

## PHASE 2 DRAFT

## DRAFT SCOPE OF WORK – VERSION 2, 1.28.2019

## CONTRACT NO. P00208P16

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 and possible planning of new elements for the Regional Inflow and Infiltration (I/I) Control Program. This scope of work shall build on the work that WTD completed previously and explore more comprehensive and system wide I/I reduction. The products of this scope of work will inform the region about three program types, present options for program components, develop related information and may include implementation plans for the recommended programs.

**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 several sources around the country and from King County estimated that 50-70% of the peak flow in a separated system is I/I. The I/I results in higher CSI related capital program costs by accelerating the need for capacity improvement projects and increasing their size. Annually it is estimated that 25% 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 increasing 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**

Prepare Program Development Plans and Implementation Plans for the I/I reduction program options as advised by Metropolitan Water Pollution Abatement Advisory Committee (MWPAAC) in December 2018. Development of implementation plans will be initiated only after major program components are recommended by MWPAAC, and determined by King County.

**Estimated Project Schedule**

Notice to Proceed

April 2019

1 Project Planning	April 2019 – May 2019
2 Program Goals, Methods, Background Information Development	April 2019 – September 2019
3 Regional BMP Development	October 2019 – December 2019
4 Inspection Training and Certification Program Development	October 2019 – December 2019
5 Private Side Sewer Program Development	October 2019 – June 2020
6 Implementation Plans	January 2020 – December 2020

**Reference Documents**

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-i/docs/Reports/0512\\_II\\_Control\\_Program\\_Recommendations.ashx?la=en](http://www.kingcounty.gov/~media/services/environment/wastewater/i-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 2 - Implementation Plan for Recommended I/I Program Concepts**

The purpose of Phase 2 is to further analyze and evaluate the three recommended, I/I reduction program options, define the programs in greater detail and as relevant develop implementation plans.

## Task 1000 - 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 1100 – Project Management Plan

Prepare a Project Management Plan addressing Scope of Work.

1. 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:
  - a. A work breakdown structure (“WBS”) that identifies resources and responsibilities necessary to respond to WTD-approved work scope.
  - b. A project 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 Phase 2 PMP.
2. Two (2) 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 1200 – 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 1300.
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 1300 – 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 brief 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 2000 – 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 further analyze the details of options. Actions beyond this more in-depth analysis have not been agreed to at this time i.e. implementation is not assumed at this time.

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.

**Subtask 2100 – MWPAAC Involvement Plan**

Consultant shall revise the MWPAAC Involvement Plan for Phase 2 to include engagement strategies, the input process and schedule for involving MWPAAC in the Evaluation of Inflow and Infiltration Reduction Concepts. The MWPAAC Involvement Plan shall outline a process for MWPAAC to advise the WTD Director on which types of I/I programs should be implemented.

**Deliverables:**

1. MWPAAC Involvement Plan

**Assumptions:**

1. 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.
2. This project is expected to be an agenda item at monthly meetings of the E&P Subcommittee for the duration of the scope (up to 8 times per year).
3. The MWPAAC Involvement Plan shall define roles and responsibilities of the Consultant, King County and MWPAAC for the evaluation.

**Subtask 2200 – Support to King County Staff during MWPAAC Meetings**

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

**Deliverables:**

1. Presentation materials for meetings.

**Assumptions:**

1. Attendance at up to 8 MWPAAC meetings per year.
2. A total of 8 individual trips for out of town experts have been budgeted for attending MWPAAC meetings. More than one individual trip could occur for the same meeting.
3. Each meeting is expected to be 2 hours long.
4. One-hour of travel time was included for each MWPAAC meeting.
5. Two hours of meeting preparation were included for Consultant PM and Leads to develop materials and two hours for meeting notes were allocated for each meeting.

### **Task 3000 Meeting and Briefings Participation**

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

#### **Subtask 3100 – Meeting and Briefings Participation**

##### **Deliverables:**

2. Presentation materials for meetings and briefings.

##### **Assumptions:**

1. Attendance at up to 8 meetings or briefings per year
2. Each meeting is expected to be 2 hours long.
3. One-hour of travel time was included for each meeting.
4. One hour of preparation was included for Consultant PM and Leads.

### **Task 4000 Program Development Plan**

The Consultant shall develop a plan for the overall approach in developing both I/I programs and program implementation plans.

#### **Subtask 4100 – Develop Program Goals, Methods and Background Information**

Consultant shall initiate program development tasks in collaboration with MWPAAC; specifically developing the following:

- overview graphic of the Phase 2 planning process
- goals, objectives and critical success factors for each program concept
- description of each programs barriers to implementation and mitigation approaches to lessen or remove barriers (i.e. existing state or local laws and regulation, agency staff capacity and funding) based on Phase 1 findings
- methods to evaluate benefits of private side sewer program options
- compile information from existing side sewer inspection programs to inform program development

In addition, the consultant shall develop information on the following items:

- process or method to reach agreement on final program components and implementation plans to develop
- draft outlines for each program development plan e.g. regional BMPs, inspector training program and private side sewer inspection program (includes financial assistance component)
- draft outlines for each possible implementation plan

WTD will provide context on systemwide planning to inform discussions with MWPAAC, as needed.

##### **Deliverables:**

1. Draft and Final Program Development Plan

**Assumptions:**

1. Regional benefit evaluation will not be undertaken for the Regional BMPs or the Inspector Training Programs because they are assumed to primarily prevent new I/I, not reduce existing I/I. These programs are not expected to affect planned capital program costs.
2. The Program Development Plan will inform tasks 5000, 6000, 7000, and 8000.
3. The Program Development Plan will be 20 pages or less in length.

**Task 5000 – Equity Impact Review**

The consultant shall develop and implement a plan to integrate the King County equity impact review process into all program development and implementation planning tasks. King County's equity impact review is comprised of five phases, some of which may not apply to this scope e.g. Phase 5 ongoing learning. The plan will be developed concurrently to Task 4000, and is expected to include Phase 1 scoping, Phase 2 assessment and initiate Phase 3 analysis. Targeted community engagement may be needed to support this task. Implementation of the equity impact review plan will occur concurrently to all subsequent tasks, and may include additional analysis as program components are further defined.

**Deliverables:**

1. Draft and Final Equity Impact Review Plan

**Task 6000 – Regional BMP Development**

The Consultant shall build upon the Phase 1 technical memorandums and outcomes of Task 4000 to develop major components of a common regional BMP approach that would have the greatest possible benefit of I/I reduction. This task will consider different configuration of program components through collaborative discussion with MWPAAC. This task will result in enough detail to support a recommendation on whether to implement the program and will provide additional detail around key considerations/criteria e.g. regional effectiveness of I/I reduction, legal and political implications, property owner impacts, local agency impacts, WTD impacts, and equity and social justice.

The relevant Phase 1 technical memorandum are:

- Verify 2004 King County Final Draft Regional I/I Control Standards, Procedures and Policies (subtask 410)
- Assessment of Existing Local Agency Sewer and Side Sewer Standards (subtask 420)
- Approach to Achieve Common Sewer and Side Sewer/Lateral Standards (subtask 430)

**Subtask 6100 – Regional BMP Development**

The Consultant shall evaluate existing BMPs and determine the best 3-5 practices for implementation at a regional scale. The consultant will facilitate discussions and develop information on other major program components e.g. implications of voluntary versus mandatory implementation and subsequent actions by individual cities or districts.

Activities may include:

1. Identification of BMPs for a sewer and side sewer standards and policies with the greatest regional benefit.
2. Evaluation of the identified BMPs for regional use.
3. Further development of mitigation measures for identified barriers to implementation.
4. Describing the process to agree to or adopt BMPs at the regional level
5. If BMPs are mandatory, describe consequences if local agencies does not adopt BMPs
6. As appropriate, description of components or actions based on the equity impact review

**Deliverables:**

1. Outline will be provided in Task 4000.
2. Draft and Final Technical memorandum that presents the options explored, evaluation process and suggested regional BMPs for implementation planning.

**Assumptions:**

1. Regional benefit evaluation will not be undertaken for the Regional BMPs. BMPs are assumed to primarily prevent new I/I, not reduce existing I/I. Regional BMPs are not expected to affect planned capital program costs.
2. Technical memorandum will be focused on recommended BMPs.

**Task 7000 – Inspection Training and Certification Program Development**

The Consultant shall build upon the Phase 1 technical memorandum *Outline for a Standardized Regional Inspection Training Program* (subtask 520) to develop a comprehensive training and certification program for the region. The training program will focus on practices that help ensure private side sewer construction is performed to reduce I/I as much as possible. This task will consider different configuration of program components through collaborative discussion with MWPAAC. This task will result in enough detail to support a recommendation on whether to implement the program and will provide additional detail around key considerations/criteria e.g. regional effectiveness of I/I reduction, legal and political implications, community/ratepayer/homeowner impacts, local agency impacts, WTD impacts, and equity and social justice. The consultant will coordinate with existing trade associations to determine possible partnerships.

**Subtask 7100 – Inspection Training and Certification Program Development**

The Consultant shall develop a comprehensive training and certification program for the region.

Training program shall include:

1. Roles and responsibilities for WTD, local agencies, potential third-party contractor and potential other interested parties in job training
2. Cost estimates for running the program and funding options
3. Methods for inspector training

4. Requirements to complete training
5. Certification/recertification requirements including a testing-out option or alternate, equivalent certification
6. Consequences if agency does not use certified inspectors
7. Content for inspector training modules
8. Implementation schedule options
7. As appropriate, description of components or actions based on the equity impact review

Also, the consultant shall, as, needed further develop mitigation measures for identified barriers to implementation.

**Deliverables:**

1. Outline will be provided in Task 4000.
2. Draft and Final Technical memorandum that presents major components of the comprehensive training and certification program.

**Assumptions:**

1. Regional benefit evaluation will not be undertaken for the Inspector Training Program. An inspector training program is assumed to primarily prevent new I/I, not reduce existing I/I. Training inspectors is not expected to affect planned capital program costs.
2. Technical memorandum will be focused on the content of the training and certification program, implementation of the program will be developed in Task 8000.
3. Information developed will directly support development of an implementation plan.

**Task 8000 – Private Side Sewer Inspection Program Development**

The Consultant shall build upon the Phase 1 technical memorandums *Private Side Sewer Program Evaluation Process* and *Private Side Sewer Identification and Relevance to the King County Wastewater Service Area* (Task 600) to develop options for a private side sewer inspection program that includes financial assistance. For scoping purposes these were broken into two subtasks. This task will consider different configuration of program components through collaborative discussion with MWPAAC. This task will result in enough detail to support a recommendation on whether to implement the program and will provide additional detail around key considerations/criteria e.g. regional effectiveness of I/I reduction, legal and political implications, property owner impacts, local agency impacts, WTD impacts, and equity and social justice. The consultant, as directed, will conduct outreach to selected parties to better inform an understanding of barriers and implications of program options. This task will be set in the context of an understanding of the regional contracts that component agencies have with WTD to determine viable options for further implementation in Task 8000.

### **Subtask 8100 – Private Side Sewer Inspection Program Development**

The Consultant shall develop in-depth options for a side sewer inspection program for the region including consideration of the economic benefits of investing in I/I reduction to potentially reduce capital project costs for conveyance.

The following will be described to support development of the program:

1. Inspection trigger options (i.e., point of sale, time-based, dollar amount or scope of remodel or others)
2. Inspection criteria; Pass/fail, partial pass, partial fail
3. Repair/replacement criteria and methods
4. Process for inspection certification including actions taken if side sewer does not pass inspection
5. Enforcement triggers and actions
6. Program costs
7. Funding options
8. Financial implications to property owners and buyers
9. Regional benefit of investing in I/I reduction
10. Impacts to sewer providers and WTD
11. Impacts to real estate transaction process
12. Roles and responsibilities for all affected parties
13. As appropriate, description of components or actions based on the equity impact review which may include opportunities for partnerships, community outreach, and equity work

In addition, decision criteria will be established or refined to evaluate the options, and these are expected to include financial impacts and reduction in I/I. Also, the consultant shall, as needed further develop mitigation measures for identified barriers to implementation.

#### **Deliverables:**

1. Outline will be provided in Task 4000.
2. Draft and Final Technical memorandum that presents major components of a side sewer inspection program.

#### **Assumptions:**

1. A private side sewer program is assumed to be required within the service area.
2. Technical memorandum will be focused on the options for the private side sewer inspection program, implementation of the program will be developed in Task 8000.
3. Information developed will directly support development of an implementation plan.

### **Subtask 8200 – Financial Assistance Program Development**

The Consultant shall develop options for financial assistance programs to fund repairs needed as a result of a required private side sewer inspection program for the region.

The following will be described to support development of the program:

1. Options for grants (i.e. need based grants, grants not based on need)
2. Options for loans (i.e. need based loans, loans not based on need)
3. Options for other types of financial support
4. Qualifications and exclusions for applicants and project types for all types of financial assistance
5. Legal implications of property liens, in the event of non-payment
6. Method of fund distribution
7. Program costs
8. Funding source
9. Financial implications to rate payers
10. Roles and responsibilities for all affect parties
11. As appropriate, description of components or actions based on the equity impact review

**Deliverables:**

1. Outline
2. Draft and Final Technical memorandum that presents major components of the options for grant and loan programs.

**Assumptions:**

1. Technical memorandum will be focused on the options for the grant and loan programs, implementation of the program will be developed in Task 8000.
2. Information developed will directly support development of an implementation plan.

**Task 9000 – Implementation Plans**

The consultant shall prepare implementation plans for the programs as advised by MWPAAC and directed by WTD Director, which may include an inspection training and certification program and a private side sewer inspection program with a financial assistance program. The regional BMPs are not expected to need an implementation plan. Implementation plans will be “how to” guides to set up, implement and manage the selected programs based on well-defined program development plans. Implementation plans will focus on recording results developed in earlier tasks, and providing items such as draft ordinance language, plan to set legal authorities, outreach plans, supporting materials and other items necessary to implement the program. Community engagement may occur in advance or in tandem with this task to support development of implementation plans.

The implementation plans shall at a minimum include:

1. Refined program vision, mission statement, goals, and scope
2. Roles and responsibilities for WTD and the MWPAAC agencies
3. Legal implications and authorities to put in place, if any
4. Outreach plan and materials
5. Financial plan including program costs
6. Implementation schedule
7. All supporting materials e.g. application forms, certificate, etc.

8. Tracking software recommendations
9. Process checklist for each program

**Subtask 9200 – Inspection Training and Certification Implementation Plan**

The Consultant shall develop an implementation plan specific to the inspection and training plan. The outline of the plan will be developed during Task 4000 and will guide the content.

**Deliverables:**

1. Outline will be provided during Task 4000
2. Draft and Final Implementation Plans

**Subtask 9300 – Private Side Sewer Inspection Program Implementation Plan**

The consultant shall develop an implementation plan specific to the private side sewer inspection program including a financial assistance component. The outline of the plan will be developed during Task 4000 and will guide the content.

**Deliverables:**

1. Outline will be provided during Task 4000
2. Draft and Final Implementation Plans

**Task – 10,000 Unplanned, Urgent and/or Critical Work**

The Consultant shall provide services which are unplanned, urgent and/or critical to maintaining the project schedule and progress of the work. The work of this task must be specifically scoped, agreed to, and authorized in writing by the County prior to performing the work. Work areas may include but not be limited to supplemental:

1. Technical;
2. Policy;
3. Financial; and
4. Legal Research.

**Subtask 9100 – Unplanned, Urgent and/or Critical Work**

**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.

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