

EXHIBIT A

SCOPE OF SERVICES

CITY OF CAMAS

WASTEWATER TREATMENT FACILITY OPERATIONS AND MAINTENANCE PLAN UPDATE

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.

Table 1		
Task	O&M Chapter	APEs
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.

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

Deliverable Summary
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 ODC	
Total Labor Rate		\$ 226	\$ 226	\$ 176	\$ 195	\$ 176	\$ 160	\$ 135	\$ 195	\$ 165	\$ 226	\$ 226	\$ 137	\$ 95			\$11.70		
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	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	44	\$ 6,226	\$ -	\$ 515	\$ 515	\$ 6,741
4013	O&M Chapter Development			2	6		12						4	26	\$ 4,180	\$ 300	\$ 304	\$ 604	\$ 4,784
4010	Subtotal - Task 4010	0	0	6	18	0	36	0	0	0	0	0	16	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	48	\$ 6,834	\$ -	\$ 562	\$ 562	\$ 7,396
4023	O&M Chapter Development				6		18						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	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	44	\$ 6,194	\$ -	\$ 515	\$ 515	\$ 6,709
4033	O&M Chapter Development				6		14						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	92	\$ 13,942	\$ 600	\$ 1,076	\$ 1,676	\$ 15,618
Task 4040 - Tertiary Treatment and Disinfection																			
4041	Information Gathering				6		14						12	44	\$ 6,194	\$ 300	\$ 515	\$ 815	\$ 7,009
4042	APE Development				6		14						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	92	\$ 13,942	\$ 600	\$ 8,740	\$ 9,340	\$ 15,618
Task 4050 - Solids Stabilization																			
4051	Information Gathering				6		14						12	44	\$ 6,194	\$ 300	\$ 515	\$ 815	\$ 7,009
4052	APE Development				6		14						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	92	\$ 13,942	\$ 600	\$ 8,740	\$ 9,340	\$ 15,618
Task 4060 - Solids Processing																			
4061	Information Gathering				6		10						12	40	\$ 5,554	\$ 300	\$ 468	\$ 768	\$ 6,322
4062	APE Development				6		10						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	80	\$ 12,022	\$ 600	\$ 7,600	\$ 8,200	\$ 13,558
Task 4070 - Plant Water																			
4071	Information Gathering				3		6						12	33	\$ 4,329	\$ 300	\$ 386	\$ 686	\$ 5,015
4072	APE Development				3		6						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	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	675	\$ 102,723	\$ 4,270	\$ 20,789	\$ 25,059	\$ 114,329