

INFLOW/INFILTRATION FACT SHEET

LOCAL PLANNING HANDBOOK

The Met Council owns, operates, and maintains the regional interceptor system and nine regional water resource recovery facilities (WRRF) that process over 250 million gallons of wastewater each day. We work cooperatively with communities, regulatory agencies, and citizens of the region to help ensure that costly infrastructure can be efficiently built and operated in a sustainable manner. This includes reducing the amount of stormwater runoff and groundwater that enters into sanitary sewer pipes and gets treated, unnecessarily, at our regional water resource recovery facilities.

WHAT IS INFLOW/INFILTRATION?

Inflow and infiltration (I/I) are terms for the ways that stormwater runoff and groundwater (clear water) make their way into sanitary sewer pipes.

With **inflow**, clear water enters the regional wastewater system through rain leaders, sump pumps, storm sewer cross connections, and foundation drains that are connected to sanitary sewer pipes. Inflow is greatest during major storm events and can more than triple wastewater volumes. **Infiltration** is a more gradual process and occurs when water seeps into sanitary sewer pipes through cracks, leaky pipe joints and/or deteriorated manholes (Figure 1 shows I/I Sources).

WHY I/I MATTERS?

Excessive I/I in the sewer systems create multiple problems:

- **Expensive Treatment of Clear Water**

Once clear water gets mixed in with wastewater, all water is treated. This is expensive and impacts the regional system. Reducing excessive I/I in the system saves hundreds of millions of dollars.

- **Reduced Interceptor Capacity**

I/I uses fixed capacity in large regional sewer pipes, which is planned to serve future growth. The additional flow takes capacity that was built to accommodate existing flow and new development. During major rain events, the additional flow can exceed the available sewer system capacity causing overflow issues.

- **Water Quality**

If capacity of the sewer system is exceeded, wastewater can overflow and spill, with untreated wastewater impacting water quality as well as public health and the environment.

- **Less Recharge to Aquifers**

If clear water is entering sewer pipes, that water is not filtering down and recharging aquifers and supplementing groundwater.

REDUCING EXCESSIVE I/I

Reducing I/I at the source is a far more cost effective and sustainable approach than investing in new regional infrastructure. Met Council flow data shows that I/I entering the wastewater conveyance system adds unnecessary volume that strains system capacity and drives up treatment costs. By addressing I/I at the community and property owner level, we can extend the life of existing infrastructure, avoid premature and costly upgrades, and reduce the burden of unnecessarily high wastewater bills. Local mitigation efforts are not only more affordable but help maintain system reliability.

Local costs to eliminate excessive I/I would mainly be related to identifying and removing I/I sources and removing illegal connections to the wastewater system. The Met Council established an I/I Surcharge Program which received Operations and Environmental Performance Award from the National Association of Clean Water Agencies. The program has a flexible approach for communities with excessive I/I where communities can use their own funds to develop an effective mitigation program to reduce I/I versus paying a surcharge.

MET COUNCIL POLICY REGARDING I/I

Metropolitan Council Environmental Services and communities in the region are working hard to reduce I/I in the regional wastewater system to preserve capacity as well as protect public health and the environment.

The Met Council's I/I policies indicate that the Met Council:

- **will not** provide additional capacity within its interceptor system to serve excessive I/I
- **will** establish I/I goals for all communities discharging wastewater the regional system and communities that have excessive I/I their sanitary sewer systems will be required to eliminate the excessive I/I within a reasonable time period.

The Met Council also reviews local I/I prevention and mitigation programs as part of the decennial comprehensive plan update process.

I/I MITIGATION PROGRAMS IN COMMUNITY COMPREHENSIVE PLANS

Communities that are served by the regional system or by a locally owned and operated treatment plant need to include an I/I mitigation program in its comprehensive sewer plan, which includes goals, policies, and strategies for preventing and reducing excessive I/I in the local sewer system.

For these communities, the comprehensive plan needs:

- Requirements and standards for minimizing I/I and for the disconnection of illegal sump pump and foundation drain connections to the sanitary sewer system.
- Local ordinances that prohibit the discharge of sump pumps, foundation drains and/or rain leaders to the sanitary disposal system and require the disconnection of existing foundation drains, sump pumps, and roof leaders from the sanitary sewer system.
- Identification of the extent, source, and significance of existing I/I problems and analyze the costs for remediating the I/I identified issues; and
- An implementation plan that contains a program strategy, priorities, scheduling, and financing for eliminating and preventing excessive I/I from entering the sanitary sewer system.

HOW WE CAN HELP

We have several ways to help communities address I/I including:

- Inflow and Infiltration Toolbox highlights programs and products as potential solutions to I/I problems that communities can use. It includes information on local government best practices, ways to get a I/I reduction program started, investigative techniques, corrective actions for private property as well as publicly owner sewers, and sample local ordinances.
- Potential I/I Grant Funds available through the Met Council
- Reviewing the Met Council's projections based on hypothetical 25-year storm events and community flows, which identify high-risk communities to alert communities of potential magnitude of the problem.

