

# **INFLOW AND INFILTRATION PROGRAM STATUS UPDATE**

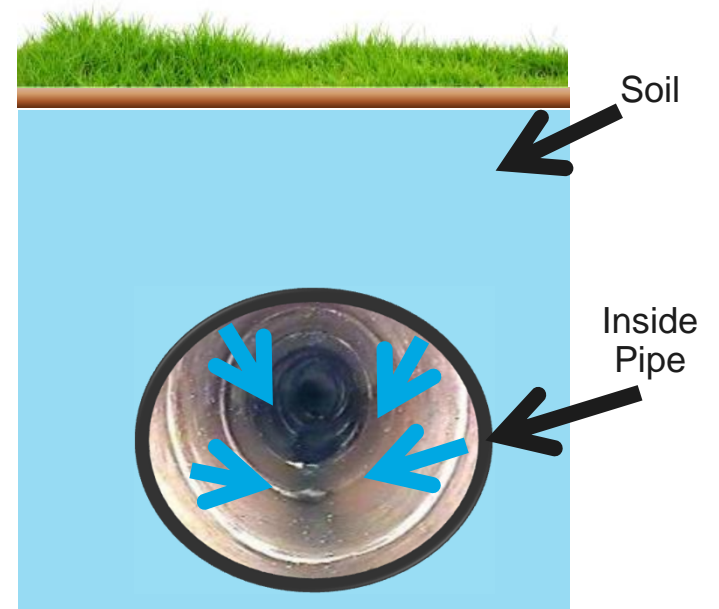
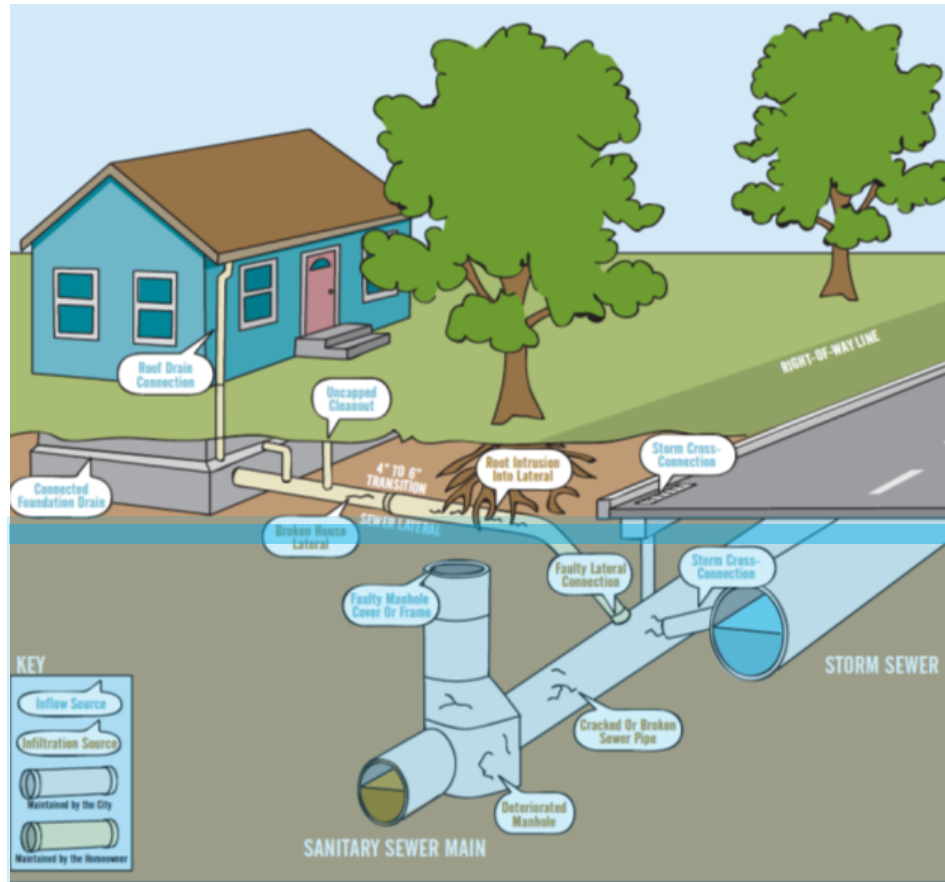
February 12, 2018

# 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



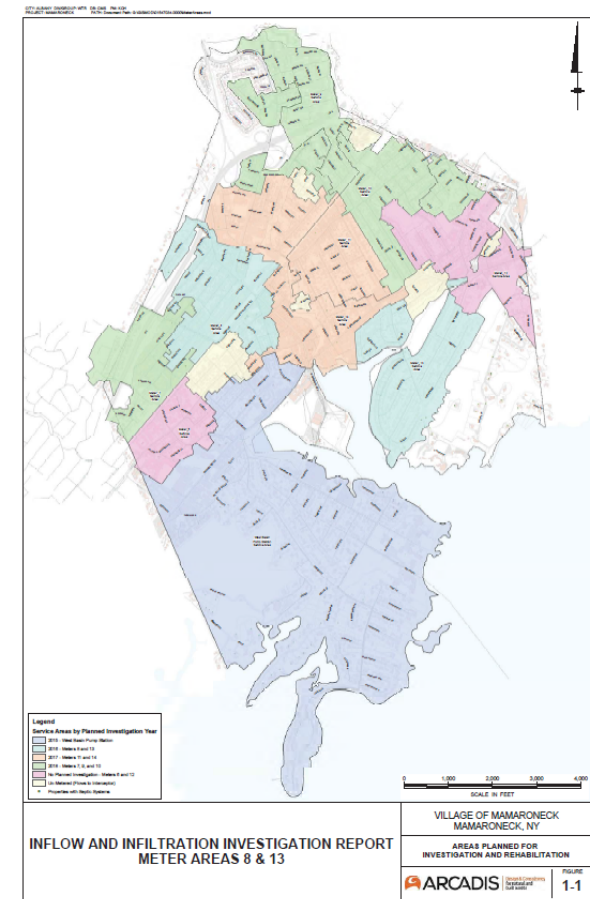
# Inflow and Infiltration Sources



## 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		

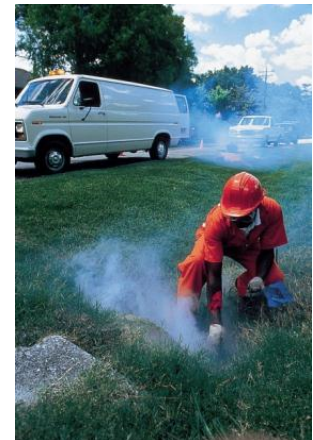
All Areas



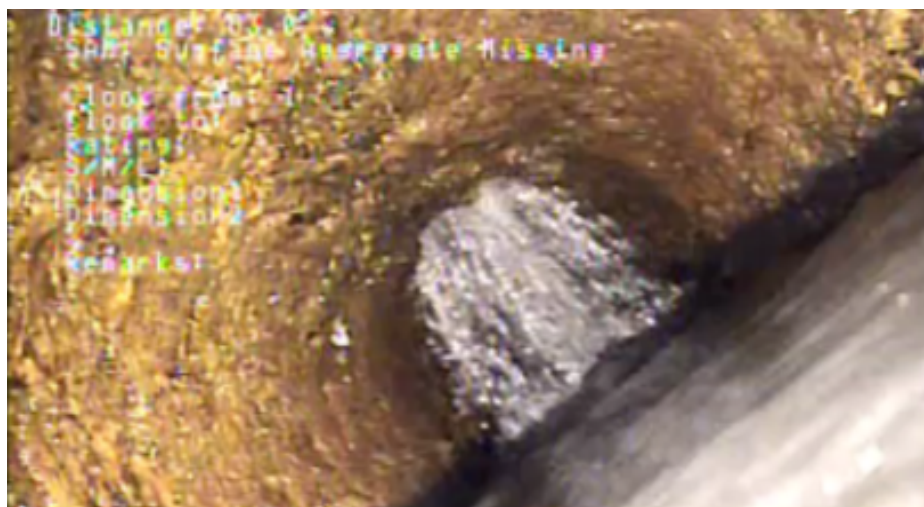


## Meter Area 11 and 14 Program

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



## Investigation Results in 2017



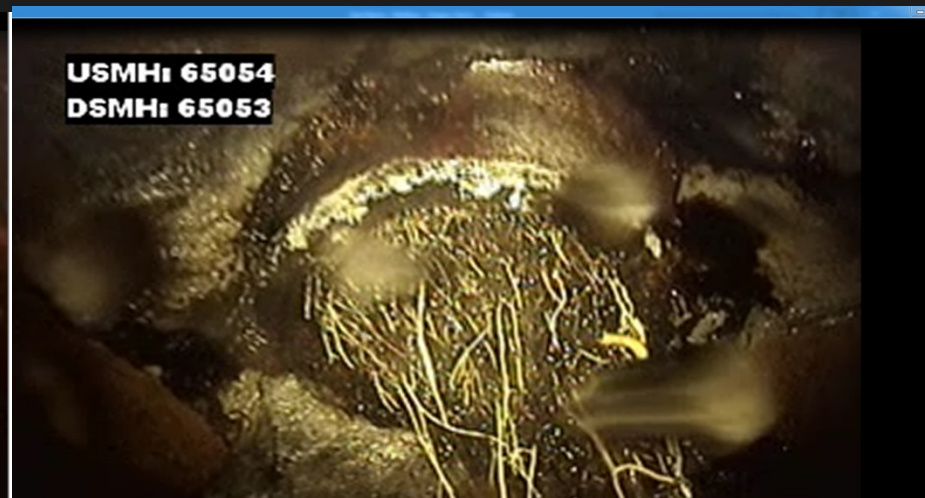
Infiltration



Fracture



Infiltration and Mineral Deposits



Roots



# Examples of Rehabilitation



Brick Manhole



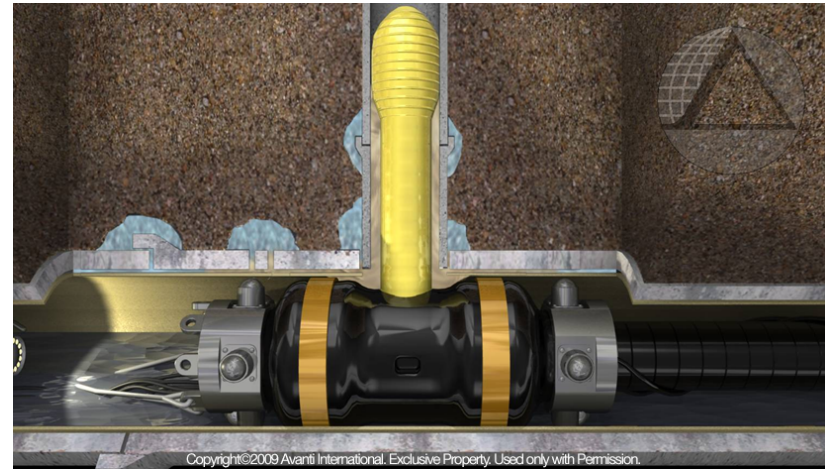
Manhole Lining



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

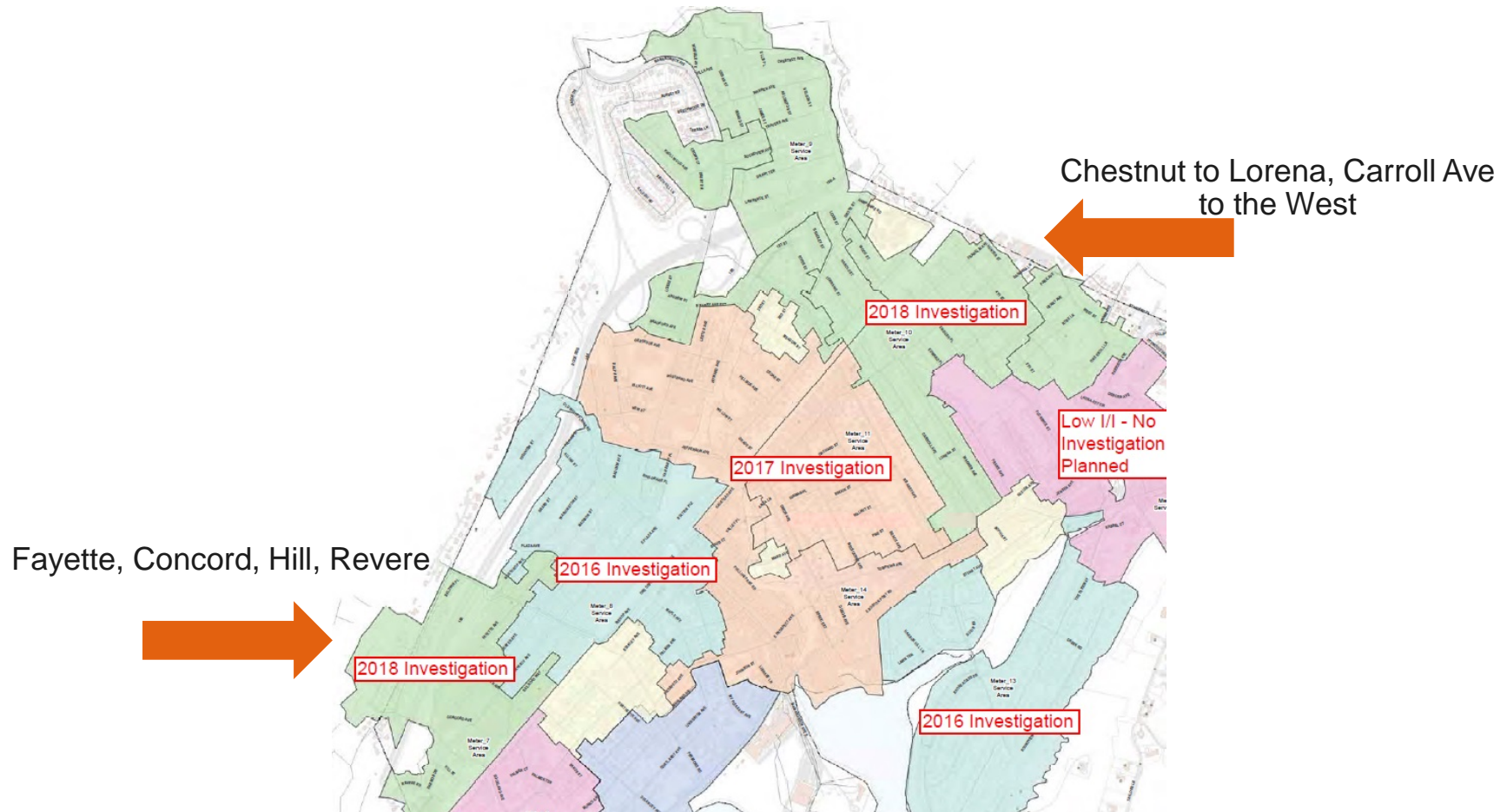
Area	Rating 3			Total
	Sewer LF	Rehabilitation	Oversight	
West Basin Service Area <sup>(1)</sup>	54,431	\$ 1,000,000	\$ 100,000	\$ 1,100,000
Meter Area 8 & 13	28,147	\$ 750,000	\$ 75,000	\$ 825,000
Meter Area 11 & 14	33,607	\$ 850,000	\$ 85,000	\$ 935,000
Meter Area 7, 9 & 10 <sup>(1)</sup>	63,510	\$ 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.

<sup>(1)</sup> The estimated rehabilitation cost has been reduced for these areas



## 2018 Sewer Investigation Area



**QUESTIONS?**