



Metropolitan Water Pollution Abatement Advisory Committee

King Street Center, 201 South Jackson Street, MS KSC-NR-0508
Seattle, WA 98104 206-477-4435

MEMBERS:

Alderwood Water and
Wastewater District
City of Algona
City of Auburn
City of Bellevue
City of Black Diamond
City of Bothell
City of Brier
City of Carnation
Cedar River Water and Sewer District
Coal Creek Utility District
Cross Valley Water District
Highlands Sewer District
City of Issaquah
City of Kent
City of Kirkland
City of Lake Forest Park
Lakehaven Water and Sewer District
City of Mercer Island
Midway Sewer District
Northeast Sammamish Sewer District
Northshore Utility District
Olympic View Water and Sewer District
City of Pacific
City of Redmond
City of Renton
Ronald Wastewater District
Sammamish Plateau Water and
Sewer District
City of Seattle
Skyway Water and Sewer District
Soos Creek Water and Sewer District
Southwest Suburban Sewer District
City of Tukwila
Valley View Sewer District
Vashon Sewer District
Woodinville Water District

1704_8106L_MWWPAAC_ltrhd.ai

Recommendation of the MWWPAAC Engineering and Planning Subcommittee on I/I Reduction Concepts to Study for Implementation Planning

September 6, 2018

The Metropolitan Water Pollution Abatement Advisory Committee (MWWPAAC) Engineering and Planning (E&P) Subcommittee has been reviewing and discussing concepts to enhance the Regional Inflow and Infiltration (I/I) Control Program in collaboration with King County Wastewater Treatment Division (WTD). The objective of this effort was to evaluate conceptual programs to reduce I/I in the separated sewer portion of the regional wastewater system. The programs evaluated related to sewer and side sewer standards, inspector training, private side sewer inspection requirements, regional I/I reduction resource support, and grants and/or loans. This document presents recommended program options to advance to the next step of planning.

Recommendation for Implementation Planning

The Engineering and Planning (E&P) Subcommittee is submitting for MWWPAAC's consideration the following recommendation to WTD regarding implementation planning of concepts to enhance the Regional I/I Control Program.

Summary of Recommendation

The E&P Subcommittee recommends that the following concepts advance to implementation planning:

- Focused regional standard best management practices (BMPs)
- Regional inspection training and certification program
- Private side sewer inspection program

What is Implementation Planning?

Implementation planning will take these conceptual program ideas and flesh out details considering program components, roles and responsibilities, costs, and implementation schedule, and will ultimately develop an operating plan. It will not begin implementation itself. Implementation planning will be completed in coordination with MWWPAAC.

Figure 1 below illustrates the overall planning process. This recommendation occurs in the "Explore" box on the left, and the next step of implementation planning is shown in the "Define" box in the middle. The decision point during implementation planning will come after major program components are recommended by MWWPAAC, and may take the form of interagency agreements or contract. A detailed scope of work will need to be developed to initiate implementation planning.

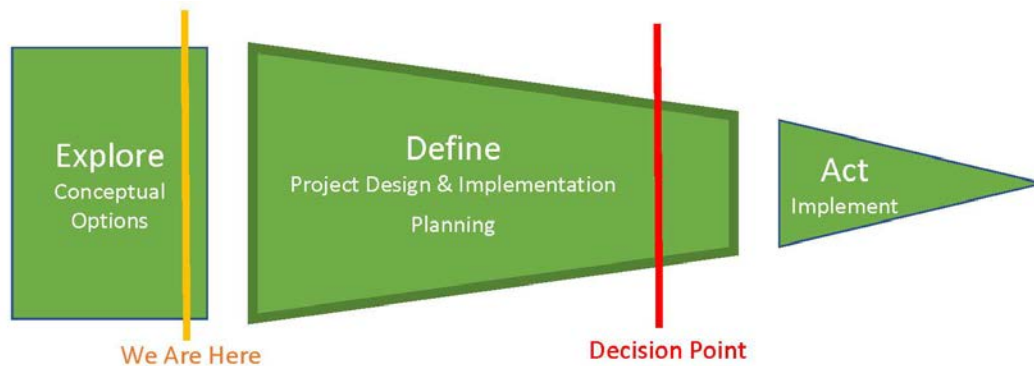


Figure 1. Overview of Planning Process for Regional I/I Control Program Improvement

Rationale for Recommendation

Focused Regional Standard BMPs

Description:

- Standardization of 3 to 5 regional BMPs spanning new construction, repair, rehabilitation, and/or demolition for use by local agencies
- Program addresses prevention of I/I but not reduction of existing I/I
- To be informed by findings in the Assessment of Existing Local Agency Sewer and Side Sewer Standards and the Evaluation of Current Inspection Programs at Cities and Sewer Districts completed during the Evaluation of I/I Reduction Concepts work
- Implementation planning would develop details such as which BMPs would be adopted, expectations for use and adoption, roles and responsibilities, and an implementation schedule

Rationale:

- Program would support minimizing future side sewer I/I by having standard side sewer construction practices
- Program is considered relatively easy to implement with medium impact to local agencies for program implementation
- Program would focus on BMPs that would have little to no cost burden on property owners
- Program would fit with WTD's role as a regional clearinghouse for I/I information and coordination

Regional Inspection Training and Certification

Description:

- Development and/or hosting of regional inspection training and a certification program on both new and existing construction inspections
- Program addresses prevention of I/I but not reduction of existing I/I
- To be informed by findings in the Assessment of Existing Local Agency Sewer and Side Sewer Standards and the Evaluation of Current Inspection Programs at Cities and Sewer Districts completed during the Evaluation of I/I Reduction Concepts work
- Implementation planning would develop details such as minimum requirements for inspectors, potential modules and content for training, roles and responsibilities, and requirements for certification

Rationale:

- Program would support minimizing future side sewer I/I by having consistent inspection practices in the region
- Program is considered relatively easy to implement with medium impact to local agencies for program implementation
- Program is intended to have little to no cost burden on property owners

Private Side Sewer Inspection Program

Description:

- Development of private side sewer inspection program triggered by property transfer or potential other method along with a grant/loan program to mitigate financial burden on disadvantaged ratepayers
- Program addresses reduction of existing I/I, not just prevention
- To be informed by interviews conducted and data collected during the Evaluation of I/I Reduction Concepts work, and a review of existing national private side sewer programs
- Implementation planning would develop details such as triggers for inspection, certification methods, model ordinance language, roles and responsibilities, program costs, financing methods, implementation schedule, and a plan to operate the program
- Specifically, the E&P Subcommittee recommends including, but not limiting the considerations to, the following:
 - Inspection triggers including point of sale, age of property, and/or set time frame
 - Methods to set up the program to maximize cost-effective reduction of I/I regionally
 - Administration by WTD, local agency(ies), and/or a hybrid of both local and WTD
 - Side sewer inspectors' role filled by independent contractors or employed by WTD or local agencies
 - The type of inspections accepted such as visual, air, or water testing
 - A financial plan that incorporates funding mechanisms such as grants and loans to mitigate financial burden on disadvantaged ratepayers

Rationale:

- Program supports reduction of I/I by addressing the largest contributor: private side sewers
- Program has the potential to offset the need for or reduce the size of future regional conveyance projects
- Program is considered hard to implement with impacts to property owners, local agencies, and WTD
- Program would have some impact or burden to the community (e.g., property owners and real estate market)

Background

Summary of Process

The Evaluation of I/I Reduction Concepts project was designed to assist MWPAAC and WTD in considering new elements for the Regional I/I Control Program. This project builds on regional I/I reduction work performed to date and explores more comprehensive and system-wide I/I reduction. As part of the evaluation, the following actions were performed:

- Reviewed existing sewer and side sewer standards, assessed existing local agency standards compared to BMPs, and developed an approach to achieve common regional standards
- Reviewed existing city and utility district inspection programs for sewers and side sewers to identify inspection BMPs, and developed a framework for a regional inspection training program

- Identified the types of private side sewer programs currently administered in the United States; documented case studies of existing private side sewer programs; and evaluated frameworks for implementing private side sewer programs within WTD service areas, specifically for side sewer inspection and certification, grants or loans, and regional I/I support

To accomplish these actions, in-person interviews were conducted at 32 of the 34 local agencies, and technical memoranda were developed.

Through the interview process, there was consensus to not do further analysis on side sewer maintenance or insurance programs. This discussion was brought to the MWPAAC E&P Subcommittee for consideration and the subcommittee agreed to remove both items from further evaluation.

Ten program options were developed into program frameworks, and evaluation criteria were developed in collaboration with the E&P Subcommittee. The evaluation criteria were then applied to the program frameworks. The results of the evaluation informed and supported the subcommittee's recommendation along with group discussion. Four of the initial 10 program options were combined into one recommended framework: the private side sewer program. This, together with the other programs presented above, were selected to advance into implementation planning.

The four remaining program options that were not recommended for implementation planning are described below.

Programs Not Recommended for Implementation Planning

The following four program options were considered during the evaluation process but were not recommended for implementation planning:

- Scalable BMP program: For this program each local agency would perform a gap analysis on construction, repair, rehabilitation, and demolition standards, and develop individual plans for BMP adoption and implementation. The program was not recommended for further analysis as the impact to local agencies could be high and the overall effectiveness to I/I reduction was considered low.
- Voluntary regional inspection training program without certification: For this program, inspector training modules and materials would be developed, but use of the materials would be voluntary to the individual agencies. The program was not recommended for further analysis as it would not effectively reduce I/I. E&P Subcommittee members suggested that for this program to have any effectiveness on I/I reduction it would have to be mandatory and consistently implemented across the region.
- Regional I/I support by WTD: For this program, WTD would provide regional resources such as rainfall simulation toolkits, smoke testing kits, flow monitors, and rain gauges. WTD could also administer preferred vendor contracts to help agencies perform services (e.g., manhole and closed-circuit television [CCTV] inspection, etc.). The program was not recommended for further analysis. E&P Subcommittee members suggested that this program option was not considered an actual I/I reduction program, and WTD may be able provide this resource more effectively either through the upcoming flow monitoring project or in conjunction with the existing contracts with the MWPAAC agencies.
- Grant and/or loan program not connected to a private side sewer inspection program: This program would be available for property owners to use to voluntarily inspect, replace, and/or repair their private side sewers. The program was not recommended for further analysis. Many of the agencies currently have some type of grant or loan program, and a program not associated with a side sewer inspection program would have little to no effectiveness on regional I/I reduction.