

ATTACHMENT 1

SCOPE OF WORK

RFP P00208P16

Style Definition: Heading-AE-SoW

PROFESSIONAL SERVICES FOR EVALUATION OF INFLOW AND INFILTRATION REDUCTION CONCEPTS

Introduction

This scope of work is to provide services to the King County Wastewater Treatment Division (WTD) to assist in exploration of new elements for the Regional Inflow and Infiltration (I/I) Control Program. This scope of work shall build on the work that WTD has done previously and explore more comprehensive and system wide I/I reduction. The products of this scope of work will inform the region about potential new elements for the I/I Control Program, present possible frameworks for implementation of potential programs, and include an implementation plan for moving forward with new program elements.

Project Background

I/I is excess water that flows into sewer pipes from groundwater and stormwater. I/I in the separated regional wastewater system impacts both capital and operational costs.

WTD's Conveyance System Improvement (CSI) Program assesses capacity in the regional wastewater system and plans future projects. Capacity is assessed against a 20 year peak flow. Findings from CSI Program analysis show that about 70% of the peak flow in the separated system is I/I. The I/I results in higher capital program costs by accelerating the need for capacity improvement projects and increasing their size. Annually it is estimated that 27% of the average wastewater system flow is I/I. Transporting and treating I/I increases operation costs related to pumping, treating, and disposing of the total wastewater volume. The extra cost to build additional capacity for I/I flows, convey flows through the system, and treat the excess flows are currently spread across all customers, through WTD's utility rates.

WTD has had an I/I Control Program since 1999. The program was established as part of the Regional Wastewater Services Plan. Currently the I/I program focuses on portions of the system that have wastewater flow capacity shortages. Specifically the I/I program has developed data to assess where I/I reduction might be a more cost effective solution than increase pipe and/or pump station capacity. The program has been effective in some areas of the regional wastewater system. Currently, there is no comprehensive program to address I/I throughout the regional wastewater system.

Objective of Scope of Work

Evaluate concepts for I/I reduction programs to comprehensively reduce I/I through the separated sewer portion of the regional wastewater system to inform the region on future steps for the program. The concepts to be evaluated were identified by Metropolitan Water Pollution Abatement Advisory Committee (MWPAAC) and the King County Wastewater Treatment Division (WTD) in 2015. The programs identified are related to sewer standards, sewer inspection requirements, and private side sewers.

MWPAAC, via the Engineering and Planning (E&P) subcommittee shall have a role in guiding the evaluation and reviewing the products of the evaluation. Ultimately the evaluation seeks to recommend a program or programs for implementation.

Estimated Project Schedule

Notice to Proceed	December 2016
1 Project Planning	January 2017 – February 2017
2 Review of Sewer and Side Sewer Standards	March 2017 – November 2017
3 Standardized Regional Sewer and Side Sewer Inspection Program	March 2017 – November 2017
4 Private Side Sewer Programs	November 2017 – June 2018

Comment [SN1]: Consultant team would like to start task in March 2017.

Reference Documents Available To Proposers

1. King County in cooperation with cities and sewer districts developed proposed Engineering Standards/Procedures, Guidelines, and Standard Design Details for the design, construction, inspection and testing of sanitary sewers in 2004 (for a copy see Appendix B of the 2005 Executives Recommended Regional Infiltration and Inflow Control Program at: http://www.kingcounty.gov/~media/services/environment/wastewater/i-/docs/Reports/0512_II_Control_Program_Recommendations.ashx?la=en)
2. [The County posted to the P00208P16 web site a summary of two 2015 MWPAAC I&I Task Force meetings under P00208P16 - Task Force Meeting Compilation.](#)

Scope of Work

Consultant Deliverable Standards

1. For all deliverables, the Consultant shall provide the following unless otherwise specified in a particular task:
 - A. Draft and final of any plan, report, and technical memos
 - B. One electronic copy of all deliverables
 - C. One bound printed copy (for reports, technical memoranda and design documents)
 - D. One unbound printed copy (for monthly reports/invoices and for bound documents)
 - E. One electronic copy of draft agenda 3 business days before scheduled meetings or workshops
 - F. One electronic copy of draft meeting/workshop notes within 5 business days following the event
 - G. One electronic copy of updated Action/Decision Logs after each team meeting.
2. Wastewater Treatment Division will review the draft submittals and transmit review comments via email to the Consultant using Wastewater Treatment Division standard comment tracking form. The Consultant shall provide a written response to the County for each comment within a mutually agreed timeframe for receipt of the comments; timeframe to be determined during negotiations. Each comment response shall describe how the comment will be incorporated into the final document. Each comment response will be reviewed with the County's Project Representative (PR) to reach consensus on resolution.

PHASE 1 – Evaluation of Concepts

The purpose of Phase I is to explore and evaluate new elements for the Regional (I/I) Control Program. The products of Phase 1 tasks will present the results of the exploration and evaluation so that potential new elements for the I/I Control Program can be fully discussed by regional stakeholders. King County will provide an attorney to support these items in the scope. The attorney will interface with policy and technical members of the team.

Task 100 - Project Management

This task includes all work related to the management, administration, and coordination of Consultant activities in accordance with the Project Management Institute's standards.

Subtask 110 – Project Management Plan

Prepare a Project Management Plan addressing Scope of Work.

1. Prepare a draft Project Management Plan ("PMP") within 30 working days of the Notice to Proceed ("NTP") that document the Project Management Institute method that shall be used for managing the project. The PMP shall include:
 - a. A work breakdown structure ("WBS") that identifies resources and responsibilities necessary to respond to WTD-approved work scope.
 - b. A project schedule and resource loaded schedule.
 - c. A quality assurance program, communication protocols, invoicing requirements, and project procedures, such as filing systems, charge numbers, change management, and document format.
2. Following review by WTD of the draft PMP and within 10 working days of receipt of WTD's review comments, prepare and submit a final PMP to WTD for review and approval.
3. Distribute final WTD-approved PMP to all subconsultants.
4. Update the PMP and submit to WTD if required by changes in project schedule, budget, or scope of work, or as requested by WTD.

Deliverables:

1. Draft and final initial PMP.
2. At least two (2) and up to four (4) updates of the PMP.

Assumptions:

1. Consultant will rely on the County's legal counsel and/or legal consultant for the legal-related aspects of this scope. The Project Management Plan will assume that the participation of the County's legal consultant and/or legal council is available.

Subtask 120 – Progress Reports

Prepare monthly progress reports to document project progress.

1. Submit a monthly progress report to WTD by the 10th of each month, or other mutually agreed-upon date in advance of the monthly meetings called for in Subtask 130.

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2. Progress reports shall be one (1) to two (2) pages in length and include:
 - a. Work completed for prior month, schedule of work for the next month, any changes in staffing, schedule updates, identification of issues that impact schedule, and proposed means to address critical issues.
 - b. A listing of all costs to date and a revised cost-to-complete estimate tracked at task level (not subtask level).

Deliverables

1. Up to 24 monthly progress reports over two years.

Subtask 130 – Monthly Progress Meetings

The Consultant shall hold monthly meetings to discuss project progress, activities may include the following:

1. Conduct monthly one-hour progress meetings with WTD PR and/or WTD PM and members of the County's Project Team, as necessary and appropriate to review:
 - c. Project tasks underway.
 - d. Time and budget tracking.
 - e. Work elements accomplished.
 - f. Work items planned for the next period.
 - g. Scope changes.
 - h. A log of decisions, time, and budget needed to complete specified portions of the project.
2. At least three (3) working days prior to each meeting, prepare and distribute draft meeting agenda (one hour effort for one person per meeting).
3. Within three (3) working days following each meeting, prepare meeting notes with decision log and action items list (two hour effort for one person per meeting).

Meeting notes include:

 - a. Summary of each agenda item discussed.
 - b. Action items that have been resolved.
 - c. Items which require a response by a specific Consultant or subconsultant team member, King County, or others.
 - d. Changes to deliverables or schedules.
 - e. Updates to decision log.
 - f. Updates to action items list.

Deliverables:

1. Meeting agenda distributed electronically to participants at least three (3) working days before each meeting.
2. Meeting Notes (see Consultant Deliverable)

Task 200 – MWPAAC Involvement Support

The Consultant shall Work with the MWPAAC to develop a plan for collecting and sharing information as this scope of work is completed. MWPAAC and King County are in agreement to move forward with this evaluation to explore options. Actions beyond exploration have not been agreed to at this time.

The scope of work requires cooperative efforts with MWPAAC agencies to collect and evaluate local agency standards and inspection programs. The county Project manager will be the point person to initiate communication and foster the cooperation of MWPAAC members with the Consultant. The consultant will be responsible for collecting and evaluating the information once the county Project Manager has established the contact.

Deliverables:

1. MWPAAC Involvement Plan that presents strategies and process for involving MWPAAC in the Evaluation of Inflow and Infiltration Reduction Concepts.

Assumptions:

2. MWPAAC Engineering and Planning Subcommittee is likely to be the venue for involvement, however, an alternate venue such as a specifically formed task force is possible.
3. The MWPAAC Involvement Plan shall outline a process for MWPAAC to make recommendations to WTD Director on which types of I/I programs explored in Task 400, Task 500, and Task 600 should be carried forward and further developed in an implementation plan.
4. The MWPAAC Involvement Plan shall define roles and responsibilities of the Consultant, King County and MWPAAC for the evaluation.

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Subtask 210 – Support to King County Staff during MWPAAC Meetings

WTD will meet with MWPAAC at least monthly to provide project briefings. The consultant shall provide support to WTD during these meetings.

Deliverables:

1. Materials for and presentation at up to 8 MWPAAC meetings.

Assumptions:

1. A total of 8 individual trips for out of town experts have been budgeted for attending MWPAAC meetings. Multiple trips could occur for the same meeting.

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Task 300 Meeting and Briefings Participation

The Consultant shall attend and participate in meeting and briefings with WTD staff and decision makers on an as needed basis.

Deliverables:

1. Presentation materials for meetings and briefings.

Assumptions:

1. Eight meetings shall be conducted during the project.
2. Meetings shall be 2 hours long and include 1 hour for transit to King County.

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Task 400 Review of Sewer and Side Sewer Standards

The Consultant shall determine the extent to which existing sewer and side sewer standards meet the industry best management practices. The review shall note where existing standards are not being fully enforced. If the review shows areas where existing standards can be improved or more fully implemented they will be noted.

Subtask 410 – Verify 2004 King County Final Draft Regional I/I Control Standards, Procedures, and Policies

Consultant shall verify that the 2004 standards are still accurate and can be used as a benchmark for assessing standards and procedures in place at the cities and sewer districts that discharge wastewater to King County's regional system (see Reference Document). Other key references to consult in this process are the American Public Works Association standard specifications, and EPA Capacity, Management, Operation, and Maintenance (CMOM) program, and applicable WEF Manuals of Practice.

Deliverables:

1. Technical memorandum summarizing assessment and update of 2004 King County Final Draft Regional I/I Control Standards, Procedures, and Policies.
2. If needed, propose changes and update the 2004 King County Final Draft Regional I/I Control Standards, Procedures, and Policies.

Assumptions:

1. The County shall provide their standards, procedures and policies to the Consultant.
2. The purpose of the review is to determine if 2004 Standards are still relevant and appropriate per industry best practices.

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Subtask 420 – Assessment of Existing Local Agency Sewer and Side Sewer Standards

The Consultant shall assess local agency sewer and side sewer standards as compared to recognized best management practices established in subtask 410. This subtask shall include the use of phone or in person interviews to collect information on the standards, specifications, and practices in place at each of the cities and sewer districts that discharge wastewater to King County's regional system. To the extent practical, information on city and sewer district standards available on the internet or in sewer comprehensive plans shall be reviewed to collect information prior to sending questionnaires or scheduling interviews with cities and sewer districts. Activities may include the following:

1. Interview 34 cities and sewer districts to collect information on and acquire sewer and side sewer standards.
2. Assess standards in place at cities and sewer districts to determine if they meet the best management practices established in subtask 410. The Questions below will

be used as a starting point to guide the to be addressed in the assessment and the results will be responsive to them. -may include but are not limited to:-

- a. Are sewer and side sewer standards consistent throughout the regional wastewater service area?
- b. Do the standards being applied in the regional wastewater service area meet industry wide best management practices?
- c. What improvements could be made to sewer and side sewer standards through the regional wastewater service area to reduce I/I to reduce I/I?
- d. Are there sewer and side sewer standards in place at city's and sewer districts (e.g., installations in the field do not meet specifications)?
- e. Are there specific practices being implemented that are resulting in a disproportionately high risk of I/I?
- f. Does the agency have a local sewer rehabilitation/replacement program? What is the extent of the program?
- g. Does the agency have a private side sewer programs or any mechanisms in place to inspect, maintain, or replace private side sewers?

Deliverables:

1. Technical memorandum that presents the findings of assessing of existing local agency sewer and side sewer standards as compared to best management practices.

Assumptions:

1. Task 400 to be completed simultaneously with Task 500 as they both require collecting information from cities and sewer districts.
2. The Consultant shall plan to visit each of the MWPAAC cities or sewer districts, where possible, with King County staff. King County shall assist in arranging site visits. If a visit is not possible, the Consultant shall call the city or sewer district.
3. The technical memorandum shall present information in a consolidated manner and not individually call out deficiencies or good practices of any one city or sewer district. The documentation of each city and sewer district standards will be summarized on a standardized form and be available for reference.
4. Visits will be used to conduct staff interviews and will not involve field visits of active sewer construction. As such, the determination of how well any local standards are being enforced will depend solely upon information gained in these interviews.
5. Budget includes travel time and mileage to visit each MWPAAC city and sewer district.

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Subtask 430 – Develop an Approach to Achieve Common Sewer and Side Sewer Standards

The Consultant shall develop an approach to achieve common sewer and side sewer standards that significantly conforms with the standards identified in Task 410 throughout the regional wastewater service area. If the result of subtask 420 show irregularities in sewer and side sewer standards amongst the cities and sewer districts the Consultant shall explore and identify approaches to addressing those irregularities. Activities may include:

1. Research policy and legal issues associated with achieving common side sewer and side sewer standards in place throughout the regional wastewater service area.
2. If needed, develop template tools, practices, procedures or other materials to assist cities and sewer districts in addressing any irregularities in sewer and side sewer standards amongst the cities and sewer districts.

Deliverables:

1. Draft and Final documentation that present the approach to achieving common sewer and side sewer standards.

Assumptions:

1. The purpose of the regional evaluation approach is for education, and as such the format and content shall be at a level to provide information for the cities and sewer districts to MWPAAC and the public. Example checklist, tracking forms, or other illustrative tools to support the outline will be included as appropriate.

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Task 500 - Standardized Regional Sewer and Side Sewer Inspection Program

The Consultant shall assess sewer and side sewer inspection programs in the cities and sewer districts in the regional wastewater service area. The assessment shall examine the potential for a standardized regional inspection program. The consultant shall collect information on current sewer and side sewer inspection programs at 34 cities and sewer districts in the King County regional wastewater service area. The inspection programs shall be evaluated against industry standard programs. Based on the evaluation areas where inspection programs can be improved shall be noted. The findings of the evaluation shall be used to develop an outline for a regional sewer and side sewer inspection training program.

Subtask 510 - Evaluation of Current Inspection Programs at Cities and Sewer Districts

The Consultant shall evaluate sewer and side sewer inspection programs throughout the regional wastewater service area. This evaluation shall occur simultaneously with Subtask 410. As is the case for Subtask 410, the evaluation shall be done using phone or in person interviews.

Utilizing a variety of references, the Consultant shall identify best practices for a sewer and side sewer inspection program. The references shall include American Public Works Association standard specifications, EPA CMOM, and others identified as examples of best management practices. Activities may include:

1. Identify best practices for a sewer and side sewer inspection program.
2. Acquire details on inspection programs at 34 cities and sewer districts.
3. Work with WTD and the cities and sewer districts to develop a series of questions to guide the evaluation of inspections programs. The questions below will be used as a starting point to guide the evaluation and the results will be responsive to them. below shall be included in the evaluation may include but are not limited to:
 - a. Do inspection programs meet industry standards?

- b. Are there consistent inspection programs at the cities and sewer districts in the Regional Wastewater Service Area that comply with King County Code? At a minimum, the following questions shall be explored with each city or sewer district in addressing inspection program consistency:
 - o How many inspectors are there per capita in the city or sewer district service areas?
 - o On average how many building permits are issued?
 - o On average how many side sewer permits are issued?
 - o Are side sewer permits part of or separate from building permits?
 - o Is there a formal training program for inspectors?
 - o What is the range of experience amongst inspectors?
 - o What is the extent of side sewer inspections (e.g., is the entire length of side sewer inspected)?
 - o Are inspections done upon completion or throughout construction?
 - o What type of inspection (e.g. pressure test) is done?
4. Work with WTD to assess WTD review of inspection data that is submitted by the cities and sewer districts.
5. Provide a written summary of the findings of the evaluation.

Deliverables:

1. Technical memorandum that presents the findings of evaluating current inspection programs in place at the cities and sewer districts that are part of the regional wastewater treatment system.

Assumptions:

1. Task 500 to be completed simultaneously with Task 400 as they both require collecting information from cities and sewer districts.
2. The Consultant shall plan to visit each of the MWPAAC cities or sewer districts where possible, with King County staff. King County shall assist in arranging site visits. If a visit is not possible, the Consultant shall call the city or sewer district.
3. The technical memorandum shall present information in a consolidated manner and not individually call out deficiencies or good practices of any one city or sewer district. The documentation of each city and sewer district inspection program will be summarized on a standardized form and be available for reference.
4. Visits will be used to conduct staff interviews and will not involve field visits of active sewer inspection. As such, the determination of how well any local standards are being enforced will depend solely upon information gained in these interviews.
5. Travel budget for subtask 510 included in subtask 420.

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Subtask 520 – Outline for a Standardized Regional Inspection Training Program

If the results of Subtask 510 show the need for a standardized regional inspection program, the Consultant shall prepare outline for a program to train staff conducting sewer and side sewer inspections in the regional wastewater service area. The outline shall include the following elements:

1. Identification of improvements needed to inspection programs in the regional wastewater service area.
2. Identification of improvements needed in training of inspectors.
3. Content for inspector training.
4. Entity conducting the training.
5. Requirements to complete the training.
6. Funding sources for the training.
7. Methods to assess effectiveness of the program at reducing I/I.

Deliverables:

1. Draft and Final documentation that presents the outline for a standardized regional inspection program.

Assumptions:

1. The purpose of the outline is for education, the format and content shall be at a level to provide information to MWPAAG cities and sewer districts and the public. Example checklist, tracking forms, or other illustrative tools to support the outline will be included as appropriate.
2. No actual training shall be provided.

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Task 600 – Private Side Sewer Programs

Private side sewer programs could be established to create conditions where private side sewers are routinely inspected, maintained, or replaced so that I/I is minimized or reduced. The Consultant shall identify the types of programs that are utilized by other utilities across the nation and examine the potential for use of those programs in the King County regional wastewater service area. Should new concepts for private side sewer programs be identified those concepts could be explored as well.

Task 600 shall summarize the program types in order to orient WTD and the cities and sewer districts to them. With the program types summarized a framework for implementation of each type of program shall be prepared. Some of the greatest challenges to establishing a private side sewer program are legal and policy issues. Therefore, it is critical that the consultant team identify legal and policy issues as well as technical and financial during all Task 400 work.

Subtask 610 – Identification of the Types of Private Side Sewer Programs

The Consultant shall summarize the types of programs so that they can be evaluated in subtasks 620 to 650. WTD has identified inspection, insurance, enforcement, and financial aid side sewer programs to be included in the summary. Other programs identified by the Consultant shall include:

1. Research private side sewer programs.
2. Work with WTD and the cities and sewer districts to develop a series of questions to guide the private side sewer programs research. The questions below will be used as a starting point to guide the evaluation and the results will be responsive to them. The questions in the evaluation may include but not be limited to below shall be included in the evaluation:

- a. What are the strengths of each program?
- b. What are the weaknesses of each program?
- c. Have any programs been determined to be more successful (i.e., effective) in reducing I/I than others? What were the conditions that contribute to success? How was success determined?
- d. What was the property owner's participation rate, and what factors maximized property owner's willingness to participate.
- e. Were there unintended consequences or impacts from implementing the program, and how were they addressed?
- f. What methods are available to determine the costs and benefits of these programs?

Deliverables:

1. Written summary of the research that addresses the key questions.
2. Technical memorandum that summarizes the types of private side sewer programs.

Assumptions:

1. The purpose of the summary is for education, the format and content shall be at a level to provide information to MWPAAC and the public.
2. The evaluation shall rely on published assessments.
3. The Consultant shall use up to 8 case studies from sources such as the WEF Private Property Virtual Library.

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Subtask 620 – Evaluation of and a Framework for Side Sewer Inspection and Certification Program

The Consultant shall evaluate and explore the application of a side sewer inspection and certification program in the King County regional wastewater service area. Activities may include:

1. Work with WTD and the cities and sewer districts to develop a series of questions to guide the evaluation of a private side sewer inspection and certification program. The questions below will be used as a starting point to guide the evaluation and the results will be responsive to them. The questions in the evaluation may include but not be limited to: below shall be included in the evaluation:
 - a. What mechanism (e.g. real estate transaction) triggers a side sewer inspection?
 - b. What action(s) (e.g. documentation of results, documentation of results and repair of defects) are taken based on the result of the inspection?
 - c. What is the legal authority to implement the program in a City and Sewer District local government setting?
 - d. What regulatory/legislative changes at local, county, and state level would be needed to implement the program?
 - e. What is the potential for the program to be effective in reducing I/I in the regional wastewater system?
 - f. Are there any anticipated impacts to operations (e.g., pipes with substandard slopes lack flushing velocity) of wastewater collection systems?

- g. Are there any positive or negative impacts (environmental, groundwater/stormwater, safety, infrastructure, or other) associated with the program? What methods are available to avoid, address or mitigate negative impacts?
 - h. What are the potential costs and funding mechanisms of the program?
 - i. Are there affordability or other potential financial impacts, positive or negative? What methods are available to avoid, address or mitigate negative impacts?
 - j. What methods are available to assess effectiveness of the program at reducing I/I?
 - k. What private sector entities would be involved in the program? What type of outreach to these entities is needed?
2. Based on the findings of the evaluation, the consultant shall develop a framework for implementation of a private side sewer inspection program in the King County regional wastewater service area. The framework shall include optional features for consideration. The framework shall include:
 - a. Description of the program.
 - b. Identification of legal authority for program.
 - c. Complete list of program procedures.
 - d. Program incentives and penalties.
 - e. Partners for implementing the program.
 - f. Estimate costs for the program and potential funding sources.
 - g. Method for assessing program effectiveness over time.

Deliverables:

1. Technical memorandum that summarizes evaluation of the side sewer inspection and certification program.
2. Draft and Final documentation that presents the framework for a standardized regional inspection program.

Assumptions:

1. The Consultant shall develop a draft framework based on the questions above and at a minimum include the elements listed above so that for distribution to the cities and sewer districts can adequately understand the proposed program. The framework is not intended to be of sufficient detail to be immediately implemented.
2. Where applicable, social justice and equity energy, and sustainability considerations consistent with King County priorities considerations shall be applied to the framework.
3. A two-hour meeting shall be held to present the draft framework to the cities and sewer districts. The focus of the meetings shall be focused on information sharing and education.
4. The final framework shall incorporate comments from the cities and sewer districts.
5. The framework is not intended to be of sufficient detail to be immediately implemented. Further, extensive outreach to the providers of side sewer inspection and certification services is not included in this scope to establish standardized inspection procedures and equipment.

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6. The final framework will include a comparison of the estimated unit cost to remove I&I under this proposed program with other I&I programs that are currently being evaluated and/or implemented.
7. The final framework optimally would include a summary of downstream separated conveyance system capital improvements to address I&I and/or CSOs that would not be needed if this program were implemented. WTD will provide avoided costs so that a comparison between I/I programs and conveyance system/CSO capital projects can be made.

Subtask 630 – Evaluation of and a Framework for Private Side Sewer Insurance Programs

The Consultant shall evaluate and explore the application of a side sewer insurance program in the King County regional wastewater service area. Activities may include:

1. Work with WTD and the cities and sewer districts to develop a series of questions to guide the evaluation of a private side sewer insurance program. The questions in the evaluation may include but not be limited to: below shall be included in the evaluation:
 - a. What are the options for making private side sewer insurance available to property owners?
 - b. What is the legal authority to implement insurance programs in a City and Sewer District local government setting?
 - c. What is the potential for the program to be effective in reducing I/I in the regional wastewater system?
 - d. Are there any anticipated impacts to operations (e.g., pipes with substandard slopes lack flushing velocity) of wastewater collection systems?
 - e. Are there any positive or negative impacts (environmental, groundwater/stormwater, safety, infrastructure, or other) associated with the program? What methods are available to avoid, address or mitigate negative impacts?
 - f. What are the potential costs and funding mechanisms of the program?
 - g. Are there affordability or other potential financial impacts, positive or negative? What methods are available to avoid, address or mitigate negative impacts?
 - h. Does the program need public funding/staffing to be effective?
 - i. What methods are available to assess effectiveness of the program at reducing I/I?
2. Based on the findings of the evaluation the consultant shall develop a framework for implementation of a private side sewer insurance program in the King County regional wastewater service area. The framework shall include:
 - a. Description of the program.
 - b. Identification of legal authority for program.
 - c. Complete list of program procedures.
 - d. Identification of insurance provider(s) (e.g. utility, private company).
 - e. Identification of funding mechanism(s).
 - f. Program incentives and penalties.
 - g. Method for assessing program effectiveness over time.

Deliverables:

1. Technical memorandum that summarizes evaluation of the side sewer insurance program.
2. Draft and Final documentation that presents the framework for a standardized regional insurance program.

Assumptions:

1. The Consultant shall develop a draft framework based on the questions above and at a minimum include the elements listed above so that for distribution to the cities and sewer districts can adequately understand the proposed program. The framework is not intended to be of sufficient detail to be immediately implemented.
2. Where applicable, social justice and equity energy, and sustainability considerations consistent with King County priorities considerations shall be applied to the framework.
3. A two-hour meeting shall be held to present the draft framework to the cities and sewer districts. The focus of the meetings shall be focused on information sharing and education.
4. The final framework shall incorporate comments from the cities and sewer districts.
5. The framework is not intended to be of sufficient detail to be immediately implemented. Further, extensive outreach to the providers of private side sewer insurance is not included in this scope to establish standardized inspection procedures and equipment.
6. The final framework will include a comparison of the estimated unit cost to remove I&I under this proposed program with other I&I programs that are currently being evaluated and/or implemented.
7. The final framework optimally would include a summary of downstream separated conveyance system capital improvements to address I&I and/or CSOs that would not be needed if this program were implemented. WTD will provide avoided costs so that a comparison between I/I programs and conveyance system/CSO capital projects can be made.

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Subtask 640 – Evaluation of and a Framework for Private Side Sewer Maintenance Program

The Consultant shall evaluate and explore the application of a side sewer maintenance program in the King County regional wastewater service area. Activities may include:

1. Work with WTD and the cities and sewer districts to develop a series of questions to guide the evaluation of a private side sewer maintenance programs. The following questions in the evaluation may include but not be limited to: shall be included in the evaluation:
 - a. What are the options for implementing private side sewer maintenance programs?
 - b. What is the legal authority to implement maintenance programs in a City and Sewer District local government setting?

- c. What is the potential for the program to be effective in reducing I/I in the regional wastewater system?
 - d. Are there any anticipated impacts to operations (e.g., pipes with substandard slopes lack flushing velocity) of wastewater collection systems?
 - e. Are there any positive or negative impacts (environmental, groundwater/stormwater, safety, infrastructure, or other) associated with the program? What methods are available to avoid, address or mitigate negative impacts?
 - f. What are the potential costs and funding mechanisms of the program?
 - g. Are there affordability or other potential financial impacts, positive or negative? What methods are available to avoid, address or mitigate negative impacts?
 - h. Does the program need public funding/staffing to be effective?
 - i. What methods are available to assess effectiveness of the program at reducing I/I?
2. Based on the findings of the evaluation the consultant shall develop a framework for implementation of a private side sewer maintenance program in the King County regional wastewater service area. The framework shall include:
 - a. Description of the program.
 - b. Identification of legal authority for program.
 - c. Complete list of program procedures.
 - d. Identification of maintenance provider(s) (e.g. utility, private company).
 - e. Identification of funding mechanism(s).
 - f. Program incentives and penalties.
 - g. Method for assessing program effectiveness over time.

Deliverables:

1. Technical memorandum that summarizes evaluation of the side sewer maintenance program.
2. Draft and Final documentation that presents the framework for a standardized regional maintenance program.

Assumptions:

1. The Consultant shall develop a draft framework based on the questions above and at a minimum include the elements listed above so that for distribution to the cities and sewer districts can adequately understand the proposed program.
2. Where applicable, social justice and equity, energy, and sustainability considerations consistent with King County priorities shall be applied to the framework.
3. A two-hour meeting shall be held to present the draft framework to the cities and sewer districts. The focus of the meetings shall be focused on information sharing and education.
4. The final framework shall incorporate comments from the cities and sewer districts.
5. The framework is not intended to be of sufficient detail to be immediately implemented. Further, extensive outreach to the providers of private side sewer

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inspection services and repair services is not included in this scope to establish standardized inspection procedures and equipment.

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6. The final framework will include a comparison of the estimated unit cost to remove I&I under this proposed program with other I&I programs that are currently being evaluated and/or implemented.

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7. The final framework optimally would include a summary of downstream separated conveyance system capital improvements to address I&I and/or CSOs that would not be needed if this program were implemented. WTD will provide avoided costs so that a ~~However, this comparison between I/I programs and conveyance system/CSO capital projects can be made~~is not included in this scope unless the avoided costs are provided by WTD.

Subtask 650 – Evaluation of and a Framework for Grant or Loan Programs for Private Side Sewers

The Consultant shall evaluate and explore the application of a side sewer grant or loan programs in the King County regional wastewater service area. Activities may include:

1. Work with WTD and the cities and sewer districts to develop a series of questions to guide the evaluation of private side sewer grant or loan programs. The ~~following questions in the evaluation may include but not be limited to: shall be included in the evaluation:~~
 - a. What are the options for making private side sewer grants or loans available to property owners?
 - b. What is the legal authority to implement the program in a City and Sewer District local government setting?
 - c. What is the potential for the program to be effective in reducing I/I in the regional wastewater system?
 - d. What levels of property owner participation in the program could be expected?
 - e. Are there any anticipated impacts to operations (e.g., pipes with substandard slopes lack flushing velocity) of wastewater collection systems?
 - f. Are there any positive or negative impacts (environmental, groundwater/stormwater, safety, infrastructure, or other) associated with the program? What methods are available to avoid, address or mitigate negative impacts?
 - g. What are the costs and funding mechanisms of the program?
 - h. Are there affordability or other potential financial impacts, positive or negative? What methods are available to avoid, address or mitigate negative impacts?
 - i. What criteria should be established for funding eligibility?
 - j. What methods are available to assess effectiveness of the program at reducing I/I?
2. Based on the findings of the evaluation the consultant shall develop a framework for implementation of a private side sewer grant or loan programs ~~private side sewer insurance program~~ in the King County regional wastewater service area. The framework shall include:
 - a. Description of the program.

- b. Identification of legal authority for program.
- c. Complete list of program procedures.
- d. Identification of grant or loan providers.
- e. Program incentives and penalties.
- f. Method for assessing program effectiveness over time.

Deliverables:

- 1. Technical memorandum that summarizes evaluation of the side sewer grant or loan program.
- 2. Draft and Final documentation that presents the framework for a standardized regional side sewer grant or loan program.

Assumptions:

- 1. The Consultant shall develop a draft framework based on the questions above for distribution to the cities and sewer districts. The framework is not intended to be of sufficient detail to be immediately implemented.
- 2. Where applicable, social justice and equity energy, and sustainability considerations consistent with King County priorities considerations shall be applied to the framework.
- 3. A two-hour meeting shall be held to present the draft framework to the cities and sewer districts. The focus of the meetings shall be focused on information sharing and education.
- 4. The final framework shall incorporate comments from the cities and sewer districts.
- 5. The framework is not intended to be of sufficient detail to be immediately implemented. Further, extensive outreach to the providers of grant or loan programs for private side sewers is not included in this scope to establish standardized inspection procedures and equipment.
- 6. The final framework will include a comparison of the estimated unit cost to remove I&I under this proposed program with other I&I programs that are currently being evaluated and/or implemented.
- 7. The final framework optimally would include a summary of downstream separated conveyance system capital improvements to address I&I and/or CSOs that would not be needed if this program were implemented. WTD will provide avoided costs so that a comparison between I/I programs and conveyance system/CSO capital projects can be made.

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PHASE 2 - Implementation Plan for Recommended I/I Program Concepts

This purpose of Phase 2 is to develop an implementation plan for recommended I/I program elements. The implementation plan will reflect the findings of Phase 1.

Task 700 – Phase 2 Project Management

This task includes all work related to the management, administration, and coordination of Consultant activities for Phase 2 in accordance with the Project Management Institute's standards.

Subtask 710 – Project Management Plan

Updated the Project Management Plan addressing Scope of Work.

1. Prepare a draft updated Project Management Plan (“PMP”) within 30 working days of the Notice to Proceed (“NTP”) that document the Project Management Institute method that shall be used for managing the project. The PMP shall include:
 - d. A work breakdown structure (“WBS”) that identifies resources and responsibilities necessary to respond to WTD-approved work scope.
 - e. A project schedule and resource loaded schedule.
 - f. A quality assurance program, communication protocols, invoicing requirements, and project procedures, such as filing systems, charge numbers, change management, and document format.
2. Following review by WTD of the draft PMP and within 10 working days of receipt of WTD’s review comments, prepare and submit a final PMP to WTD for review and approval.
3. Distribute final WTD-approved PMP to all subconsultants.
4. Update the PMP and submit to WTD if required by changes in project schedule, budget, or scope of work, or as requested by WTD.

Deliverables:

1. Draft and final initial PMP.
2. At least two (2) and up to four (4) updates of the PMP.

Subtask 720 – Progress Reports

Prepare monthly progress reports to document project progress.

1. Submit a monthly progress report to WTD by the 10th of each month, or other mutually agreed-upon date in advance of the monthly meetings called for in Subtask 730.
2. Progress reports shall be one (1) to two (2) pages in length and include:
 - a. Work completed for prior month, schedule of work for the next month, any changes in staffing, schedule updates, identification of issues that impact schedule, and proposed means to address critical issues.
 - b. A listing of all costs to date and a revised cost-to-complete estimate tracked at task level (not subtask level).

Deliverables

1. Up to 24 monthly progress reports over two years.

Subtask 730 – Monthly Progress Meetings

The Consultant shall hold monthly meetings to discuss project progress, activities may include the following:

1. Conduct monthly one-hour progress meetings with WTD PR and/or WTD PM and members of the County's Project Team, as necessary and appropriate to review:
 - a. Project tasks underway.
 - b. Time and budget tracking.
 - c. Work elements accomplished.
 - d. Work items planned for the next period.
 - e. Scope changes.
 - f. A log of decisions, time, and budget needed to complete specified portions of the project.
2. At least three (3) working days prior to each meeting, prepare and distribute draft meeting agenda (one hour effort for one person per meeting).
3. Within three (3) working days following each meeting, prepare meeting notes with decision log and action items list (two hour effort for one person per meeting).
Meeting notes include:
 - g. Summary of each agenda item discussed.
 - h. Action items that have been resolved.
 - i. Items which require a response by a specific Consultant or subconsultant team member, King County, or others.
 - j. Changes to deliverables or schedules.
 - k. Updates to decision log.
 - l. Updates to action items list.

Deliverables:

1. Meeting agenda distributed electronically to participants at least three (3) working days before each meeting.
2. Meeting Notes (see Consultant Deliverable)

Task – 800 Prepare an Implementation Plan of Recommended I/I Program Element(s)

The Consultant shall develop an implementation plan for establishing recommended new element(s) of the regional I/I control program.

Services are to be determined based on the results and decisions of Phase 1.

Deliverables:

Deliverables are to be determined.

Task – 900 Unplanned, Urgent and/or Critical Work

This task is to provide other consultant services, which are unplanned, urgent and/or critical to maintaining the project schedule and progress of the work. The Consultant shall provide services as requested and directed. No activities are defined at this time. However, examples of the types of work that may be required under this task are supplemental technical, policy, financial, and legal research. When the need for services is identified, the consultant will prepare a letter describing the scope.

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deliverables, level of effort, and schedule. Upon written authorization by the County's PR, a new subtask will be established for the defined activities.

Consultant Services

Services have not been identified at this time.

Deliverables:

1. No deliverables are defined at this time. Deliverables associated with the respective additional activities that arise will be defined for each respective subtask.