Metropolitan Council Environmental Services (MCES)

What does MCES do?

If you brushed your teeth, washed your dishes, or flushed your toilet today, you most likely used our wastewater collection and treatment system.

We own and operate 610 miles of regional sewer pipe that conveys wastewater to our treatment plants. We are also responsible for performing the maintenance and repairs necessary to keep our sewer system working effectively and safely for the communities that we serve.

We are nationally known for our work treating wastewater, and consistently achieve near-perfect compliance with federal and state water discharge standards.

MCES has a comprehensive program to evaluate the condition of our interceptor system, and have developed a plan to rehabilitate or replace interceptors and manholes based on:

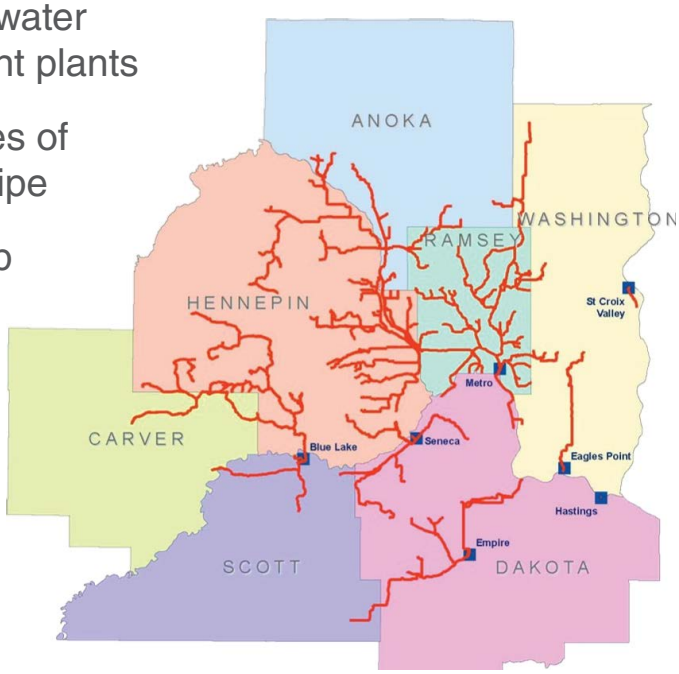
- Age
- Condition
- Criticality
- Capacity
- Need to accommodate growth
- Opportunity to coordinate with other planned infrastructure improvements

Our wastewater infrastructure

8 wastewater treatment plants

610 miles of sewer pipe

60 pump stations



Why is it important to keep our sewer system in good repair?

- **Protect public health**
- **Manage assets effectively**
- **Protect other infrastructure**

Who is MCES?

OUR CUSTOMERS

109 communities in the 7 country Metro Area

2.6 million population served

250 million gallons treated daily

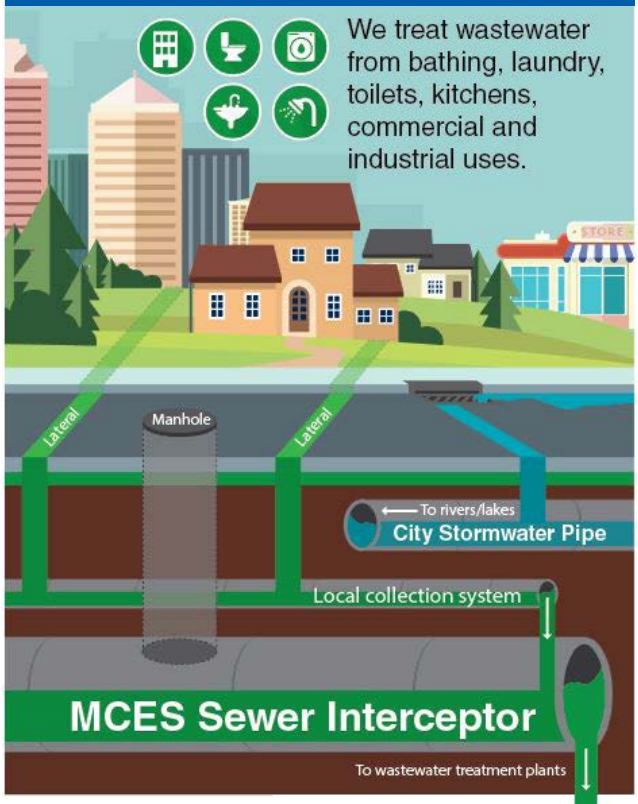
OUR ORGANIZATION

600+ employees

$7 billion in valued assets

$100 million/year capital investment for interceptor program planned until 2030

What is wastewater?



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

How do we prioritize our projects?

June 2017

We evaluate priority based on the following considerations:

PIPE AGE

While the age of a pipe doesn't necessarily determine it's condition, it can be an indicator when considered alongside the pipe's material and situation. For example, some brick pipes that are over 100 years old are still in good working condition, but a newer concrete pipe with a highly turbulent flow can become corroded and need repair after 40 or 50 years.

PIPE CORROSION

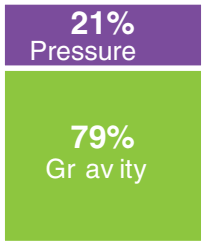
Concrete and metal pipe can be damaged by chemicals released by wastewater. This happens when sewer gas is converted by bacteria living on the pipe walls into an acid which corrodes the pipe material.

IMPACT OF FAILURE

The impacts of pipe failure are taken into account when prioritizing projects. If a pipe is located in a sensitive area that would result in environmental impacts, disruption to homes or business, or a major transportation or rail corridor, it's rehabilitation will be prioritized.

PIPE TYPE & INSPECTION FINDINGS

Our interceptor system consists of gravity pipes and pressure pipes. Gravity pipes use gravity rather than pumps to move wastewater through, as where pressure pipes use pumps. Gravity pipes can be inspected visually with video, laser, or sonar. Most often, pressure pipes can't be easily inspected without establishing a temporary conveyance system.

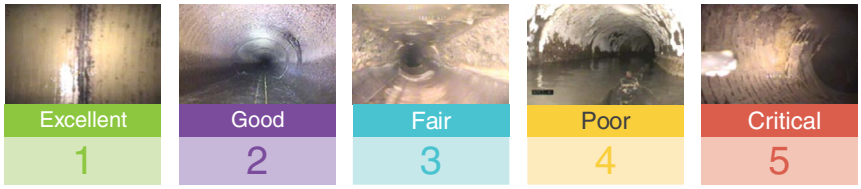


SOIL CONDITION

Gradually shifting soil, tree roots, the turbulence of the wastewater moving through the pipe, and other situational factors can have a big impact on the condition of a pipe. When combined with age and pipe material, different situations can result in how long a pipe can last before needing repair or replacement.

PIPE CONDITION

MCES regularly inspects its gravity pipes and assigns each pipe a condition rating from 1 (excellent - newly installed) to 5 (critical - needs immediate attention). Approximately 20% of our gravity pipes are rated as 4 and need a repair scheduled, and less than 2% are critical and require immediate attention.



Construction Methods

MCES is engaged in a systematic sewer rehabilitation program that is designed to keep our sewers reliable while accommodating growth in the region.

Cured-in-Place Pipe
Adds a new liner to the inside of an existing pipe. **This process has the lowest impact.**

Remove & Replace Pipes
Excavate to remove and replace sections of pipe.

Repair & Reconstruct Maintenance Holes
Reline or remove and replace maintenance structures.

Our system's future

MCES CAPITAL IMPROVEMENT PROGRAM

The regional wastewater system has an estimated replacement value of approximately $7 billion. MCES plans to invest $100 million/year in the interceptor system over the next 10 years and beyond on projects that will:

- Protect public health
- Preserve our wastewater assets
- Meet planned regional and local capacity
- Coordinate with other infrastructure projects
- Protect public assets and natural features