King County

Department of Natural Resources and Parks

Wastewater Treatment Division

Contract P00208P16
Professional Services for Evaluation of Inflow and Infiltration Reduction Concepts

Phase 1: Evaluation of Concepts

Task 600
Private Side Sewer Program Identification and Relevance to the King County Wastewater Service Area

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Project 150258

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Revision History

Date	Revision	Reason for Revision
4/23/19	1	Issue final document

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1.0 Background and Purpose

This introductory section presents the background and purpose for the Task 600 Private Side Sewer Program Identification and Relevance to the King County Wastewater Service Area technical memorandum (TM). The section also describes the drivers for, and potential benefits of, implementing side sewer programs, as well as provides an overview of the TM contents.

Background

Inflow and infiltration (I/I) is rainwater, surface water, and groundwater that flows directly and indirectly into sanitary sewers. Although sewer design guidelines include a reasonable allowance for I/I, excessive rates of I/I in a sanitary sewer system can lead to basement backups, sanitary sewer overflows, and unnecessary treatment costs. Excessive I/I flows in King County's (KC) regional separate sanitary sewer system impact both capital and operational costs.

KC Wastewater Treatment Division's (WTD) Conveyance System Improvement (CSI) Program assesses the hydraulic capacity of the regional wastewater system with projected 20-year peak flows. This information is used to plan and size future capacity-related improvement projects.

Findings from a flow monitoring study estimated that about 50–70 percent of the peak flow in a separate sanitary sewer system is rain-derived I/I[1]. An estimated 25 percent of the annual wastewater system volume treated by KC's wastewater treatment plants (WWTPs) can be attributed to I/I.

This I/I results in higher capital program costs by accelerating the need and scale of capacity improvement projects. Operational costs are increased because of the need to transport and treat higher rates of flow. The additional capital costs associated with increasing the capacity of the collection system, pump stations, and wastewater treatment plants to handle excessive I/I flows are currently spread across all customers through WTD's sewer rates.

WTD implemented an I/I Control Program in 1999 as part of the Regional Wastewater Services Plan. Currently, the I/I Control Program efforts are focused on portions of the sanitary sewer system experiencing flow capacity shortages. Specifically, the I/I Control Program has developed a regionally accepted method to assess how pursuing I/I reduction might be more cost-effective than increasing pipe and/or pump station capacity. Thus far, the I/I Control Program has been effective in reducing I/I experienced in some areas of the regional wastewater system; however, no comprehensive program is currently in place to address I/I throughout the regional wastewater system.

The project, Phase 1 Evaluation of I/I Reduction Concepts, has been developed to help KC WTD and Metropolitan Water Pollution Abatement Advisory Committee (MWPAAC) member agencies consider new elements for the Regional I/I Control Program. This project will build on WTD's work performed to date and explore more comprehensive and systemwide I/I reduction. WTD selected Brown and Caldwell (Consultant) per the P00208P16 Professional Services Contract to assist with this project. The Consultant has been tasked with the following actions:

- Collect and share existing I/I Control Program information with MWPAAC.
- Review sewer and side sewer standards, assess how existing local agency standards compare to best management practices (BMPs), and develop a framework to achieve common regional standards.
- Evaluate current city and utility district inspection programs for sewers and side sewers to identify BMPs and develop a framework for a regional inspection training program.

[1] King County Infiltration & Inflow National Survey + Pages 11-13, Control of Infiltration and Inflow in Private Building Sewer Connection, Dillard, Wayne, Chair, the Sanitary Sewer Overflow Cooperative Agreement Workgroup of the Water Environment Federation, 1999.

- Identify the types of private side sewer[2] programs commonly used in the United States (U.S.) and evaluate existing private side sewer programs within KC service areas for side sewer inspection and certification, grants or loans, and regional I/I support, if any.
- Develop frameworks for implementing private side sewer programs within KC service areas, specifically for side sewer inspection and certification, grants or loans, and regional I/I support.

Purpose

The purpose of this document is to describe private side sewer programs implemented by other sewer agencies across the nation, and to examine the potential for use of these types of programs within the KC service area.

Task 600 involves developing an understanding of potential private side sewer programs that could be established in which private side sewers are routinely inspected, maintained, and/or replaced so that I/I is minimized throughout KC's regional wastewater sewer area. As part of this task, the Consultant worked with the MWPAAC Engineering and Planning subcommittee to consider, evaluate, and ultimately recommend potential programs in the context of the KC service area. An overview of the evaluation process and results are presented the Task 600 Evaluation Process, Findings, and Outcomes TM.

Potential Benefit of Implementing Private Side Sewer Programs

Regional I/I programs are typically the result of drivers such as a need to improve system capacity, to manage the operation of existing infrastructure, and/or to ensure permit compliance for the collection system and treatment plant. These needs are typically signaled by sewer backups, sanitary sewer overflows, and/or treatment plant discharge violations. Initiating a private side sewer program based on these needs can be justified, but it is ultimately a reactive measure. A proactive approach to collection system management would be driven by a desire to provide long-term protection of system integrity.

KC is proactively considering potential private side sewer programs to protect its system, given there are several clear benefits to starting a regional program now, rather than in 10 years or later. Figure 1 illustrates the increasing presence of aging side sewers overtime in King County, which accompanies its aging housing stock. In 2030, it is estimated that almost one third of side sewers will be over 75 years old. This aging infrastructure will become a larger problem when acute issues emerge in the future, which may have been avoided if private side sewers and I/I source control were properly addressed sooner.

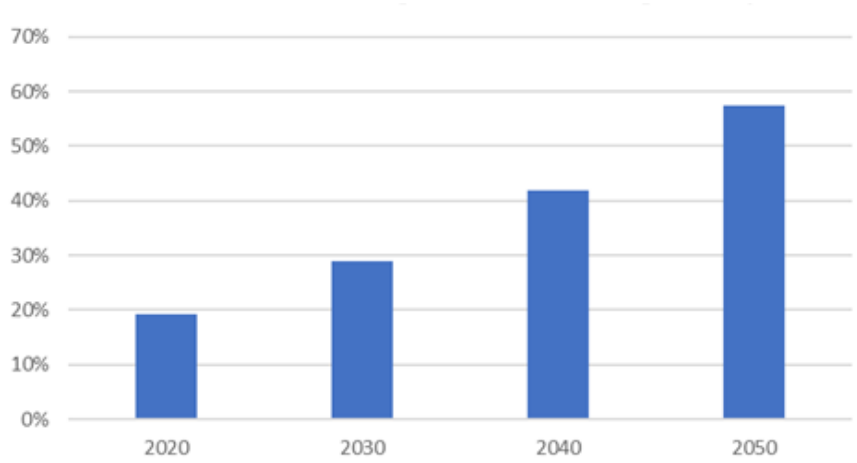

Figure 1. Estimated KC side sewers older than 75 years
Source: 2016 King County Housing Stock Analysis

[2] Note: private side sewers are also referred to as "laterals" by other sewer agencies within the U.S.

Considering aging infrastructure alone, the lack of attention to inspection and maintenance of private side sewers will eventually diminish the levels of service that the regional system can provided. Given that KC currently has a limited number of identified near-term and long-term capacity deficiencies, the timing of this regional I/I program concept evaluation is ideal: while sustaining the current level of performance, options can be explored to reduce costly capacity-related projects in the future.

Additionally, climate change influences on local weather are expected to intensify historic normal storm patterns. These influences will compound the issues related to aging infrastructure and may increase peak wet weather flows experienced in the system. Setting up a program now to realize the future benefit of service level protection could be a vital component of broad climate resiliency actions.

Document Overview

The document first presents an overview of the types of private side sewer programs currently being implemented throughout the U.S. Then, national case studies are provided as examples of program implementation. This is followed by a discussion of common elements of side sewer programs. Finally, considerations for setting up a new program are addressed, including program development and implementation considerations.

2.0 Types of Private Side Sewer Programs

There are many different types of private side sewer programs, including:

- Inspections (new installation, aged infrastructure, reconnection, and abandonment/demolition)
- Lateral maintenance and/or rehabilitation
- Private I/I source remediation
- Backflow prevention
- Property owner education/assistance
- Grant or loan programs to assist with any of the above

In 2015, a MWPAAC task force selected a subset and combination of these types of programs for evaluation. The selected private side sewer programs for evaluation included:

- Inspection and certification programs
- Insurance and maintenance programs
- Grant or loan programs

The following section summarizes these types of programs.

Side Sewer Inspection and Certification Programs

Side sewer inspection programs for new construction, repair, replacement, and abandonment are generally in place to ensure that side sewers meet required standards. I/I enters sewer systems via structural defects in sewer system components (sewer mains, manholes, laterals, and side sewers); improperly sited and/or non-watertight manholes; and direct and indirect clean water connections.

Key contributors to structural defects that may result in I/I over time include:

- Poor construction practices, such as over-excavation that leads to manhole and sewer main settlement, resulting in structural defects
- Manholes and sewer mains constructed in areas with high groundwater, and with connections and joints that are not properly sealed
- Use of materials that may not be appropriate for local soil condition

- Improperly connected laterals/side sewers, unplugged wyes/tees, and broken plugs
- Improperly abandoned side sewers
- Roots that enter side sewers, laterals, and sewer mains through deteriorating and non-gasketed joints, broken connections, and other openings; physical and chemical root control methods that address roots but do not address the points of entry

Typically, side sewer inspection programs are focused on piping and bedding materials, trench construction, cleanout installation, and pipelaying, bedding, and backfill operations. Many sewer utilities across the nation only require newly constructed side sewers to be fully inspected. Other sewer utilities, especially those with high growth areas and capacity issues related to I/I flows, have included inspection provisions for side sewer repairs, building demolition, and other activities. The scale of this type of inspection program is usually in line with the overall goals and vision of the specific sewer utility to justify the effort and expenditure of its resources. In some cases, these other side sewer inspection/private property programs are focused on reducing sewer backups into buildings and identifying and disconnecting/redirecting private property sources of I/I entering the sewer system.

As noted by many utilities throughout the U.S., it is common for maintenance crews to respond to sewer backup service requests only to find that the cause of the backup was a blockage in the side sewer, not in the sewer main. To reduce the demand on sewer maintenance crews, many utilities have developed side sewer/lateral inspection programs that are triggered when roots are observed in service connections during mainline inspections with closed-circuit television (CCTV) cameras. Programs are also in place to repair defects in side sewers/laterals and service connections, through which roots protrude and infiltration enters sewer mains.

In addition to CCTV inspections, private property I/I investigations can include inspecting existing side sewers using dye flooding in low lying areas and by using dye with artificial rainfall to identify illicit sources of clean water entering the sewer system. These clean water sources may include:

- Downspouts
- Foundation drains and sump pumps
- Area drains
- Window well drains
- Catch basins, stormwater inlets, and trench drains
- Structure or landscape underdrains.

Sewer utilities are motivated to implement private side sewer inspection programs for different reasons. The requirements used to trigger inspections also vary. Utilities conducting traditional I/I analyses and sewer system evaluation surveys (SSES) will often conduct private property I/I source inspections.

There are only a few large, regional sewer utilities that focus resources on reducing high levels of I/I in their system by developing property transfer-driven, point-of-sale programs, through which side sewer/laterals are inspected and clean water sources are identified. Prior to the property transfer, issues encountered must be addressed or a lien may be placed on the property.

Examples of side sewer inspection and certification programs are provided in the national case studies presented later in Section 3. Appendix A provides a representative list of successful I/I programs implemented throughout the U.S.

Private Side Sewer Insurance and Maintenance Programs

Private side sewer insurance and maintenance programs are generally intended to give a property owner “peace of mind” concerning any service interruptions that might arise as a result of a private side sewer failure. By participating in the program, the property owner experiencing a sewer service

disruption would simply call the designated program phone number and a service crew would be dispatched to address the issue.

The cost for such programs may be covered by the sewer bill and offered by the local sewer agency, or may require a subscription payment by the property owner to a private sewer maintenance or insurance entity. Often, such sewer lateral programs are intended to cover the cost of addressing situations when the lateral is not functioning properly and the scope of work and/or resultant costs to the property owners is overwhelming. This is similar to programs offered by telephone companies for phone lines between a home and its connection box.

There are some differences between insurance programs and maintenance programs which relate to eligible costs covered and the extent of repair covered. One important distinction is that some maintenance programs may only address blockages that prevent free flow of sewage and water through the lateral, and any costs to repair the lateral would be borne by the property owner. Typically, insurance programs cover the costs of addressing blockages and fixing the actual sewer pipe problem. The exact extent of a repair covered by a maintenance or insurance program can vary. Some programs, for instance, will not cover issues under the building, and others will cover at least the clearing of blockages under the building but not the actual pipe repair.

Neither maintenance nor insurance programs are intended to address inflow sources found on private property, such as directly connected roof leaders or area drains. It is typical for code violations that are sources of inflow to be exclusions from the program. Infiltration is also not typically viewed as a defect that qualifies for repair under the program, unless a side sewer defect is enabling significant infiltration to enter the sewer system. Typically, “point” repairs are made at the location of the side sewer failure (such as a pipe collapse)—whereas an I/I reduction repair could involve a complete rehabilitation or replacement of the lateral in conjunction with redirection of directly connected inflow sources. Some programs may also require the property owner to install a cleanout outside the building at their own expense, if one does not exist.

Grant or Loan Programs for Private Side Sewers

Grant or low-interest loan programs are intended to defray a portion of, or the entire cost of side sewer improvements for the property owner. When I/I reduction programs are implemented, the need for individual side sewer repairs are often identified. Many sewer agencies have adopted programs to assist the property owners with the cost of these improvements. Financial assistance like this can increase participation in voluntary programs and improve relationships with customers required to participate in mandatory programs.

Both grants and loans may be appropriate for some I/I reduction programs, depending upon the situation. Grants are particularly useful in low or fixed income segments of the customer base. Low-interest loans are helpful and can be designed to accommodate a number of situations, including required down payments, payment terms, and loan forgiveness conditions.

One drawback with these programs is that the cost of repairs can place acute financial pressure on the sewer agency providing the financial assistance. If the cost of the program will be covered by sewer rates, it will be important to determine if any annual participation limits should be put on the program. These limits can help motivate participants to sign up early in voluntary programs. An additional consideration is the funding source for such programs. Some sewer agencies have sought bond counsel opinions on whether using capital funds for such programs would be legal, or could impact the bond rating for the agency. In some cases, the agencies have decided to support such programs using funds from annual operating budgets.

Prior to implementing a grant program, sewer agencies will need to determine whether or not the financial assistance received by the property owners will be subject to federal income taxes. Several scenarios used by agencies in the U.S. are listed below.

- The **Hampton Roads Sanitation District** in Virginia Beach, Virginia, applied for, and received, a special ruling from the Internal Revenue Service stating that their specific sewer lateral program would be 100 percent grant-funded and would not be considered taxable income to the

participating property owner. The letter clearly stated that this ruling was specific to the Hampton Roads program.

- The **Milwaukee Metropolitan Sewerage District** (MMSD) in Milwaukee, Wisconsin, has relied upon analysis of the Hampton Roads program ruling and other information to determine that such rulings or reporting are not applicable to their programs.
- The **City of McMinnville**, Oregon, currently issues W-9 taxable income forms to property owners participating in its lateral repair reimbursement program and will not issue reimbursement until the completed form is submitted to the City.

Not surprisingly, the programs with the highest degree of participation coincide with 100 percent grant-funded approaches. While definitive studies have not been performed that compare participation rates to I/I reduction outcomes, it generally follows that the greater amount of correction work done will improve the chances of significant peak flow reduction.

While it is difficult to determine exactly to what degree this kind of financial assistance improves participation in a private side sewer program, communication to the property owner on how such programs are intended to work is just as important. If documents explaining the program and what it will obligate the owner to do themselves are not clear, participation will suffer, regardless of the generosity of the grant program.

To assess the feasibility of a private side sewer grant or loan program, the Consultant reviewed grant and loan programs currently implemented by the 34 MWPAAC agencies, and private side sewer programs currently in place in Washington that represent a national best practice. A summary of grant and loan programs currently implemented by MWPACC agencies is provided in Appendix B. Information on two other loan programs for side sewer repairs within Washington, but outside of MWPAAC agencies, is provided in Appendix C.

3.0 National Case Studies

There are many I/I programs currently in place or being implemented across the country (see previously referenced Appendix A). This section presents national case studies of the types of programs described in Section 2 including point of sale and general inspection programs, maintenance programs and grant and loan programs. Although other programs exist, the following section describes programs relevant to KC within the U.S. that feature the common elements of successful private property programs include the following:

- **East Bay Municipal Utilities District, California.** regional program, I/I testing standards for laterals pre/post repair, point of sale/major remodel trigger, regional contracts for inspections, public education support.
- **Metropolitan Council Environmental Services, Minnesota.** regional I/I program, private property advocacy and evaluation assistance, toolkit for satellite municipalities.
- **Milwaukee Metropolitan Sewer District, Wisconsin.** regional program, regional contracts, financial support, consulting support, public outreach support, sharing information, flow monitoring support, modeling support.
- **City of McMinnville, Oregon.** Community Development Block Grant-backed low interest loans for lateral repairs.
- **South Fayette Township, Pennsylvania.** point of sale lateral and clear water inspections, rebates to property owner for repairs.
- **Johnson County, Kansas.** long-term program, substantial public involvement efforts, evaluations of effectiveness.
- **Costa Mesa Sanitary District, California.** 50 percent reimbursement program.

- **City of Grand Strand, South Carolina.** private lateral maintenance and repair program, takes responsibility for private issues without taking ownership for private lateral, includes addressing improper sources of inflow, requires property owner to sign up and pay maintenance fee.

Three large regional programs are described in more detail below followed by a summary of select small programs. These programs were chosen as they had the most relevance to the types of programs identified in the scope of work for this project.

Program Case Study 1: East Bay Municipal Utility District, California

East Bay Municipal Utility District (EBMUD), headquartered in Oakland, California, provides regional water and wastewater wholesale service to seven communities in the East Bay area of San Francisco. As part of the regional interceptor and treatment system, EBMUD has three satellite treatment facilities (referred to as wet weather facilities [WWFs]), which are used only during wet weather events that exceed the capacity of the system near those facilities. These WWFs were built to provide screening, primary treatment, and disinfection prior to discharge to San Francisco Bay. In 2009, the U.S. Environmental Protection Agency (EPA) rescinded EBMUD's discharge permits for these facilities, an action that ultimately led EBMUD and the satellite municipalities to sign a Consent Decree (CD) with EPA and the State of California. Conditions of the negotiated CD require EBMUD and the municipalities to perform sewer system rehabilitation and annually monitor and analyze progress in reducing the reliance on these WWFs.

An aspect of the regional rehabilitation strategy is to address private sewer laterals. The regional Private Sewer Lateral program, which was phased in starting in 2011, requires the owner of such laterals to assess the condition of the pipe compared to a regional standard and make necessary repairs until compliance with the standard can be confirmed by an EBMUD inspector. Any one of the following events can trigger the private sewer lateral permit process, which obligates the property owner to comply with the standard.

- A point of sale, which occurs when a property is sold (except under some circumstances)
- A building permit application, where costs filed are expected to be $100,000 or more
- The size of the property water meter is being increased

The program is based on the concept of a "compliance certificate", which documents compliance with EBMUD's Regional Private Sewer Lateral Ordinance. Steps to obtaining a compliance certificate are summarized below.

- Owner assesses the condition of the side sewer and makes necessary repairs until they believes it meets the requirements to obtain a compliance certificate.
- Owner notifies EBMUD and schedules an inspection.
- Verification testing/inspection is completed in the presence of EBMUD's authorized representative. A compliance certificate is issued if the EBMUD representative determines that the side sewer is in compliance with the Regional Private Sewer Lateral Ordinance.

The compliance certificate is valid for 20 years if the side sewer is replaced. Otherwise, the certificate is valid for 7 years. The property owner's responsibility is to the connection with the sewer main, and not just to the property line. If an exemption certificate from the program has been retained, it is valid for only 10 years from the date of issuance.

If the compliance certificate cannot be obtained before the property transfer, a one-time, 180-day extension is available. A $4,500 deposit is required to secure the extension. If the compliance certificate is not obtained after the 180-day extension, the current property owner is subject to enforcement action. Additional procedures are in place for common interest developments, such as condominiums with a homeowner's association. Additionally, separate rules exist for sewer laterals over 1,000 feet long.

EBMUD reviews flow monitoring data annually and analyzes it to determine if system flows are declining at rates that will ultimately result in no discharges from the WWFs during events of a

certain magnitude and smaller. If rehabilitation efforts are not shown to be making adequate progress at specified mid-course check-in points, to be performed by 2022 and 2030, EBMUD and the municipalities may need to revise the regional program to meet CD requirements.

Program Case Study 2: Metropolitan Council Environmental Services, Minnesota

The Metropolitan Council is the regional planning agency serving Minnesota's Twin Cities' seven-county metropolitan area and providing critical services including the collection and treatment of wastewater. The Council delivers regional wastewater collection and treatment services to 104 communities and the public through the Environmental Services (MCES). The MCES system serves a population of over 3 million people.

During a planning study published in 2004, MCES determined that between 2000 and 2030, the Twin Cities' seven-county area will grow by nearly 1 million people and 470,000 households. In September 2005, the Council mailed "systems statements" to each community in the seven-county area, informing local officials how their community is affected by the Council's regional system plans. These statements are intended to help communities prepare or update their local comprehensive plans, which—under state law—must be consistent with regional plans. Local communities had until 2008 to submit their local comprehensive plans for Council review.

In 1993, the Council initiated a grant program for local communities to address I/I. While this program was intended to encourage I/I reduction in the Council's satellite sewer systems, it was clear that even greater steps would need to be taken to prevent significant future investments in regional sewers. On April 8, 2003, the Council appointed individuals to serve on an I/I task force, which included representatives from 15 communities from across the region. The task force was charged with reviewing I/I issues and formulating and proposing implementation strategies to reduce excessive I/I in local and regional wastewater collection systems. Recommendations and conclusions were reached by consensus of task force members.

After extensive outreach, the Council adopted the I/I Surcharge Program in February 2006. The purpose of the surcharge program was to provide the Council with contingency funding to build additional capacity if necessary—or alternatively, provide an incentive and mechanism for communities to fund the cost of mitigating their excess peak I/I. Communities were able avoid surcharges and/or receive rebates of their surcharges by eliminating their excess peak I/I through a combination of programs and system improvements. It was the intent of this program to encourage communities to eliminate their excess peak I/I over the 5-year period from 2007 through 2011. Based on monitoring data gathered during a 2005 storm event, 47 communities were found to have exceeded I/I goals. These communities were given the option of working on I/I mitigation or paying a surcharge; all eventually initiated I/I mitigation efforts.

In 2009, MCES organized a second I/I task force that was tasked with evaluating whether the originally conceived excessive I/I demand charge should continue through 2013. That task force recommended that an ongoing program of I/I mitigation was more appropriate than a demand charged-based program. In 2014, a significantly wet period followed by a large storm in June identified 46 communities as exceeding I/I goal peak flows, triggering each to develop a work plan that required completion in 4 years.

In the years between 2007 and 2015, an estimated $157 million has been spent on I/I mitigation efforts by 49 communities in the region. MCES administered $9 million in state grant funds in support of these program costs. MCES also reports to have spent $88 million in mitigating I/I in its own system during this period. MCES has performed several analyses to evaluate the effectiveness of this regional program. One evaluation that considered flows monitored at the influent of two regional treatment plants indicated a 6–24 percent reduction in peak day flows during comparable significant storms experienced before and after the program began.

An important aspect of this program is that it did not specify how communities were to mitigate I/I to meet program goals. As a result, many communities elected to pursue improvements on public infrastructure only and not attempt mitigation on private property. Some communities did perform

private work, such as the City of Golden Valley, which pursued extensive measures including point of sale inspections for clear water connections and lateral integrity. A recent review by the Consultant concluded that these efforts by Golden Valley were successful in reducing the 10-year peak hour flow by 24 percent.

MCES is now working to promote more efforts by communities on private property to make further progress toward I/I goals. In recent years, grant funding administered by MCES for private property I/I mitigation activities has been limited to $900,000 per year. Eligible private property I/I mitigation activities included sewer lateral repair or replacement and/or disconnection of foundation drains. Property owners can apply for reimbursement by MCES of actual costs (up to a maximum grant of $2,000) for qualifying repairs of sewer laterals and disconnection of foundation drains. In 2016, a third I/I task force considered additional approaches for making progress on I/I, with a focus on private I/I projects.

In its summary report, the task force made the following recommendations:

- Continue the regional planning policy of balancing regional standards with the needs of local communities to tailor programs to their individual circumstances.
- Develop a robust public outreach program for I/I and wastewater system maintenance.
- Pursue consistent funding sources for public and private I/I projects from state and regional entities.
- Develop a model ordinance for a private property sewer service lateral inspection program.
- Develop best practices for a private property I/I inspection program and a best practices toolkit that would include inspection standards and training and performance standards for repair and rehabilitation of private service laterals.
- Investigate the ability to develop master contracts held by MCES that could be used by communities for private property I/I inspections and service lateral repairs.
- Provide technical assistance to communities on flow metering to better quantify the impact of private property I/I mitigation.
- Review the exceedance peak hour factors used to develop I/I goals currently in place at the time that the *2050 Water Resources Policy Plan* is prepared.

Program Case Study 3: Milwaukee Metropolitan Sewerage District Private Property I/I Program

The MMSD is a state-chartered, governmental agency providing regional wastewater conveyance, treatment, and disposal for 28 satellite municipalities within a 411-square mile planning area located across five counties with a service population of about 1 million people.

In 2008, 2009, and 2010, severe storms passed through the Milwaukee area, causing thousands of basement backups in MMSD's service area. In response to the especially severe storms in July 2010, MMSD announced the establishment of a regional Private Property I/I (PPII) reduction program and developed a comprehensive PPII policy with significant input from its satellite municipalities. This program was authorized with an expected total budget through 2020 of $62 million, with $9 million available in the first year. In recent annual budgets, MMSD has added $5 million to the PPII fund. MMSD is currently reviewing the need to reduce, continue, or expand this program beyond 2020 through a facility planning process that looks to 2050 and beyond.

The MMSD PPII policy articulates which activities and repairs would be eligible, without dictating exactly how each satellite would use the funds—a critical desire of the satellites who wanted to maintain control over the funds. Following the MMSD Commission's adoption of the policy, staff developed several guidance documents that further explained expenditure eligibility and processes for spending approval. As of July 2016, the MMSD Commission has twice adopted modifications to this policy in response to comments and requests received by the municipalities. In general,

activities that can be reimbursed must be intended to reduce the amount of PPII being conveyed by local and MMSD sewer systems.

MMSD's policy allows for investigation and inspection specifically intended to identify and/or quantify PPII sources, up to 20 percent of the overall funding allocation to the municipality. Construction, information, and education activities are not subject to this cap. Construction inspection, engineering services during construction, and post-rehabilitation evaluation of I/I reduction achieved by specific, focused activities are also not subject to the cap.

Although it was widely acknowledged that some communities might have a greater PPII reduction need than others, these same communities may not have paid into the MMSD capital budget in that same proportion. As a solution, the funding allocation aspect of the policy was based on the property tax proportion that is the basis for the MMSD capital budget. During the formation of the MMSD PPII policy, significant debate ensued over the extent to which municipalities would need to "cost share" and even whether participating property owners would be required to cost share. Ultimately, the adopted policy did not require a cost share by either municipalities or property owners, but rather allowed this issue to be addressed on a case-by-case basis.

Each satellite municipality is responsible for determining where their allocated funds will be applied and for what types of I/I reduction activities, if they satisfy policy criteria. MMSD encouraged satellite municipalities, through the policy and continued dialog to expend funds in areas where there were documented, historical issues with basement backups and where improvements, in terms of flow reduction, could eventually be documented.

Through February 2016, MMSD has committed $22.5 million to 25 municipalities participating in the program. These funds were committed through executing 61 work plans between MMSD and the municipalities. Nearly 10,000 properties have been investigated through this effort and some level of I/I reduction construction has been performed on over 6,000 properties. The types of construction have included lateral pipe grouting, lateral pipe lining, foundation drain disconnection, and various types of private inflow removal. Where possible, MMSD has encouraged municipalities to move forward on construction only in locations where flow monitoring data have already been gathered so that a post-construction flow reduction evaluation can eventually be performed. MMSD has performed the flow monitoring at no cost to the municipalities, if requested.

Summary of Various Smaller Programs

Several additional case studies for programs that focus on topics of interest to MWPAAC members are provided below. Each example was selected for its unique features to provide a well-rounded summary of existing programs.

Costa Mesa Sanitary District (California) has had two programs to address specific issues with sewer laterals. The first program, which was discontinued in June 2017, was referred to as the Sewer Lateral Assistance Program (SLAP) and provided residential lateral owners with financial support to repair and maintain problematic sewer laterals. The SLAP reimbursed property owners up to 50 percent of the cost of televising, cleaning, and performing clean-out installation and lateral reconstruction. The intent of the program was to assist with proactively addressing lateral issues that can lead to sewer backups and spills in the service area. In July 2017, Costa Mesa initiated a new program, referred to as the Residential CCTV Program, which covers the entire cost of inspecting the lateral, valued at $300. The intent of the program is to inform lateral owners of the potential issues that their pipes pose, but those owners are responsible for the cost of any repairs.

The **City of McMinnville** (Oregon) is located at the confluence of the North and South forks of the Yamhill River in the Willamette Valley. Due to the age of its sewer collection system, McMinnville has had occasional sewer overflows to the river, and has faced a mandate by state regulators to eliminate these discharges. McMinnville determined that approximately 60 percent of its I/I originates from private sewer laterals and established the Private Sewer Lateral Replacement Program to address lateral issues in areas where the City would be performing I/I rehabilitation projects on its public system. In such cases, the City inspects laterals near the City project and

determines if a lateral requires replacement. The cost of the repair is borne by the property owner, but the City has made available Community Development Block Grant (CDBG)-backed low interest loans available for qualifying participants. Those that refuse to repair a lateral that has been deemed to be defective are faced with a $50 per month penalty until the repair is made.

The **Municipal Authority of the Township of South Fayette** (Pennsylvania) is located within the service area of Allegheny County Sanitary District, which is under an EPA CD to reduce and eliminate untreated discharges to area surface waters. The amount of I/I in the South Fayette sewer system is being addressed by a point of sale lateral inspection and repair program that also includes inspection for clear water sources. If a lateral is found to be defective, the entire lateral is required to be replaced, or in certain limited circumstances, can be rehabilitated. South Fayette charges a base fee of $250 for each lateral/clear water inspection. With proper documentation, South Fayette will reimburse the property owner up to $1,000 for lateral repairs made to comply with the program.

The **Grand Strand Water and Sewer Authority** (South Carolina) has established the Service Line Maintenance Program to proactively address issues that lead to system I/I and sewer backups. For participating property owners, this program provides private lateral maintenance and repair, from the property line to the point at which the lateral goes under the house foundation. The Authority owns the portion of the lateral between the property line and the sewer main. Under the program, the Authority takes responsibility for private issues without taking ownership for private laterals. The program includes addressing improper sources of inflow, and requires participation and an annual maintenance fee from each property owner. Program participation is required for certain customers.

4.0 Common Elements of a Side Sewer Program

Prior to implementing any type of private property-related program, all elements of the initiative and associated regulations and requirements should be carefully considered to encourage stakeholder buy-in, prevent unintended consequences, and foster continued program success. For example, common side sewer standards should be considered in parallel to developing a regional private side sewer inspection program as a proactive approach to prevent I/I from entering the KC collection system.

This section describes common elements of a successful private property program including:[3]

- Well-defined program vision, mission statement, goals, and scope
- Appropriate and necessary legal authorities
- Established program management, sufficient staffing, and adequate funding and procurement methods
- Standard practices and acceptable technologies
- Robust and accessible information management system
- Stakeholder and public education and communication
- Continuous improvement approach with defined performance measures.

Well-defined program vision, mission statement, goals, and scope. Establishing a well-defined program scope and vision, and sharing that scope and vision with all local agencies and stakeholders, is critical to developing adoptable and sustainable private side sewer program. This scope and vision justifies and helps secure the resources necessary to implement the program. The scope should be re-evaluated as the program matures, and if necessary, the vision and objectives may be modified.

[3] L. Chase, Water Environment Federation, *Private Property Inflow and Infiltration Control*, Chapter 4, Private Property Program Implementation Considerations, Special Publication, 2016.

Appropriate and necessary legal authorities. To enforce agency requirements applicable to the sewer system's various components located within private property, updates may be necessary for the sewer use ordinances, resolutions, and other instruments describing the legal authorities that control the quantity and type of flows discharged to the collection system. This may include:

- Identifying and requiring disconnection of improper connections
- Accessing collection system components (including the right-of-entry to test for improper connections on private property)
- Requiring the proper design, construction, and inspection of new and rehabilitated sewers, sewer connections, and side sewers

Requirements may also be strengthened for maintaining, repairing, and replacing side sewers. An additional clause could be considered to clarify legal authority, identifying the following:

- What constitutes a defective side sewer, lateral, or (privately-owned) sewer
- The process for repair or replacement of a defective side sewer, lateral, or sewer
- Methods by which the defective lateral, side sewer, or sewer can be repaired or replaced
- Consequences (penalty or fee) for noncompliance

Established program management, sufficient staffing, and adequate funding and procurement methods. A decision would be necessary regarding whether the private side sewer program will be managed and staffed in-house, or a consultant will oversee program implementation and administration. Because this decision impacts staffing and/or budgeting, it should be carefully considered prior to program implementation. Personnel should also be identified who will champion the initiative and account for staffing and associated budgets.

Standard practices and acceptable technologies. Appropriate practices and technologies relevant to the type of private side sewer program that will be implemented also need to be identified. These practices could include written policies and procedures, technical specifications, standards drawings, approved methods and materials, and inspection criteria. Written policies, procedures, and guidance documents may also be developed for items including I/I source identification, condition assessment, and hydraulic modeling. In addition, a mechanism should be implemented that enables evaluation and adoption of new technologies, products, and methodologies as the initiative progresses.

Robust and accessible information management system. Management of data related to the private side sewer program is an important element of the initiative. Existing resources can be used, such as a website to house important information and enable access to all stakeholders (e.g., local agencies, consultants, developers, contractors, etc.).

Continuous improvement approach with defined performance measures. Developing key performance indicators (KPIs) that align with the side sewer program vision can help ensure sustainability of the initiative. The KPIs can be used to track and measure progress of the program. Examples of side sewer program-related KPIs include the following:

- Number of local agencies that have adopted side sewer inspection requirements
- Percent participation by local agencies in side sewer-related inspection training programs offered by KC WTD
- Amount of grant or loan funding provided to property owners for side sewer repairs

Options to Motivate the Development of a Regional I/I Program

To gradually implement constructive changes that result in I/I reduction activities, careful consideration must be given upon introducing said changes. The scope of this report does not consider specific legal impediments for implementing requirements placed on the municipalities by the region; however, lessons learned from other programs can provide insights as to what could be considered. Options include the following:

- Encouragement and education
- Financial support
- Penalties
- Combination of activities

Encouragement and education is an approach that numerous regional programs have used with mixed results. With encouragement and education, any changes made by municipalities are voluntary, but those changes are motivated by knowledge about how improved practices can benefit that individual community, neighboring communities, and the entire region. With a dedicated and targeted education program, some progress can be made; however, without additional drivers, such as pressure by the greater public to solve an acute problem, these voluntary program approaches typically make only marginal progress.

Financial support provides a means for municipalities to make meaningful progress when the only impediment is budgetary. In the context of private property I/I and side sewers, the concept of financial support can extend beyond a community to the individual side sewer owner. As an example, the Metropolitan Council in Minnesota has a 2017 grant program in the amount of $3.7 million for capital improvements to reduce I/I into municipal wastewater collection systems. Cities are eligible if they have been identified as an excessive I/I contributor, or have a measurable flow rate within 20 percent of the allowable flow limit. Grant funding can cover up to 50 percent of the I/I portion of project costs performed by the city. Similarly, MMSD's PPII Program has made $60 million available to municipalities over 10 years to address sources of I/I on private property, and this program has led to thousands of private sewer lateral repairs since the program's establishment in 2010. In addition to these regional programs, still other communities such as the City of Duluth, Minnesota, have established reimbursement programs for lateral repairs and foundation drain disconnection projects, having determined that these efforts reduce the impact of wet weather flows in the City's system.

Penalties may be the least popular approach for program implementation, but can sometimes be the best way to effect a change in practice. Typically, penalties are triggered by a lack of system performance or not implementing certain measures that are expected under the regional program. A lack of system performance could be based on observed issues during wet weather events, including sanitary sewer overflows, building sewer backups, and peak flow exceeding an established standard. Additional triggers could be a lack of following other prescribed activities, such as inspections during lateral construction, routine sewer system evaluation surveys investigations, or rehabilitation recommendations. Regardless of the exact trigger, the penalty approach would be devised such that the impact of the penalty would be enough to prompt most municipalities to avoid them.

A combination of activities may be the best method, and the case studies presented in this TM include examples of this approach. By combining education and financial support or penalties, a better understanding of the need for these measures, as well as the support needed to make early meaningful progress, can be achieved. In Milwaukee, the issues related to I/I existed for many years, but not until 2007 was MMSD able to pass changes to its rules and regulations that established peak flow standards for individual tributary service areas. Initially, exceedances of these standards triggered a requirement for the municipality to develop a plan for coming into compliance. Eventually, MMSD's PPII program provided funding for addressing private sewer issues that were contributing to the flow exceedance in these cases.

5.0 Considerations for Side Sewer Program Development in KC Service Area

Prior to implementing a regional private side sewer program in the KC service area, a number of considerations should be examined including:

- Regional program effectiveness
- Legal considerations
- Political considerations
- Property owner impacts
- Local agency and WTD impacts
- Equity and social justice considerations

Regional Program Effectiveness

Program effectiveness should be reviewed to assess the program's long-term ability to reduce I/I in the region. Some of the national case studies reviewed indicate potential effectiveness; however, since the geography, age, and construction of individual side sewers varies extensively in each area, benchmarking individual programs is not possible. One way to measure program effectiveness in King County is through pre- and post-program flow monitoring performed over several decades. Ideally, effectiveness would be measured on a 20+ year time frame. Nationally, it has been observed that extensive I/I remediation work is required to attain sustained reductions in peak wet weather flows in large collection systems.

KC's existing Decennial Flow Monitoring project provides the information necessary to check and revise several planning assumptions for conveyance system projects slated for construction over the next 40 years. The DFM project with multiple decades of data could determine the effectiveness of a side sewer program.

Legal Considerations

Legal considerations need to be reviewed to assess critical changes to legislation or regulation to support implementation of a side sewer program. Different changes may be necessary based on the type of government or administrative body involved, i.e. county, city, district. Implementing an I/I program and some related legal changes would likely require approvals by councils or boards.

A legal authority is adopted by elected officials and is enforceable in a court of law. This authority establishes the legal basis for a program, such as a side sewer inspection and certification program, gives the sewer utility permission to conduct specified activities and sets the legal boundaries of the customers' responsibilities.

Examples of legal authorities that may need to be developed and put into place prior to the implementation of a regional program include the following:

- Language added to the Sewer Use, Sewer Use Administrative, and/or Sewer Use Charge Resolution/Ordinance to strengthen ingress/egress and rights of entry, inspection, and directives for repair/replacement of private side sewers and disconnection/redirection of sources of I/I on private property
- Changes to infrastructure development standards
- Changes to technical specifications, drawings, and construction standards
- Additions to enforcement response/management plans
- If necessary, modifications to current building codes

The national case studies summarized above provided examples of cities and townships that had to change their legal authorities to comply with regional agency BMP directives (e.g., specifications and standard drawings; building codes; inspection requirements; etc.).

The legal basis for I/I control in the King County service area is described in the December 2005 KC I/I Control Program Recommendations report (2005 report), federal and state regulations, KC code, and intergovernmental agreements (IGAs) between KC and local agencies. KC's wastewater disposal agreements address I/I control through references to Section 28.84.050 of the KC code. These references establish an I/I threshold for sewers constructed after January 1, 1961, of 1,100 gallons per acre per day. Local sewers are also required to be constructed and maintained in accordance with the rules and regulations of Metro (King County).

The basis for use of public funds was described by a legal review in the 2005 report which illustrated that I/I reduction-related improvements such as private property repairs, could be cost-effective (i.e., advantages to the public outweigh the cost) and that the public benefit is demonstrated to outweigh the cost of other I/I management approaches. Using public funds for this purpose would be legally defensible and does not appear to violate the Washington State Constitution provisions. In August 2009, State Representative Ruth Kagi received the following opinion from the Washington State Attorney General's Office (AGO) regarding this issue:

> *A municipal sewer district may use public funds to repair or replace private sewers if it has the statutory authority to do so, and if paying for such repairs or replacements would not violate the state constitutional prohibition against the gifting or lending of public funds. We conclude that the municipal sewer districts have the necessary authority and that it exercise would not transgress the state constitution if the district can demonstrate that the expense will result in significant benefit to the public*.
>
> *AGO 2009 No. 5.*

This ruling confirms the acceptable use of public funds for addressing side sewers and property-related I/I sources when it is undertaken for public benefit.

The legal basis for rights-of-entry onto private property were not reviewed as part of this contract, nor was the ability of local agencies to inspect side sewers and require property owners to repair defects. Prior to making a decision to adopt a specific type of private side sewer I/I program, further review of the legal authorities of impacted agencies may be warranted. Legal counsel could participate in program development to address legal needs and support setting a legal basis for a program.

Political Considerations

Political considerations and implication need to be assessed when developing a private side sewer program. The main political uncertainty would be public perception and support of a program ranging from widespread public and political resistance to general public and political acceptance and support.

Property Owner Impacts

The impact of a side sewer program on property owners (as the customers receiving sewer service) needs to be considered. These impacts would include any additional actions and responsibilities placed on the property owner as a requirement of a program as well as any financial implications of a program. Also, property owner impacts could influence political considerations, specifically if a program requires significant action or poses significant financial burdens to property owners in the region.

Local Agency and WTD Impacts

Impacts to both MWPAAC agencies and WTD would need be understood and accepted by all parties before developing and implementing a side sewer program. These impacts may include cost implications, regulatory changes, additional staffing needs, as well as other potential issues which will be further evaluated in Phase II. Wide variation exists in administrative organization and

capacity, condition of side sewers, number of side sewer connections, and demographics between agencies in the service area.

The ease or complexity of developing and implementing programs will be different for each agency due to these variations. A side sewer program will need to be considered in relation to staffing, equipment, and processes required by any individual agency and/or WTD.

Equity and Social Justice Considerations

Any program implemented in KC will need to consider equity and social justice. Problem I/I areas are not evenly distributed across the region, or even within individual cities and districts. KC recognizes that race and place impact quality of life, particularly of people of color, low-income residents, and immigrants. Consideration of impacts to ESJ communities may include the ability to alleviate additional burdens of a side sewer program on individuals and households, such as impacts to housing costs.

I/I programs may also provide other benefits to local communities while also reducing I/I in a regional area. This consideration could include potential opportunities for job training, apprenticeships, contracting to minority-owned businesses and/or partnerships with community-based organizations for mutual benefit.

Appendix A: National I/I Programs

The following agencies have demonstrated successful private property I/I and/or lateral (side sewer)-related programs (past and present).

Table A-1. National I/I Programs

Utility Name	I/I Source Disconnection/Redirection	Lateral Repair/Replacement (on private property)	Lateral Inspection	Point of Sale	New/Repair Connection Permitting
Aberdeen, WA	X		X		X
Allegany County, MD	X				
Auburn Hills, MI	X				
Austin, TX	X		X		X
Bay Village, OH	X		X		
Berkeley, CA			X	X	X
Burbank, CA			X		
Butler Township, PA			X	X	X
Campbellsport, WI		X			
Canton, OH	X				X
Central Contra Costa Sanitary District, CA	X		X		X
Chesterfield, MO		X	X		X
Clay Township, IN	X				
Clean Water Services, OR					X
Columbus, OH	X		X		X
Costa Mesa Sanitary District, CA		X			X
Delaware County Regional Water Control Authority, PA	X		X		X
Duluth, MN	X	X	X		X
East Bay Municipal Utility District, CA	X	?	X	X	X
East Norriton Township, PA			X		
Erie County, NY	X	X	X	X	X
Fairfield, OH	X	X	X		X
Florissant, MO	X	X	X		X
Fort Wayne, IN	X	X	X		X
Fox Chapel Borough, PA			X	X	X
Golden Valley, MN	X		X	X	X
Grand Strand Water and Sewer Authority, SC	X	X	X		X
Greenfield Wastewater Utility, IN		X	X		X
Greenwood Metropolitan District, SC	X	X			
Houston, TX	X	X			X
Johnson County Wastewater, KS	X	X	X		X
Laguna Beach, CA			X		X
Lansing, MI	X	X	X		X

The following agencies have demonstrated successful private property I/I and/or lateral (side sewer)-related programs (past and present).

Table A-1. National I/I Programs

Utility Name	I/I Source Disconnection/Redirection	Lateral Repair/Replacement (on private property)	Lateral Inspection	Point of Sale	New/Repair Connection Permitting
Lee's Summit, MO	X		X		
Lexington-Fayette Urban County Government, KY	X				X
Little Rock Wastewater Utility, AR	X		X		
Marshfield Wastewater Utility	X		X		X
McMinnville, OR	X	X	X		
Metropolitan Council Environmental Services, MN	X	X	X	X	X
Miami Dade Water and Sewer Department, FL	X				
Milwaukee Metropolitan Sewer District, WI	X	X	X		X
Montgomery Water Works and Sanitary Sewer Board, AL	X	X	X		X
Morton, IL	X	X	X		X
Murfreesboro, TN		X	X		X
Port Huron, MI	X	X			X
Prichard, AL	X	X			
Rock River Water Reclamation District, IL	X	X	X		X
San Antonio Water System, TX	X		X		X
San Bruno, CA			X	X	X
Santa Barbara, CA		X	X		X
Shelbyville, IN	X		X		X
South Fayette Township Municipal Authority, PA			X		
South Williamsport Borough, PA	x	X			x
Stege Sanitary District, CA	X		X	X [a]	X
Superior, WI	X		X		
Truckee, South Dakota			X	X	X
Upper Macungie Township, PA			X	X	X
Vallejo Sanitation and Flood Control District, CA	X	X	X		
West County Wastewater District, CA			X	X	X
Wichita Water Utilities, KS	X				X
Wickliffe, OH	X			X	X
York, PA			X		

Note: Successful = sustainable, implementable program with programmatic goals identified, overall goals met/exceeded, and lessons learned documented (per WEF PPVL team standards).

[a] *Stege Sanitary District's sewer lateral compliance program was rolled into East Bay MUD's Private Sewer Lateral POS Program, as well as the compliance programs previously implemented by the cities of Alameda and Albany, CA*

Appendix B: Grant and Loan Programs Currently Administered by MWPAAC Agencies

The consultant determined which MWPAAC agencies have existing grant and/or loan programs during the interview process and by completing subsequent desktop research.

Within the MWPAAC agencies, five have an existing home repair loan program: the City of Auburn, City of Bellevue, City of Kent, Muckleshoot Indian Tribe, and Seattle Public Utilities. These grants and loans are focused on providing loans to low income, and in some cases, middle income homeowners, for health and safety repairs to their property. KC also has a grant and loan program, discussed below.

Repairs that are eligible for grant and loan funds are typically those that involve health and safety. These existing grants and loans are not meant to fund repairs for I/I removal, but rather intended to help low income residents make emergency repairs required for the residents' health, safety, and stability.

Table B-1 lists grant and loan programs that will pay for side sewer repairs that currently exist within the MWPAAC agencies and KC. As mentioned above, eligibility for these grants and loans is restricted to low income and sometimes medium income residents. The money is intended to be used for repairs to the home that are for health and safety. None of these loans are intended to be used to make repairs solely for I/I removal.

Some MWPAAC agencies already have a Housing Repair Assistance Program, providing low income, and in some cities, medium income residents some form of loan assistance. These communities include Auburn, Bellevue, Kent, Renton, Seattle, Valley View Water District, and King County.

Table B-1. MWPAAC Agencies with Existing Grant and/or Loan Programs

Agency with an Existing Grant or Loan Program	Grant	Loan	Program Name	Customer Eligibility	Does Loan Program Fund Side Sewer Repairs?
City of Auburn	Yes	No	City of Auburn Home Repair Program	Eligibility limited to applicants who: • Live within the city limits of Auburn • Are at or below 50% of the area median income • Live in an owner-occupied housing unit • Have lived in their home for at least 1 year	Yes
City of Bellevue	Yes	Yes	City of Bellevue Home Repair Program	The purpose of this program is to aid with health- and safety-related repairs for low to moderate income customers.	Yes
City of Black Diamond	Yes, see details	Yes, see details		Owners of properties at certain addresses in Black Diamond may be eligible for U.S. Department of Agriculture Single Family Housing Repair Loans and Grants; however, eligibility is also income dependent. Note: grants can only be used to remove health and safety hazards. Loan funds can be used only for health and safety repairs.	Unknown
City of Kent	Yes	No	City of Kent Home Repair Assistance Program		Yes, it has in the past, if funds are available
Muckleshoot Indian Tribe	Yes		Tribal Housing Program	Tribal Housing Program provides owner occupant tribal members with housing rehabilitation grants up to $45,000.	Unknown
City of Renton	Yes	No	City of Renton Housing Repair Assistance Program	Low income Renton residents may participate in the Housing Repair Assistance Program that supports the health and safety of the occupants. "Minority and women owned businesses" are encouraged to apply to bid on these jobs.	No, because side sewer repairs would take up too much of the program's budget. If a homeowner needs to repair a side sewer, Renton coordinate with King County's Home Repair program for additional funding
City of Seattle, Public Utilities	Yes	Yes	City of Seattle Home Repair Loan Program	City of Seattle Office of Housing's Home Repair Loan Program: low or no interest loans to qualified low and moderate income homeowners. Income limit of about $51,550 for two-person household and $64,400 for a four-person household. Specifically includes side sewer repairs. For more information: HomeRepairLoan@seattle.gov or 206.684-0244.	Yes
Valley View Sewer District	No	Yes	Financing Connections	For private side sewer work, see eligibility. For more information: 206.242-3236 or at http://www.valleyviewsewer.org/connecting-to-sewers/financing-connections/	Yes, this program can be used for side sewer repair costs and includes storm water installation and repairs for the purpose of reducing I/I into the sanitary sewer.
King County Grant and Loan Programs	Yes	Yes	King County Housing Repair Program	Multiple loans and grants available are available (and may be combined); some of the funds are income specific. King County also has an approved contractor list.	Case specific

Appendix C: Private Side Sewer Loan Programs Within the State of Washington

The consultant completed desktop research on side sewer repair grants and loans available at agencies within the state of Washington.

Two loan programs, specifically for sewer lateral repairs, are currently administered by the City of Tacoma and Pierce County and are described below.

City of Tacoma, Washington. The City of Tacoma's Residential Sewer Conservation Loan—the first of its kind in Washington state—is specific to side sewer repair and replacement. Highlights of the program include:

- Covers 90 percent of side sewer repair/replacement
- Interest rates at 2 percent below prime, at a minimum of 4 percent
- Loan amounts between $1,000 and $10,000
- Secured by a lien on the property
- Eligibility for the Residential Sewer Conservation Loan
- Property must be within Tacoma city limits and served by Tacoma Wastewater
- Must have good credit with Tacoma Public Utilities or provide a recent good credit report
- Project must be for an existing residential structure—new construction structures are not eligible
- Must apply for loan prior to completion of project
- The City of Tacoma also has a Commercial Conservation Sewer Loan, offered by the Housing Division. Its purpose is to provide businesses with financial assistance in the purchase of equipment that will keep pollutants out of the City's sewer system. Highlights of this loan include:
    - Low interest loan for 90 percent of the cost for industrial pre-treatment equipment, green interceptors, oil/water separators, and almost any kind of business-related equipment that will keep pollutants out of the sewer system
    - Interest rates are 2 percent below prime, at a minimum of 4 percent
    - Loan amounts between $10,000 and $100,000

Pierce County, Washington. Pierce County has a Residential Sewer Conservation Loan Program, which is similar to Tacoma's. Pierce County also has a Commercial Sewer Conservation Loan Program. To be eligible for the Residential Sewer Conservation Loan, the following must apply:

- Home must be located within the boundaries of the Pierce County sewer service area.
- Home must be an existing single or multi-family property—new construction is not eligible.
- The repair must be an eligible repair activity. These include repairing cracks and fractures, holes in pipes, root damage, offset joints, and sagging pipes.