Information Item: Minneapolis Pipe-In-Pipe Repairs

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Environment Committee

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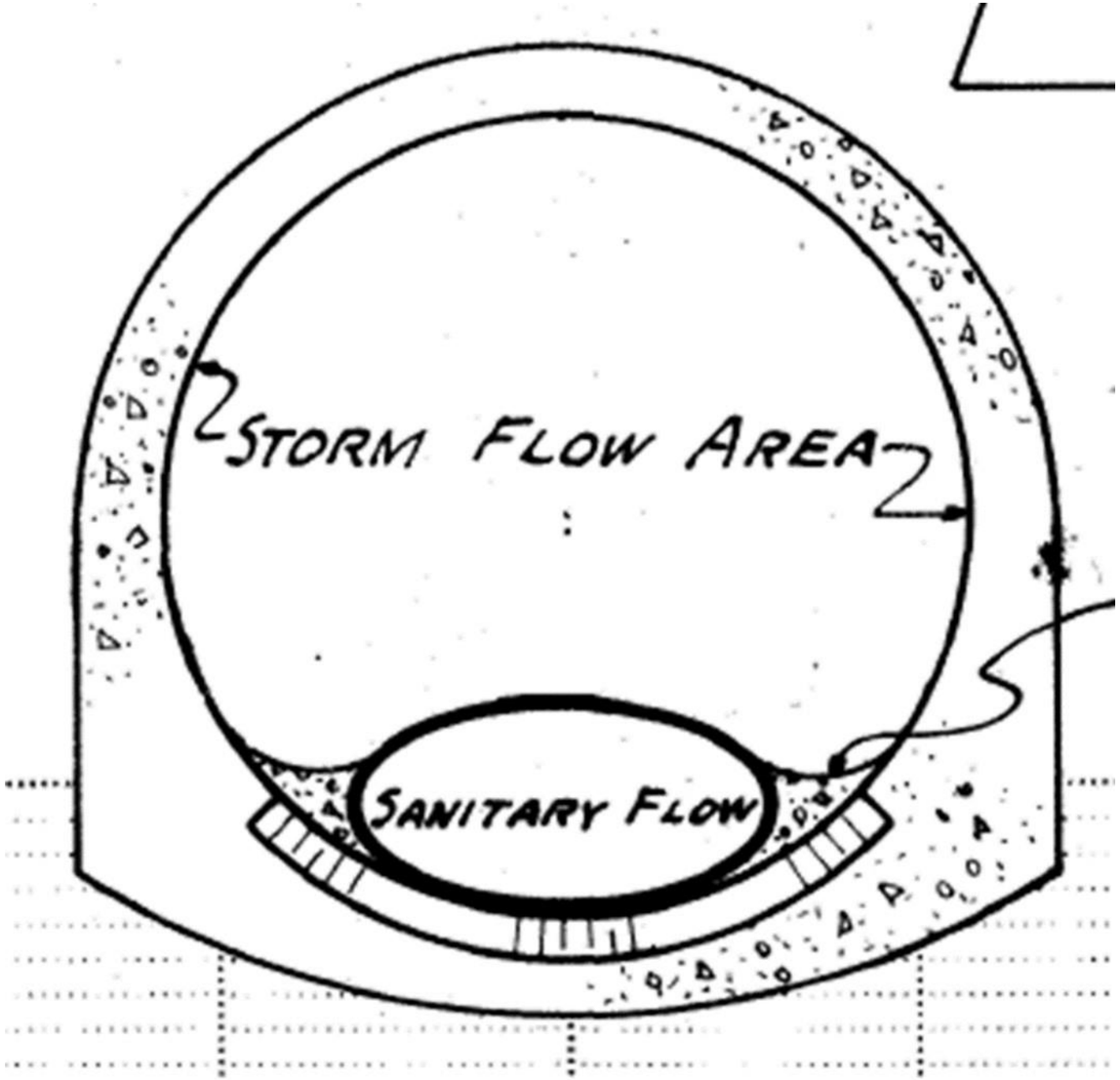
METROPOLITAN COUNCIL

Inflow and Infiltration Program Work in the City of Minneapolis

Program Work:

- $3.1 Million since 2018 modeling the Minneapolis portion of the interceptor system and assessing Inflow and Infiltration (I/I) issues in a joint study with the City
- $214,000 since 2013 smoke testing interceptors and City sanitary sewers in collaboration with the City
- $7.7 Million budgeted for the completion of the 1-MN-341 rehabilitation (currently under construction)
- Estimated that rehabilitation of 1-MN-303 will be between $10 and $15 Million

Pipe-In-Pipe Interceptors



Background:

- Originally constructed as a combined sanitary and storm sewer
- Pipe was laid at invert of the combined sewer to convey wastewater
- Pipe was typically constructed a corrugated metal pipe that was “squashed” to better align with the bottom of the combined sewer

“Pipe-In-Pipe” Interceptors

1-MN-341:

- 111-inch combined sewer built 1911
- 62 by 31-inch pipe-in-pipe section constructed in 1986
- Includes a regulator constructed at 26th Avenue S
- 2-year construction for the rehabilitation of the pipe-in-pipe section started in 2021

“Pipe-In-Pipe” Interceptors

1-MN-303:

- 102” Combined sewer built 1920s
- 53 by 27-inch pipe-in-pipe section constructed in 1965
- Project is in design phase
- Severity of the deficiencies and capacity issues will require a different approach

Condition Assessment of Pipe-In-Pipe Interceptors

Identified problems:

- Pipe-in-pipe is difficult to maintain with main access through City of Minneapolis storm sewer maintenance structures
- Limited locations to insert a camera for televising the inside conditions
- Frequent inspection and maintenance by walking storm sewer
- Repaired areas are susceptible to wear and damage from storm debris

1-MN-341 Repairs – New Access Structures

Excavations were drilled down to concrete sewer

Steel casing was used to support the soils

1-MN-341 Repairs – New Access Structures

Corrugated pipe used to form inside of concrete outer structure with new internal access riser formed over pipe

New top slab and casting are set to match existing street

1-MN-341 Repairs – Rehabilitating the Pipe-In-Pipe

Interceptor pipe is repaired and cleaned

Geopolymer concrete mat is applied to corrugated pipe

1-MN-341 Repairs – Rehabilitating the Pipe-In-Pipe

Polymer mat is troweled smooth

Finished product

Questions?

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