

Project Overview for Discussion*:

Evaluation of I/I Reduction Concepts

February 2016

*This document has been prepared to facilitate discussion with MWPAAC E&P regarding the work to explore and evaluate I/I Reduction Concepts identified by the MWPAAC I/I Task Force in 2015. The project objective and scope are expected to be revised as WTD works with MWPAAC to further define the work.

Project Objective

The overall objective of this project is to Evaluate Inflow and Infiltration (I/I) reduction concepts. I/I is excess water that flows into sewer pipes from groundwater and stormwater. The long term capacity needs of the separated portion of the regional wastewater conveyance system are driven by peak flow events in the conveyance system that are largely attributed to I/I.

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. These concepts are in addition to the current Regional I/I Program activities to assess the cost effectiveness of I/I reduction as compared to a conveyance system project to increase capacity.

A variety of I/I reduction concepts will be evaluated. MWPAAC, via the Engineering and Planning (E&P) subcommittee will have a role in reviewing the products of the evaluation. Ultimately the evaluation seeks to recommended a program or programs for implementation. The project report will include a work plan for implementation of a recommended program or programs. More details on the evaluation and products of the evaluation are provided in the Preliminary Project Scope Statement discussion below.

Information on the need for the project and how it complements WTD's existing I/I Program efforts is found in the Need/Justification section of this charter.

Preliminary Project Scope Statement

The expected result of the project is a report presenting the evaluation of I/I reduction concepts. Included in the report will be an implementation plan for a program or programs recommended as part of the evaluation.

General categories for the I/I reduction concepts identified by Metropolitan Water Pollution Abatement Advisory Committee (MWPAAC) and the King County Wastewater Treatment Division (WTD) in 2015 are listed below. More detail on the categories and their evaluation are summarized later in this preliminary project scope statement discussion.

- Sewer and Side Sewer Standards, including design, construction, and inspection;
- Standardized Regional Sewer and Side Sewer Inspection Program;
- Private Side Sewer Programs, including certification and insurance programs, grant, and loan;

Each I/I reduction category will be evaluated. Key questions to be explored during the evaluation are:

- What are the costs to start the program and ongoing annual costs?
- How much can I/I be reduced over time?
- Can the effectiveness of I/I reduction options be assessed over time?
- Who (i.e. WTD or local agency) implements the program?
- What are the public (utility) and private (homeowner) responsibilities under a program?
- How can a program be incentivized?

Additional questions will be developed during preparation of the project scope of work.

An overview of the process for evaluation of each category is below.

Sewer and side sewer standards will be evaluated as follows. The evaluation will begin with the project team carrying out a comparison of sewer and side sewer standards. The comparison will be between the existing standards in place at each Cities and Sewer Districts that contribute wastewater flows to WTD and the 2004 Final Draft Regional I/I Control Standards, Procedures, and Policies. The primary purpose of this comparison is to determine the extent to which existing sewer and side sewer standards meet the 2004 draft regional standards. If the comparison shows areas where existing standards can be improved they will be noted. The need for routine review of standards will be assessed. A framework for implementing consistent regional sewer and side sewer standards and conducting routine review of City and Sewer District standards will be prepared.

A Standardized Regional Sewer and Side Sewer Inspection Program will be evaluated as follows. The project team will collect information on current inspection programs at Cities and Sewer Districts that contribute wastewater flows to WTD. The inspection programs will be evaluated against industry standard programs including United States Environmental Protection Agency collection system's management, operation, and maintenance (CMOM) and American Public Works Association. Based on this evaluation areas where inspection programs can be improved will be noted. The findings of the

evaluation will be used to develop a framework for a regional sewer and side sewer inspection program.

Private Side Sewer Programs will be evaluated as follows. There are a number of different types of private side sewer programs. This evaluation will start by summarizing the programs types in order to orient MWPAAC E&P members to them. The types of programs summarized will include inspection or certification programs, insurance programs, and grant or loan programs. With the program types summarized a framework for implementation of each type of program will be prepared.

All the I/I Reduction concepts explored will be discussed together in a final report. The report will be used to inform the discussions between WTD and MWPAAC. The final report from this project will include a program or programs and a work plan for implementation. The work plan will include a scope of work and other direction for WTD and the Cities and Sewer Districts that contribute wastewater flows to WTD to fully evaluate options and move forward with program(s)

Preliminary Schedule

Q1-Q2 2016: Develop Scope of Work

Q3-Q4 2016: Develop RFP and Procure Consultant

2017 – 2018: Complete Scope of Work

Initial Task List for Discussion*

Evaluation of Inflow and Infiltration I/I Reduction Concepts

*The task list below has been prepared to facilitate discussion with MWPAAC E&P. It is a starting point for producing a scope of work. The tasks and subtasks are expected to be revised as WTD and MWPAAC work together to further define the work.

Task 100 - Project Management

Subtask 110 – Project Management Plan

Subtask 120 – Progress Reports

Subtask 130 – Monthly Progress Meetings

Task 200 – MWPAAC Support

Subtask 210 – Support to King County Staff During MWPAAC Meetings

Subtask 220 – Supplemental Research in Response to MWPAAC Requests

Task 300 - Briefings and Presentations

Task 400 - Review of Sewer and Side Sewer Standards

Subtask 410 – Comparison of Existing Local Agency Sewer and Side Sewer Standards to 2004 Final Draft Regional I/I Control Standards, Procedures, and Policies

Subtask 420 – Framework for Program to Conduct Routine Review of Local Agency Sewer and Side Sewer Standards

Task 500 - Standardized Regional Sewer and Side Sewer Inspection Program

Subtask 510 - Evaluation of Current Local Agency Inspection Programs

Subtask 520 - Framework for a Standardized Regional Inspection Program (responsibilities and funding)

Task 600 – Private Side Sewer Programs

Subtask 610 – Evaluation of Private Side Sewer Inspection Programs

Subtask 610a – Identification of Side Sewer Inspection Program Types

Subtask 610b – Framework for a Side Sewer Inspection Program

Subtask 620 – Evaluation of Private Side Sewer Insurance Programs

Subtask 620a - Identification of Side Sewer Insurance Program Types

Subtask 620b – Framework for a Side Sewer Insurance Program

Subtask 630 – Evaluation of Grant or Loan Programs for Local Agency Collection System or Private Side Sewers

Subtask 630a – Identification of Grant or Loan Program Options

Subtask 630b – Framework for a Grant of Loan Program

Task – 700 Prepare a Work Plan for Implementation of Selected Program(s)

Task 710 – Review Framework for I/I Reduction Program Options

Task 720 – Work Plan for Implementation of Recommended I/I Program(s)