

Brightmoor Neighborhood

Fenkell Stormwater Projects

May 23, 2023



Water & Sewerage
Department



Greetings & Introductions

- Project team

Detroit Water and Sewerage Department

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Outline

- Introduction to Water and Sewer Systems
- What is Green Stormwater Infrastructure (GSI)?
- Fenkell Stormwater Projects
 - Locations
 - Timeline
 - Community Input



Water and Sewer Systems

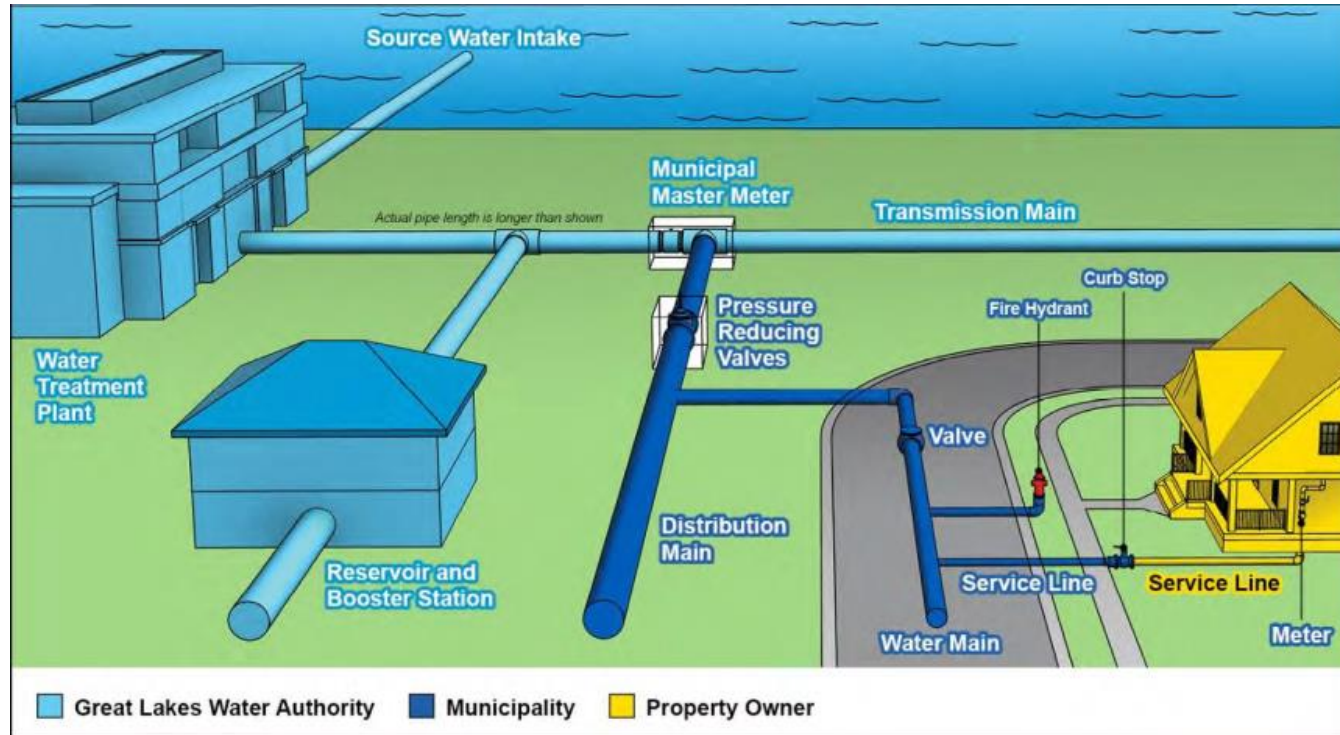


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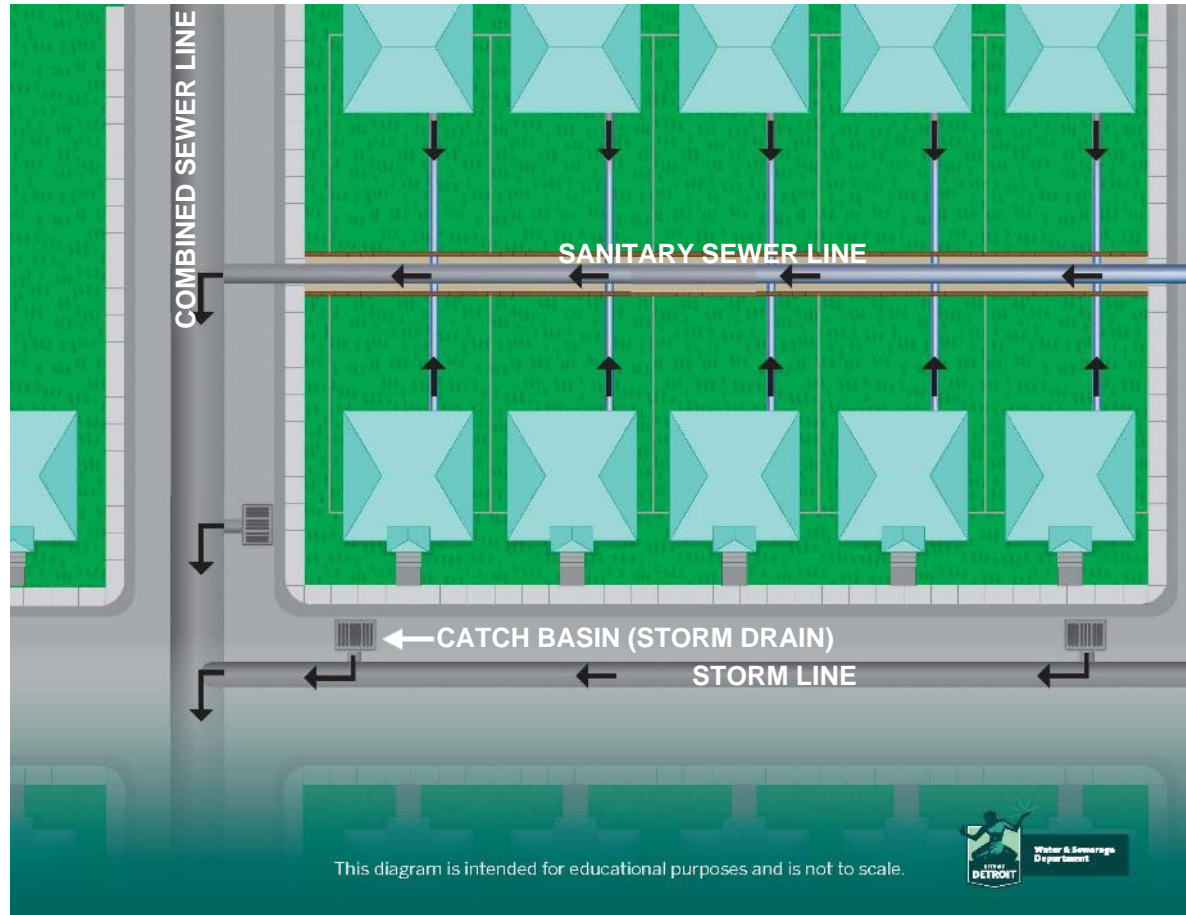
Drinking Water System

The treated drinking water system delivers clean water from water treatment plants and through the water mains to your property.



Combined Sewer System

The combined sewer system is separate from the water system – untreated sewage and stormwater is collected in pipes, pumped and treated at nine wet weather facilities, and full treatment at the GLWA Water Resource Recovery Facility.

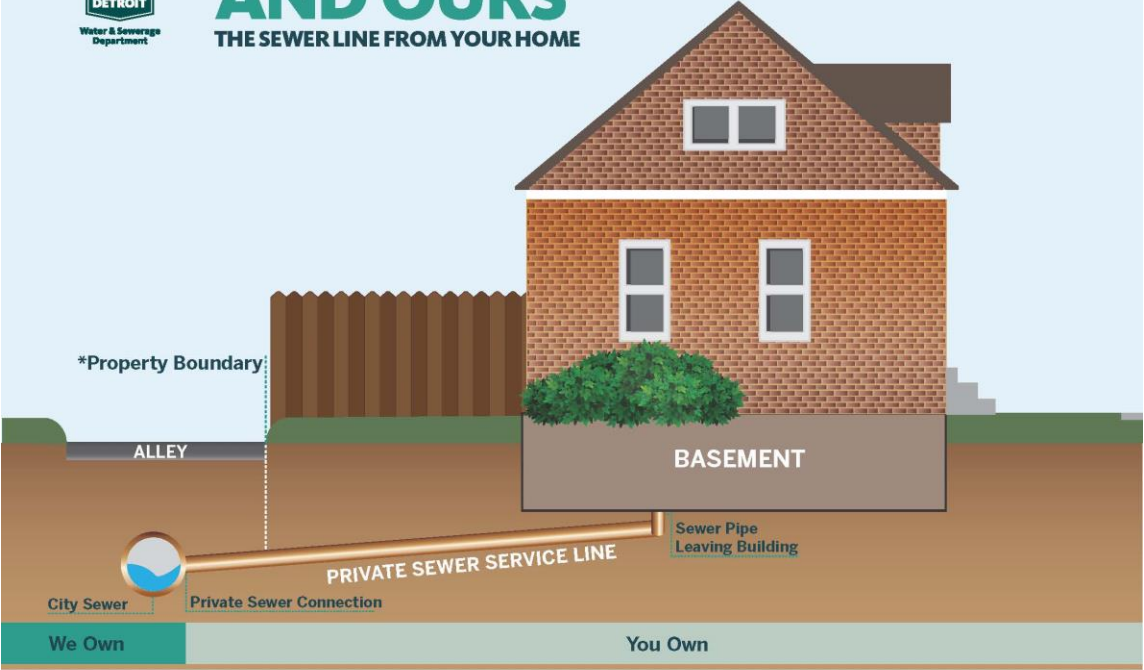


Sewer System – Private Responsibility



YOUR RESPONSIBILITY AND OURS

THE SEWER LINE FROM YOUR HOME



For more information, call 313-267-8000 or visit www.detroitmi.gov/DWSD



Green Stormwater Infrastructure (GSI)



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What is stormwater?

Rainfall and snowmelt that flows from impervious/hard surfaces and into the combined sewer system. Impervious surfaces include:

- Roofs
- Streets
- Sidewalks
- Driveways
- Parking lots

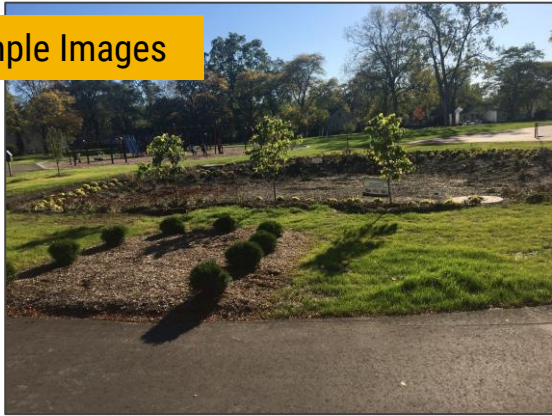


Green Stormwater Infrastructure

Green stormwater infrastructure (GSI) is an approach to managing stormwater that uses the natural processes of soils and plants to **soak up stormwater** where it falls **before it can enter and overwhelm** the combined sewer system.

Examples of GSI includes **bioretention/rain gardens**, bioswales, pervious pavers, and tree boxes.

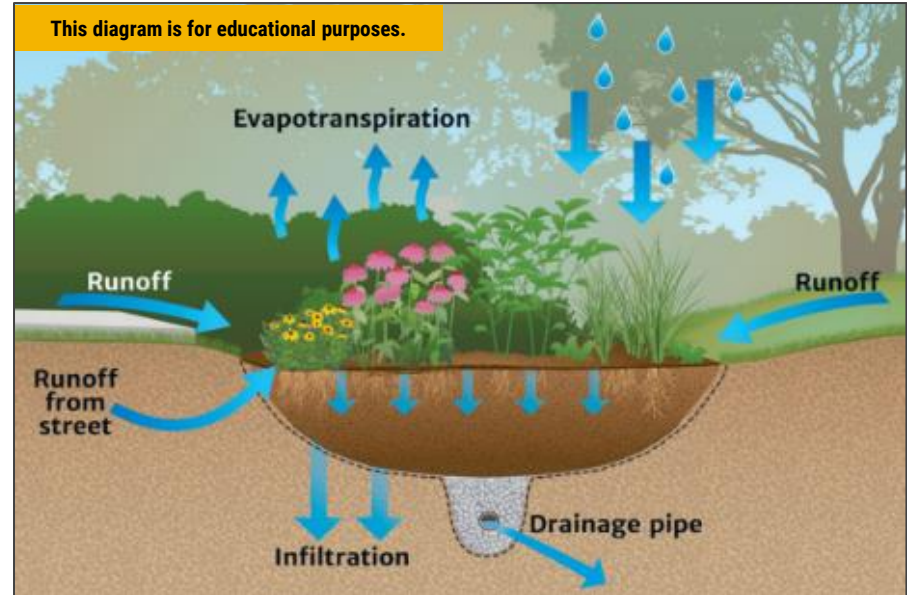
Example Images



Green Stormwater Infrastructure

How a bioretention works:

1. Stormwater runoff flows into the bioretention from the hard surfaces.
2. Water soaks into the grass and plants, preventing it from entering the combined sewer system.
3. Buried drain pipe carries excess water to the combined sewer in extreme conditions.



Green Stormwater Infrastructure in Detroit

Warrendale Project Renderings



8084 Stahelin Avenue



8027 Greenview Avenue

Green Stormwater Infrastructure in Detroit

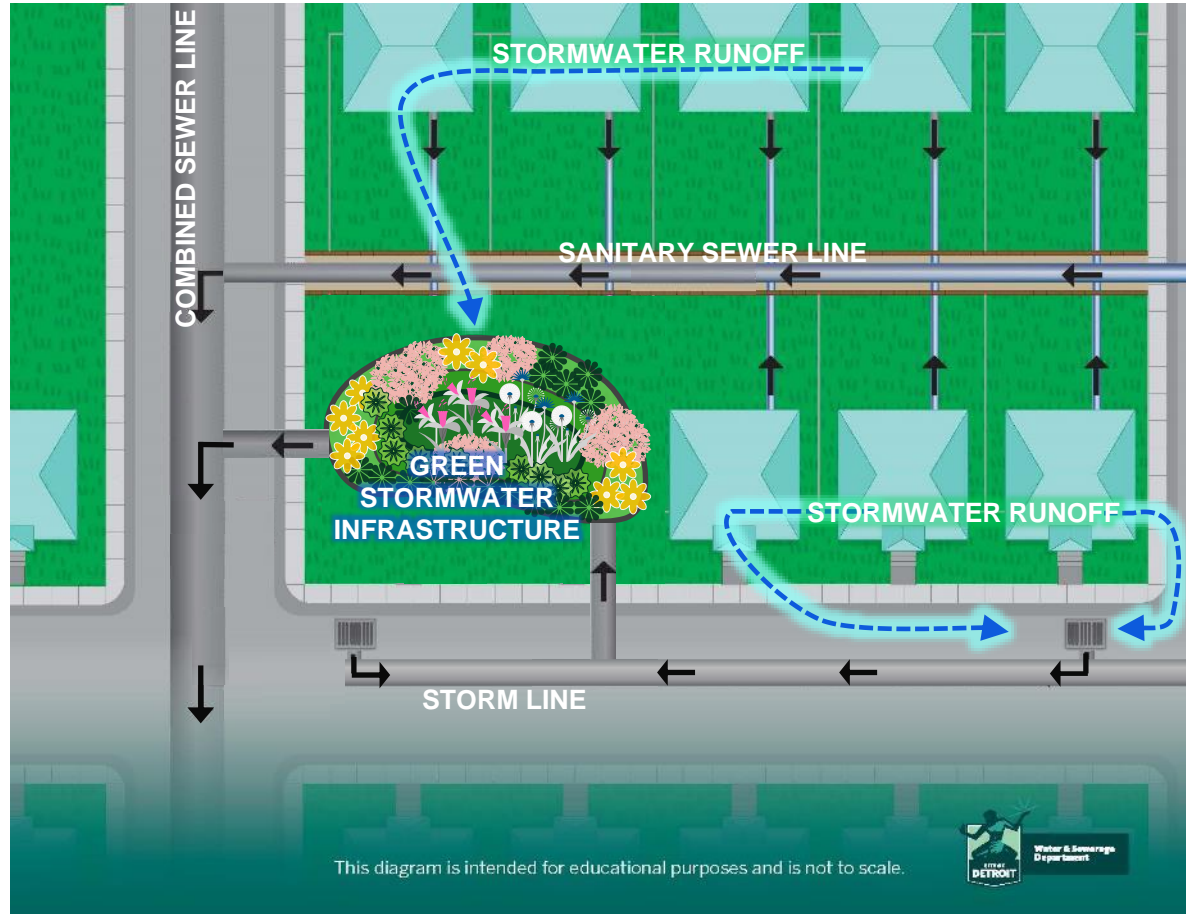
Existing Warrendale
bioretention/rain
garden sites.

Installed



Benefits of Green Stormwater Infrastructure

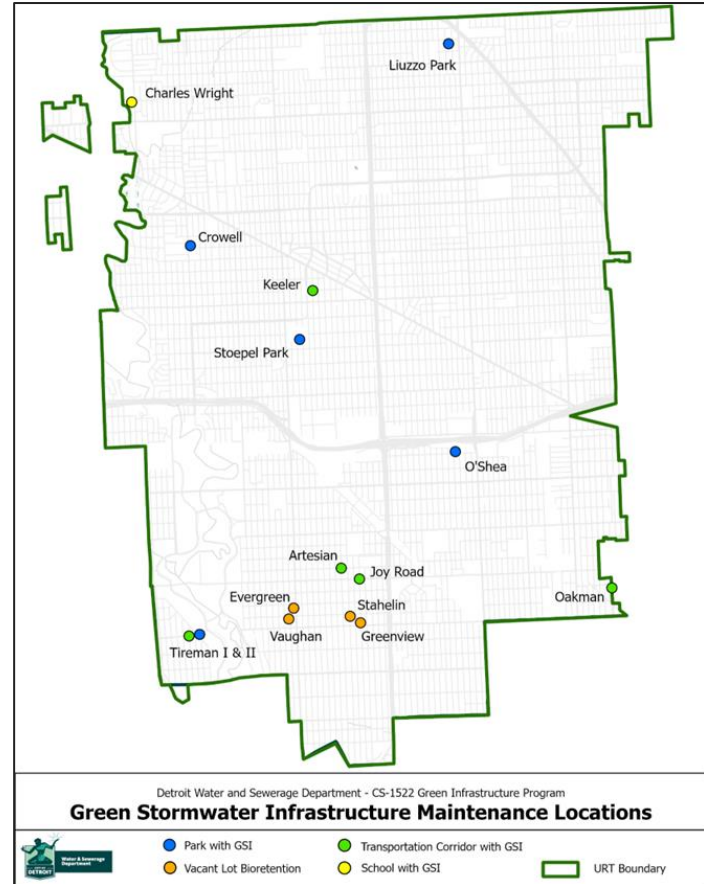
- Creates capacity within the combined sewer system
- Helps reduce the potential for future basement backups and street flooding
- Reduces the potential for combined untreated sewage to enter the Rouge River
- Improves water quality of the Rouge River



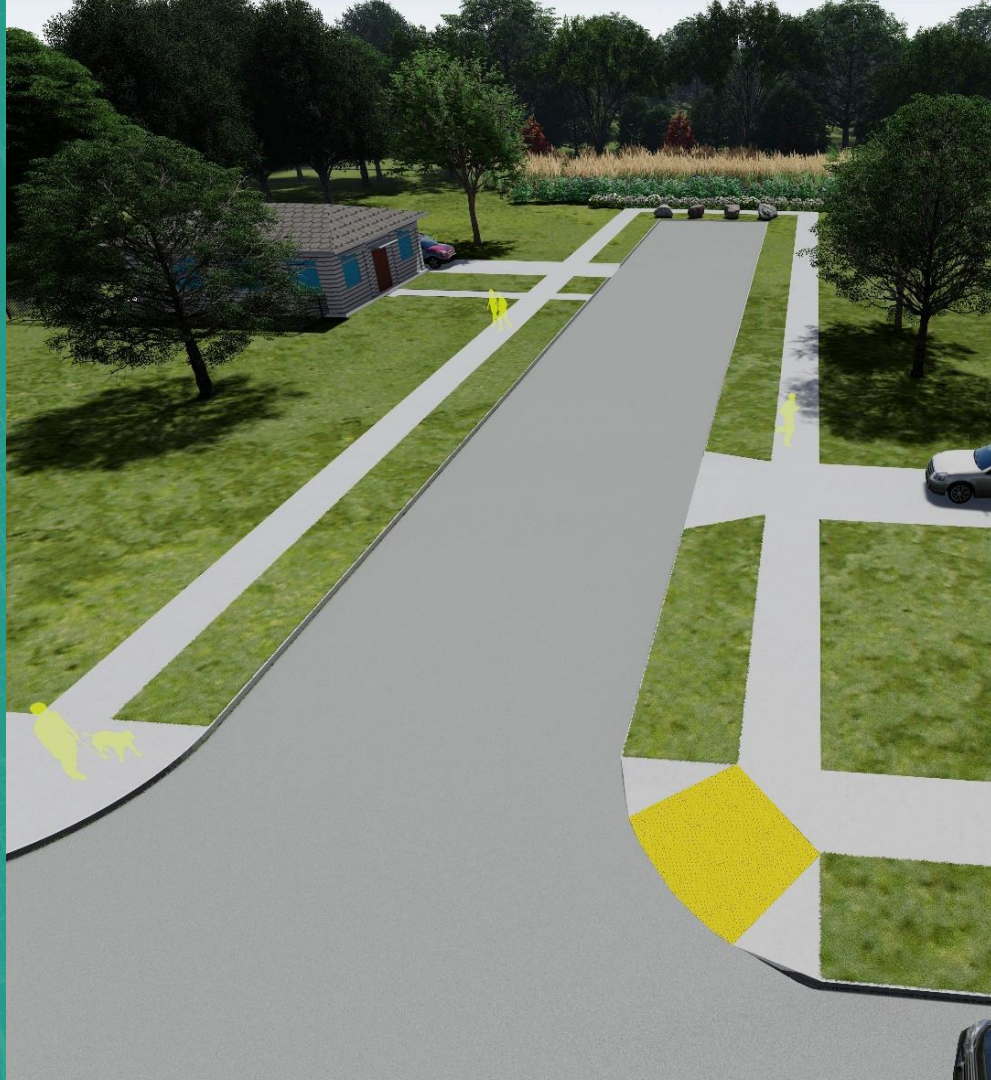
This diagram is intended for educational purposes and is not to scale.

Stormwater Runoff Management in Detroit

DWSD has worked with partners throughout Detroit to manage stormwater runoff and install a variety of Green Stormwater Infrastructure (GSI).



Fenkell Stormwater Projects



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Fenkell Stormwater Projects

- Install bioretention practices at vacant land and direct stormwater runoff to the practices
- Remove impervious surfaces and install trees and native plants to treat stormwater
- Decommission a portion of Blackstone Street between Keeler and Midland Street (pending City Council approval)



Bioretention practices reduce the amount of stormwater runoff that flows into the City's already burdened sewer system, improve water quality by filtering out pollutants, promote infiltration to the groundwater table, and increase habitat for birds and butterflies.

Fenkell Stormwater Projects



Implementation of 24 bioretention practices which includes 1 street vacation



\$1.6M grant funds secured



Stormwater runoff managed from roughly 50 acres

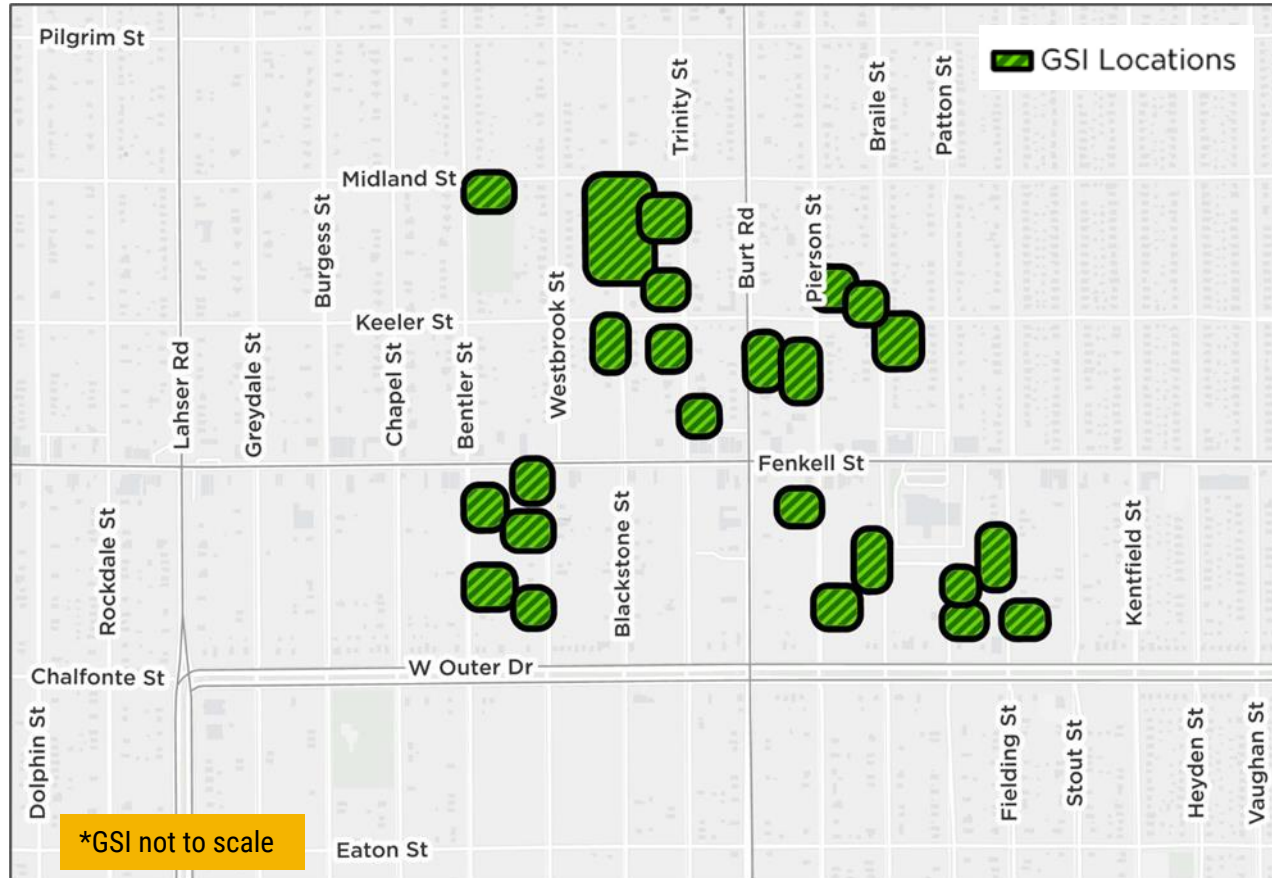


8.2 million gallons of peak flow controlled

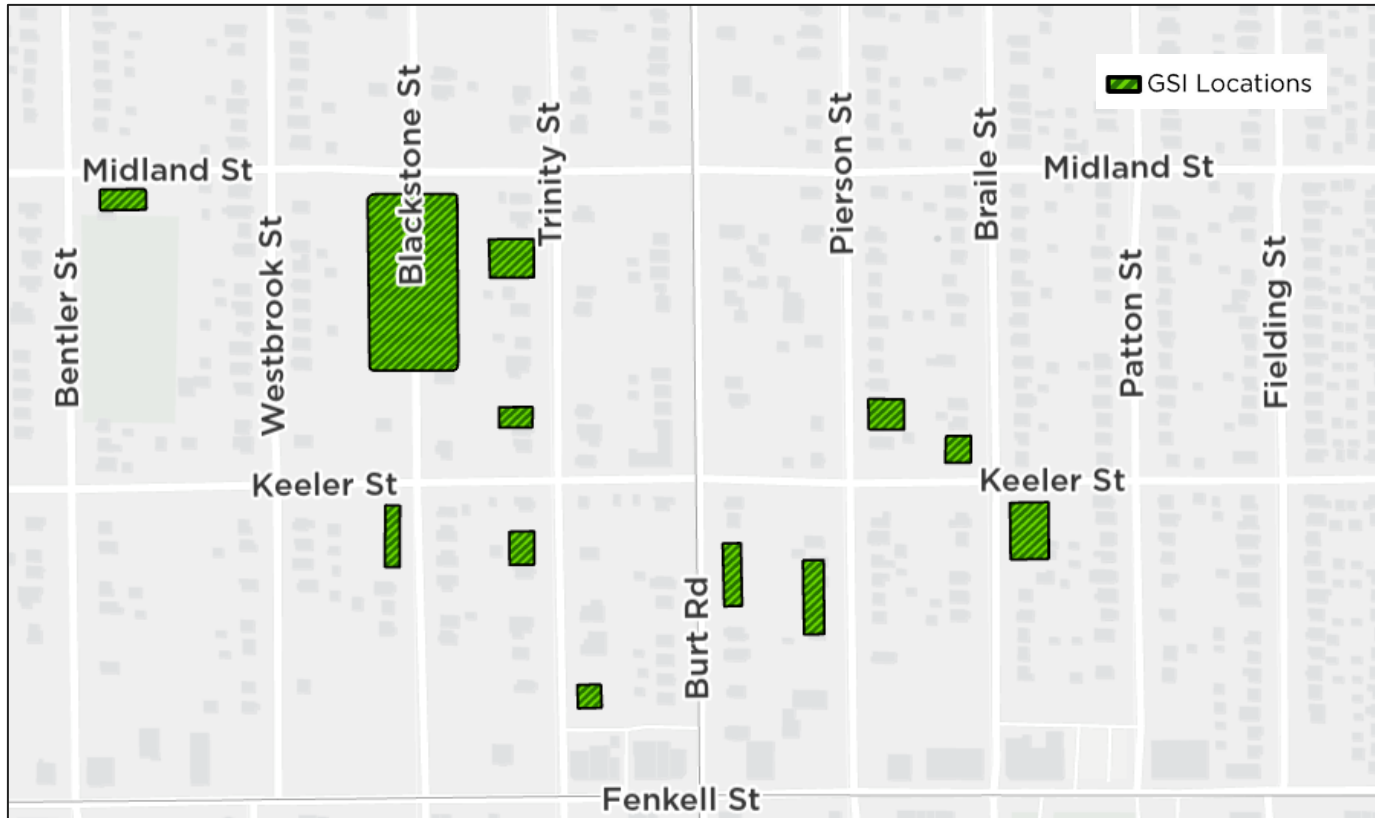


Benefits nearly 100 occupied homes adjacent to the bioretentions and the combined sewer for the entire neighborhood

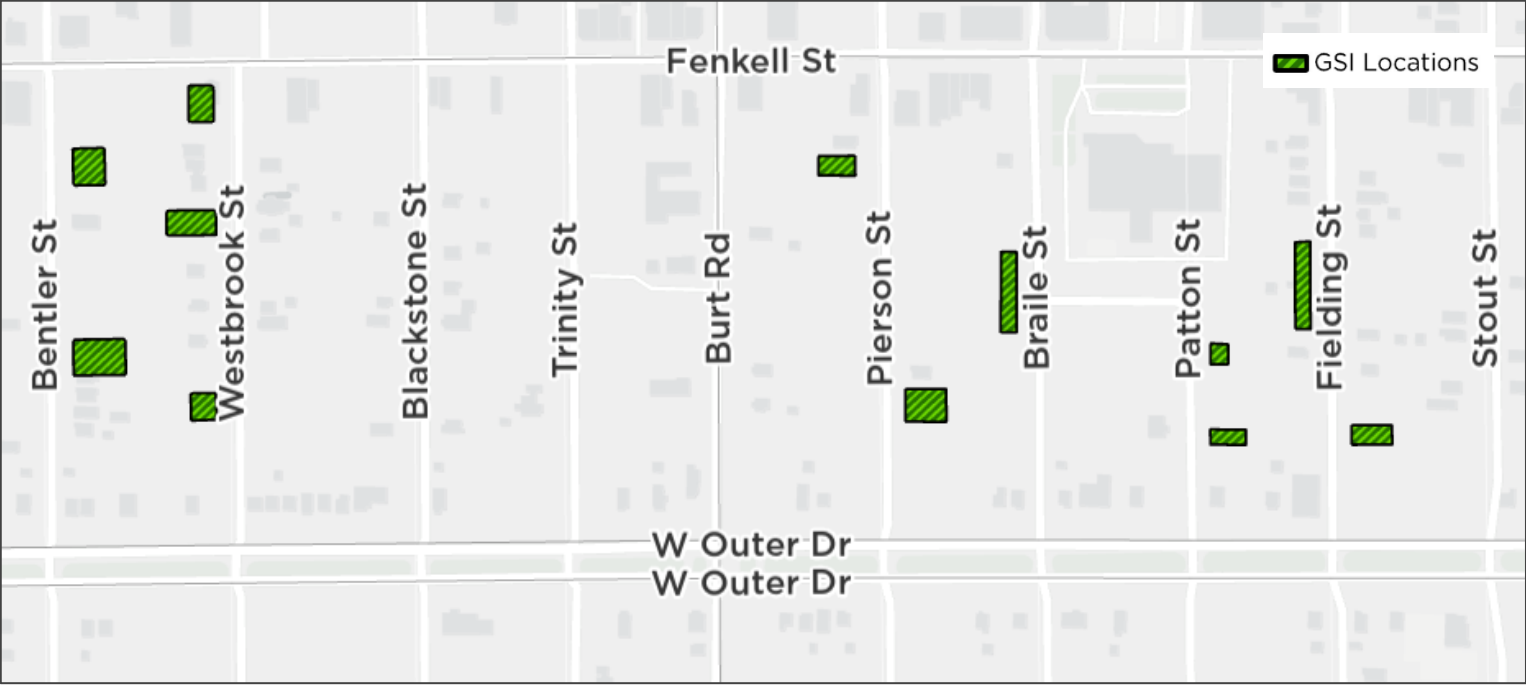
Location of Fenkell Stormwater Projects – High Level



Location of Fenkell Stormwater Projects – North of Fenkell



Location of Fenkell Stormwater Projects – South of Fenkell



Fenkell Stormwater Projects – Blackstone Street Greening



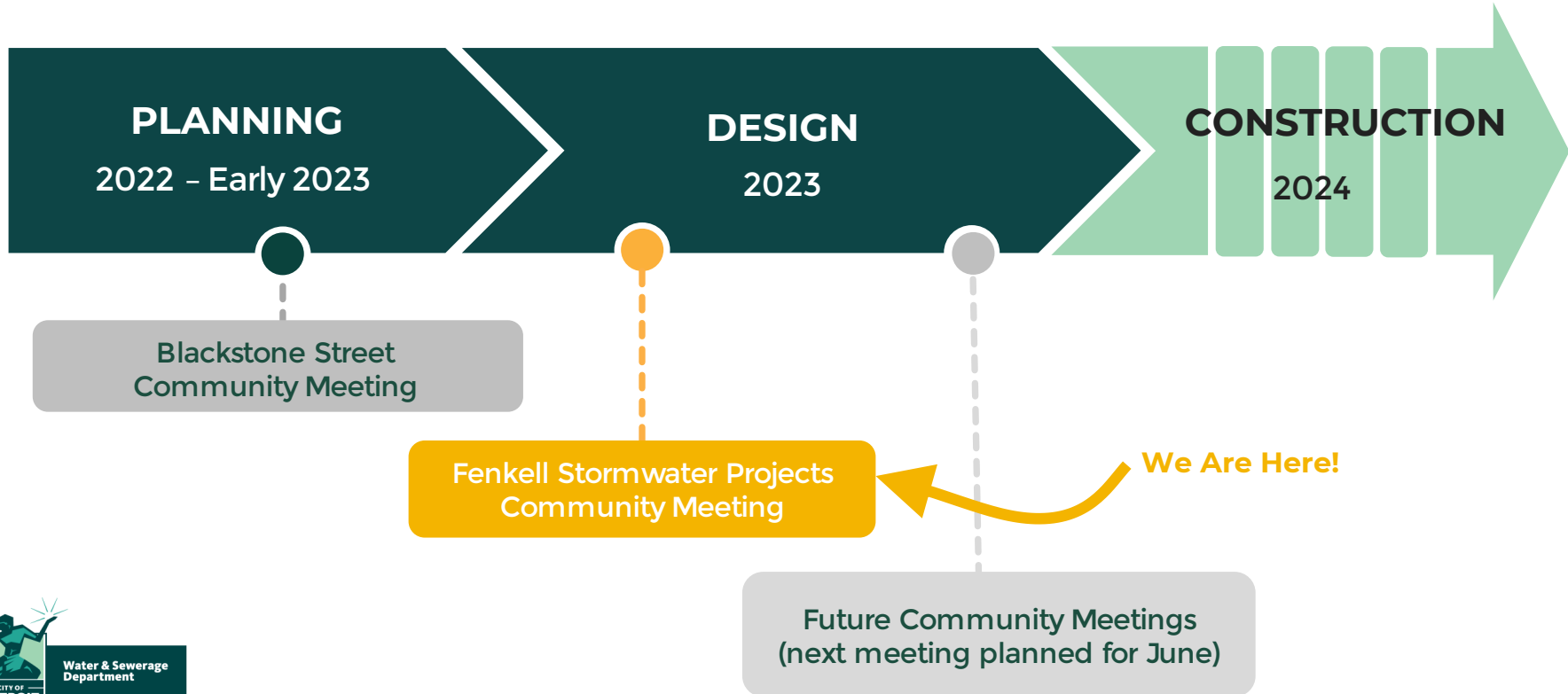
- Project proposes to remove 460 feet of Blackstone Street between Keeler and Midland Street to create an area to manage stormwater.
- Removal of this portion of Blackstone will create a GSI practice that will manage more than 2 million gallons of stormwater annually.

Blackstone Street Greening Rendering



Future Condition

Project Timeline



Community Survey on Stormwater Management

- 1. Have you experienced flooding in the neighborhood?**
- 2. Are you familiar with Green Stormwater Infrastructure (GSI) in Detroit?**
- 3. What would you like to discuss in future meetings?**

Next Steps for Community Involvement

- Vegetation options
- Plant and tree species preference
- Plant layouts
- Natural vs. manicured vegetation, etc.



Gro-Low Sumac



Kalm's St. John's Wort



Little Bluestem



Prairie Dropseed



Penn Sedge



Black Eyed Susan



Canadian Anemone



Bee Balm



Southern Blue Flag



Great Blue Lobelia

Thank You

Questions?



313-880-2812



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