

Information Item: Inflow and Infiltration Program

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Environment Committee: July 28, 2020



Inflow and Infiltration (I&I) Program



Long-term strategy that works



Simple solutions, unique strategies

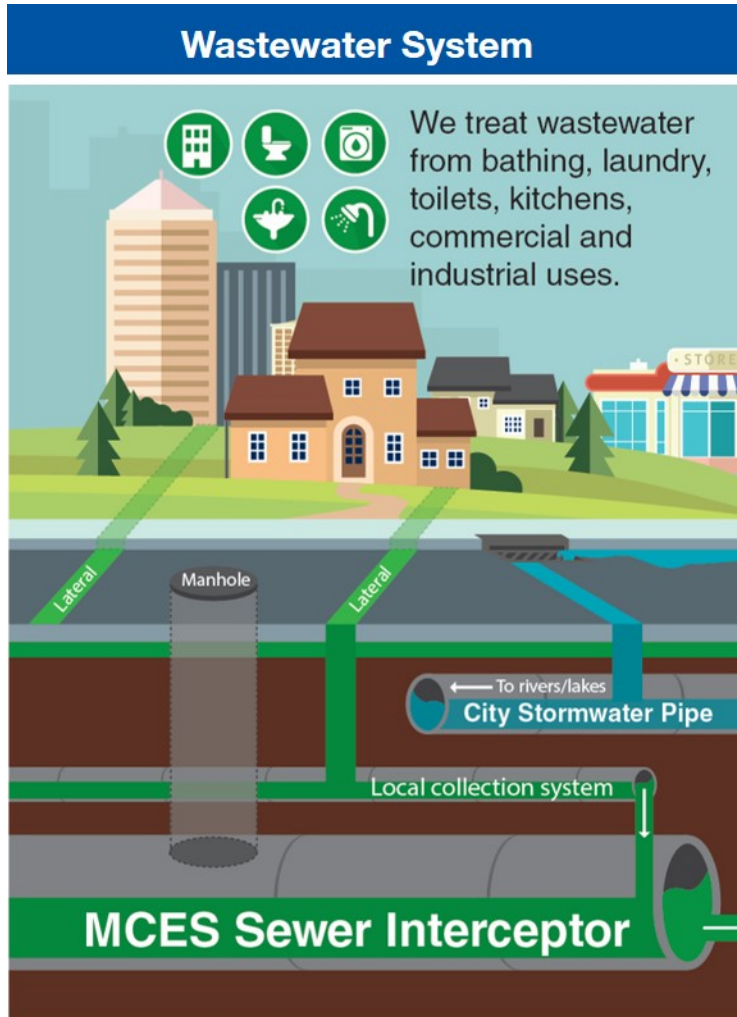


Key milestones and success indicators



Continued investment

Wastewater System



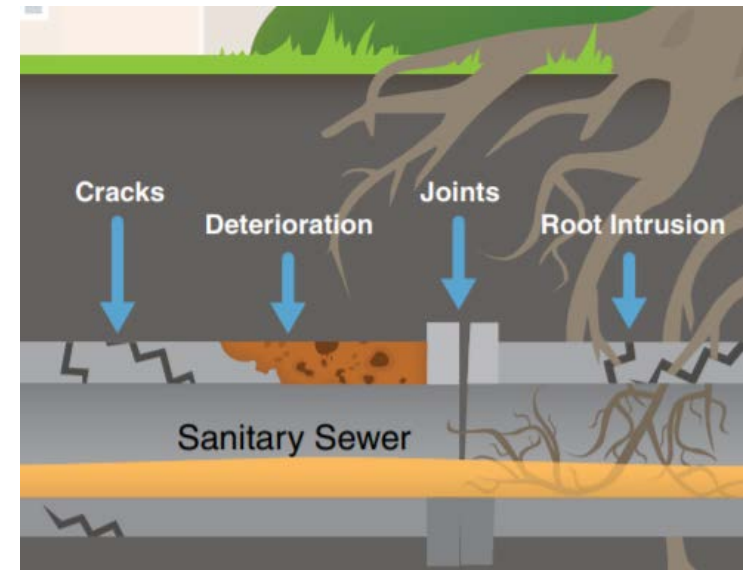
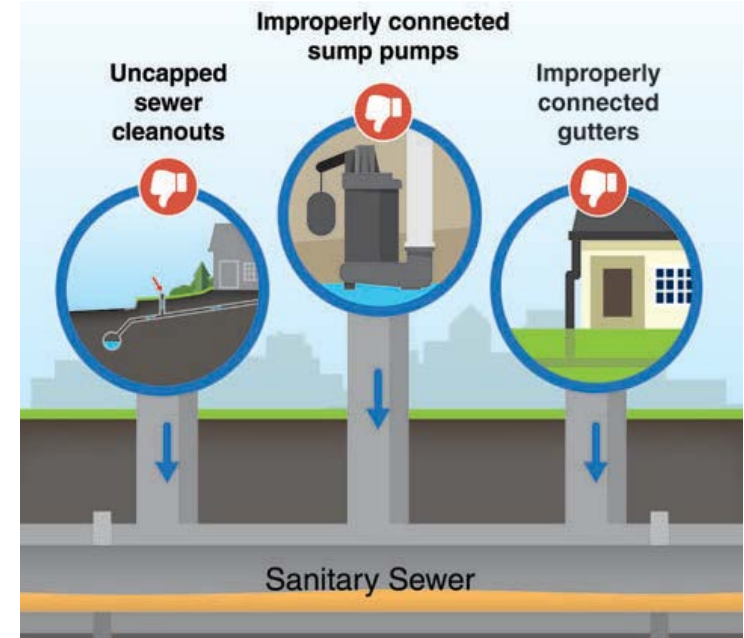
Our treatment process removes pollutants by converting them to small volume of organic solids, and returns clean water to the environment.

To wastewater treatment plants

Wastewater Treatment Plant

A Clear Issue: I&I

- Backups to homes and overflows to waterways
- Increased costs to convey and treat
- Reduced capacity for growth
- Wasted resource

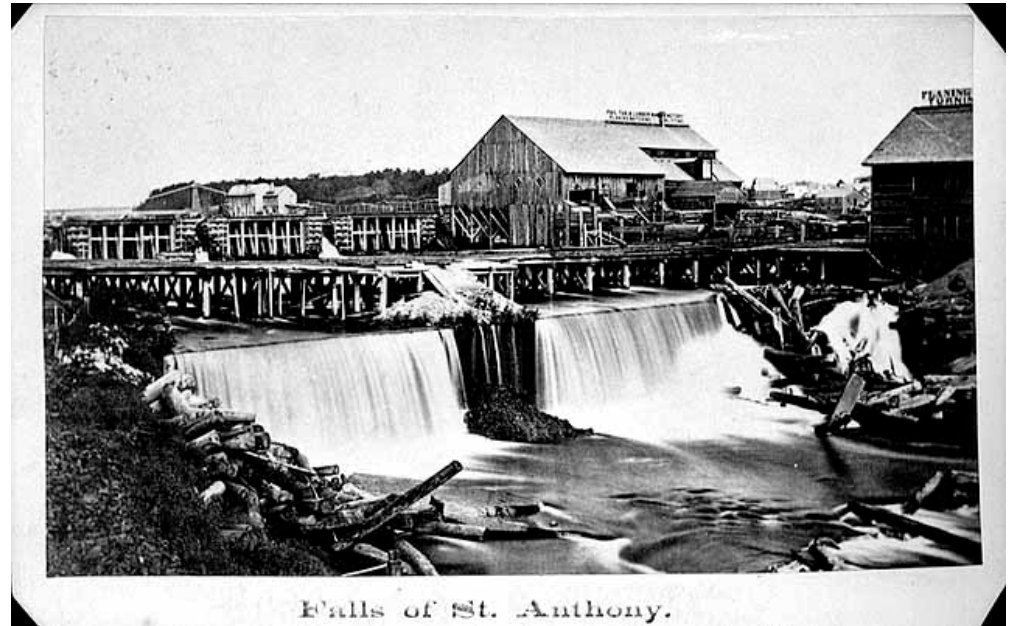


Mississippi River

1870: Begin discharging all sewage to river

1938: Metro Plant begins treating combined sewage

1940-1990's: frequent overflows to river.
Combined System



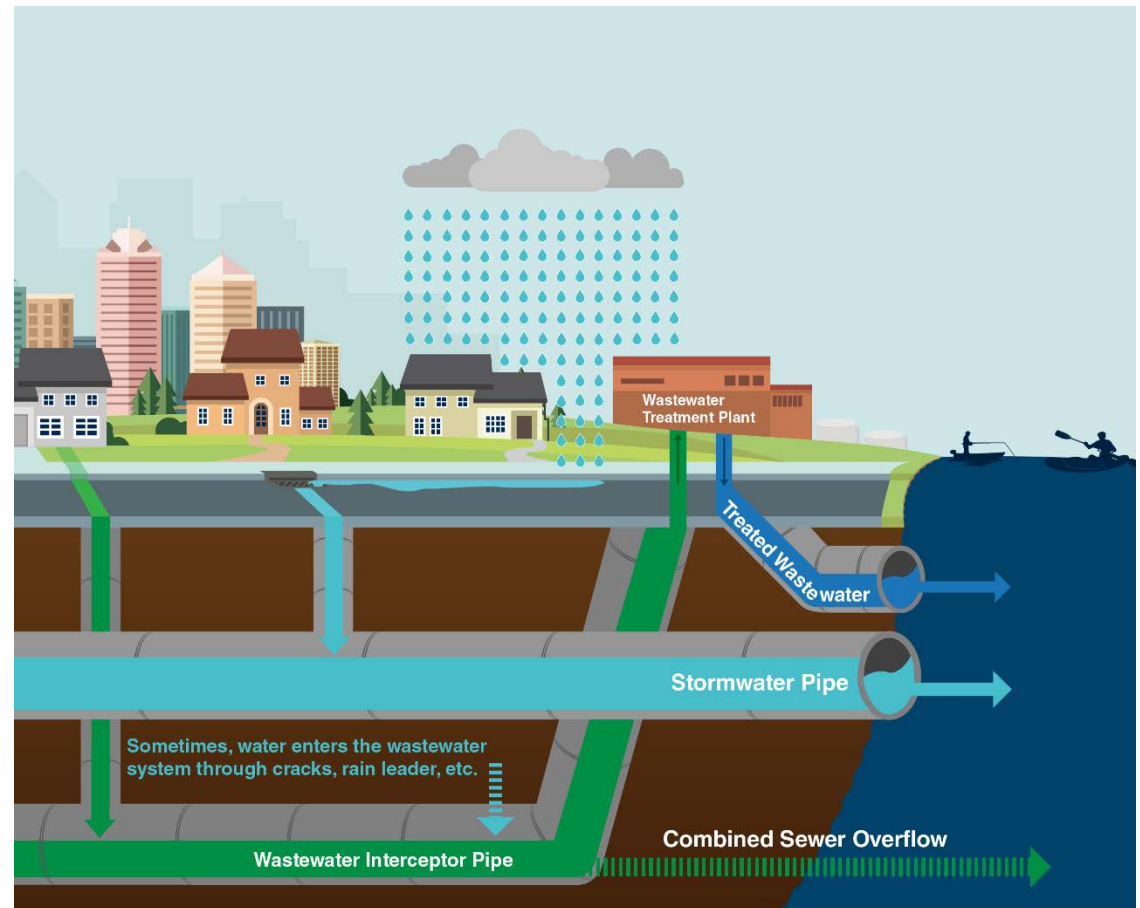
St. Anthony Falls, 1860

Sewer Separation

1960s: Sewer separation begins by Minneapolis, Saint Paul, South St. Paul

1986: Accelerated sewer separation - over \$330 Million invested

1995: Sewers are considered separated, I&I remains in some areas



Timeline



**July 1987
Superstorm**

- **16" of rainfall** over one week in region
- Agreement to study I&I; no EPA consent decree



**1990
System
Evaluation**

- **~20% of annual flow** from I&I
- Identified approaches for mitigation incentive vs disincentive programs



**2002
Interceptor
Master Plan**

- Projected peak flow **exceeds capacity with future growth projections**
- More cost effective to address sources of I&I vs increasing system capacity



**2004 I&I
Task
Force**

- Reaffirms approach to address I&I mitigation at source
- Identifies implementation of demand charges in 2013 if peak flow is not reduced

Timeline



I/I Program Begins

- Monitoring starts in 2004
- 55 communities assigned work plans in 2007



2009-2010: I/I Task Force 2

- Deferred 2013 Demand Charge
- Policy Amended, On-Going I&I Mitigation Program adopted



April –June 2014: Extreme Wet Weather

- 42 Communities exceed I&I goals
- Communities experience back up of sewage into homes and release wastewater to lakes and streams.



2016 I/I Task Force 3

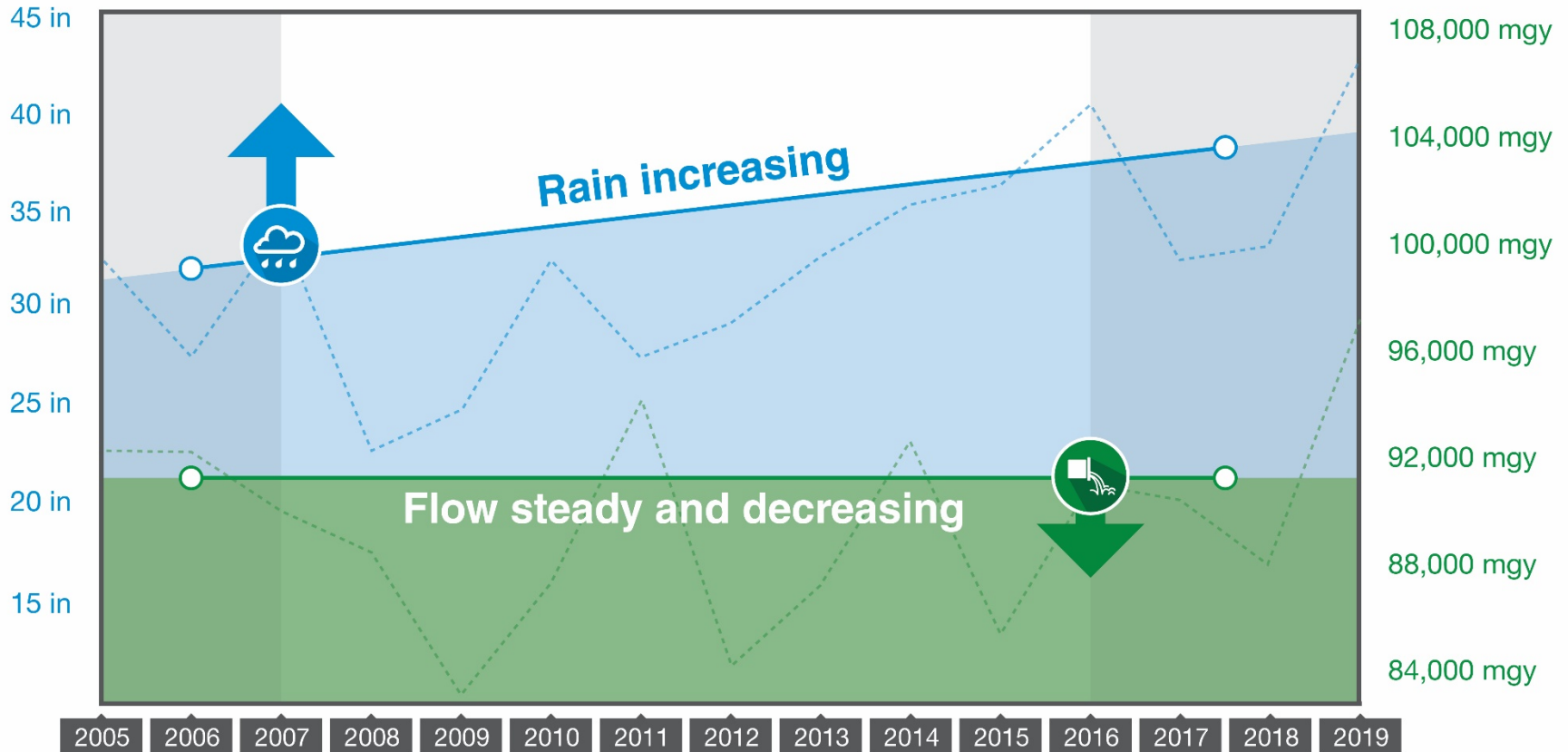
- Identify need to continue program
- Develop community tools and public education
- Help communities advocate for funding

Steady Progress

The population served increased 10% in a decade

RAIN

FLOW



Inflow & Infiltration Program

2005: Policy adopted;
program begins



2014: Greater rainfall event
than 2005, fewer peak
wastewater flow occurrences

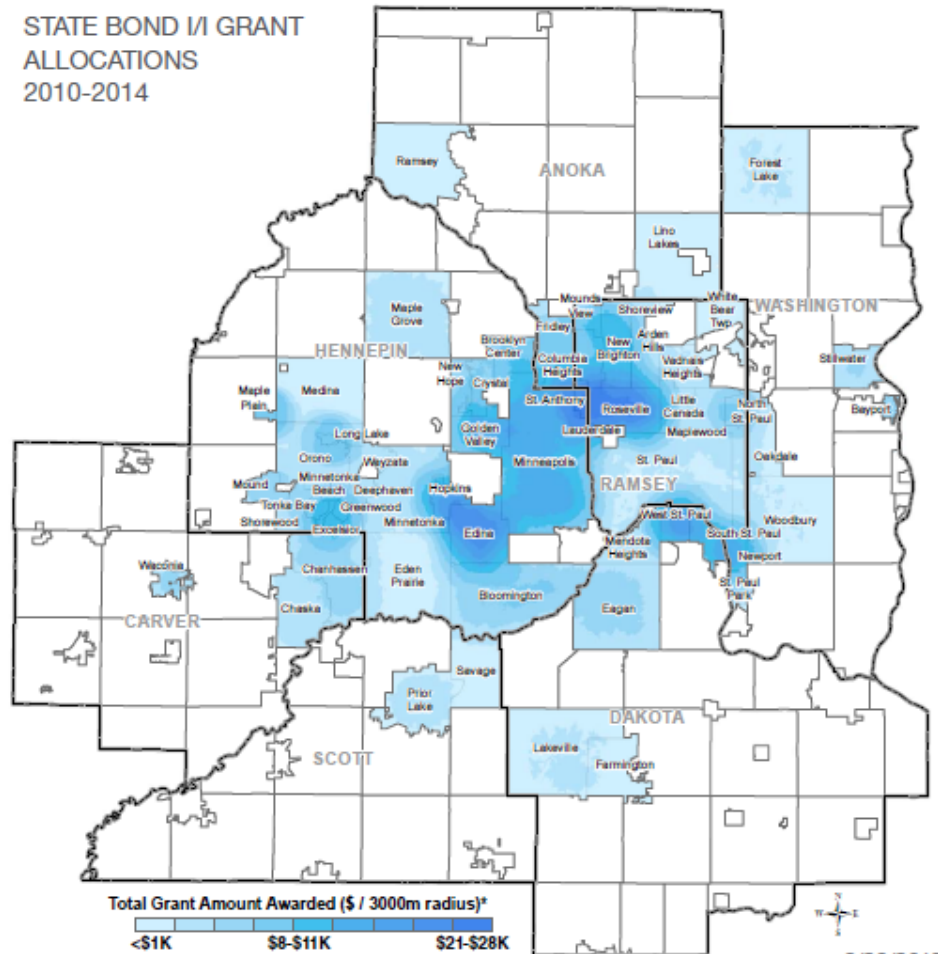


2019: Greatest annual
precipitation on record

Partnership

- \$175 Million work plan credits
 - Portion of investment
- \$22 Million private repairs
 - \$46M with rain leaders
- Unique programs
- <4% budget increase
- MCES ~ \$100 Million

Grants invested across the region



Minneapolis

2003: Rain leader disconnection program

2013: Peak I&I flows reduced by 75%

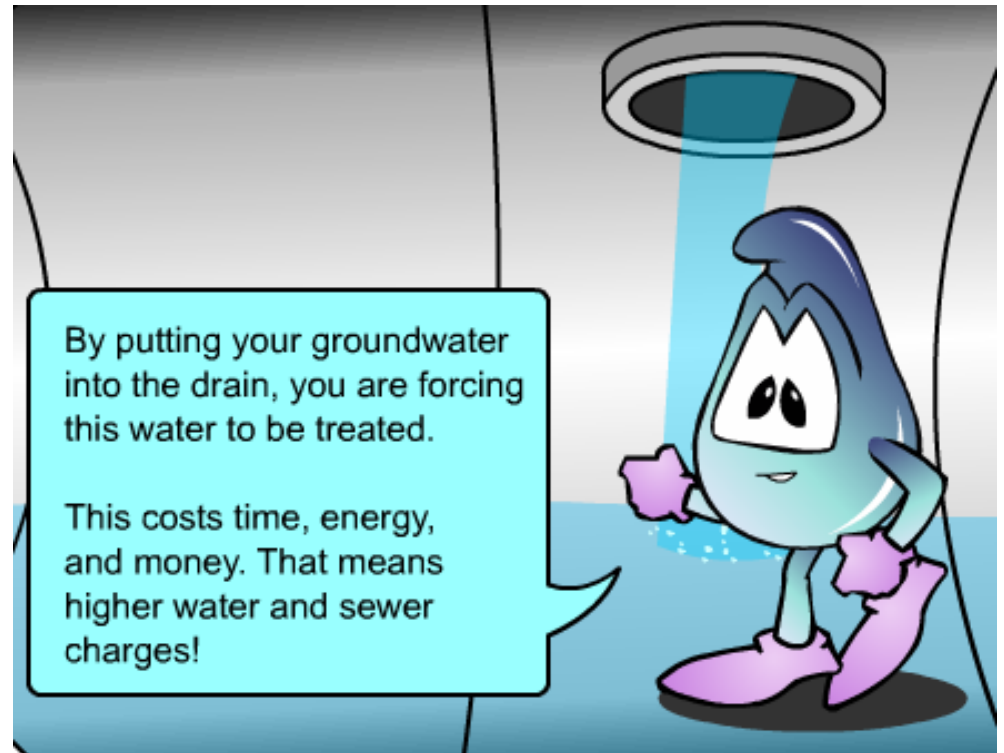
2018: Joint study with MCES to identify remaining I&I



Golden Valley

2007: Point-of-sale inspection and repair program

2014: Peak I&I flows reduced by 28%

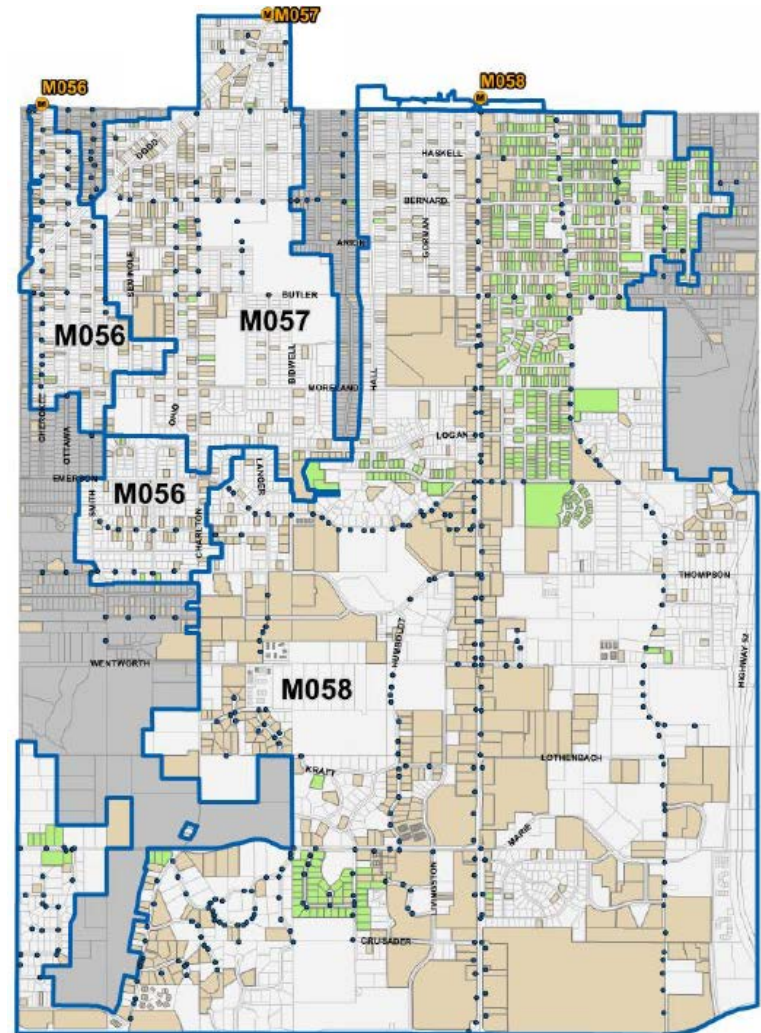


West St. Paul

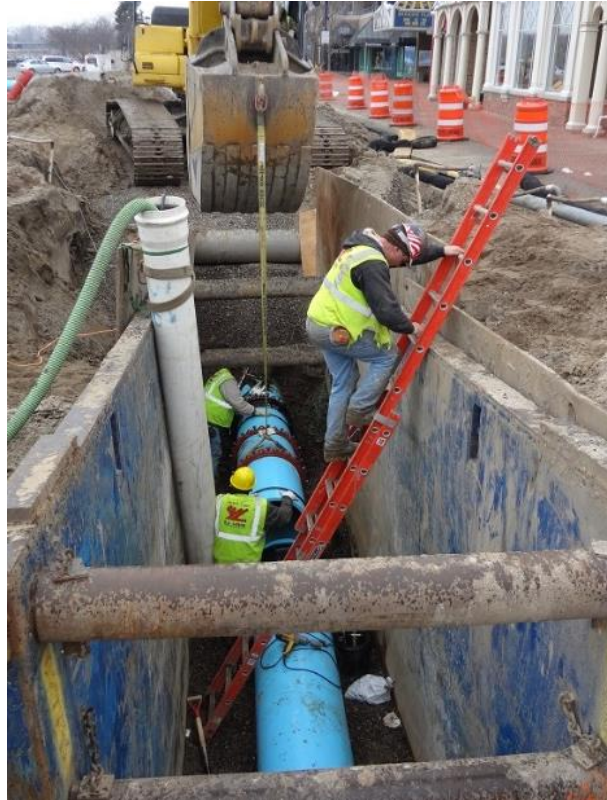
2008: Inspection and repair program for service laterals

2013: Peak I&I flows reduced by 33% with high return on investment

2017: Revised ordinance for point-of-sale, continues investments



Capital Improvements in the Region



Rainy Days Ahead

- “The 18 years from 2000-2017 have seen nearly three times as many mega-rains as the 27 years spanning 1973-99.”
 - State Climatology Office
- “This tendency towards more intense precipitation events is projected to continue in the future.”
 - National Climate Assessment

2016 Task Force



**Mitigating
I&I in the
regional
system**



**Advocating
for funds for
communities**



**Developing a
robust public
outreach
program**



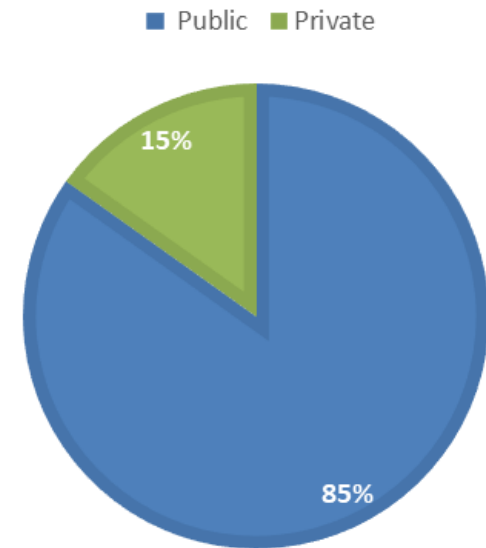
**Developing
best practices
for private
property
inspections**



**Engaging
stakeholders
in the
comprehensive
planning
process**

Unresolved I&I

- Up to 80% of I&I volume
 - EPA I&I Research, 2008
- Less than 15% of investments
 - MCES I&I Program
- Unique communities, programs
 - [West St. Paul](#)
 - [Golden Valley](#)
 - [Roseville](#)
 - [Saint Paul](#)
 - [Minneapolis](#)



Credits reported 2007 - 2018



Partnering

- West St. Paul MOU
 - Private I&I repairs and reporting
 - Meter analyses by MCES
- Minneapolis MOU
 - Joint Study
- Mound
 - Repairs to MCES and City wastewater system
- Newport
 - Flow study (waiting for data)



Engagement

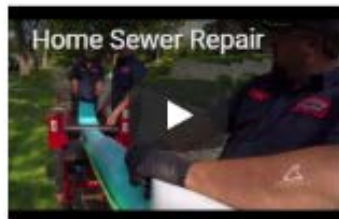
WASTEWATER
Inflow and Infiltration
Local Government
Property Owners
News & Events
Funding & Finance
Publications & Documents
Contact Staff
Council Fact Sheets

TOOLS FOR PROPERTY OWNERS



Don't let clear water into the wastewater system. It costs you in many ways:

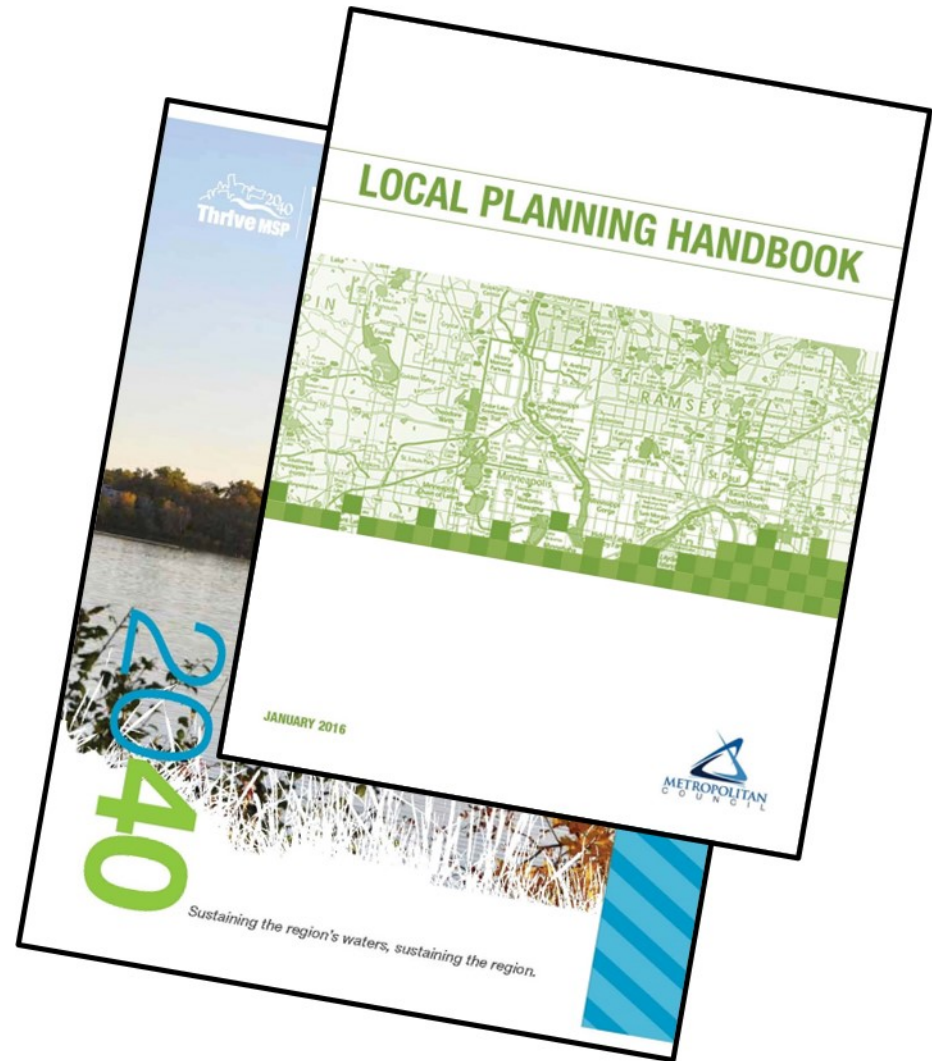
- Causes sewer backups into homes
- Causes sewer overflows into rivers and lakes
- Increases sewers and utility fees
- Increases the need for larger and more expensive sewer pipes and treatment facilities



[REDUCE I/I ON YOUR PROPERTY](#)

Comprehensive Plan Updates (CPU)

- 82 CPUs approved by Council to date
- I&I-related common themes
 - continued efforts and commitment in I&I reduction
 - need for additional funding to incentivize I&I reduction for property owners
 - characterizes the potential I&I sources from public and private infrastructure



National Activity on Combined Sewer Overflows (CSOs)

- EPA Report May 2017, list of communities which have entered into agreements to address the public health risks associated with CSOs
 - Boston: \$898 Million
 - Washington, DC: \$2.57 Billion
 - Indianapolis: \$1.6 Billion
 - Chicago: \$1.77 Billion
 - Kansas City: \$2.38 Billion
- Twin Cities were not identified and in fact negotiated a termination of their CSOs

Next Steps to Ensure Compliance



Continued investment in regional wastewater assets



I&I Program tailored to address challenges in each community



Financial support for both public and private infrastructure investments



Joint studies with Minneapolis and Saint Paul to understand system response to wet weather

Questions

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