

Phase 2 – Sewer System Evaluation Survey Farmington Sewershed

Presentation to Town of Avon Water Pollution Control Authority July 14, 2022

USEPA I/I Abatement Process

• <u>Definitions</u>

- Infiltration
 - Enters Indirectly
- Inflow
 - Enters Directly

<u>Three Part Process</u>

- I/I Analysis
- Sewer System Evaluation Survey
- Rehabilitation





EPA Phase 1 Infiltration/Inflow Investigation 2014-2016

<u>Flow Monitoring</u>

- Divided Sewershed into 20 Meter Basins
- EPA Excessive Infiltration & Inflow Metrics
- 30% of meter basins rated as high in one or both metrics

Manhole Inspection

- Visual Inspection of Manhole Structures for evidence of I&I
- 215 Manholes Inspected (20% of Sewershed)
- 14 Severe Defects, 62 Moderate, 201 Minor

Dye Flow Dilution

- Quantifies Increased Flow between Pipe Segments during Overnight Low Flow, Isolating Problem Areas to be CCTV'd
- 20 miles Investigated (45% of Sewershed)
- 4 Severe Metersheds, 2 Moderate, 3 Minor

<u>CCTV Investigation</u>

- Targeted a few Problem Areas Isolated During Dye Dilution
- 21 of 54 pipe segments Investigated showed infiltration
- <u>Sewer Capacity Analysis of Farmington and</u>
 <u>Simsbury Sewersheds</u>
 - 12 pipe segments found capacity constraints
- Approved by DEEP in 2018



EPA Phase 2 Sewer System Evaluation Survey 2022 – Scope of Work

- <u>Smoke Testing Fall 2022</u>
 - Non-toxic, non-staining, non-explosive smoke to find illicit connections
 - 4 Metersheds targeted based on Phase 1 Inflow Metric
- <u>Sewer Rehabilitation General Specifications Winter 2022</u>
- <u>Comprehensive Manhole Inspection Early Spring 2023</u>
 - Visual Inspection of Manhole Structures for evidence of I&I
 - 175 Manholes selected based on age of infrastructure and discussion with Town Staff
- Dye Flow Dilution Mid Spring 2023
 - Quantifies Increased Flow between Pipe Segments during Overnight Low Flow, Isolating Problem Areas
 - 4 Metersheds Investigated based on Phase 1 Infiltration Metric
- <u>Capacity Analysis of Sanford & Hawley Interceptor Summer 2023</u>
 - 2 Flow Meters for 8 Weeks to make Hydraulic Calculations
- <u>CCTV Investigation Spring 2024</u>
 - Target Problem Areas Isolated During Dye Dilution
 - Full Main Interceptor, 6 miles of Gravity Sewers, 100 Service Laterals
- Database of Manhole Frames & Covers to be Raised Throughout
- Final SSES Report Summer/Fall 2024
 - Include recommended rehabilitation plan based on cost effectiveness analysis





EPA Phase 2 Sewer System Evaluation Survey 2022 - Schedule

<u>Article</u> <u>Number</u>	<u>Scope Item</u>	<u>Fee Basis*</u>	<u>Cost/Budget</u>	
2.19	Comprehensive Manhole Inspections	CPFF	\$	60,000
2.20	Develop Database of Manhole Frames & Covers to be Raised	CPFF	\$	5,500
2.21	Smoke Testing for Inflow	CPFF	\$	78,500
2.22	Non-Toxic Dye Flow Dilution Testing	CPFF	\$	102,300
2.23.1	Cleaning and CCTV Inspection of Farmington Sewershed Main Interceptor	CPFF	\$	104,200
2.23.2	Cleaning and CCTV Inspection of Farmington Sewershed	CPFF	\$	125,500
2.23.3	CCTV Service Connections	CPFF	\$	36,000
2.23.4	CCTV Technical Memorandum	CPFF	\$	22,500
2.24	Develop Sewer Rehab General Specifications	CPFF	\$	31,000
2.25	Capacity Analysis of Sanford & Hawley Interceptor	CPFF	\$	38,500
2.26	Develop SSES Report	CPFF	\$	57,000
TOTAL BUDGET			\$	661,000



