

INFLOW AND INFILTRATION PROGRAM STATUS UPDATE

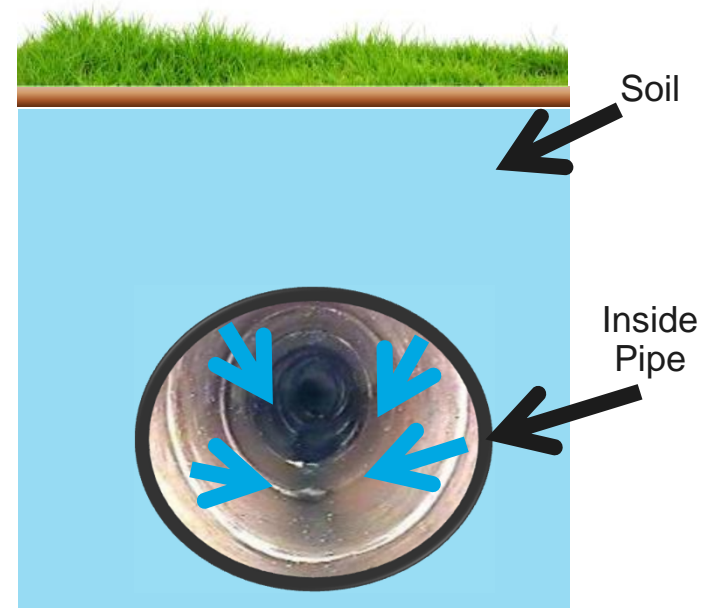
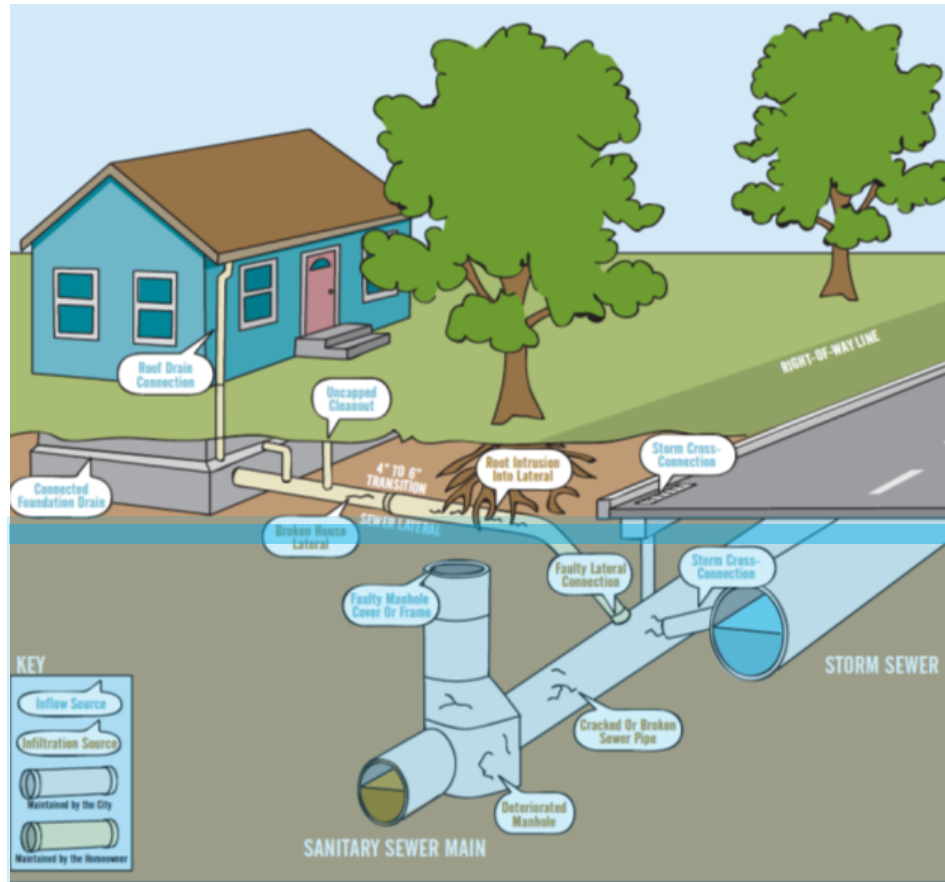
February 12, 2018

Inflow and Infiltration Program

- Stormwater and groundwater enters sewer
- Causes sewer overflows and pollutes waterbodies
- Burdens treatment plant and increases treatment costs
- NYSDEC Consent Order and Westchester County IMA



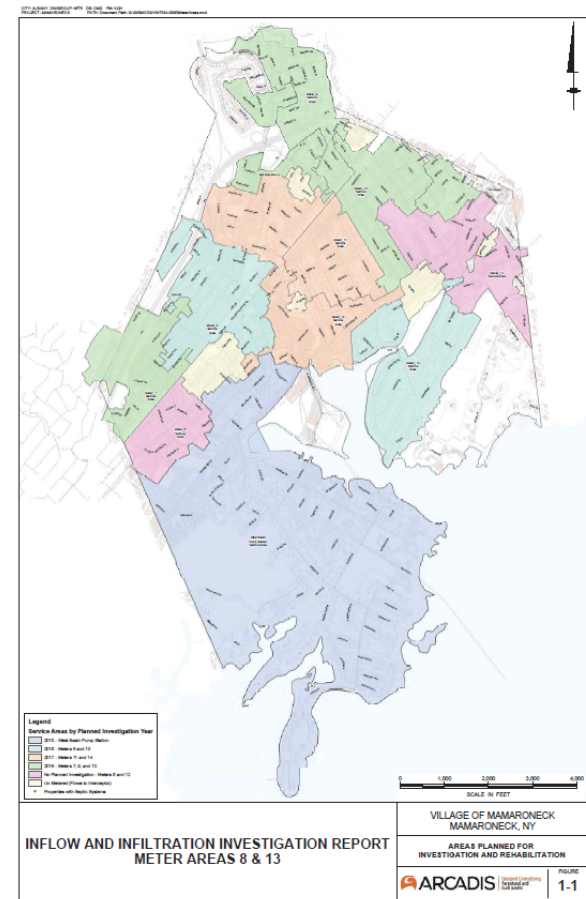
Inflow and Infiltration Sources



III Program Schedule

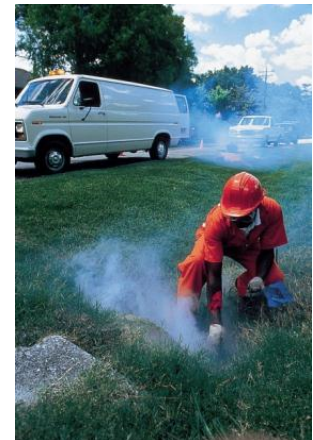
Metered Area Name	Planned Investigation Year	Planned Rehabilitation Year
West Basin Pump Station Service Area	Completed 2015	2016, 2017, 2019
Meter 8	Completed 2016	2018
Meter 13	Completed 2016	2018
Meter 14	2017	2018
Meter 11	2017	2018
Meter 7	2018	2019
Meter 9	2018	2019
Meter 10	2018	2019
Note: Meter Area 12 and 6 did not show excessive infiltration and inflow		

All Areas

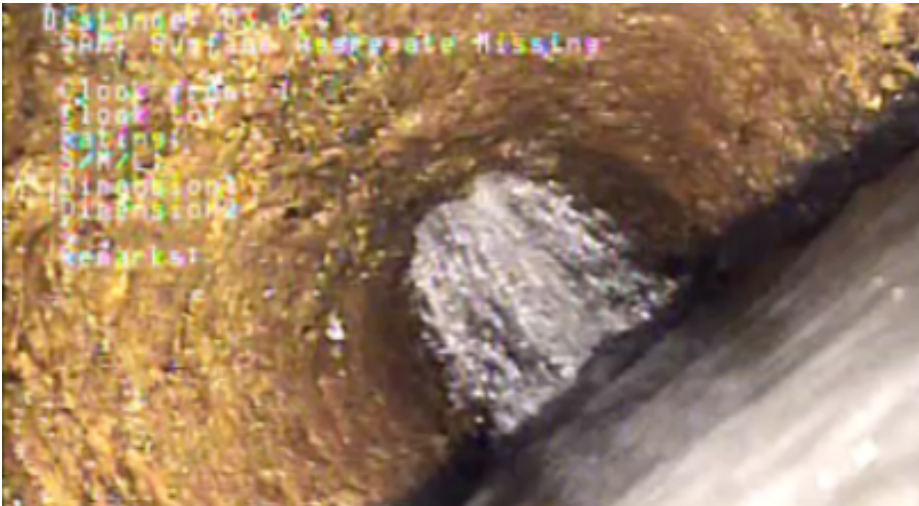


Meter Area 11 and 14 Program

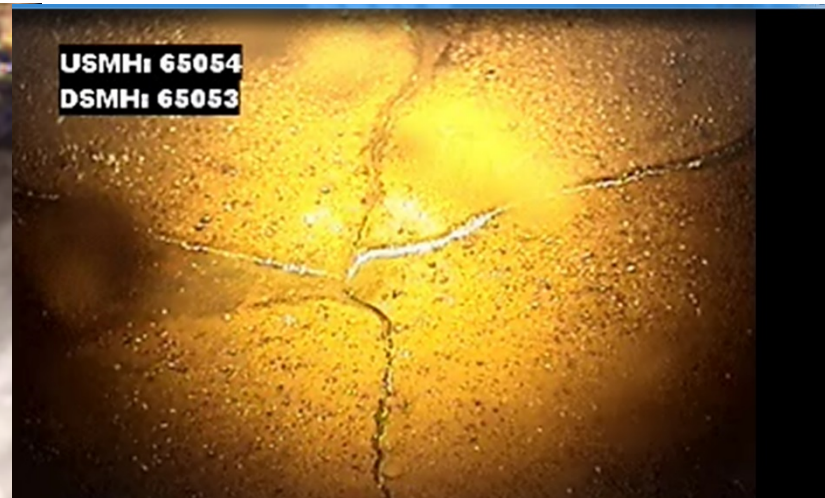
- Flow Metering
- Smoke Testing
- Sewer and Manhole Inspection
- Private Illicit Connection Removal – Driveway drains, sump pumps, gutters, cleanouts



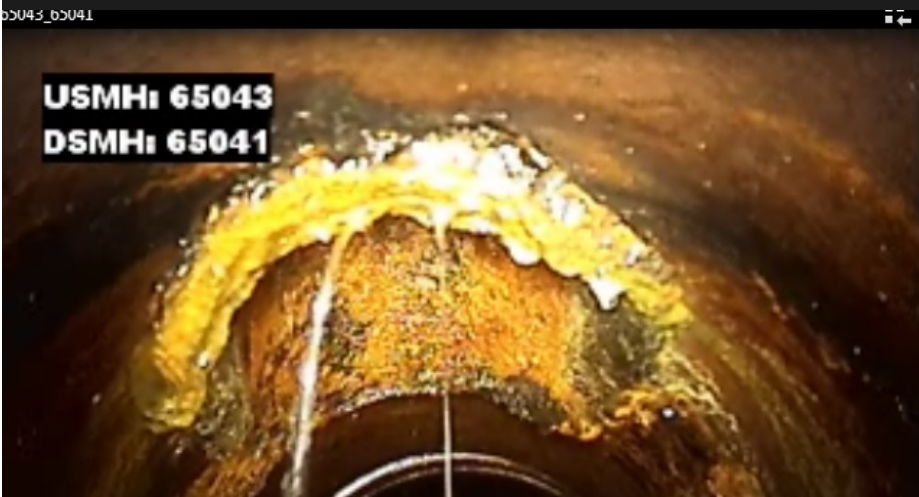
Investigation Results in 2017



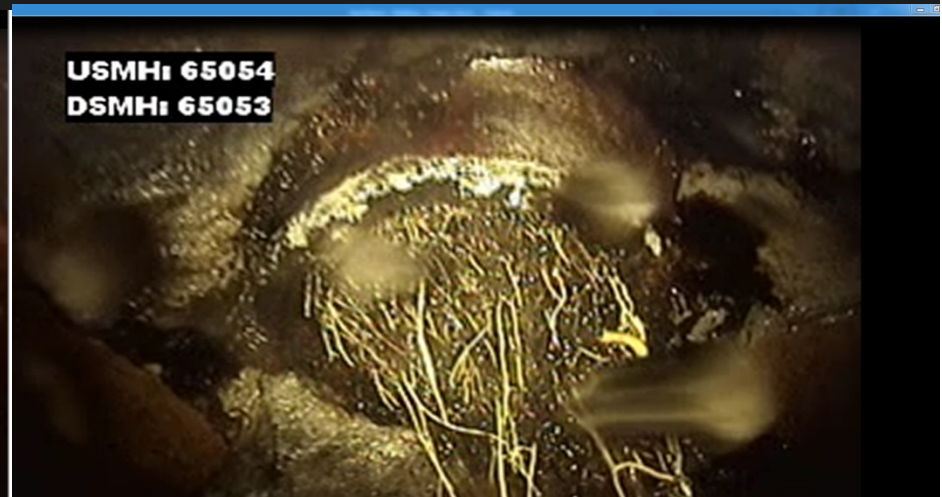
Infiltration



Fracture



Infiltration and Mineral Deposits



Roots

Examples of Rehabilitation



Brick Manhole



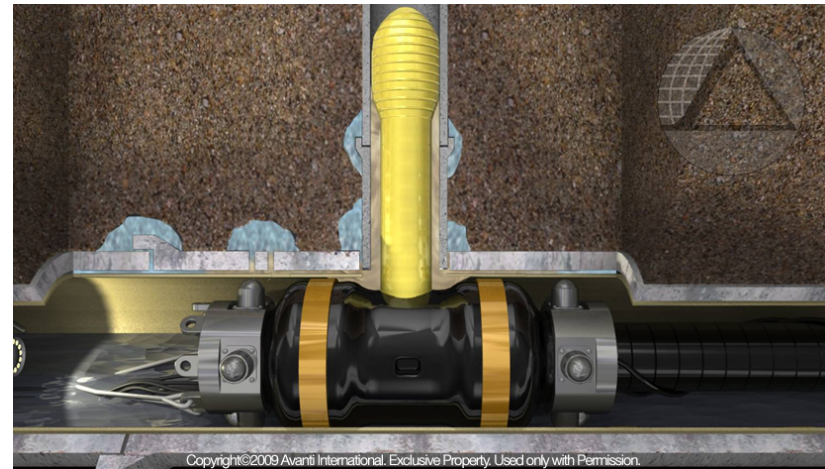
Manhole Lining



Cementitious Liner



Clay Pipe With Liner



Building Lateral Grouting

Summary of Results

- Smoke Testing – 30 potential illicit connections
- Manhole Inspection – 15 rated Level 3, 83 rated Level 2, 58 Rated Level 1
- Sewer Inspection – 46 segments rated Level 3, 99 segments rated Level 2.



Rating of “3” – High Priority (Rehabilitation needed in the near term)

Rating of “2” – Moderate Priority (Rehabilitation or re-inspect with 5-10 years)

Rating of “1” – Low Priority (Sewer Inspection – Inspect again in 10-15 years)

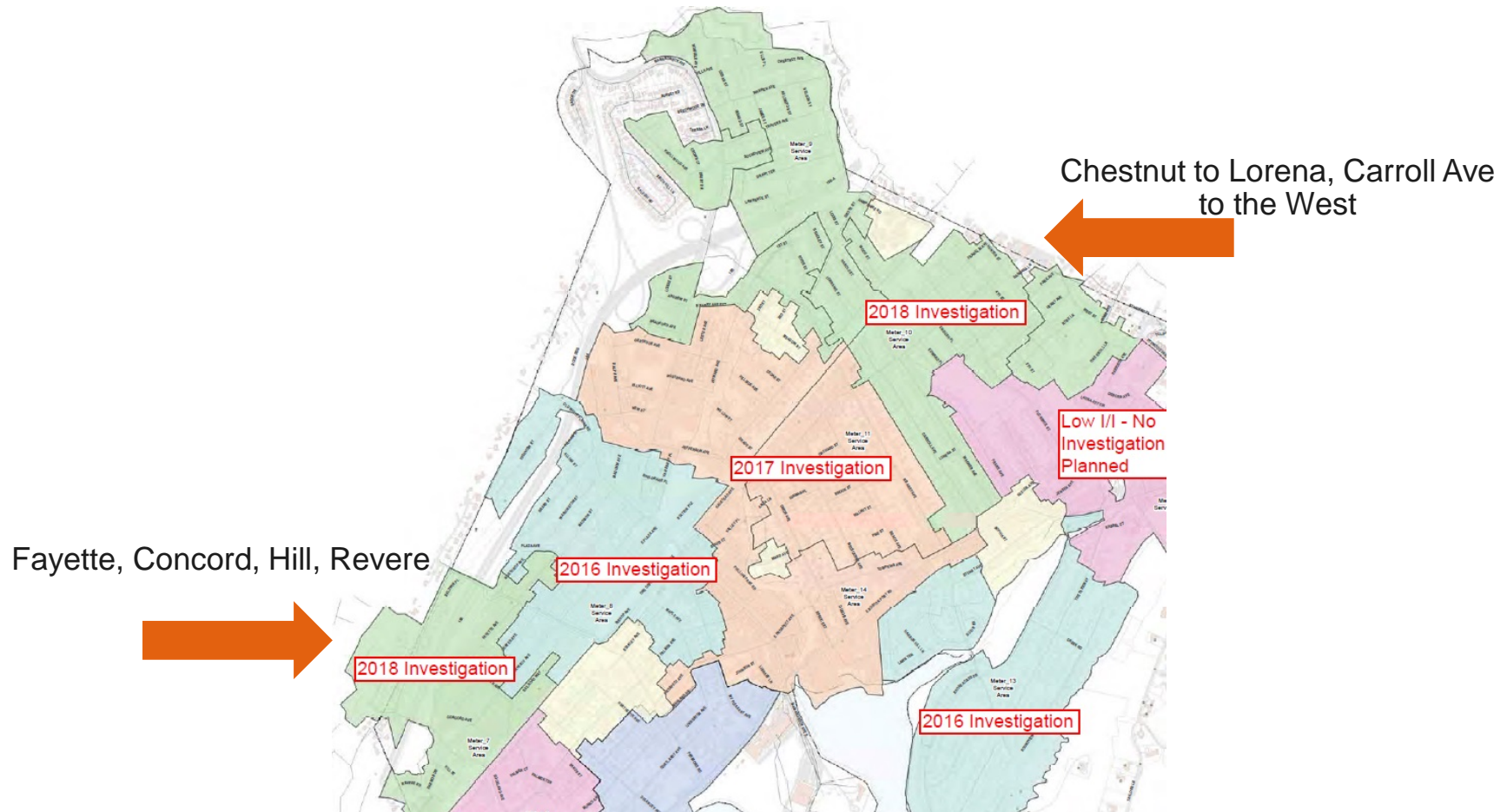
Estimated Cost For Sewer and Manhole Rehabilitation

Area	Rating 3			Total
	Sewer LF	Rehabilitation	Oversight	
West Basin Service Area ⁽¹⁾	54,431	\$ 1,000,000	\$ 100,000	\$ 1,100,000
Meter Area 8 & 13	28,147	\$ 750,000	\$ 75,000	\$ 825,000
Meter Area 11 & 14	33,607	\$ 850,000	\$ 85,000	\$ 935,000
Meter Area 7, 9 & 10 ⁽¹⁾	63,510	\$ 1,200,000	\$ 115,000	\$ 1,315,000
	Subtotal	\$ 3,800,000	\$ 375,000	
	TOTAL	\$4,175,000		

Note: Estimated cost does not include engineering design.

⁽¹⁾ The estimated rehabilitation cost has been reduced for these areas

2018 Sewer Investigation Area



QUESTIONS?