Inflow and Infiltration Update

Jan. 16, 2024

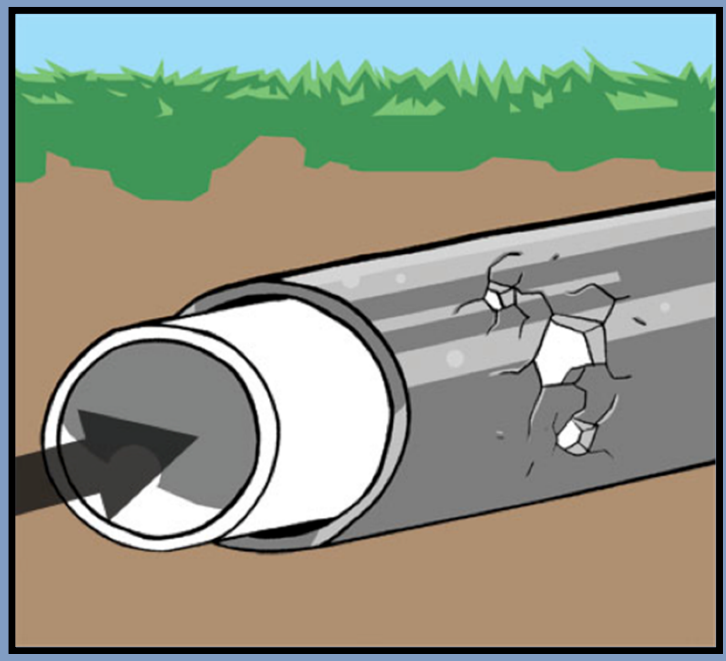
Inflow and Infiltration Update

Infiltration: ground water enters the sewer system through cracks and joints

Inflow: stormwater that enters through manholes, catch basins, or improper connections.

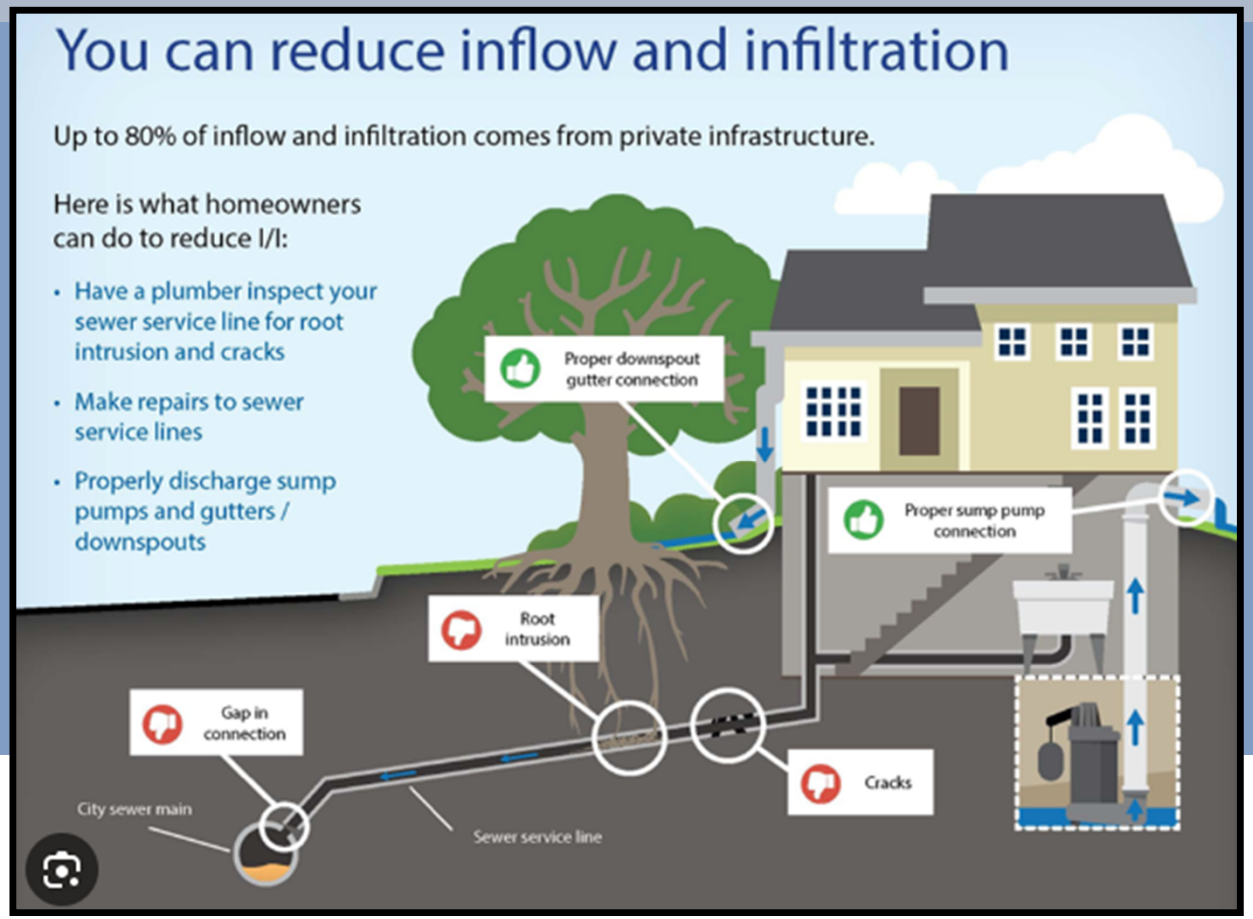
Quick History:

- Large sewer influent spikes at WWTP during storm events
- Hired Parametrix to lead our I&I program in Sept. 2023
- Focused on Old Town b/c pipe ages



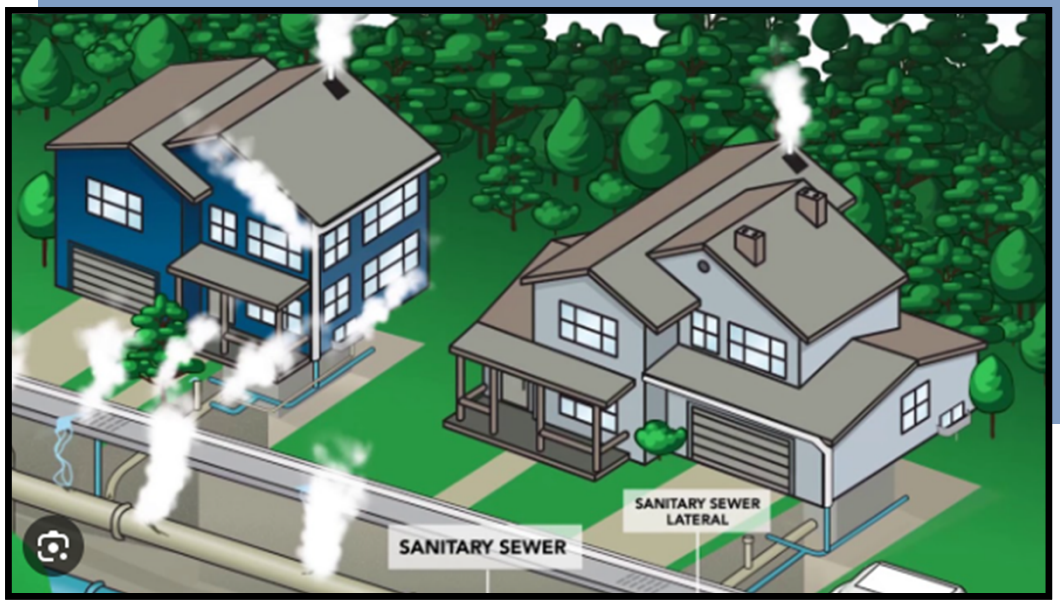
Inflow and Infiltration Update

Sewer System:
Investigation of the system will help find leaks or cross connections in the pipe/sewer network



Inflow and Infiltration Update

Smoke Tests: Smoke is blown into the sewer system to find leaks or cross connections in the pipe/sewer network



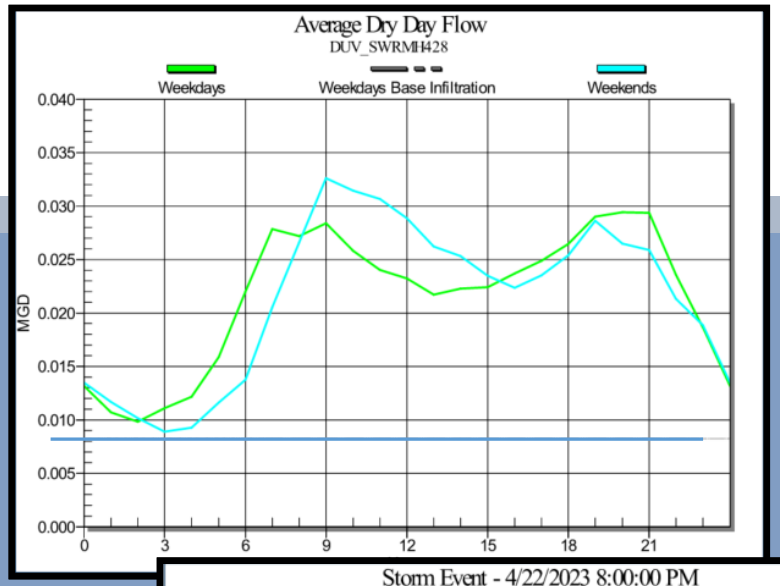
Preliminary Report

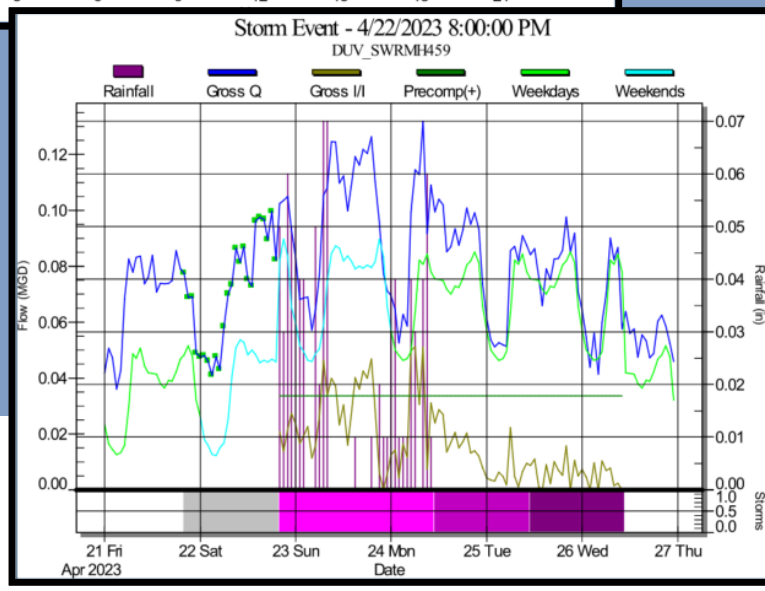
Monitored Flow March – August 2023

- 4 Locations Strategically monitored
- 6 Recordable Rain Events (>0.5” of rain in 24 hrs)
- Draft report submitted 1/10/24

Average Dry Day Flows → Base Infiltration

Captured Changes in flow vs. rain gauge





Preliminary Report Results

Infiltration: 69% if flow is Infiltration in Basin 430 = 2.7gpd/ft

Table 6: Net Base Infiltration Values

Meter Basin ID	Net ADDF (MGD)	Net WWP (MGD)	Net BI (MGD)	BI Percentage of Net ADDF
DUV_SWRMH428	0.022	0.013	0.009	41%
DUV_SWRMH430	0.072	0.022	0.05	69%
DUV_SWRMH459	0.036	0.025	0.011	31%
DUV_SWRMH466	0.101	0.101	0.000	0%

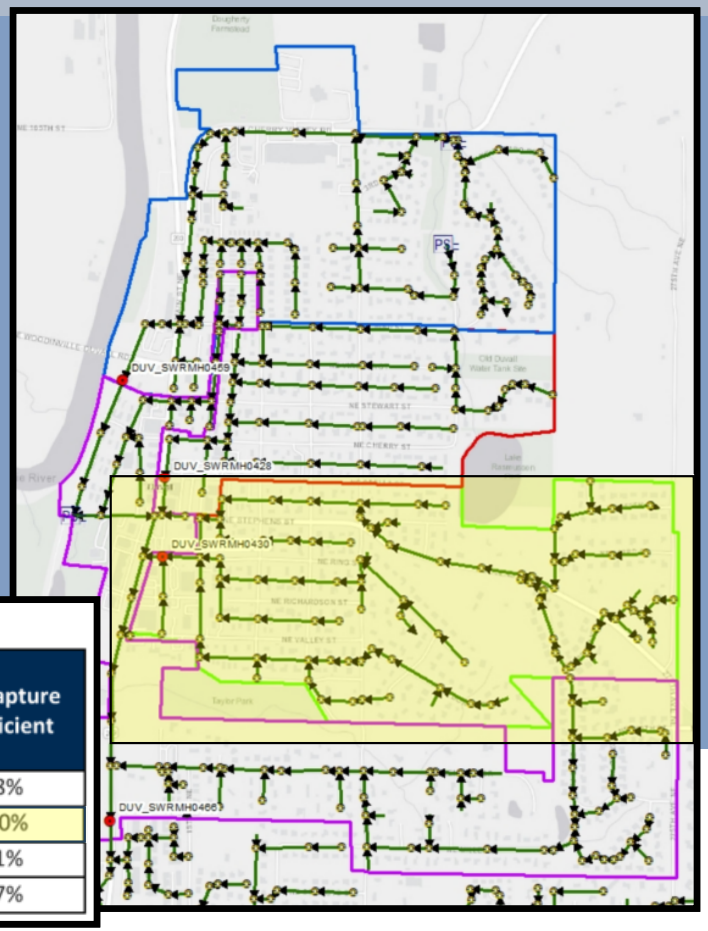
Inflow: Basin 430 roughly 10x higher

Table 8: Normalized RDII Severity by Volume

Meter Basin ID	Net RDII Severity by Volume (MG/in)	Pipe Length (LF)	Normalized Net RDII Severity by Volume (gal/in/LF)	Net RDII Severity Volume Ra
DUV_SWRMH428	0.03	11,080	2.7	4
DUV_SWRMH430	0.73	18,768	38.9	1
DUV_SWRMH459	0.06	15,254	3.9	2
DUV_SWRMH466	0.06	19,205	3.1	3

Table 10: RDII Capture Coefficients

Meter Basin ID	Net RDII Severity by Volume (MG/in)	Basin Area (ac)	Net Capture Coefficient
DUV_SWRMH428	0.03	60.3	1.8%
DUV_SWRMH430	0.73	116.8	23.0%
DUV_SWRMH459	0.06	106.4	2.1%
DUV_SWRMH466	0.06	127.0	1.7%



Next Steps

- Focus between Main Street and Fourth Avenue from Stella Street to Coe-Clemons Creek
- Staff will begin trying to locate any source locations
- Smoke Testing Old Town – Feb/March
- Put together a Capital Plan / Continue Testing Locations
- Aiming for 1st year of CIPP repair in Summer/Fall 2024