Kane and Kennedy Brook Watershed Storm Drainage Analysis

Public Information Meeting

September 10, 2026

CDM Smith

WEST HARTFORD

SEAL OF THE CITY OF HARTFORD CONNECTICUT

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Agenda



Study Background



Public Outreach



System Evaluation



Proposed Improvements



Study Schedule and Next Steps

Study Background

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September 10, 2026

Study Area

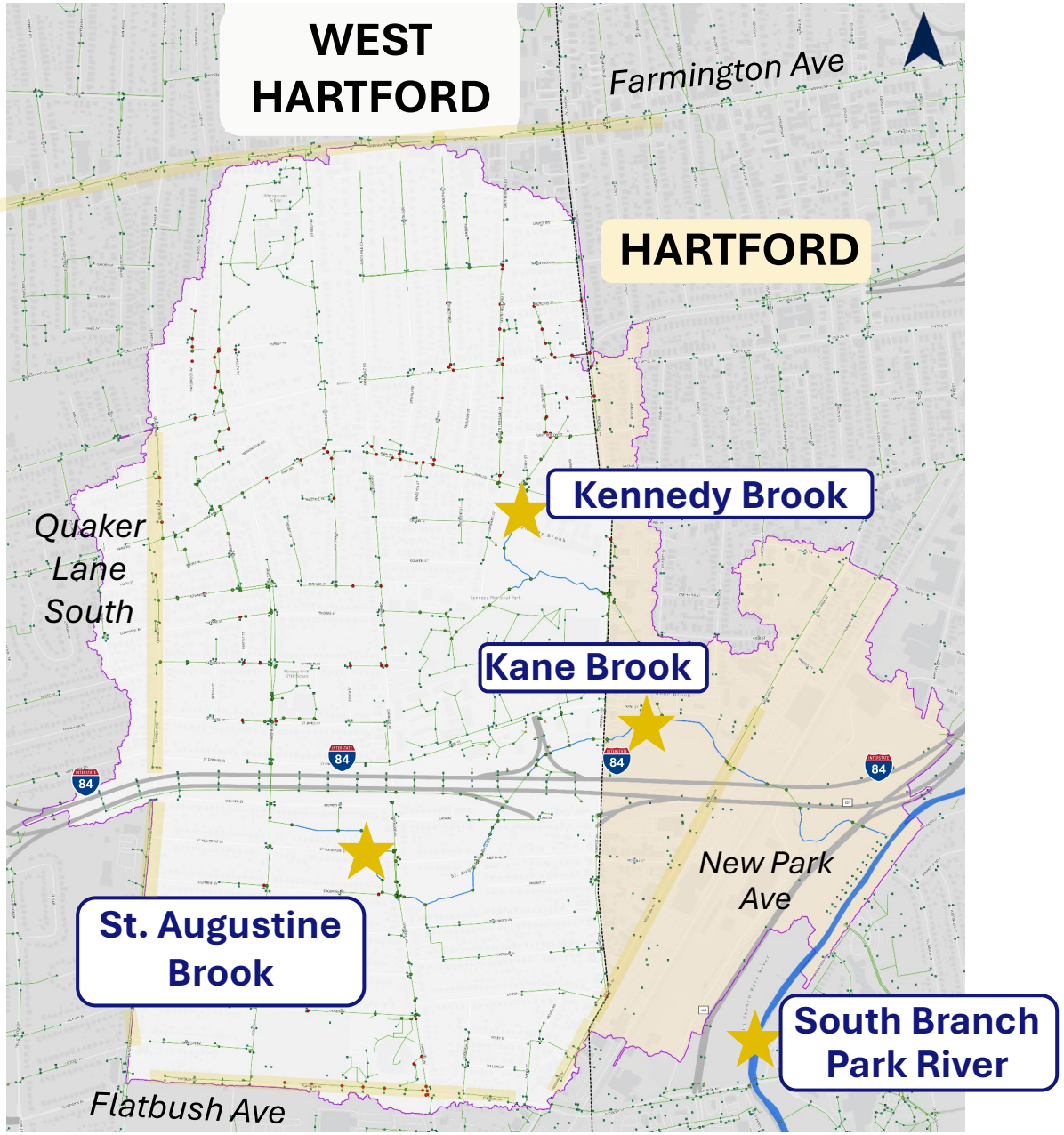
- St. Augustine Brook
- South Branch Park River
- Kane Brook
- Kennedy Brook

North
Farmington Ave

West
Quaker Lane South

East
New Park Ave

South
Flatbush Ave



Why This Study is Needed

- Multiple known areas of historic flooding within the study area
- Flooding observed on:
  - Roadways
  - Public spaces
  - Private properties



Location: Lexington Road, West Hartford
Source: Town of West Hartford

Purpose and Goals of the Study

The purpose of the study is to evaluate alternatives to **reduce flooding** and **improve storm drainage** in flood-prone areas within the watershed area

Goals:

- Evaluate the Town's and the City's storm drainage system
- Determine areas of concern
- Engage residents, business owners, and others in the watershed
- Provide recommended improvements to reduce or eliminate flood occurrences
- Solicit feedback from key stakeholders throughout the process

The Town of West Hartford obtained a **Connecticut Department of Energy and Environmental Protection** (CT DEEP) Climate Resilience Fund grant for this study

Public Outreach

September 10, 2026

Social Pinpoint Survey

Available August 29 – November 27, 2025

5,500+ postcards mailed to West Hartford and Hartford households

Properties: 2,618 West Hartford; 371 Hartford

Areas of Focus

- Property Information
- Flood and Drainage Experience
- Impacts and Concerns
- Improvements and Priorities

Survey: Respondents

89 responses – 78 from West Hartford, 11 from the City of Hartford

7 interactive map markers

88% of respondents were from West Hartford

57% of respondents have lived in their current home for 10+ years

89% of respondents own a property within the study area

14% of respondents own a business within the study area

What We Heard from the Public

Flooding and Drainage

Recurring concerns and experiences with flooding during high-intensity storms, with impacts to homes/driveways/yards

Impacts and Concerns

Substantial concern about flooding impacts, with a focus on risks to property, mobility, drainage infrastructure, and broader climate-related conditions

Improvements and Priorities

Prioritized storm drainage improvements and increased maintenance; Desire for green infrastructure

★ **TOP PRIORITY:** Protection of properties and homes

**Public feedback received through the survey reflected flooding and drainage concerns related to private property.*

Scan to view the full survey summary report!

2025 Outreach to Neighborhood Associations

Park Road Association

October 16, 2025
West Hartford, CT

Parkville Revitalization Association

November 12, 2025
Hartford, CT

Meeting Objectives

- ❑ Provide overview of flood study
- ❑ Understand neighborhood flood concerns and recurring issues

Meeting Outcomes

- ✓ Broadened community participation in the study
- ✓ Documented key flooding concerns and impacts identified by residents
- ✓ Expanded public engagement and survey participation

System Evaluation

Stormwater Drain Piping, Culverts, and Bridges

CDM Smith

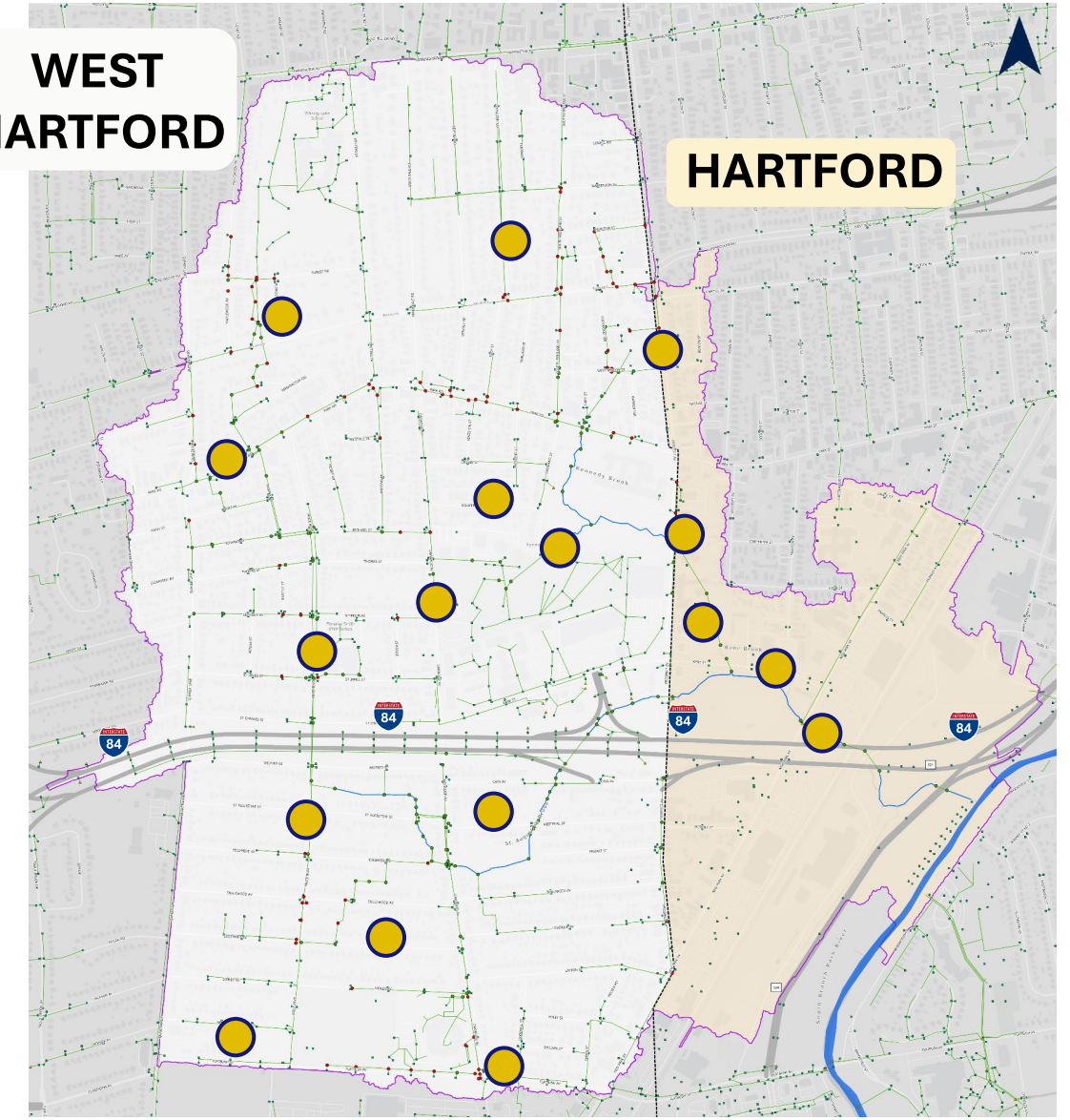
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Evaluation of Stormwater System

Pipes, culverts, and bridges

- Reviewed data from Town of West Hartford, City of Hartford, and the public survey
- Conducted field work, including flow metering and survey
- Developed a computer model of the river and storm drain system, including:
  - Kane Brook
  - Kennedy Brook
  - St. Augustine Brook
  - Key outfalls and storm drain pipes



Known flooding area

*Source: Town of West Hartford, Hartford, and public survey results

Design Criteria

CTDOT Drainage Manual

Storm drain pipes were evaluated to a **10-year storm**

Culverts and bridges were evaluated to a **50-year or 100-year storm** based on watershed size

10-year storm:
heavy rainstorm with **1 in 10** chance of occurring in any given year

Not guaranteed to happen once every 10 years

Could happen more often or consecutively

CTDEEP Stormwater Quality Manual

Green stormwater infrastructure design

Rainfall Statistics

Intense rainfall at shorter durations

10-Year, 24-Hour Design Storm

1.8 inches	2.6 inches	3.3 inches	5.1 inches
1 hour	3 hours	6 hours	24 hours

Tropical Storm Fred

August 19, 2021



- **3.1** inches – 1 hour
- **4.8** inches – 3 hours
- **5.0** inches – 15 hours

Summer 2026 Storm

August 3, 2026

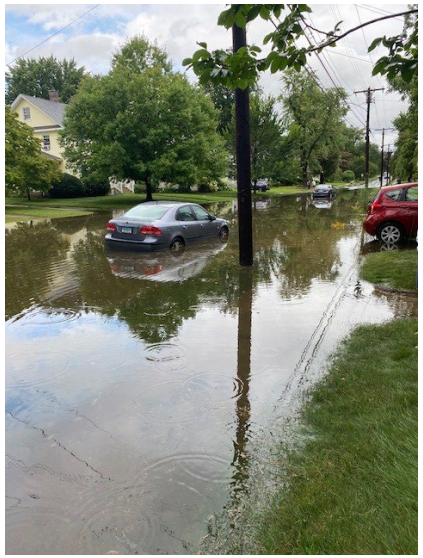


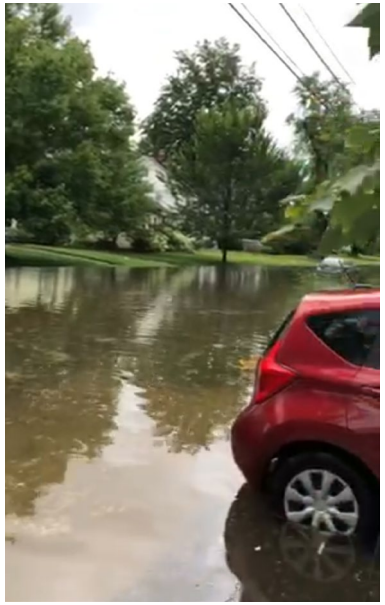
- **1.4** inches – 1 hour
- **2.8** inches – 3 hours
- **3.2** inches – 14 hours

Photo Sources: Town of West Hartford, City of Hartford, & CDM Smith
Data Source: USGS North Branch Park River at Albany Ave

Tropical Storm Fred

August 19, 2021












Source: Town of West Hartford and City of Hartford

Recent Flooding

August 3, 2026















Source: CDM Smith

Proposed Improvements

September 10, 2026

Evaluation of Stormwater System

EXISTING DRAINAGE CAPACITY

Portions of **existing storm drain pipes** and **culverts** have **insufficient capacity** during the 10-year design storm

PROPOSED STORMWATER SYSTEM IMPROVEMENTS

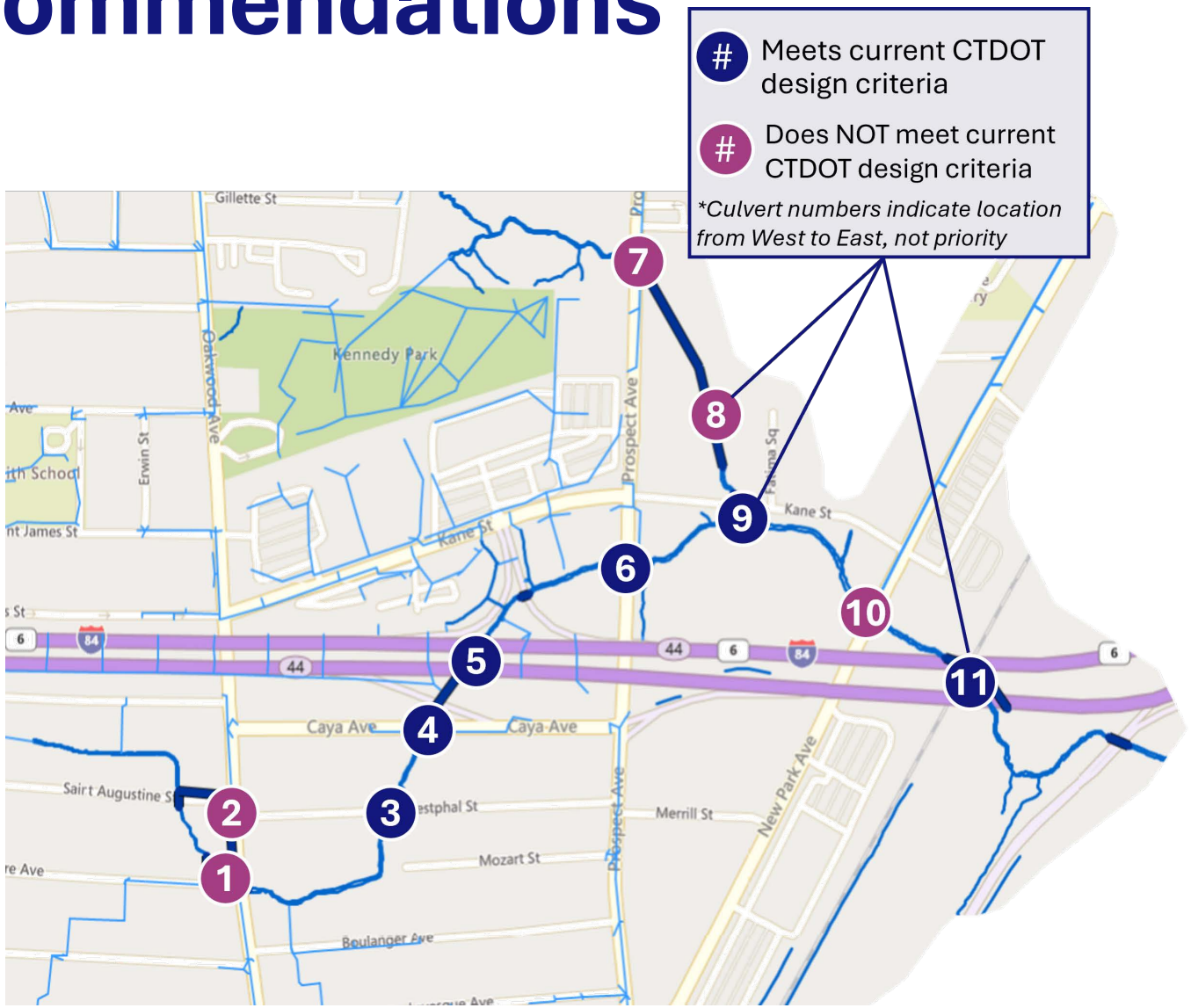
After evaluating the existing stormwater system, **four types of stormwater system improvements are proposed**

- **Bridges and culvert replacements**
- **Storm drainage system improvements**
- **Green stormwater infrastructure**
- **Regular maintenance**

Bridge and Culvert Recommendations

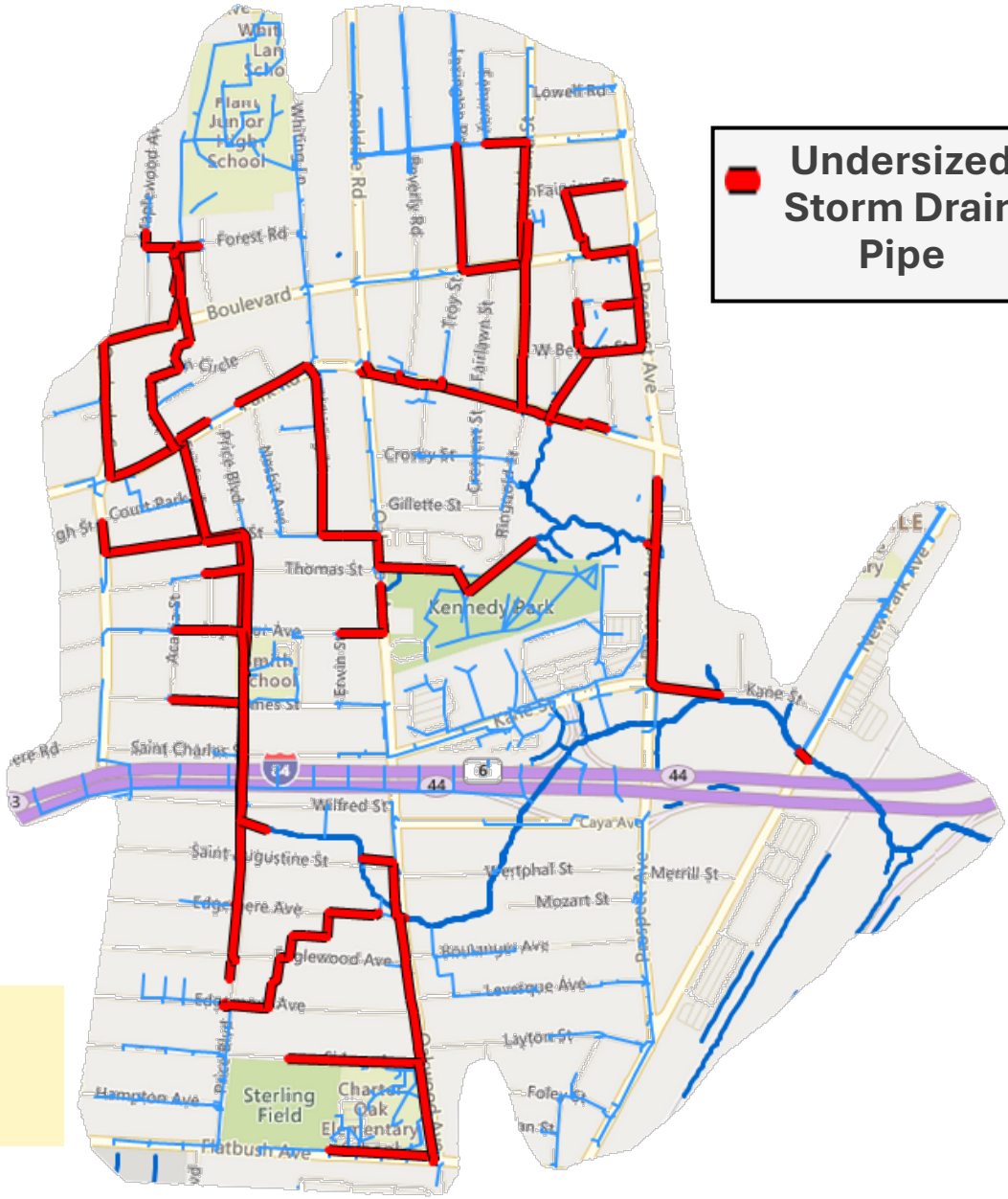
- **Upsize bridges and culverts** to meet CTDOT 50- and 100-year storm design criteria

#	Location	#	Location
1	St. Augustine Brook at Edgemere Ave	6	St. Augustine Brook at Prospect Ave
2	St. Augustine Brook at Edgemere Ave	7	Kennedy Brook at Prospect Ave
3	St. Augustine Brook at Westphal St	8	Kennedy Brook at 244 Prospect Ave
4	St. Augustine Brook at Caya Ave	9	Kane Brook at Kane St
5	St. Augustine Brook at I-84	10	Kane Brook at New Park Ave
		11	Kane Brook at Busway/I-84



Storm Drainage System Improvements

- **Older storm drainage system (50+ years)**
  - Designed to different design criteria accounting for smaller storms
- **Upsize drain pipes** to carry more stormwater during 10-year storm and reduce flooding



*Reference Public Meeting *Storm Drainage Improvements Map* for specifics on upsizing measurements

Green Stormwater Infrastructure (GSI)

What is GSI?

An approach to managing wet weather impacts to ***improve water quality*** *and* ***reduce stormwater*** *entering the storm drainage system*, while providing ***aesthetic benefits to the community***

Three locations identified within the Study Area:

- Whiting Lane School
- Florence Smith STEM School
- Kennedy Memorial Park

All 3 GSI proposed locations are in West Hartford *(No suitable GSI site identified in Hartford)*

Strategically pairing GSI projects with storm drain pipe and culvert replacement projects reduces **total length, and in some locations, the size of storm drains and culverts.**

Green Stormwater Infrastructure Drivers

- Consent Decrees, MS4 Permits, New Development Guidelines, Equity Funds
- Purpose of GSI
  - Peak rate attenuation
  - Groundwater recharge
  - Volume reductions (CSOs)
  - Water quality improvements (MS4 Permits)
  - Co-Benefits (triple bottom line)



Source: Subsurface Storage, Corona Park, Queens, NYC



Source: Ayer Community Dog Park, Constructed Wetland, Ayer, MA

Co-Benefits of GSI: Triple Bottom Line

- Environmental
  - Air quality
  - **Flood mitigation**
  - Heat island
  - Air quality
  - Habitat creation



Source: Union Buckeye Gateway Project, Cleveland, OH

- Social
  - Stress reduction
  - Mental health
  - **Recreation community space**
  - Aesthetics



Source: Arsenal Park, Watertown, MA

- Economic
  - Property value
  - Energy savings
  - Job creation
  - **Infrastructure cost savings**



Source: 555 Main St GSI Improvements, Hartford, CT

Green Stormwater Infrastructure: Toolkit

- Limited Space
  - Porous pavement
  - Green roofs
  - Bioswales
  - Rain gardens
- Large Open Space
  - Bioretention basins
  - Constructed wetlands
  - Subsurface storage systems



Source: StormTrap Stormwater Solutions, Subsurface Stormwater Storage

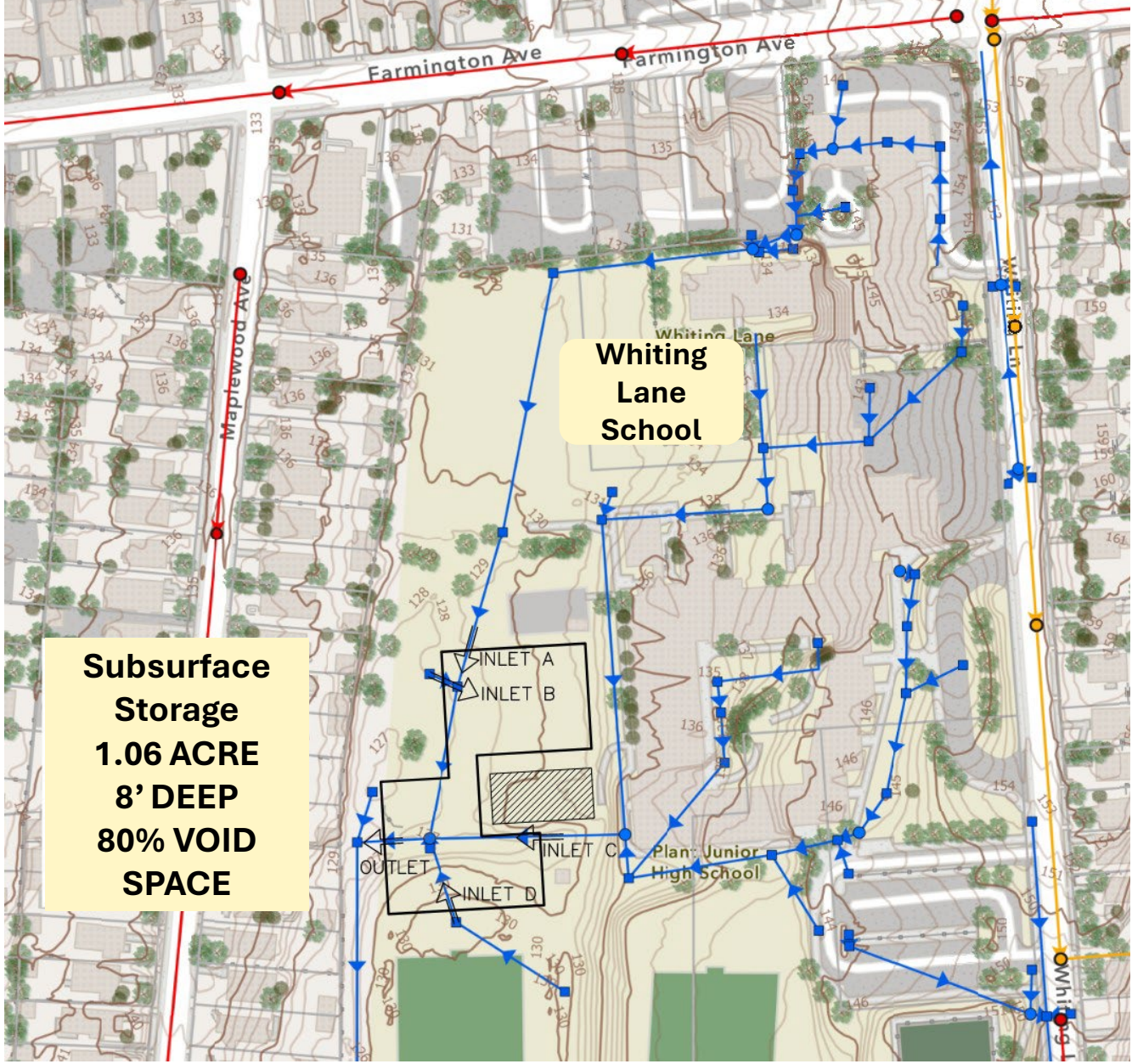
- Subsurface Storage System Benefits
  - Maximizes stormwater storage
  - Preserves valuable space at surface
  - Most economical
  - Least maintenance required
  - Provides flood mitigation, preserves recreational space, reduces infrastructure costs

Whiting Lane School

- Proposed subsurface stormwater storage system located below field
- Provides approximately 2.06 million gallons of storage
- Reduces size of replaced pipes and culverts
- Reduces need to replace pipes
- Reduces frequency of flooding



Source: Union Buckeye Gateway Project, Cleveland, OH

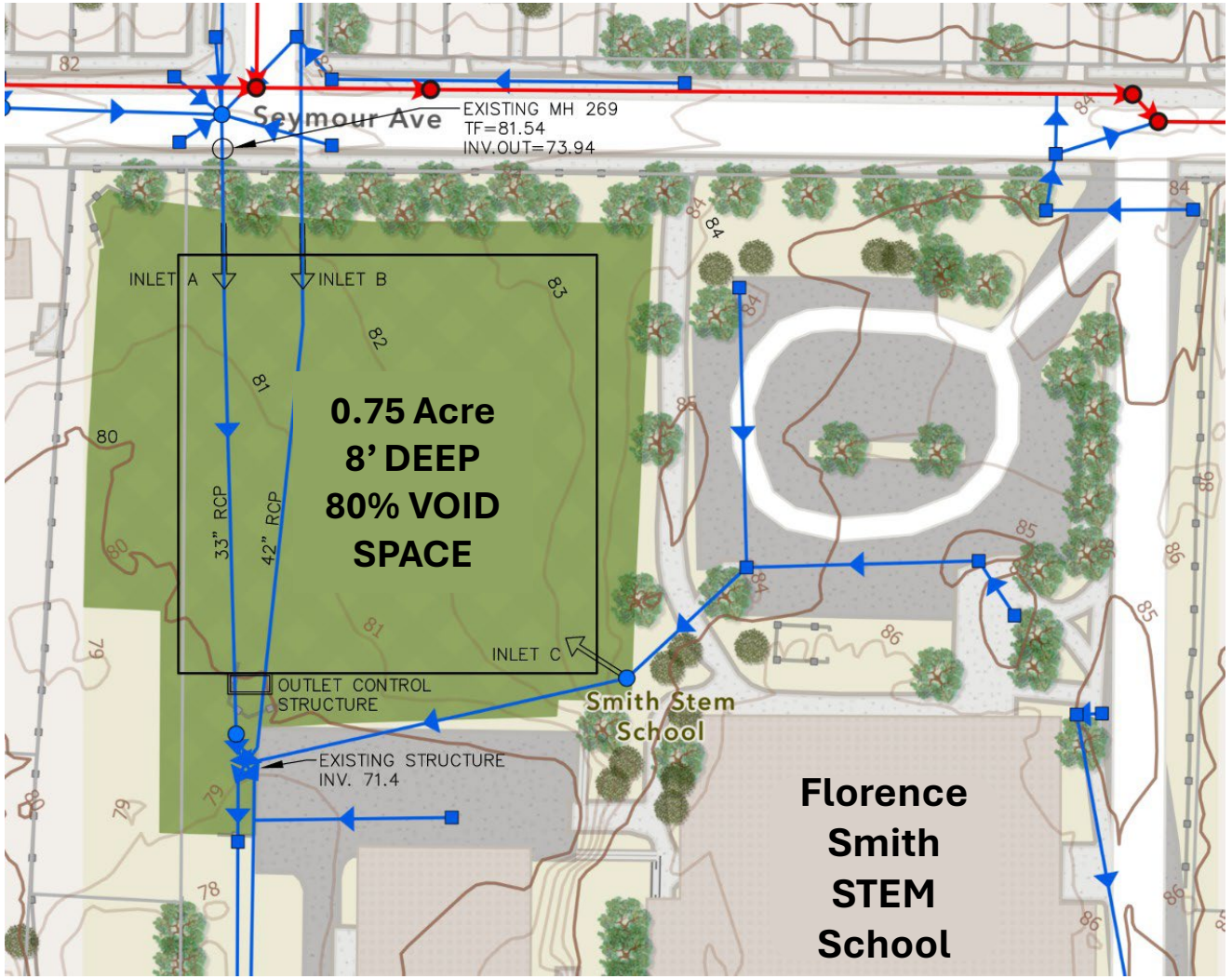


Florence Smith STEM School

- Proposed subsurface stormwater storage system located below field
- Provides approximately 1.56 million gallons of storage
- Reduces size of replaced pipes and culverts
- Reduces need to replace pipes
- Reduces frequency of flooding

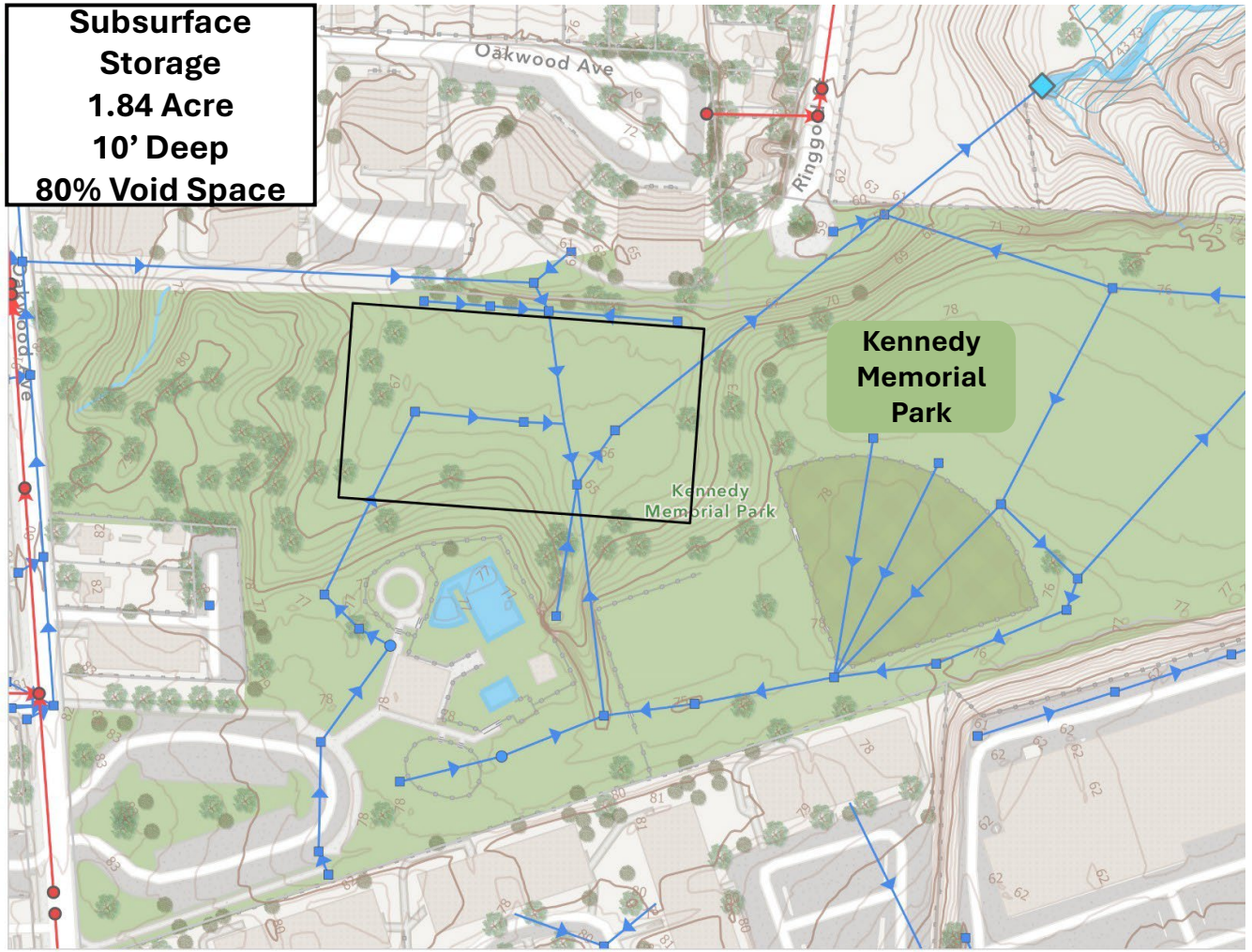


Source: Union Buckeye Gateway Project, Cleveland, OH



Kennedy Memorial Park

- Proposed subsurface stormwater storage system located below field
- Provides approximately 4.8 million gallons of storage
- Reduces size of replaced pipes and culverts
- Reduces need to replace pipes
- Reduces frequency of flooding
- Impact from three subsurface storage systems
  - 8,420,000 gallons



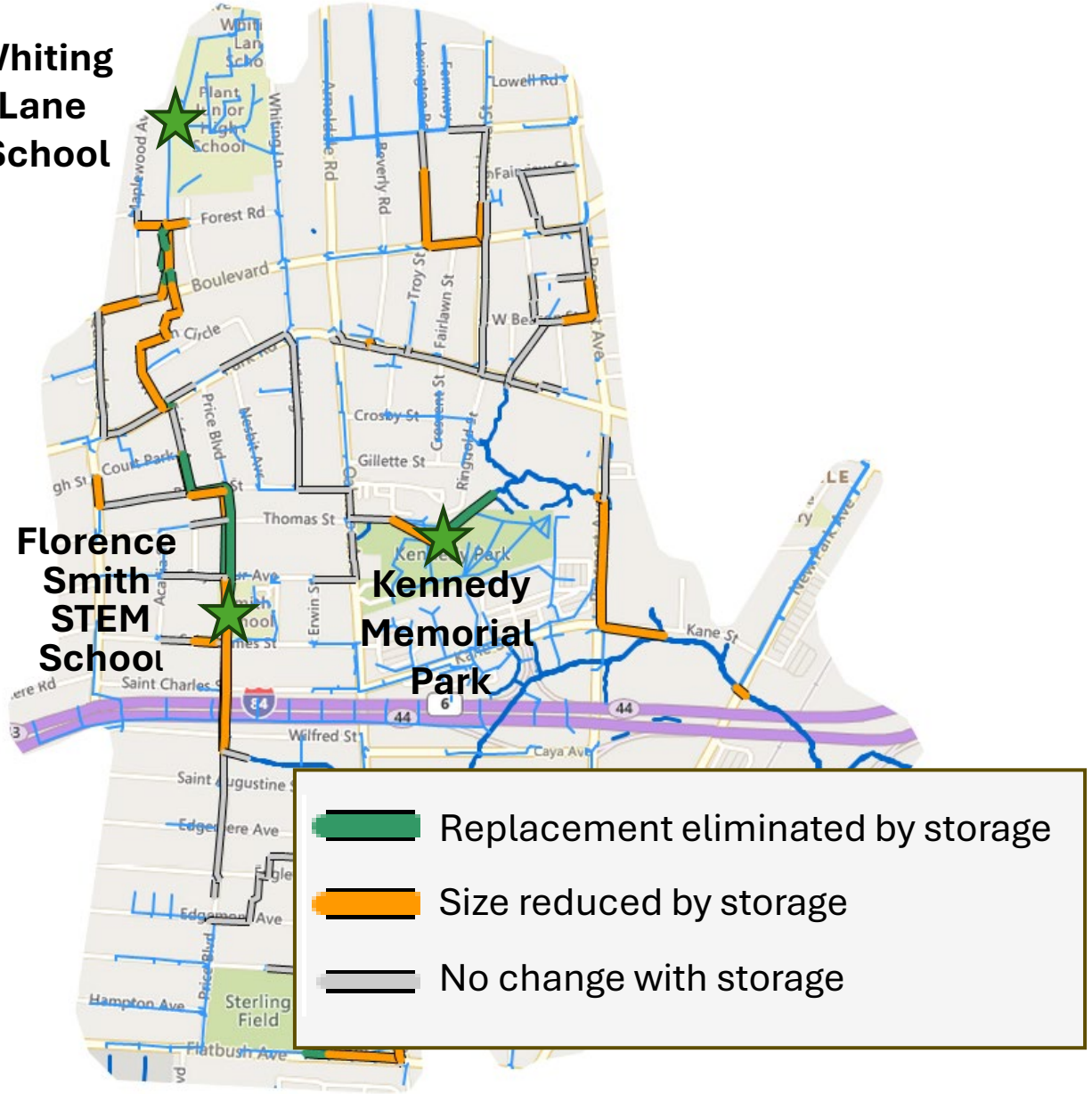
GSI Impact

Replacement eliminated for **4,400 ft** of pipe

Replacement eliminated for **8,500 ft** of pipe

Replacement size reduced for culverts

- Kennedy Brook at Prospect Ave
- Kane Brook at New Park Ave
- St Augustine Brook at St Augustine St



Stormwater Maintenance

- **Regular maintenance is critical to reduce flooding**
- Maintenance includes:
  - Street sweeping and leaf collection
  - Catch basin cleaning and debris removal
  - Storm drainage system inspections, cleaning, and repairs
  - Culvert and bridge inspections and cleaning
  - Stream and river inspections and debris removal

Shared responsibilities between Town of West Hartford, City of Hartford, State of Connecticut, and private property owners



Source: CDM Smith

Key Challenges

PHASING

Stormwater improvements are typically performed from downstream to upstream in the system

ENGINEERING

Final design of challenging culverts and bridges

OWNERSHIP

Town of West Hartford,
City of Hartford,
State of CT,
Private property owners

FUNDING

West Hartford and Hartford will need to secure funding to advance the Study's recommendations from planning to implementation

CONSTRUCTION

Large diameter drain pipes, culverts, bridges construction in urban streets

Implementation Timeline: 20+ YEARS

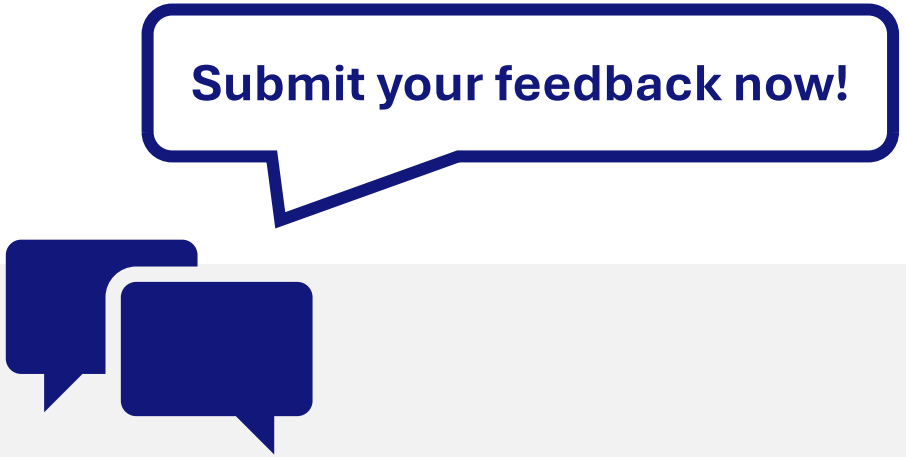
Study Schedule and Next Steps

September 10, 2026

Study Schedule



Public Meeting
September 10, 2026



Public Comment Period Closes
September 24, 2026



Report with recommendations
Winter 2026

Next Steps

- Complete the conceptual recommendations by Winter 2026
- Town and City will review and prioritize the recommended projects
- Evaluate project ownership, funding, and design needs
- Seek funding for priority improvements
- Incorporate selected projects into future Capital Improvement Plans
- Advance priority projects into final design and construction

Contact Us

www.westhartfordct.gov

kanekennedy@westhartfordct.gov

West Hartford Engineering Department

Scan to learn more!

CDM Smith

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Thank You!

September 10, 2026