chapters.
- Produce final O&M Chapters.

#### **Assumptions**

- Carollo will submit draft O&M Chapters a minimum of one week prior to the O&M Chapter Review Meetings.
- The City will provide comments on the draft Review O&M Chapter a maximum of week after the draft O&M Chapter Review Meeting.

#### **Deliverables**

- Seven (7) draft and final agenda.
- Seven (7) meeting minutes and action items.
- Seven (7) draft and final O&M Chapters.
- Record of comments.

## **SUMMARY**

Below are a summary of meetings and deliverables for the above scope of work.

<b>Meeting Summary</b>
Meeting No. 1 – Kick-off & Data Analysis.
Meeting 2 through 8 - O&M Information Gathering.
Meeting 9 through 15 - O&M Chapter Development.

<b>Deliverable Summary</b>
Six (6) monthly progress reports
Preliminary schedule, and no more than two (2) updates
Meeting agendas. materials and notes
Preliminary APE graphic and table templates.
Twenty-nine (29) draft process flow diagrams.
Seventeen (17) draft APEs.
Seven (7) Draft and Final O&M Chapters.
Record of comments.

TASK / DESCRIPTION		Quality Manager, Lara	Treatment QA/QC	Project Manager, Dan Reisinger	Senior Professional, Alan Straub	Project Professional	Professional	Staff Professional,	Biological Modeling - Principal	E&C Staff Professional	E&C Principal	Structural Principal	Designer, Technician, GIS,	Clerical/WP	Total Hours	Carollo Labor Cost	OTHER DIRECT COSTS			TOTAL COST
																	Travel and Printing	PECE		
Total Labor Rate		\$ 226	\$ 226	\$ 176	\$ 195	\$ 176	\$ 160	\$ 135	\$ 195	\$ 165	\$ 226	\$ 226	\$ 137	\$ 95			\$11.70	Total ODC		
Task 1010 - Project Management																				
1013	Project Administration	6		12	24		6							6	54	\$ 9,678	\$ 70	\$ 70	\$ 140	\$ 9,818
1010	Subtotal - Task 1010	6	0	12	24	0	6	0	0	0	0	0	0	6	54	\$ 9,678	\$ 70	\$ 70	\$ 140	\$ 9,818
Task 4010 - Headworks																				
4011	Information Gathering			2	6		12							12	32	\$ 4,582	\$ 300	\$ 374	\$ 674	\$ 5,256
4012	APE Development			2	6		12						12	12	44	\$ 6,226	\$ -	\$ 515	\$ 515	\$ 6,741
4013	O&M Chapter Development			2	6		12						4	2	26	\$ 4,180	\$ 300	\$ 304	\$ 604	\$ 4,784
4010	Subtotal - Task 4010	0	0	6	18	0	36	0	0	0	0	0	16	26	102	\$ 14,988	\$ 600	\$ 1,193	\$ 1,793	\$ 16,781
Task 4020 - Primary Treatment																				
4021	Information Gathering				6		18								24	\$ 4,050	\$ 300	\$ 281	\$ 581	\$ 4,631
4022	APE Development				6		18						12	12	48	\$ 6,834	\$ -	\$ 562	\$ 562	\$ 7,396
4023	O&M Chapter Development				6		18						4	4	32	\$ 4,978	\$ 300	\$ 374	\$ 674	\$ 5,652
4020	Subtotal - Task 4020	0	0	0	18	0	54	0	0	0	0	0	16	16	104	\$ 15,862	\$ 600	\$ 1,217	\$ 1,817	\$ 17,679
Task 4030 - Secondary Treatment																				
4031	Information Gathering				6		14								20	\$ 3,410	\$ 300	\$ 234	\$ 534	\$ 3,944
4032	APE Development				6		14						12	12	44	\$ 6,194	\$ -	\$ 515	\$ 515	\$ 6,709
4033	O&M Chapter Development				6		14						4	4	28	\$ 4,338	\$ 300	\$ 328	\$ 628	\$ 4,966
4030	Subtotal - Task 4030	0	0	0	18	0	42	0	0	0	0	0	16	16	92	\$ 13,942	\$ 600	\$ 1,076	\$ 1,676	\$ 15,618
Task 4040 - Tertiary Treatment and Disinfection																				
4041	Information Gathering				6		14						12	12	44	\$ 6,194	\$ 300	\$ 515	\$ 815	\$ 7,009
4042	APE Development				6		14						4	4	28	\$ 4,338	\$ -	\$ 328	\$ 328	\$ 4,666
4043	O&M Chapter Development				6		14								20	\$ 3,410	\$ 300	\$ 234	\$ 534	\$ 3,944
4040	Subtotal - Task 4040	0	0	0	18	0	42	0	0	0	0	0	16	16	92	\$ 13,942	\$ 600	\$ 8,740	\$ 9,340	\$ 15,618
Task 4050 - Solids Stabilization																				
4051	Information Gathering				6		14						12	12	44	\$ 6,194	\$ 300	\$ 515	\$ 815	\$ 7,009
4052	APE Development				6		14						4	4	28	\$ 4,338	\$ -	\$ 328	\$ 328	\$ 4,666
4053	O&M Chapter Development				6		14								20	\$ 3,410	\$ 300	\$ 234	\$ 534	\$ 3,944
4050	Subtotal - Task 4050	0	0	0	18	0	42	0	0	0	0	0	16	16	92	\$ 13,942	\$ 600	\$ 8,740	\$ 9,340	\$ 15,618
Task 4060 - Solids Processing																				
4061	Information Gathering				6		10						12	12	40	\$ 5,554	\$ 300	\$ 468	\$ 768	\$ 6,322
4062	APE Development				6		10						4	4	24	\$ 3,698	\$ -	\$ 281	\$ 281	\$ 3,979
4063	O&M Chapter Development				6		10								16	\$ 2,770	\$ 300	\$ 187	\$ 487	\$ 3,257
4060	Subtotal - Task 4060	0	0	0	18	0	30	0	0	0	0	0	16	16	80	\$ 12,022	\$ 600	\$ 7,600	\$ 8,200	\$ 13,558
Task 4070 - Plant Water																				
4071	Information Gathering				3		6						12	12	33	\$ 4,329	\$ 300	\$ 386	\$ 686	\$ 5,015
4072	APE Development				3		6						4	4	17	\$ 2,473	\$ -	\$ 199	\$ 199	\$ 2,672
4073	O&M Chapter Development				3		6								9	\$ 1,545	\$ 300	\$ 105	\$ 405	\$ 1,950
4070	Subtotal - Task 4070	0	0	0	9	0	18	0	0	0	0	0	16	16	59	\$ 8,347	\$ 600	\$ 5,605	\$ 6,205	\$ 9,637
4000	Total - Task 4000	6	0	18	141	0	270	0	0	0	0	0	112	128	675	\$ 102,723	\$ 4,270	\$ 20,789	\$ 25,059	\$ 114,329



## **CITY OF CAMAS**

### **Staff Report**

**TO:** Mayor and City Council

**FROM:** James Hodges, Project Manager

**DATE:** 1/11/2019

**SUBJECT:** Lacamas Creek Sewer Pump Station Consultant Agreement for 100% Plans, Specs, permits and estimates.

### **Background**

On July 2, 2018 Council formally approved a professional services contract in the amount of \$361,189.00 with Wallis Engineering to perform engineering, initial environmental and archaeological investigations, and other related work to a level that would bring the design of the Lacamas Creek Sewer Pump Station to 30% completion. Work associated with that initial contract is nearly complete, and I am happy to report that we accomplished all tasks for about \$307,000.00, or roughly \$54,000 less than the contract amount.

It is important to note that this project requires two separate engineering and permitting contracts because of its complex environmental permitting issues and high potential for historical artifacts. The second of these two contracts is the subject of this report.

### **Current Contract and Budget Summary**

This second contract with Wallis Engineering includes all remaining work required to advance the design and permitting of this project to 100% completion. This contract amount is \$377,630.00. At the completion of this work the project is slated to be ready to bid in early 2020.

### **Budget Implications**

The current budget total (2018 through 2020 for design, permitting and construction) =	\$3,200,000
2019 Capital Budget =	\$1,275,000
Total Design and Permitting (Design Contracts 1 and 2) =	\$738,819

**EXHIBIT A –SCOPE OF WORK**  
**WALLIS ENGINEERING**  
**PHASE II**  
**LACAMAS CREEK SEWER PUMP STATION IMPROVEMENTS**  
**CITY OF CAMAS**

January 2019  
WE#1460B

**PROJECT DESCRIPTION**

The existing Lacamas Creek Pump Station was constructed in 1958 and is located just east of 1642 NE 3rd Avenue in Camas, WA on the west shoreline of Lacamas Creek. The pump station is nearing its design capacity, and many of the components have reached their useful life. The City of Camas has selected the Wallis Engineering team to design and permit a new Lacamas Creek pump station, and a nearby satellite pump station at Baz Park to serve homes and businesses in the NE 3rd Loop area.

The project is divided into three phases:

Phase I: 30% design including environmental and archeological permitting.

Phase II: Land use permitting, preparation of contract documents, and bidding

Phase III: Construction services

Phase I has been completed except for environmental permitting and archeological surveys and reporting, which is still in progress. This contract is for Phase II services and includes preparation of final construction contract documents for the improvements that were identified in the predesign report prepared for Phase I. Phase II also includes supplemental survey work as needed, soil infiltration testing for stormwater, preparation and processing of land use permits, building permits, and a Construction Stormwater General (NPDES) Permit, a hazardous building materials survey of the existing pump station, and bidding assistance.

**CONTRACT DURATION**

Contract term shall be from the date contract is fully executed until December 31, 2019.

**DESIGN TEAM**

<b>Firm</b>	<b>Role</b>	<b>Task(s)</b>
Wallis Engineering (WE)	Project Management, Pump Station and Pipeline Engineering, Site Engineering	1, 2,
GreenWorks (GW)	Park Design, Landscape Architecture	4,5
R&W Engineering (R&W)	Electrical Engineering	4
Geotechnical Resources Inc. (GRI)	Geotechnical Engineering	3
KC Development (KC)	Surveying	2
MWA Architects (MWA)	Architectural Design	4
MD Structural (MDS)	Structural Design	4
G2 Consultants (G2)	Hazardous Building Materials Survey	6



## **PHASE II: LAND USE PERMITTING, PREPARATION OF CONTRACT DOCUMENTS, AND BIDDING**

### **TASK 1 PROJECT MANAGEMENT**

**1.1 Project Management and Quality Control.** Provide ongoing coordination with all team members and City staff for the duration of the project. Provide technical oversight and financial management to ensure the schedule and budget are met and subconsultant work is coordinated; prepare monthly progress reports; and provide a single point of contact for City staff. This task includes:

- Preparation and ongoing monitoring of a project budget and schedule.
- Quality assurance/ quality control (QA/ QC).
- Scope change management.
- Coordinate between tasks and team members.
- Manage quality control review of all work activities and project deliverables.
- Monthly progress reports to be submitted with billings.

**1.2 Project Update Meetings.** Facilitate project meetings, either at City offices or by conference call, with the City's Project Manager.

#### **Task 1 Assumptions:**

- Up to three (3) project update meetings at City offices.
- This phase of the project (Phase II) will be complete in 22 weeks from Notice To Proceed. Environmental permitting processes will run concurrently with design activities. Completion of Phase II services is contingent on approval of environmental permits by the respective regulatory agencies.

#### **Task 1 Deliverables:**

- Updated project schedule and budget as required
- Monthly progress and status reports
- Monthly invoices

### **TASK 2 SURVEY AND MAPPING**

**2.1 Survey.** KC Development will provide supplemental topography survey that may be needed during the final design phase, including tree surveys that are required as part of land use permitting.

#### **Task 2.1 Assumptions:**

- A maximum of 20 hours of survey field crew (includes Party Chief and Chain Person) and 20 hours of office survey will be required.
- Right-of-way and easement acquisitions are not required.

#### **Task 2.1 Deliverables:**

- Supplemental survey information in AutoCAD Civil 3D.

### **TASK 3 GEOTECHNICAL INVESTIGATIONS**

**3.1 Infiltration Testing.** A boring will be drilled to a depth of 30 ft. The boring will be made by a truck-mounted drill rig, using hollow-stem auger drilling techniques. Disturbed split-spoon samples will be obtained from the boring at 2.5-ft intervals of depths using an oversized California Modified Sampler. The samples will be collected by dropping a 140-lb hammer a distance of 30 in. using an automatic hammer. The boring will be subcontracted to a drilling contractor experienced in drilling and sampling soils for engineering purposes. Soil cuttings from the borings will be placed in 55-gallon drums and disposed of off-site by the drilling subcontractor.

As the boring is advanced, an infiltration test will be completed in the silty gravel or silty, gravelly sand anticipated at a depth of about 18 ft. Due to the required depth of the test and the anticipated subsurface conditions, the infiltration tests will be completed, if feasible, in general accordance with the alternative Auger Borehole Falling-Head Infiltration Test method outlined in Section 4.1.6, Alternative Test Methods, of the SWWASCE Infiltration Standards, or if infeasible due to hard subsurface conditions, the open borehole method as described in Appendix 6B in the 2004 Stormwater Management Manual of Eastern Washington.

A member of GRI's engineering staff will coordinate the field exploration program, log each excavation, obtain representative samples of the soils encountered, and document the field infiltration tests. Prior to drilling, the public utility notification process will be completed.

Laboratory testing of soil samples obtained from the boring will include standard classification tests such as natural water content and grain size analyses.

Engineering analyses will be accomplished that will lead to the preparation of conclusions and recommendations concerning the measured permeability.

A memorandum will be prepared that summarizes the soils encountered in the boring and discusses the results of the infiltration tests. The memorandum will be provided in electronic format for your use and distribution.

***Task 3.1 Assumptions:***

- The boring will take one day to complete and is scheduled for on January 17, 2019.
- The design memorandum will be submitted within four weeks after completion of all field work. Preliminary information can be submitted informally as soon as it becomes available from the studies.

***Task 3.1 Deliverables:***

- Technical memorandum summarizing the findings.

**3.2 Level One Hydrogeologic Assessment.** Per CMC 16.55.050(C), Critical Area Report Requirements for Critical Aquifer Recharge Areas, a Level One Hydrogeologic Assessment is required because the new impervious area for the Lacamas Creek Trailhead pump station will exceed 2,500 sf of area.

A Level 1 Hydrogeologic Assessment will be completed for the Lacamas Lake Park site by a Washington licensed hydrogeologist who is experienced in preparing hydrogeologic assessments. The assessment will include:

- Summary of available geologic and hydrogeologic characteristics of the site and approximate permeability of the unsaturated zone;
- Approximate groundwater depth, flow direction, and gradient;
- Location of wells and springs located within 1,300 ft of the site;
- Location of other critical areas, including surface waters, within 1,300 ft of the site;
- Results of ground-level reconnaissance of the site and the surrounding area to evaluate the presence of underground storage tanks, above-ground storage tanks, hazardous materials, hazardous waste, solid waste, pits, sumps, staining, odors, or distressed vegetation which may be indicative of adverse environmental conditions.
- Identification of appropriate Best Management Practices (BMPs) used to prevent degradation of groundwater.
- The results of the Level 1 Hydrogeologic Assessment will be summarized in a report that will include a summary of the information required by Chapter 16.55 of the City of Camas Municipal Code. A draft report in electronic format will be provided for your review. The final report will be signed and stamped by a Washington licensed hydrogeologist.

***Task 3.2 Assumptions:***

- City will assist with the provision of a list of existing site monitoring wells (if available), BMPs related to facility use of hazardous materials, and any existing spill prevention plans.
- The Level 1 Hydrogeologic Assessment will be completed within four weeks after notice to proceed.

### ***Task 3.2 Deliverables:***

- Draft and Final Hydrogeologic Assessment Reports.

## **TASK 4 FINAL DESIGN (PS&E)**

**4.1 Utility Coordination.** Coordinate with private utility providers to ensure all potential conflicts with proposed work are addressed. Coordination work will include the following:

- Develop a utility contact information list and send project information letters to all utility companies involved to explain nature of the work.
- Coordinate with private utility providers for relocation of existing and installation of new facilities as needed. This task includes up to two meetings each with private utility companies.
- Submit applicable plans to the affected private utility providers. Utility conflict notices will be sent to utilities at the 60% and 90% completion stage.
- Maintain a record of correspondence with utility companies.

**4.2 60% PS&E.** The design team will prepare and submit 60% plans, specifications, and estimate (PS&E) for City review. Comments from the 30% design submittal will be reviewed and incorporated into the 60% PS&E. The 60% PS&E will include the design components described below.

### ***Civil and Site Design***

Civil and site design will include the following:

- Finalize stormwater management concepts (swales, infiltration system).
- Prepare draft and final stormwater report.
- Finalize finished floor levels for new structures. Establish final finished grades; overall major surfaces, road profiles, etc.
- Develop final site and utility plans for the Lacamas Creek Pump Station and Baz Park Pump Station.
- Design alignments of utilities (water, sewer, electric) to serve future restroom at Lacamas Creek Trailhead Park.

### ***Pipelines***

- Final pipeline design will include:
- Finalize vertical and horizontal pipe alignments for gravity and pressure force mains.
- Develop typical trench sections and pavement restoration plan.
- Finalize jack & bore road crossing design, including provisions to prevent road settlement.

### ***Mechanical***

- Final mechanical design will include the following:
- Finalize system curve and hydraulic grade line calculations.
- Establish wetwell liquid levels.
- Finalize selection and sizing of major equipment, including pumps.
- Coordinate equipment selection and design with electrical and controls discipline
- Finalize selection of piping materials and ancillary equipment (check valves, plug valves, etc.).

### ***Odor Control***

- Final odor control design will include the following:
- Select ventilation and carbon filtration equipment to be used in pump stations.
- Design layout of odor control equipment, ventilation piping.

### ***Electrical & Controls***

- R&W will prepare the PS&E for the pump station electrical and control components, including the following design tasks:
- Coordinate with Clark Public Utilities for review of load calculations and one-line diagrams, including up to one site visit.

- Final sizing of electrical equipment and generators.
- Design of control panels, motor control centers, disconnect panels, and other electrical and control equipment.
- Site lighting, power, and instrumentation signal design.
- Design of SCADA communications from pump stations to City's central monitoring site.

### ***Structural***

MD Structural will provide structural design for the following components:

- Structural design of an approximately 900 square foot gabion retaining wall for the LCPS to support a level backfill and pump station equipment.
- Structural design of a 3-sided concrete masonry unit (CMU) equipment shelter with a single slope steel roof canopy for the LCPS.
- Structural design of a wood or structural steel equipment shelter for the BPPS.
- Structural calculations for building permits.

### ***Landscape***

- GreenWorks will prepare the PS&E for the pump station landscaping components, including the following design tasks:
- Final selection of gabion wall, fencing and gate materials
- Irrigation and planting design

### ***Architectural***

- MWA will provide architectural specifications for the following:
- LCPS finishes, CMU pattern and color recommendations
- Metal roofing
- CMU block seal
- Sheet Metal Flashing and Trim

**4.3 90% PS&E.** The design team will prepare and submit 90% plans, specifications, and estimate for City review. Design components described in Task 4.2 will be further refined and comments from the 60% design submittal will be reviewed and incorporated into the 90% PS&E.

**4.4 Final PS&E.** The design team will prepare and submit final plans, specifications, and estimate for City review. 90% PS&E will be further refined and comments from the 90% design submittal will be reviewed and incorporated into the final PS&E.

**4.5 Project Meetings.** Facilitate project meetings, providing materials, agenda, and minutes as appropriate, and record key discussions and action items. Specific project meetings included in this subtask are:

- Project team meetings (up to 3) at Wallis' office throughout the project duration at appropriate intervals based upon design activities.
- Submittal review meetings. Submittal review meetings will be held after the 60% and 90% PS&E submittals to review City comments.

### ***Task 4 Assumptions:***

- Up to three (3) project team meetings.
- City will provide assistance to the consultant when required regarding coordination with undergrounding private utilities.
- The impervious area for Baz Park falls under the threshold for triggering stormwater regulations
- Any required drawing standards will be provided by the City.
- Technical specifications will be prepared in combined WSDOT and CSI formats.
- Park improvements beyond what is required to construct the pump stations are not included.
- SCADA communications will use a cellular link with provisions for a future fiber optic connection.

- One site visit with CPU will be required.
- Programming of PLC and SCADA system will not be required at this time.
- The maximum wall height is 10'.
- Full-size, stamped, reproducible contract documents will be provided at the final stage.
- A total of 76 plan sheets is estimated to be prepared, as follows:

Sheets	Description	Firm
1	Cover Sheet	WE
1	Sheet Index	WE
2	General Notes, Legend & Abbreviations	WE
1	Pump Station Design Criteria	WE
3	Erosion Control Plans	WE
1	Erosion Control Details	WE
3	Traffic Control Plans	WE
3	Demolition Plans	WE
2	Demolition Details	WE
1	Restoration Plans & Details	WE
4	Gravity Sewer Plan & Profiles	WE
8	Force Main Plan & Profiles	WE
6	Pump Station Civil Site, Utility, and Grading Plans	WE
2	Stormwater Facility Details	WE
5	Pump Station Mechanical Plans and Sections	WE
2	Standard Details	WE
2	Civil Details	WE
2	Mechanical Details	WE
6	Landscape and Irrigation Plans	GW
1	Landscape and Irrigation Details	GW
3	Equipment Shelter Structural Plans	MDS
1	Retaining Wall Plan & Profile	MDS
1	Structural Details	MDS
1	Electrical Legend and Abbreviations	R&W
2	Electrical One-Line Diagrams	R&W
4	Electrical Plans	R&W
1	Electrical Details and Schedules	R&W
1	Pump Disconnect Panel Details	R&W
2	Control Panel Layout	R&W
2	Control Panel Wiring Diagram	R&W
2	Control Panel I/O Wiring Diagram	R&W
76		

#### **Task 4 Deliverables:**

- Utility contact list and correspondence records.
- 60%, 90% and final plans, specifications and estimate.
- Meeting agenda and notes from submittal review meetings.

## **TASK 5 PERMITTING**

**5.1 Site Plan Review.** The two pump stations will require site plan review approvals from the City, a Type II land use process, with a separate site plan review application for each pump station. Following preliminary site plan approval, building permit approval is required prior to construction.

The site plan review applications will be processed as an administrative Type II application. For the site plan review application, the project team will:

- Prepare the application narrative, describing the project and documenting how each pump station complies with applicable City criteria for approval.
- Submit application packages to City Community Development and work with the City to ensure that the application is processed efficiently.
- Coordinate with Community Development and resubmit any items necessary for the fully complete determination
- Review staff reports with the client to ensure they reflect the project elements and anticipated conditions of approval.
- Attend a design review meeting with the Parks and Recreation Commission to present the project and respond to questions.

***Task 5.1 Assumptions:***

- Site Plan Review applications will be submitted using 60% design plans.
- The site plan review applications will require one round of client review and one revision.
- Application fees will be paid by the City.
- City will provide a mailing list of property owners within three hundred feet for each pump station.

***Task 5.1 Deliverables:***

- Site plan review application forms for two pump station sites, for client review and for submittal to City Community Development.
- Complete site plan review application packages for two pump station sites including narratives addressing the site plan approval criteria, necessary drawings, pre-app meeting notes, and SEPA checklist.
- Resubmittal of items necessary for the fully complete determination for each site plan application.
- All permit fees will be paid for by the City.

**5.2 Building Permit Application.** The two pump stations will require building permit approvals. The project team will prepare the building permit applications and submit to City Community Development for review and approval.

***Task 5.2 Assumptions:***

- Building permits will be submitted using the 90% design plans.
- Community Development approval will require a preliminary submittal and one resubmittal.
- Application fees will be paid by the City.

***Task 5.2 Deliverables:***

- A building permit application package for each pump station, including an application, plan set, and structural calculations.

**5.3 Construction Stormwater General (NPDES) Permit.** This subtask includes preparation and submittal of an online Construction Stormwater Discharge permit application. (<https://ecology.wa.gov/Regulations-Permits/Permits-certifications/Stormwater-general-permits/Construction-stormwater-permit>).

***Task 5.3 Assumptions:***

- ESC plans prepared for the 90% design phase will be included with the NPDES application.

***Task 5.3 Deliverables:***

- Online Construction Stormwater Discharge Permit application.
- The entire project will be processed as a single application.

**5.4 Arborist Tree Survey.** GreenWorks will provide a Tree Survey as required by Camas Municipal Code 18.13.045. The site work, inventory, and assessment will be performed by a licensed arborist.

#### ***Task 5.4 Assumptions:***

- The Tree Survey will be an inventory and assessment of existing trees, but will not locate them. The current topographic surveys do not include all trees required for the Tree Survey. Therefore additional trees will be added to the topographic survey (see Task 2).
- The Tree Survey will include approximately 42 trees at Lacamas Trailhead Park, and approximately 10 trees at Baz Park.
- Some off-site trees will need to be included in the Tree Survey. The City will gain permission from the landowners for the arborist to access their property.

#### ***Task 5.4 Deliverables:***

- Tree Survey including inventory and assessment of Significant Trees impacted by pump station and park development.

### **TASK 6 HAZARDOUS BUILDING MATERIALS SURVEY**

G2 Consultants will perform a hazardous building materials survey for the existing Lacamas Creek Pump Station building, including an asbestos survey, limited lead-containing paint inspection, visual mercury, PCB, and universal waste.

***Asbestos.*** The asbestos portion will include an interior and exterior inspection for accessible asbestos containing building materials. All identified accessible suspect asbestos-containing materials, in those areas available for access within the scope of work, will be sampled. The presence, quantity, location and condition of identified asbestos-containing materials will be provided. All work will be performed by an experienced EPA Accredited Asbestos Inspector. Samples will be submitted via chain-of-custody to an NVLAP accredited laboratory for analysis.

***Lead-Based Paint.*** A limited inspection for lead-containing paint of the predominant painted surfaces, for the purposes of demolition, will be conducted in order to provide a general indication of the distribution of lead based paint. A direct read XRF device will be utilized for the paint/coating inspection. The presence, location and condition of identified lead-based paint will be provided, in areas within the scope of work. All work will be performed by an experienced Washington Licensed Lead-Based Paint Inspector.

***Mercury, PCBs and Universal Waste Visual Inspection.*** During the course of the inspection, G2 will conduct a visual inspection items suspected of containing mercury and/or PCBs. Items considered universal waste will also be identified and catalogued. Should suspect PCBs be identified, G2 has allowed for sampling of representative materials and analyzed. The presence, quantity and location will be recorded in a single report inclusive of all structures.

#### ***Task 6 Assumptions:***

- The pump station building will be available for unimpeded inspection over the course of two days of site work.
- Cost is based on standard sample turnaround time of three business days from completion of field work. Expedited sample turn-around is available at an additional cost, if requested.
- Destructive methods will be utilized in order to access potentially hidden materials, such as multiple layers of flooring, however no equipment will be dismantled, etc. Repairs to building components damaged by destructive sampling will be provided by others, if required.
- Roofs will be included in the sampling for asbestos. All accessible roof samples will be collected in a manner to represent the layers of the material, down to the substrate. It is recommended that the roof is repaired by a qualified contractor, contracted by the client, after G2's sampling is performed. If there are any concerns of water intrusion in the structure between this inspection and demolition, if a roofing contractor isn't utilized by the client for patching, upon request, the roof sample locations will be patched with materials available off of the shelf, at a building supply store.
- No drawings are required to be provided.

***Task 6 Deliverables:***

- Final report of findings.

**TASK 7 BIDDING ASSISTANCE**

**7.1 Project Bidding.** Contract documents prepared in Task 4 will be used to bid the project. Wallis will prepare an agenda and conduct a pre-bid meeting at the City of Camas, respond to questions that come up during bidding, and coordinate responses to questions with project subconsultants as they arise.

**7.2 Bid Addenda.** Wallis will prepare addenda and submit to the City for distribution.

**7.3 Project Award.** Wallis will attend the bid opening, review bid prices with City project manager and make a recommendation as to contract award.

***Task 7 Assumptions:***

- City will be responsible for advertising the project, preparing and distributing Contract Documents to prospective bidders and maintaining a planholder's list.
- Up to two addenda will be necessary (assistance allotments provided for subconsultants).
- Advertisement and plan distribution will be through the City's online plan center.
- City will prepare and maintain a planholder's list, review and process all bids, prepare the bid tabulation and prepare a recommendation of award.

***Task 7 Deliverables:***

- Addenda will be prepared and provided to the City in electronic format for distribution to bidders.
- Pre-bid meeting agenda and meeting minutes.
- Email with comments and recommendation from review of bid prices



Agreement Exhibit B - Fee Estimate City of Camas - Lacamas Creek Sewer Pump Station Improvements: Phase II WE #1460B January 2019																						
TASK		SE	E1	E2	E3	E4	E5	E6	Insp.	T1	TW	C1	Staff Cost	Wallis Expenses	GW	R&W	GRI	KC	MWA	MDS	G2	Total Cost
		\$182.70	\$167.50	\$155.30	\$133.00	\$115.80	\$99.50	\$89.40	\$96.50	\$101.50	\$93.40	\$78.20										
Task 1	Project Management																					
1.1	Project Management and QC		100									10	\$17,532.00									\$17,532.00
1.2	Project Update Meetings		10										\$1,675.00	\$50 (M)								\$1,725.00
	TASK 1 SUBTOTAL	0	110	0	0	0	0	0	0	0	0	10	\$19,207.00	\$50	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$19,257.00
Task 2	Survey and Mapping																					
2.1	Survey												\$0.00					\$ 5,280.00				\$ 5,280.00
	TASK 2 SUBTOTAL	0	0	0	0	0	0	0	0	0	0	0	\$0.00	\$0	\$ -	\$ -	\$ -	\$ 5,280.00	\$ -	\$ -	\$ -	\$ 5,280.00
Task 3	Geotechnical Investigation																					
3.1	Infiltration Testing												\$0.00				\$ 12,023.00					\$ 12,023.00
3.2	Level One Hydrogeologic Assessment												\$0.00				\$ 4,400.00					\$ 4,400.00
	TASK 3 SUBTOTAL	0	0	0	0	0	0	0	0	0	0	0	\$0.00	\$0	\$ -	\$ -	\$ 16,423.00	\$ -	\$ -	\$ -	\$ -	\$ 16,423.00
Task 4	Final Design (PS&E)																					
4.1	Utility Coordination			2			10					2	\$1,462.00	\$50 (P)								\$ 1,512.00
4.2	60% PS&E	24	64	120		160	96			120	16	48	\$79,248.80	\$50 (M)	\$ 35,893	\$ 46,321			\$ 3,850.00	\$ 14,300.00		\$179,662.80
4.3	90% PS&E	24	48	96		96	80			120	8	36	\$62,152.80	\$50 (M)								\$ 62,202.80
4.4	Final PS&E	24	32	72		80	72			80	8	24	\$48,098.40	\$100 (P)								\$ 48,198.40
4.5	Project Meetings	2	12	12		12							\$5,628.60									\$ 5,628.60
	Submittal Review Workshops	3	8	6		6							\$3,514.70	\$50 (M)								\$ 3,564.70
	TASK 4 SUBTOTAL	77	164	308	0	354	258	0	0	320	32	110	\$200,105.30	\$300	\$ 35,893.00	\$ 46,321.00	\$ -	\$ -	\$ 3,850.00	\$ 14,300.00	\$ -	\$ 300,769.30
Task 5	Permitting																					
5.1	Site Plan Review		20	4		4				8		8	\$5,872.00	\$75 (M)	\$ 1,320							\$ 7,267.00
5.2	Building Permits		8									8	\$1,965.60	\$50 (M)								\$ 2,015.60
5.3	NPDES			1			4						\$553.30									\$ 553.30
5.4	Arborist Tree Survey												\$0.00		\$ 3,117							\$ 3,117.00
	TASK 5 SUBTOTAL	0	28	5	0	4	4	0	0	8	0	16	\$8,390.90	\$125	\$ 4,437.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 12,952.90
Task 6	Hazardous Building Materials Survey																					
													\$0.00								\$ 1,803.00	\$ 1,803.00
	TASK 6 SUBTOTAL	0	0	0	0	0	0	0		0	0	0	\$0.00	\$0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,803.00	\$ 1,803.00
Task 7	Bidding Assistance																					
7.1	Project Bidding		4	4		4						1	\$1,832.60	\$25 (M)	\$ 3,797	\$ 3,828.00						\$ 9,482.60
7.2	Bid Addenda		16	8		8						1	\$4,927.00									\$ 4,927.00
7.3	Project Award		4	16		16				16		1	\$6,709.80	\$25 (M)								\$ 6,734.80
	TASK 7 SUBTOTAL	0	24	28	0	28	0	0		16	0	3	\$13,469.40	\$50	\$ 3,797.00	\$ 3,828.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 21,144.40
	GRAND TOTAL	77	326	341	0	386	262	0	0	344	32	139	\$ 241,173.00	\$ 525.00	\$ 44,127.00	\$ 50,149.00	\$ 16,423.00	\$ 5,280.00	\$ 3,850.00	\$ 14,300.00	\$ 1,803.00	\$377,630.00

FEE SUMMARY			
Staff	Hours	Rate	Fees
SE - Senior Engineer	77	\$182.70	\$ 14,067.90
E1- Engineer 1 (PM)	326	\$167.50	\$ 54,605.00
E2 - Engineer 2	341	\$155.30	\$ 52,957.30
E3 - Engineer 3	0	\$133.00	\$ -
E4 - Engineer 4	386	\$115.80	\$ 44,698.80
E5- Engineer 5	262	\$ 99.50	\$ 26,069.00
E5- Engineer 5	0	\$ 99.50	\$ -
E6 -Engineer 6	0	\$ 89.40	\$ -
Inspector	0	\$ 96.50	\$ -
T1 - Technician 1	344	\$101.50	\$ 34,916.00
TW- Technical Writer	32	\$ 93.40	\$ 2,988.80
C1 - Clerical 1	139	\$ 78.20	\$ 10,869.80
Total Fees from Staff			\$ 241,173.00
Subconsultant		Fees	
GW		\$	44,127.00
R&W		\$	50,149.00
GRI		\$	16,423.00
KC		\$	5,280.00
MWA		\$	3,850.00
MDS		\$	14,300.00
G2		\$	1,803.00
Total Fees from Subconsultants		\$	135,932.00
Note: Subconsultant fee includes 10% markup			
Expenses			Cost
Printing (P)		\$	150.00
Other (O)		\$	-
Mileage (M)		\$	375.00
Total Fees from Expenses			\$ 525.00
TOTAL BUDGET		\$	377,630.00

Depending on availability, actual staff usage may not match the above estimated hours breakdown. Billing rates for all staff are listed in the Fee Summary.



## Staff Report

January 22, 2019 Council Workshop

### Two Hour Parking Spaces on NE Birch Street

Staff Contact	Phone	Email
James Carothers, Engineering Manager	360.817.7230	<a href="mailto:jcarothers@cityofcamas.us">jcarothers@cityofcamas.us</a>

**PURPOSE:** The Camas Family Health Center is located at the northwest corner of NE 6<sup>th</sup> Avenue and NE Birch Street. The owner has requested to have three or four additional two hour parking spaces designated along the health center frontage on the west side of NE Birch Street just north of NE 6<sup>th</sup> Avenue. Currently, the two southernmost spaces on the west side of NE Birch Street between NE 6<sup>th</sup> Avenue and NE 7<sup>th</sup> Avenue are posted with a two hour parking restriction. All other parking spaces on this block are unrestricted (72 hour time limit per the Camas Municipal Code.)

**RECOMMENDATION:** Staff presented the health center owner's request to the Parking Advisory Committee on January 8, 2019. The Parking Advisory Committee recommends that Council adopt a resolution to designate three additional two hour parking spaces on NE Birch Street. See Figure below. If Council desires, Staff will bring to a future Council Meeting a resolution to designate a two hour time limit for these three parking spaces.

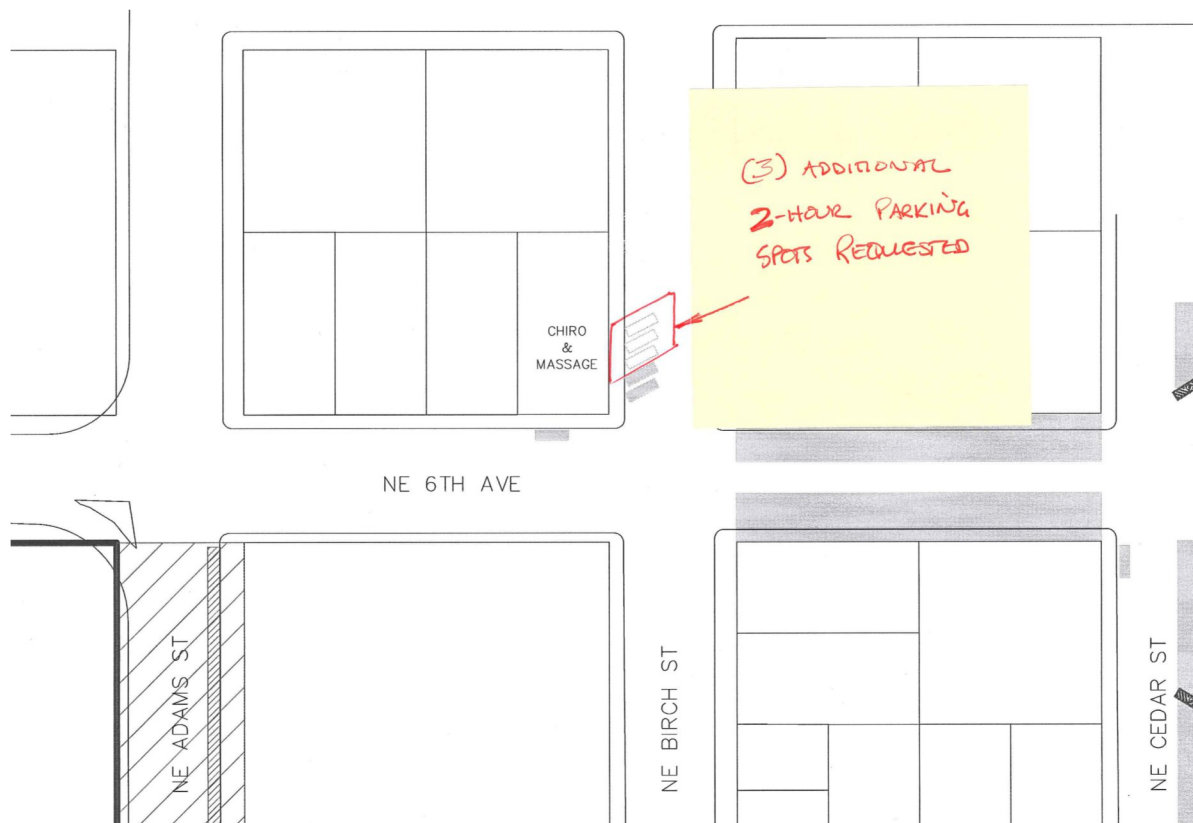


Figure: NE Birch Street Additional Two Hour Parking Spaces Recommendation from the Parking Advisory Committee.

**From:** [Jeff Englund](#)  
**To:** [Jan Coppola](#); [Phil Bourquin](#)  
**Cc:** [Curleigh \(Jim\) Carothers](#); [Steve Wall](#)  
**Subject:** FW: Downtown camas parking  
**Date:** Tuesday, December 18, 2018 8:13:28 AM

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Trista Darling submitted her letter this morning.

Jeff Englund, Engineer I  
City of Camas Engineering Dept.  
(360) 817-7233

-----Original Message-----

From: Trista Darling [<mailto:trista.darling@comcast.net>]  
Sent: Tuesday, December 18, 2018 7:16 AM  
To: Jeff Englund  
Cc: Curleigh (Jim) Carothers  
Subject: Downtown camas parking

Good morning, I hope this letter finds its way to you before the committee meeting. I apologize, yesterday got away from me due to work schedule.

My name is Trista Darling and I am the owner of Camas Family Health Center on the corner of 6th and birch in downtown Camas. We are a chiropractic and massage clinic. I am writing to ask for some parking modification on the west side of birch street. Due to our location, we only have access to public parking, which in the past has sufficed. Over the last 6 months we have witnessed an increase in the difficulty to park near our clinic. Due to the nature of our clinic, majority of patients that come to us are mobility impaired, injured or elderly, which makes walking far distances extremely difficult. Currently we have two "2 hour" parking spots on the southwest end of Birch street. I am writing to ask for 3-4 additional 2 hour parking spots be added next to the two already existing 2 hr spots. These parking spots are currently marked for 6 hours. This would help keep these spots available for patients or people looking to park for a shorter time frame.

Thank you for your consideration.

Sincerely,

Trista Darling  
360-907-6822

Sent from my iPhone