

CITY OF NEWPORT
TASK ORDER NO. 7
TO ENGINEERING SERVICES AGREEMENT
FOR STREETS AND STORM SEWER ENGINEERING SERVICES

This TASK ORDER NO. 7 to the Engineering Services Agreement dated January 3, 2012, hereinafter called Agreement, between the City of Newport, (CITY), and Civil West Engineering Services, Inc., (ENGINEER).

A. Description of Project

Smoke Testing – Wastewater/Stormwater Phase 2
Civil West Project Number: 2302-018

B. SCOPE OF SERVICES

The City agrees to utilize the services of ENGINEER and ENGINEER agrees to perform engineering services set forth in Attachment A.

C. CITY'S RESPONSIBILITIES

CITY to provide ENGINEER with the following information:

1. CITY shall provide all as-built and existing survey data available within the study area.
2. CITY shall provide timely review of submitted products (1-week turnaround), as appropriate.
3. CITY shall provide occasional staff as needed within 48 hours' notice to assist in accessing manholes

D. COMPENSATION

1. CITY shall pay ENGINEER according to the fee schedule set forth in Exhibit A to the Engineering Services Agreement dated January 15, 2013.
2. Services provided under this Task Order shall not exceed one-hundred nineteen thousand nine-hundred eight dollars (\$119,908.00).

E. MISCELLANEOUS

All terms and conditions of the Engineering Services Agreement apply to this Task Order as though fully set forth therein. In the event of a conflict between this Task Order and the Engineering Services Agreement, the terms of this Task Order shall apply.

The parties do mutually agree to all mutual covenants and agreements contained within this Task Order No.7.

CITY OF NEWPORT:

By: Ted Smith
Title: Interim City Manager
Date: 6.26.13

CIVIL WEST ENGINEERING SERVICES, INC.

By: James Cole
Title: President
Date: 6-25-13



PROPOSED SCOPE OF SERVICES

Date: June 21, 2013

Work Order Number:

To: Mr. Tim Gross, PE, Public Works Director, City of Newport

From: Garrett Pallo, PE, Principal, Civil West Engineering Services, Inc.

RE: **Smoke Testing – Wastewater/Stormwater Phase 2**
Civil West Project Number: 2302-018

This memorandum is provided to summarize the proposed scope of work, fee, schedule and other project issues related to the evaluation of deficiencies in the stormwater and wastewater systems. This is a second or follow-up phase to an initial effort undertaken in 2009.

Background Summary

The City of Newport operates and maintains a wastewater and stormwater system that collects and transmits wastewater and stormwater, respectively. Years ago, the systems were combined in a single collection system. As regulations and needs changed, the systems were separated and a separate wastewater collection system was constructed and the wastewater service laterals were reconnected to the new system leaving the stormwater system to transmit stormwater alone.

However, over the years, concerns have been raised regarding wastewater laterals that remain connected to the stormwater system. These concerns have been borne out through positive E-coli tests at stormwater outfalls and in stormwater ditches as well as laterals that have been actually found to be connected to the stormwater system through a variety of methods.

The City, along with several interested parties, is interested in evaluating the stormwater system for these potential cross-connections and eliminating them to prevent contamination of sensitive stormwater and natural drainage channels as well as beach and bay stormwater outfalls.

In 2009, Civil West undertook an initial phase (Phase 1) of smoke testing in the wastewater system. This occurred in a limited area bounded on the north by Chambers Court and east of Highway 101. The work continued south to the Yaquina State Park on the point and south of Fall Street. None of the area west of Highway 101 was tested nor any of the area east of Fogarty Street.

During the first phase of testing, a significant number of inflow and infiltration (I/I) problems were identified. In addition to these, we found deficiencies with the stormwater system including catch basins and downspouts that were tied into the wastewater collection system. We also identified a long list of homes and buildings that did not exhibit smoke rising from roof vents. This is a potential indication of homes that either have problems with their plumbing, have plumbing that is out of code compliance, or plumbing that may be tied into the storm drainage

system. Out of the small area testing in Phase 1, we identified 35 addresses that had the potential of being tied into the storm drainage system. A detailed report was provided to the City in September of 2009.

The time has come to continue the search for potential cross connections to the storm drainage system. While locating these cross connections can be like looking for a needle in a haystack, some methods can produce reasonable results while returning other side benefits.

The scope of work provided below is intended to help the City continue to find the “low-hanging fruit” in the system. This includes problematic I/I issues and potential cross connections between the wastewater and stormwater collection systems. By disconnecting stormwater connections from the wastewater system, the City reduces operating costs and wear and tear on the wastewater system and treatment facilities. By eliminating wastewater from the stormwater system, the City will reduce E-coli and bacteria levels in the stormwater and be better stewards of the environment.

Goal for the Project

Further evaluate the collection systems and locate and eliminate deficiencies, interconnections, and the potential pollution in the stormwater system.

Part A: Scope of Work

The following tasks have been identified to track project’s progress. An estimate of the man hours required for each task will be provided. While there may be many subtasks included within these major task areas, only the major tasks will be discussed below.

1. **Task 1 – Project Management and Administrative Services** – This task includes administrative and project management efforts related to the project. This shall include processing of paperwork and correspondence between Civil West and the City, coordination on financial matters, directing resources internally, meeting with staff on routine issues, and other project management activities.
2. **Task 2 – Data Acquisition and Project Kickoff** – Under this task, we will attend a project kickoff meeting to meet with staff, review project maps and records, review previous evaluations and attempts to locate cross connections, and other data. We will discuss the project goals with staff and work to develop a plan and schedule for carrying out the evaluation and we will work with staff to prioritize our efforts and focus on specific areas of the system for which to evaluate first. We will continue to evaluate until we exhaust the budget we have for fieldwork or as directed by the City. The kickoff effort will culminate with a summary letter to outline the approach and schedule that will be followed. As part of the data acquisition phase, we will include an allowance of hours to update and prepare system mapping for the stormwater system that will be a combination of the GPS mapping effort currently underway coupled with other historical records, maps, and figures obtained from the City’s archives and from City staff experience. This task will also include an allowance of hours for work on the City’s mapping which may require some additional effort to quantify wastewater and drainage basins for the purposes of smoke and dye testing.
3. **Task 3 – Review of Phase 1 Results and Follow up** – Under this task, we will obtain the original report, notes, and follow up information from the Phase 1 effort from the City. We will review the recommendations, review the follow up efforts, and provide a summary to the City as to the remaining follow up and actions that still need to be completed.

A number of techniques and tools will be used in the search for I/I issues and cross connections to the stormwater system. This is a challenging task as no single tool or technique will work in all cases. In some cases, a number of approaches may be required to evaluate a single area or part of the system. Locating these deficiencies may be akin to a “needle in a haystack” in that the source of bacteriological or fecal contamination could be from a variety of sources including cross connections and other natural sources.

The following tasks describe the tools we can utilize to evaluate the potential deficiencies of the stormwater system in search of cross connections:

4. Task 4 – Smoke Testing Services - Under this task, our team will utilize smoke testing in an effort to isolate and locate potential cross connections to the wastewater system. This may include forcing smoke into the wastewater system to see if it translates into the stormwater system in any way. The following subtasks are part of a typical smoke testing effort:

- a. **Public Notification** – Smoke testing, if properly performed, can result in a large amount of smoke being visible in neighborhoods and commercial areas. It is important that the community is notified of our activities in order to reduce interest, public concerns, and calls to City Hall. We accomplish this in a variety of ways including:
 - i. Our smoke testing crew canvases the areas that will be tested to hang door hanger announcements on doors 24 to 48 hours prior to smoke testing an area. The door hangers briefly describe the smoke testing process, discuss how the smoke is harmless, and provide residents with a number to call if they have concerns or further questions.
 - ii. We educate staff at City Hall. It is inevitable that people will call City Hall with concerns about smoke in their homes or neighborhoods. It is also likely that the first responders (police and fire) will receive calls. We work to coordinate with these City departments and provide them the information they need to answer questions. This includes a schedule of the when we will be smoke testing specific neighborhoods, an MSDS sheet for the smoke itself, a question/answer sheet for commonly asked questions, and a written description of the process of smoke testing. These information packets have proven to be very helpful to other communities that we have worked for in the past. We provide extra copies to the staff at City Hall so that they can give the information to concerned citizens that come to City Hall.
 - iii. We recommend that the City place an advertisement in the local newspaper the Saturday before smoke testing begins. The Saturday paper has the highest distribution and will reach the most people. We will prepare the ad and submit it to the paper on the City’s behalf. Advertising costs are to be billed directly to the City.
 - iv. Our experience has been that concerns and problems associated with smoke testing are greatly reduced by a successful and strategic public notification program.
- b. **Smoke Testing Survey** - We plan to utilize a 4-man crew to complete the survey in Newport. This will allow us to complete the work in a timely and efficient manner. We intend to utilize the water-based “smoke bombs” as they provide a more visible and robust smoke that is more effective in the more humid and cooler coastal climate. We utilize a powerful gas-powered fan to blow smoke into the system and pressurize the collection system for testing. We have perfected

the process and are confident in our team's abilities to complete this survey. During the survey, our team's activities will include the following:

- i. **Safety** – Whenever possible, the team will utilize manholes that are located out of the main traffic paths and in safe locations. If not choices are available, they will utilize traffic cones and traffic signs to warn motorists that there is a survey crew in the road area. We focus on safety and will do all we can to make conditions safe for the surveyors as well as motorists and pedestrians in Newport.
 - ii. **Field Reports** – Our surveyors will carry cameras and field reports to document the location and character of each potential I/I source. The field reports are designed to provide a written description of the location of the problem, a hand sketch of the location, and a photograph of smoke issuing forth from the identified problem area. The intent of the field report is to provide the City with clear documentation of each problem and give them enough information to prioritize a repair effort and locate the problem for repair at some point in the near future. An example of a field report from a recent smoke testing effort is attached to this proposal. We would be pleased to customize the field report for the City if additional information is desired.
 - iii. **Mapping** – We will prepare a map with a red “dot” indicating the location of a problem found in the field. The map will provide the City with an overall view of where we find problems. The summary map is often a useful tool to communities as they prioritize their repair or rehabilitation efforts. If a particular street or area shows a significant number of red dots, it may be prioritized higher than a street with a single dot. Mapping the locations of problems can also provide an indication to the City as to the type of repair that may be required ranging from a simple spot repair to a total pipe replacement.
 - iv. **Storm Drainage Issues** – This project will focus on the wastewater system and inflow and infiltration issues as well as locating and correcting problems with cross connections to the storm drainage system as well as homes that are not connected to the wastewater system. Our staff will be trained to watch for homes that do not “smoke” out of the roof stack vents indicating a potential problem. We also recognize that City staff may direct our surveyors to smoke some storm drainage manholes at key locations. We have assumed this will be an incidental portion of the project and can be completed within the days allotted in this scope of work.
5. **Task 5 – Dye Testing Evaluations** – In some cases, smoke testing is either not practical or it may provide inconclusive results. In some cases, dye testing may be used to evaluate if cross connections exist in some parts of the system. The approach will vary on a case-by-case basis. In some cases, dye can be introduced into sewer cleanouts and flows can be observed in a stormwater catch basin to see if dye is present. In other cases, dye can be added to the sewer system or storm drain system while the City's television inspection operators observe internal pipeline conditions for changes. This task includes an allowance of hours for utilizing dye testing for this evaluation.
6. **Task 6 –Television Inspection and Field Follow Up** – Under this task, we will coordinate with City staff to undertake specialized field investigations using television inspection equipment, potholing to locate piping or other underground issues, or other special investigations that will require City support and/or equipment. Our role in this task will be to provide direction, coordination, and evaluate data and results obtained through these efforts. This scope of work will include an allowance of hours for this task.

7. **Task 7 – Evaluation Report** – Under this task, we will provide a summary report outlining the efforts and evaluations completed in this phase of the project. The report shall include a summary of the results of smoke and dye testing as well as other information obtained through televising and other means. Where possible, actual locations or addresses of cross connections will be provided and/or shown on maps. Recommendations will be provided for additional evaluations or for correction of identified cross connections or other deficiencies. Deliverables will include 6 copies of the draft report and 6 copies of the final report. We will also include an allowance for a presentation to staff and City Council upon request.
8. **Task 8 - Reimbursables/Direct Costs** – There are a number of reimbursable items that are appropriate for a project of this type. We anticipate the following allowances for reimbursable item categories for this project:
 - a. **Mileage Costs** – Reimbursement for mileage to and from Newport as well as incidental mileage incurred during the survey itself.
 - b. **Lodging Costs** – Our approach to the project schedule is discussed later in this proposal. We anticipate our survey team spending two nights in Newport each week for two weeks. This reimbursable category will cover costs for our survey team for double occupancy rooms for those nights.
 - c. **Meals** – As our survey team will be in Newport for several days each week, this item will cover costs associated with meals during those days.
 - d. **Materials, equipment, etc.** – This category will cover the material costs that we anticipate for this project for the maintenance and use of the smoke blower equipment, fuel for the blower, and other materials required to complete the work. Reimbursables also include the costs for the door hangers that we will provide for the public notification. Smoke bombs will be provided to the surveyors by the City of Newport at the City's cost.
 - e. **Copies and reproductions** – This reimbursement category covers the costs of copies, photograph development, reproduction costs, and other costs associated with providing the deliverables required for this project.

Part B: Project Fee Proposal

We have prepared a fee proposal worksheet that includes estimates of hours and costs for the many tasks and subtasks described above. The worksheet is attached to this engineering proposal as Exhibit A.

The type of work associated with this project is difficult to quantify and, therefore, difficult to set a firm, fixed fee. The number of variables in play make it impossible to predict the amount of time that will be required to complete the field work and the associated follow up activities required to meet the City's objectives. Therefore, we have set up the project with a budget "allowance" that is estimated to complete the task though billing will be based on a time and materials approach.

The project can also be divided into parts to meet budget restrictions or phasing as required. We can coordinate this need as the project moves forward.

A summary of the proposed fee schedule for the project is provided below:

Task	Summary of Proposed Engineering Budget:	Budget
1	Project Management & Coordination	\$8,200.00
2	Data Acquisition and Project Kickoff	\$10,776.00
3	Review of Phase 1 Results and Follow Up	\$4,348.00
4	Smoke Testing Services - Allowance	\$47,440.00
5	Dye Testing Services - Allowance	\$11,180.00
6	Television Inspection and Follow Up - Allowance	\$5,808.00
7	Final Report	\$24,456.00
8	Reimbursables - Allowance	\$7,700.00
Total Proposed Budget		\$119,908.00

Part C: Project Schedule

Smoke testing is best completed during the dry season to facilitate the transfer of smoke through cracks and crevices that are not sealed by rain or surface water. The drier air also makes the water based smoke more visible for the survey team.

We can undertake this work with around one-month notice in order for us to do the background preparation that will be necessary. We will await the City's direction and provide a more detailed schedule upon request.

For the sake of planning, smoke testing the rest of the system is anticipated to take another 8 to 10 days. Additional time will be needed to complete other tasks such as dye testing, television inspections, and preparation of the report. If desired, the entire process could easily be completed within a period of 3 to 4 months if the City crews are able to provide support with television inspections in a timely manner.

We are prepared to begin this work on this important project as soon as we are authorized to do so. Please let me know if you have any questions or if you wish to see any alterations to our proposed approach. If this proposed approach is acceptable, please sign below and return a copy to our office for our records.

Sincerely,

Civil West Engineering Services, Inc.



J. Garrett Pallo, PE
President

Authorized Representative Signature Accepting Scope of Services

Date

Exhibit A

		Engineering Fee Structure									
		Principal Engineer	Project Manager	Senior Project Engineer	Project Engineer	Engr Tech	Field Surveyor/ Data Collector	Clerical	Subconsulting Support	Total Hours	Total Fee
		\$135.00	\$124.00	\$118.00	\$112.00	\$95.00	\$65.00	\$43.00			
Tasks											
1	Project Management & Coordination										
1a	Overall project management services	24	40							64	\$8,200.00
	Task Total	24	40	0	0	0	0	0	\$0.00	64	\$8,200.00
2	Data Acquisition and Project Kickoff										
2a	Kickoff Meeting and background data collection	16	16							32	\$4,144.00
2b	Mapping updating and basin definitions - Allowance			24		40				64	\$6,632.00
	Task Total	16	16	24	0	40	0	0	\$0.00	96	\$10,776.00
3	Review of Phase 1 Results and Follow Up										
3a	Obtain and review phase 1 report and results and follow up		16							16	\$1,984.00
3b	Prepare a memo on additional or remaining follow up needed		16			4				20	\$2,364.00
	Task Total	0	32	0	0	4	0	0	\$0.00	36	\$4,348.00
4	Smoke Testing Services - Allowance										
4a	Public Notification		8	8						16	\$2,048.00
4b	Smoke Testing Survey		16	80		16	40			72	\$6,056.00
4c	Smoke Testing Reporting, mapping, and documentation	8	40	40		40	80			256	\$24,224.00
	Task Total	8	64	128	0	136	160	0	\$0.00	496	\$47,440.00
5	Dye Testing Services - Allowance										
5a	Dye testing field services		8	16		16	16			56	\$5,440.00
5b	Dye testign reporting and documentation	4	24	8		8	8			52	\$5,740.00
	Task Total	4	32	24	0	24	24	0	\$0.00	108	\$11,180.00
6	Television Inspection and Follow Up - Allowance										
6a	Coordination and working with City TV crews		8	8						16	\$1,936.00
6b	Review of inspection footage and follow up		8	8						16	\$1,936.00
6c	Documentation of television inspection results		8	8						16	\$1,936.00
	Task Total	0	24	24	0	0	0	0	\$0.00	48	\$5,808.00
7	Final Report										
7a	Prepare report using all collected data	8	120	24		16				168	\$20,312.00
7b	Present to Staff and City Council (if requested)	16	16							32	\$4,144.00
	Task Total	24	136	24	0	16	0	0	\$0.00	200	\$24,456.00
8	Reimbursables - Allowance										
8a	Mileage costs									0	\$1,200.00
8b	Lodging costs									0	\$4,000.00
8c	Meals and expenses									0	\$1,000.00
8d	Materials, smoke bomb, dye, and other consumables									0	\$1,000.00
8e	Copies and reproductions and postage costs									0	\$500.00
	Task Total	0	0	0	0	0	0	0	\$0.00	0	\$7,700.00
Total		76	312	224	0	216	184	0	\$0.00	1012	\$119,908.00