



Town of West Hartford Drainage System Evaluation

November 23, 2020



**CDM
Smith**

Public Meeting
Drainage Study Update – Phase 1 – Areas 1 and 2

Introductions

Contacts:

West Hartford:

Matthew Hart

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Vice President

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Sr. Project Manager

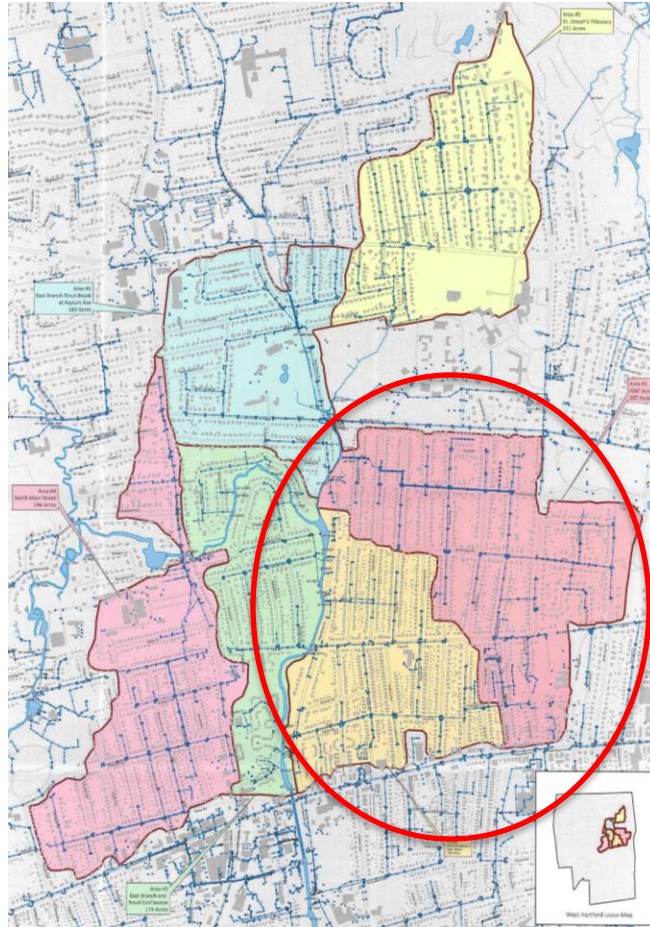
Ground Rules

- Moderator – Matthew Hart
- Please turn off your video
- Questions will be fielded by the moderator
- Public comments will take turns – one speaker at a time
- Presentation is for Areas 1 & 2
- Public meeting on 11/30 for Area 3



Agenda

- Project Overview
- Existing Conditions
- Recommendations
- Costs
- Funding Options
- Project Timeline

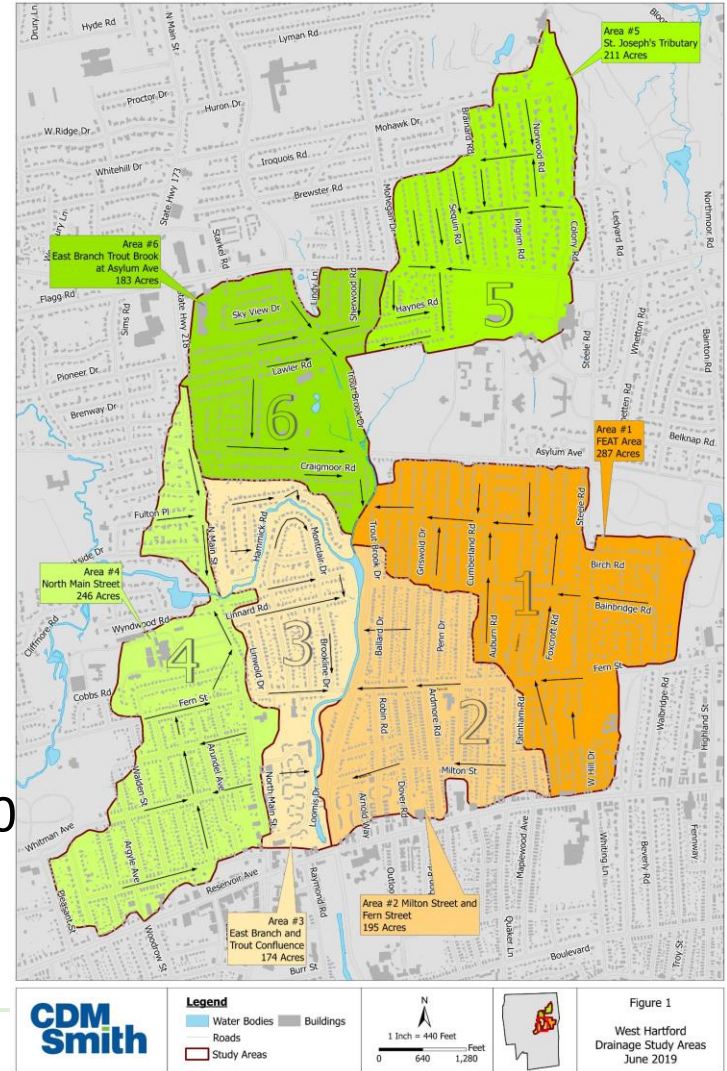




Project Overview

Project Area History

- Town project includes six drainage areas
- Significant flooding within the six areas
- Recent significant storm events
 - April and September 2018
 - August 2019
- First Public Meeting – June 2019
- Completed Phase 1 Study (Areas 1 to 3)
- Second Public Meetings – November 2020
- Working on Phase 2 Study (Areas 4 to 6)

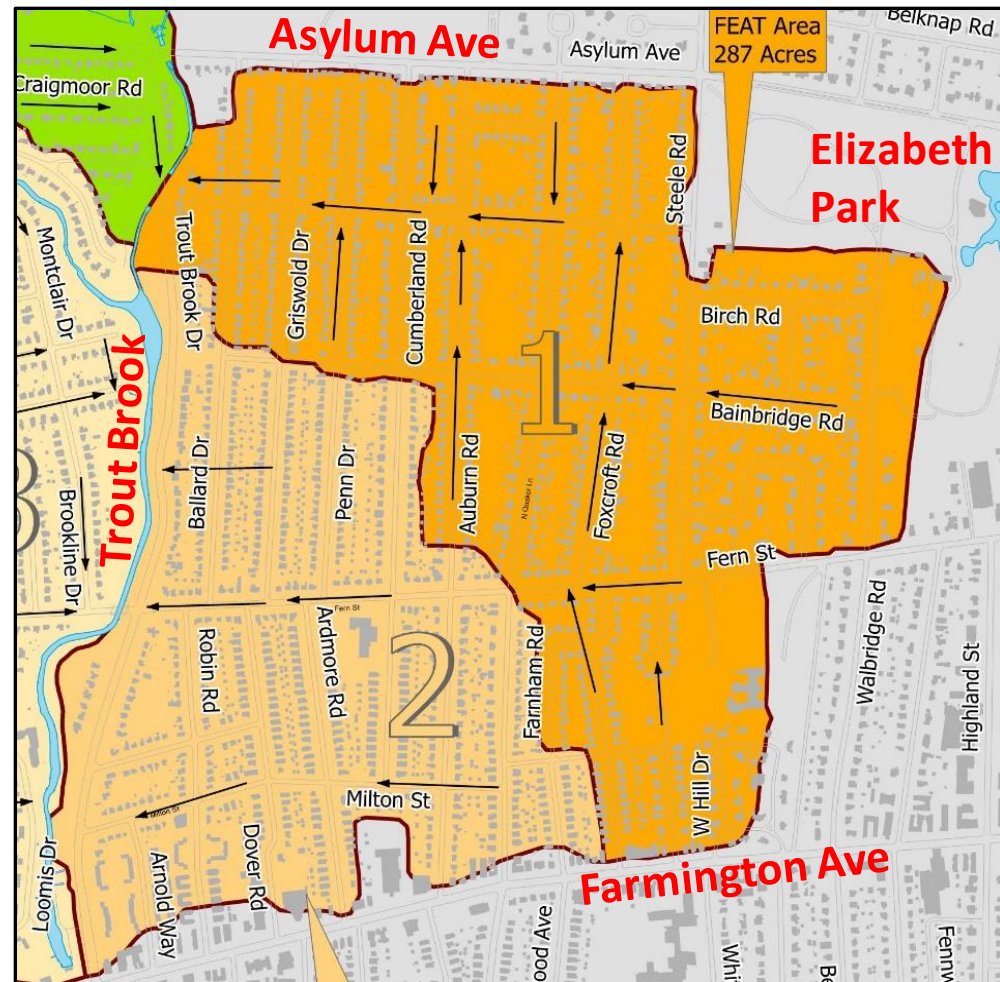


Drainage Project Scope

Phase 1 Study completed

- Collect and review data
- Survey, field work, and flow metering
- Stormwater system modeling
- Alternatives analysis
- Recommendations

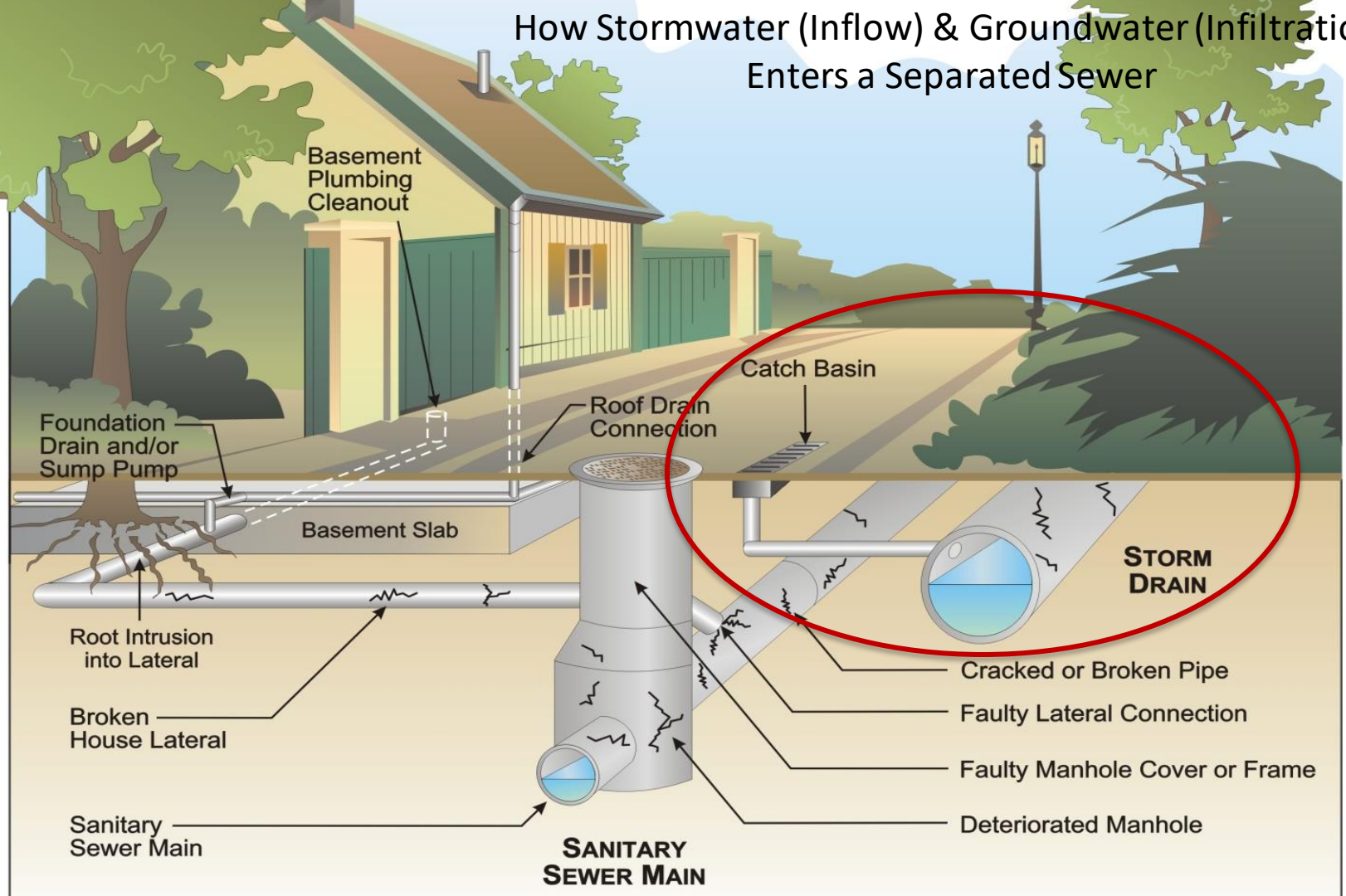
	Acre (acres)	Number of Properties	% Area of Town
Area 1 - FEAT	270	785	1.9%
Area 2 - Milton St	232	510	1.6%





Existing Conditions

How Stormwater (Inflow) & Groundwater (Infiltration) Enters a Separated Sewer



Drainage Model Development

- Field survey
- Evaluated 21 systems
- Installed 5 flow meters
- Conducted calibration and validation of drainage models
- Modeled 10 year design storm (10% chance of occurring in a given year)

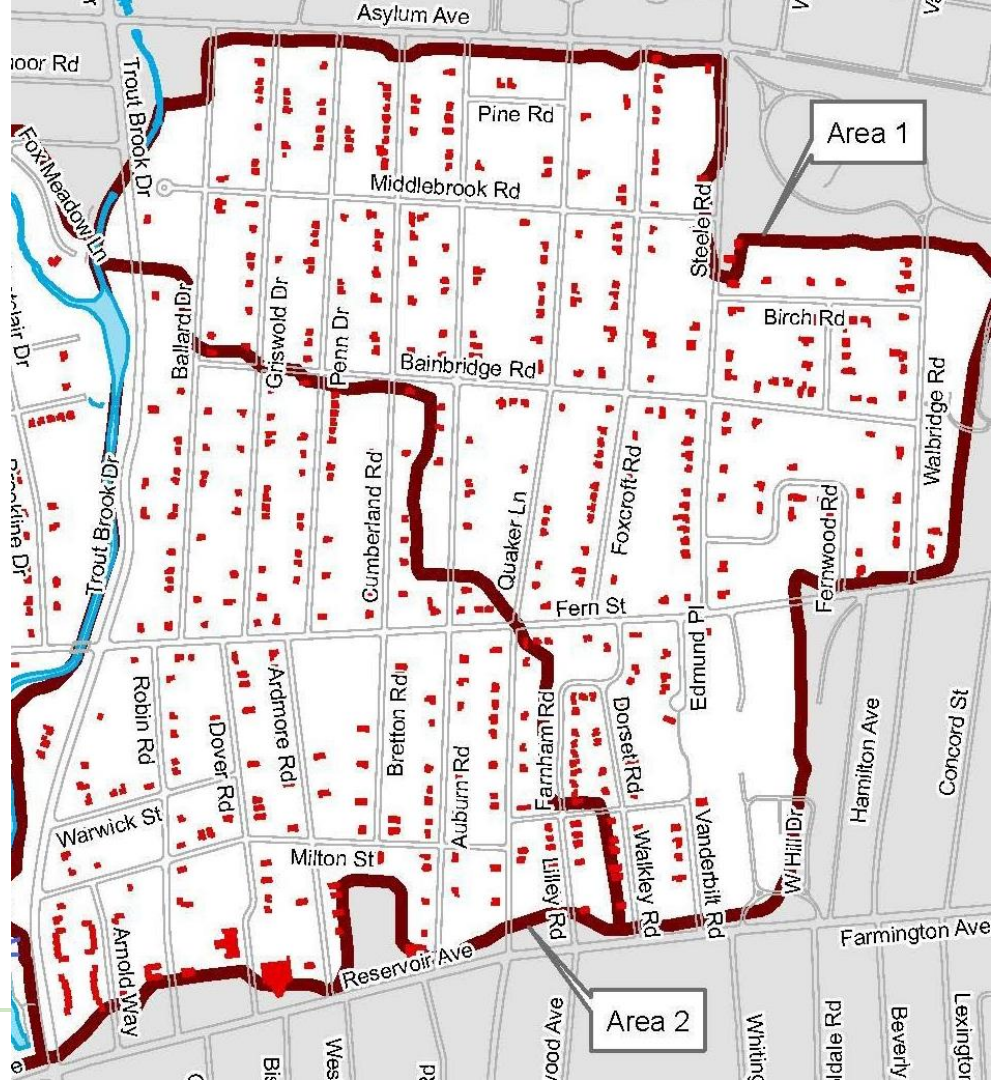


Drainage Systems with Modeled Flooding

Area	Outfall	Location	Number of Storm Exceedances
1	5641-022	FEAT – Trunk line	4
1	5641-017	Middlebrook Road	
2	5641-007	Fern Street East	4
2	5641-001	Milton Street	4
2	5641-16	Trout Brook Drive East of Linbrook Road	
2	5641-14	Trout Brook Drive East of Linnard Road	
2	5641-13	Trout Brook Drive Central	
2	5641-11	Trout Brook Drive South	
2	5641-12	Ballard Drive	1
3	1091-001	Clifford Drive North	1
3	0731-001	Linbrook Road	1
3	3261-001	Linnard Road	4
3	1981-009	Fern Street West	4
3	3681-001	Montclair Drive	4
3	2171-001	Fox Meadow Lane	
3	3321-002	Loomis North	1
3	3321-001	Loomis South	1
3	2547-002	Hammick Road North	
3	2547-003	Hammick Road South	
3	3321-003	Loomis Central	1
3	2547-001	Clifford Drive Cross-County	4

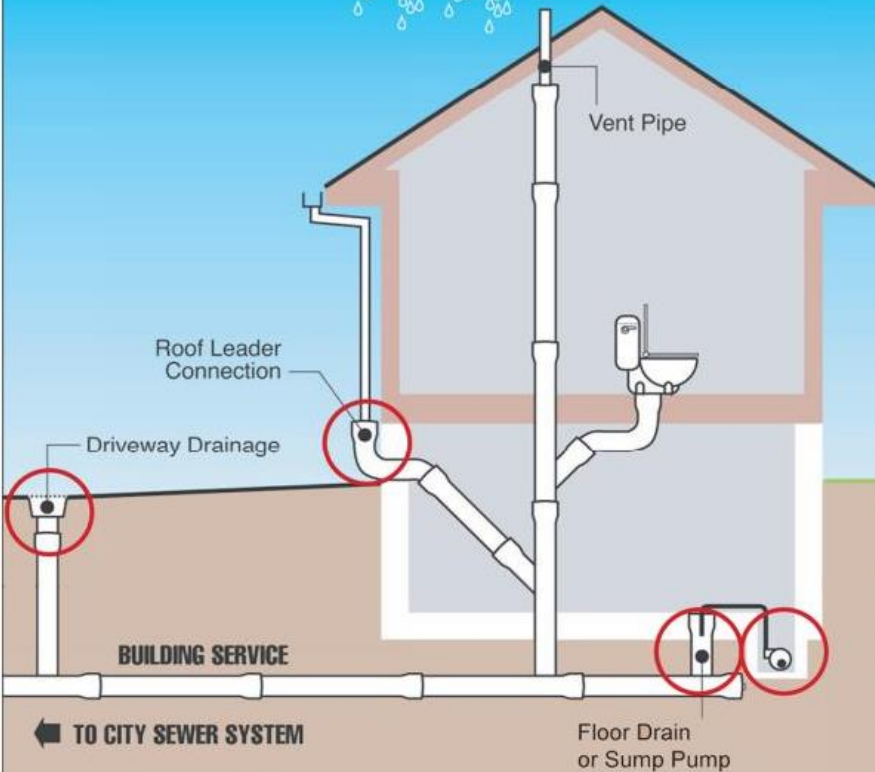
Private Inflow Removal

- 1,747 total buildings
- 661 (38%) known private inflow removal buildings (shown in red)
- Could be additional buildings that have not been inspected



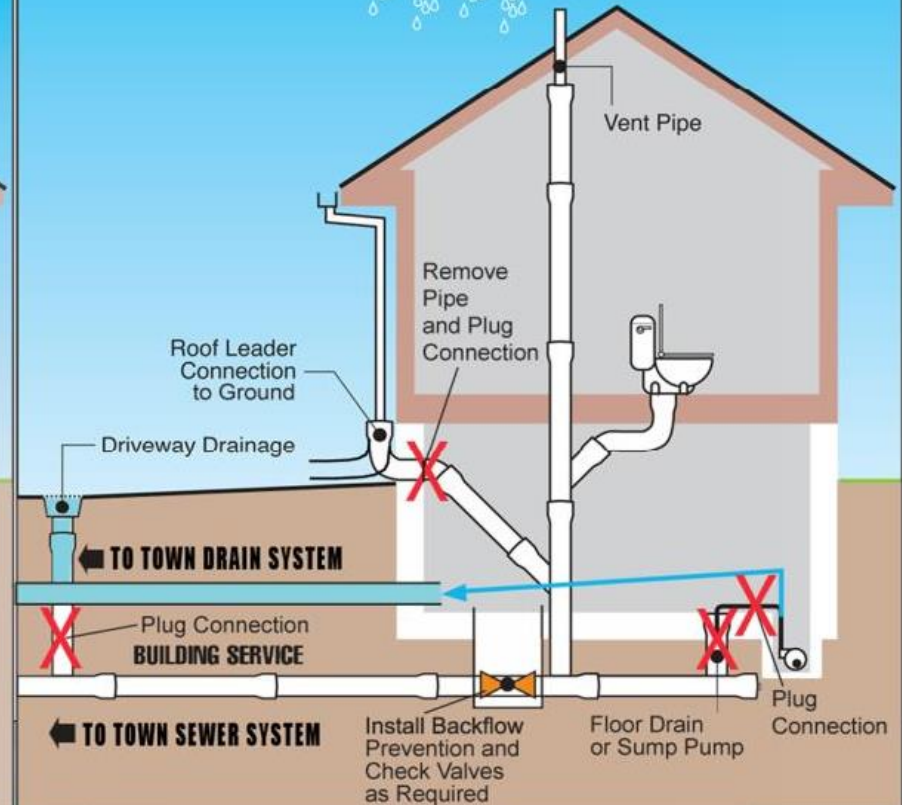
Typical Existing Household

Rain



Typical Proposed Household

Rain



Collector Drainage Systems

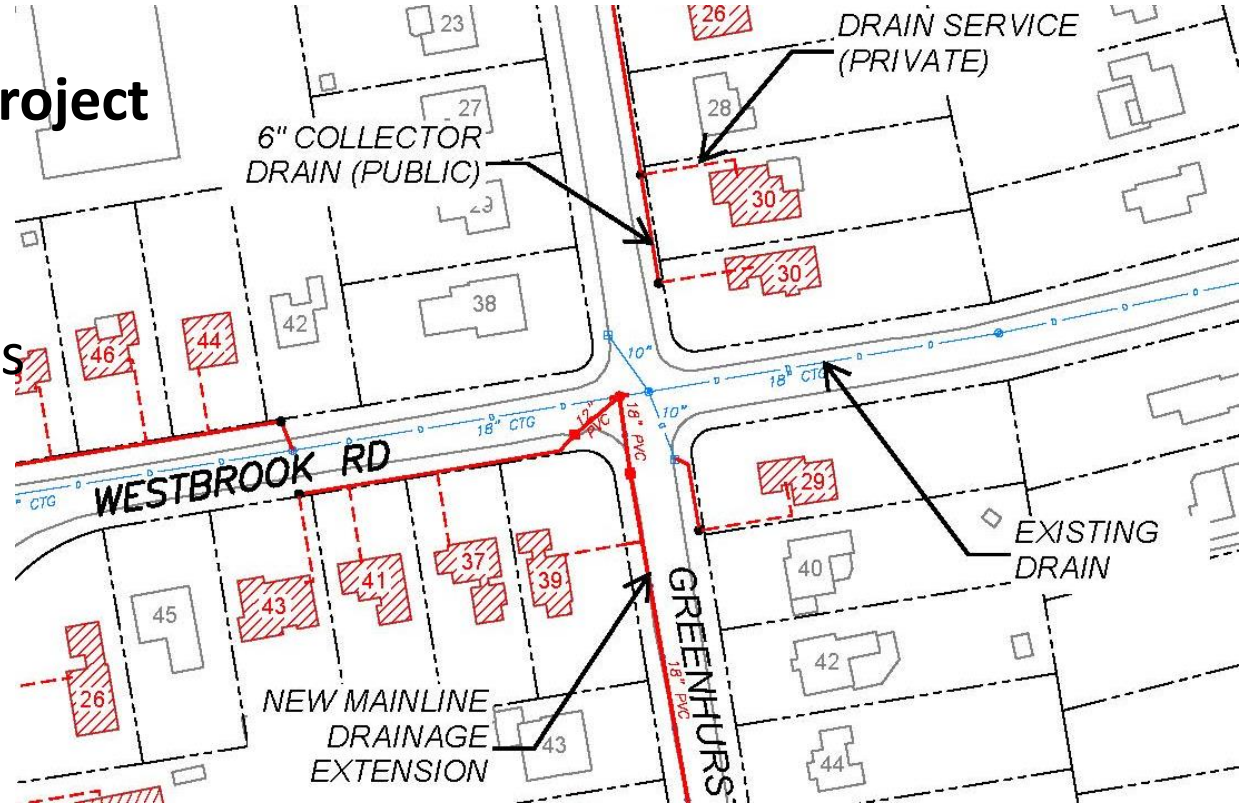
Greenhurst Road Project

Existing Drains

Drainage Extensions

Collector Drains

Drain Services

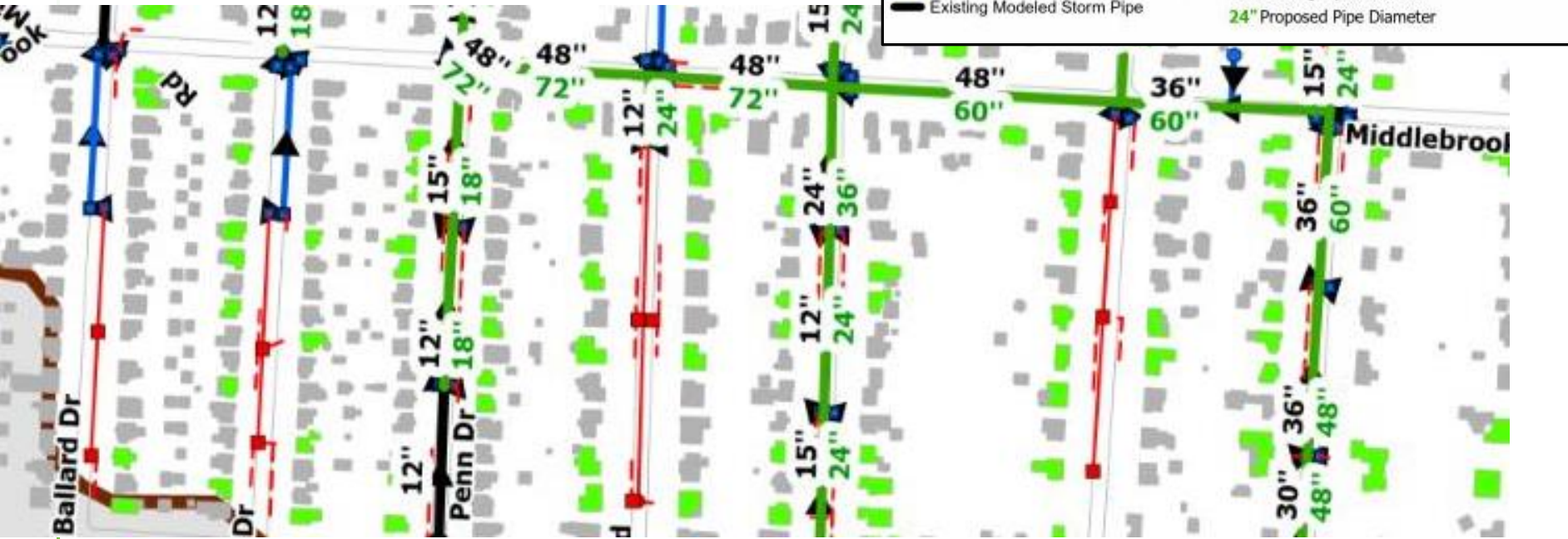




Recommendations

Recommendations

- Drainage system improvements
- Collector drains



Drainage System Prioritization

Tier 1 – High Priority

- Areas with **documented and modeled flooding**
 - Tier 1A – modeled flooding coincides with Town reported flooding
 - Tier 1B – modeled flooding is also related to groundwater
 - Tier 1C – modeled flooding during all historical events

Tier 2 – Moderate Priority

- Modeled flooding only during historical and 10-year design storm

Tier 3 – Low Priority

- Modeled flooding only during 10-year design storm event

Prioritization Recommendation Summary

Area	Outfall	Location	Outfall Drainage Area	Tier
1	5641-022	FEAT Trunk Line	Bainbridge Road Area	
			Bainbridge Road and Walbridge Road	1A
			Birch Road and Chelsea Lane	1C
			Fernwood Road and Cross County	2
			Dorset Road	1A
			Fern Street - Middlebrook Road Area	1C
2	5641-007	Fern Street East	Penn Drive	1C
			Bretton Road	1C
2	5641-001	Milton Street	Milton Street	2
2	5641-12	Ballard Drive	Ballard Drive	3
3	3681-001	Montclair Drive	Montclair Drive	1B
3	0731-001	Linbrook Road	Linbrook Road	3
3	1981-009	Fern Street West	Fern Street	2
3	2547-001	Clifford Road/Cross Country	Clifford Road/Cross-Country	2
3	3261-001	Linnard Road	Linnard Road	2
3	1091-001	Clifford Road	Clifford Road	3
3	3321-002	Loomis North	Loomis Drive North	3
3	3321-003	Loomis Central	Loomis Drive Central	3
3	3321-001	Loomis South	Loomis Drive South	3

Collector Drainage System Recommendations

Requires MDC Coordination to Proceed

Area 1

- 325 buildings (green)
- 3,800 lf drain extensions (red)
- 17,500 lf collector drains (red dash)

Area 2

- 222 buildings (green)
- 3,600 lf drain extensions (red)
- 13,500 lf collector drains (red dash)





Costs

Drainage System - Conceptual Design Costs

Area	Outfall	Location	Recommendations	Tier
1	5641-022	FEAT Trunk Line	\$23,800,000	1A, 1C, 2
2	5641-007	Fern Street East	\$4,200,000	1C
2	5641-001	Milton Street	\$7,800,000	2
2	5641-12	Ballard Drive	\$300,000	3
3	3681-001	Montclair Drive	\$300,000	1B
3	0731-001	Linbrook Road	\$1,100,000	1B
3	3261-001	Linnard Road	\$2,300,000	2
3	2547-001	Clifford Cross Country	\$600,000	2
3	1981-009	Fern Street West	\$800,000	2
3	1091-001	Clifford Drive	\$300,000	3
3	3321-002	Loomis North	\$271,000	3
3	3321-003	Loomis Central	\$60,000	3
3	3321-001	Loomis South	\$277,000	3
		TOTAL COST	\$42,108,000	

Collector Drain System- Conceptual Design Costs

Outfall	Location	Private I/I Removal Buildings	Collector Drain (Lf)	Drain Extensions (Lf)	Drain Structure (Each)	Total Costs ¹
5641-022	FEAT - Trunk line	292	15,281	3,303	21	\$5,392,000
5641-007	Fern Street East	87	5,615	1,789	12	\$2,346,000
5641-001	Milton Street	129	7,872	1,614	15	\$2,758,000
5641-12	Cross Country System Area 2	35	2,106	641	3	\$853,000
3681-001	Montclair Drive	9	350	0	0	\$77,000
0731-001	Linbrook Road	8	645	0	0	\$141,000
3261-001	Linnard Road	45	2,489	1,700	8	\$1,586,000
2547-001	Clifford Drive Cross Country	4	256	0	0	\$56,000
1981-009	Fern Street West	26	1,440	332	2	\$521,000
1091-001	Clifford Drive	4	256	0	0	\$56,000
3321-002	Loomis North	0	0	0	0	\$0
3321-003	Loomis Central	0	0	0	0	\$0
3321-001	Loomis South	0	0	0	0	\$0
Totals		639	36,309	9,379	61	\$13,786,000



Funding Options

Funding Opportunities

All Funding Options Require Town Capital Improvements Bonding

State/Federal Grants and Loans

- Building Resilient Infrastructure Communities (BRIC)
- Flood Mitigation Assistance (FMA)
- Water Infrastructure Finance and Innovation Act (WIFIA)
- CT DEEP Clean Water Fund (CWF) and State Revolving Funds (SRF)

Stormwater Utility

- Equitable funding program
- Fee contributions based on impervious area



Next Steps

Project Timeline

CDM Smith Drainage Study – Phase 1

- June 2020: Final Report
- October 2020: Town Council Workshop
- November 23rd & 30th 2020: Public Information Meetings
- Grant Submissions: January 2021
- MDC Coordination: Ongoing
- Support Stormwater Utility Legislation

CDM Smith Drainage Study – Phase 2

- October 2020 – February 2021: Drainage Study
- February 2021: Draft Report
- Spring 2021: Town Council and Public Information Meetings

Contacts

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Project webpage:

<https://www.westhartfordct.gov/town-departments/engineering/storm-water-management>

Questions

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