

Sewer and Stormwater 2024 Update

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Detroit Water & Sewerage Department

April 2024



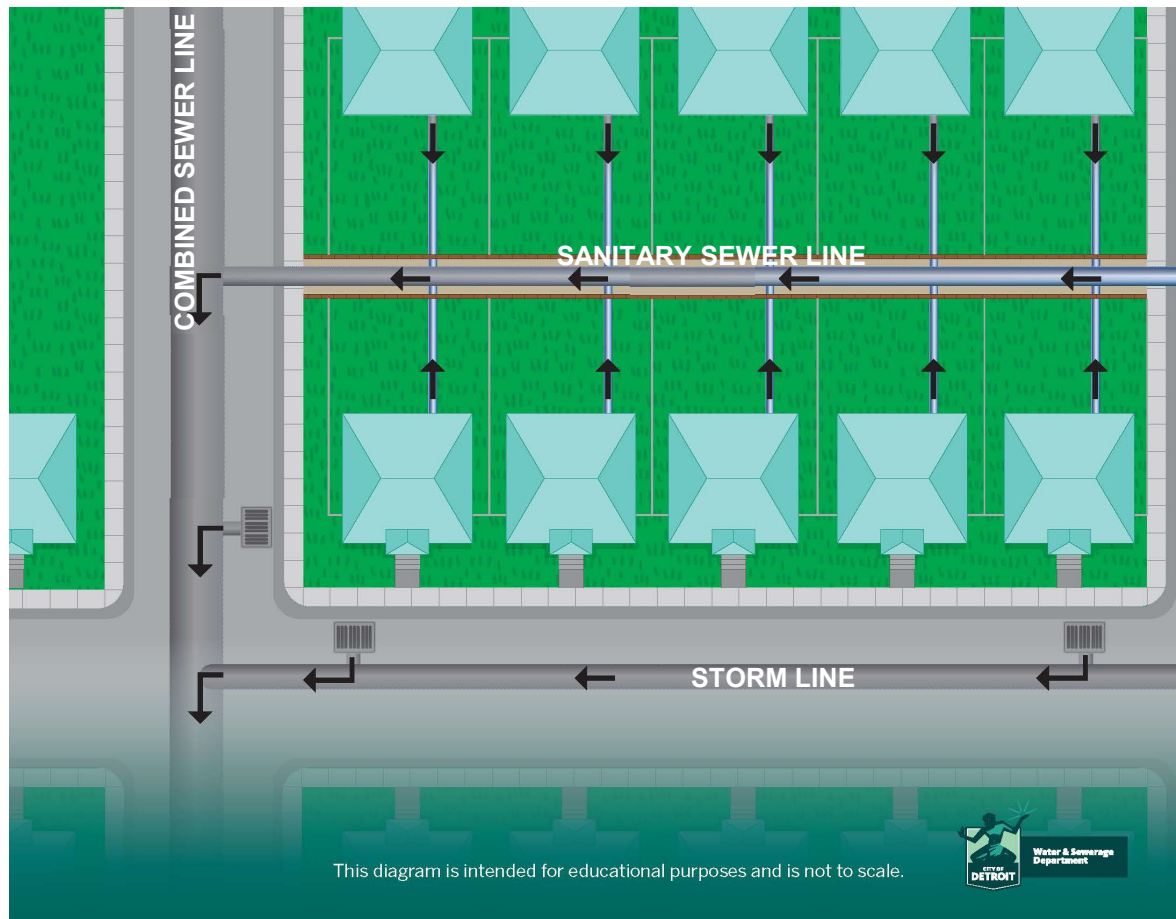
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How the Sewer System Functions



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Detroit Sewer System: Local Collection System Operated by DWSD



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

Detroit Sewer System: Private Portion



YOUR RESPONSIBILITY AND OURS THE SEWER LINE FROM YOUR HOME



Less than 20% of homes in Detroit have the sewer service line in front of the house, including some parts of Jefferson Chalmers and in several westside neighborhoods.



Sewer System Improvements

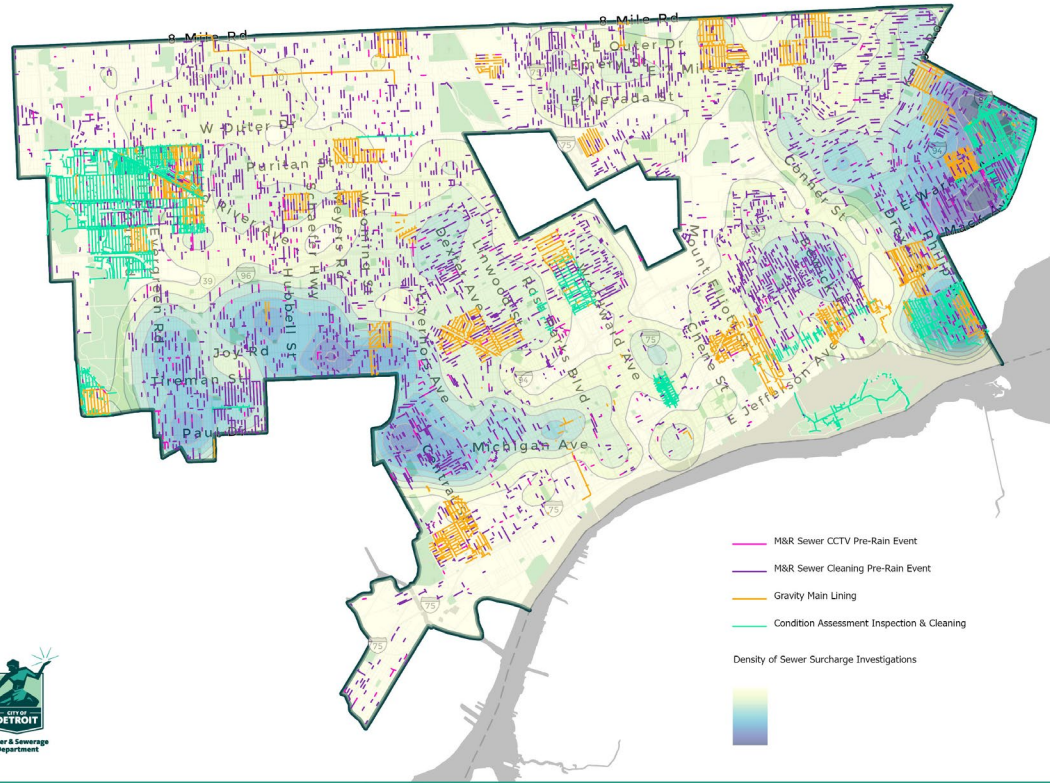


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Sewer Cleaning and Rehab to Build Capacity

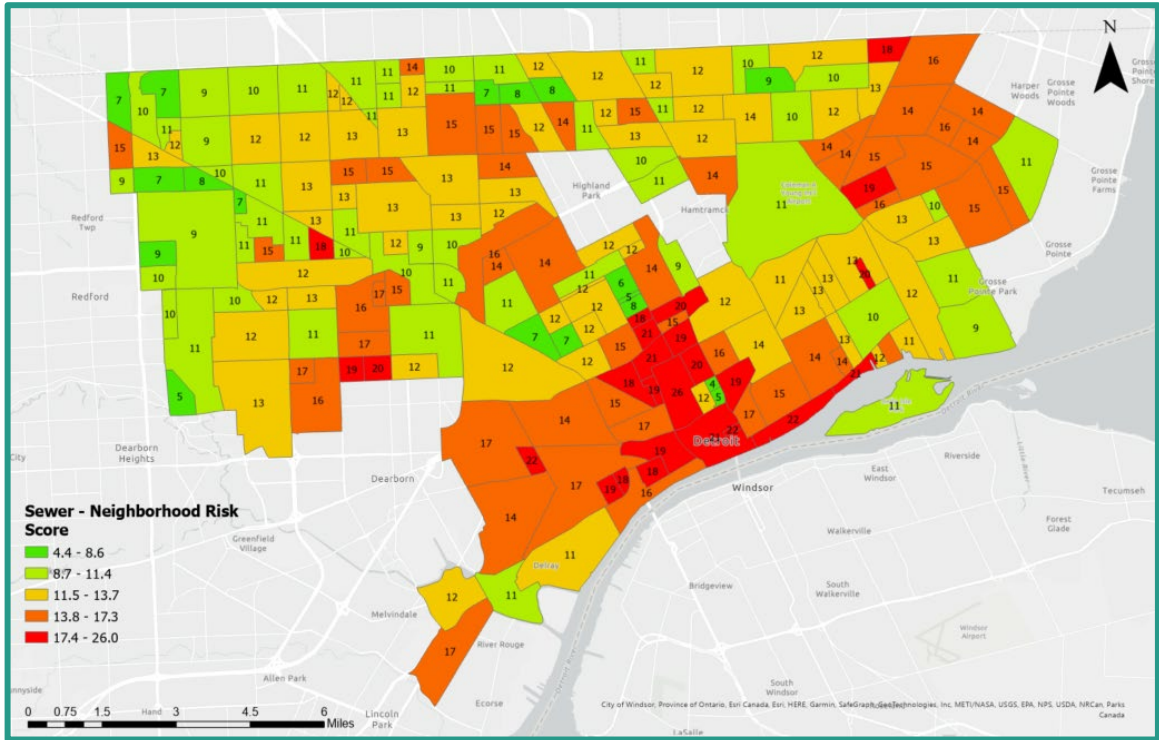
- DWSD has **cleaned 1,354 miles of city sewer pipes** since the rain event in June 2021.
- **303.58 miles of city sewer** have been **condition assessed** since 2018.
- **19.05 miles of sewer** have been **lined or repaired since 2018** to extend the useful life.

DWSD Wastewater Collection System Maintenance Prior to June 25th, 2021 Rain Event



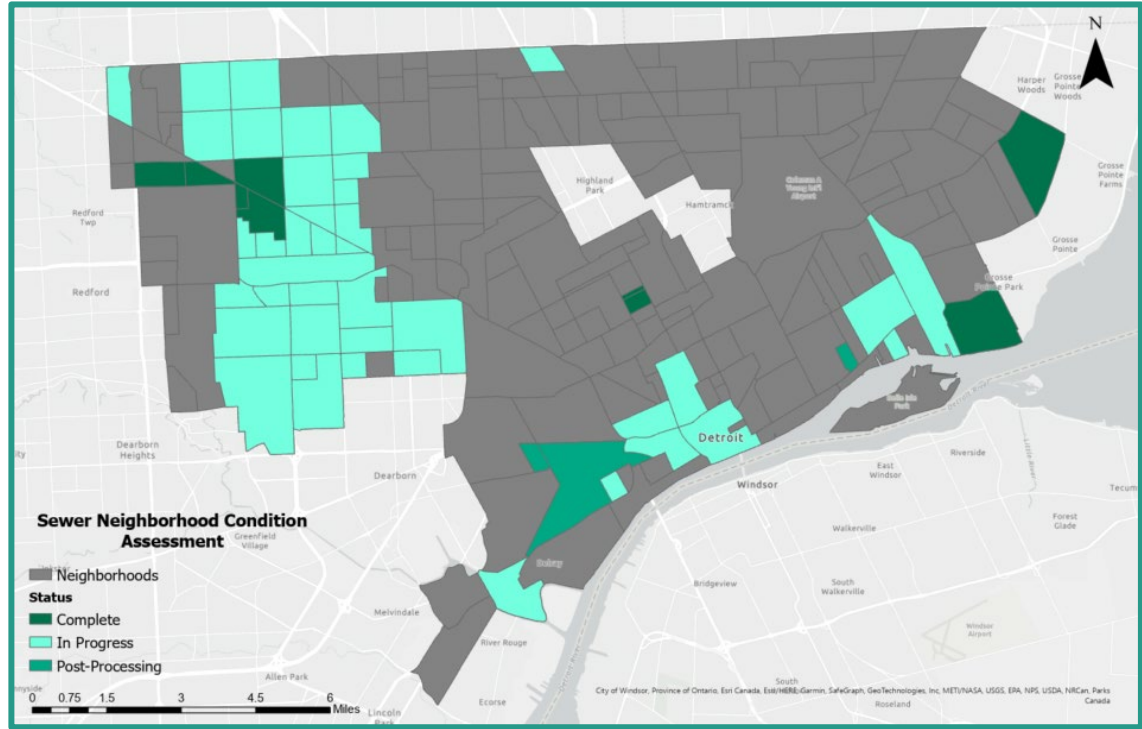
Asset Management Program - Risk

- The **DWSD Capital Improvement Program** utilizes a **comprehensive risk model** to **prioritize** neighborhood condition assessment, inspection, and interventions.
- Asset risk scores are updated annually with the newest data to plan future strategy.



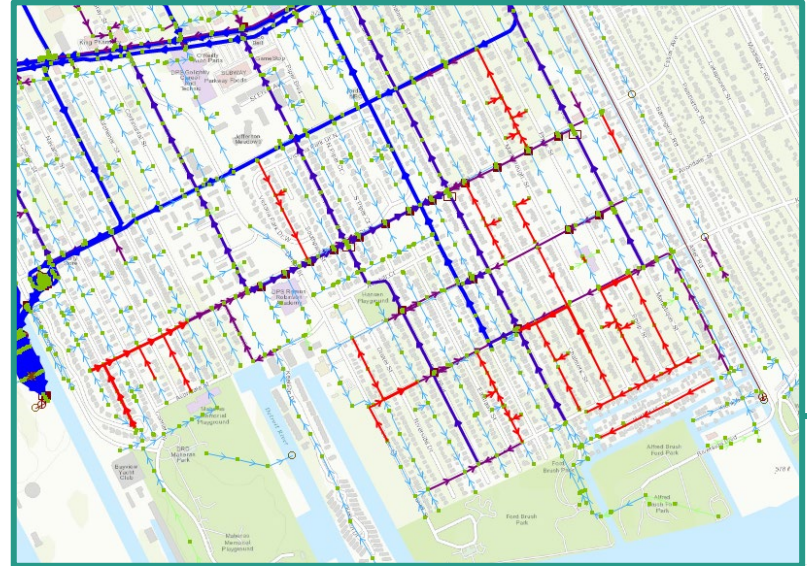
Asset Management Program - Condition Assessment

- Condition assessment is **performed on a “whole neighborhood” basis.**
- Includes cleaning, CCTV inspection, and GPS location of all pipes and manholes in the neighborhood.



Jefferson Chalmers Sewer Capacity Expansion

- DWSD has developed solutions to expand capacity within existing sewers.
- System will be **sized to accommodate larger storm events – almost 19,000 linear feet of new pipe** (shown in red).
- Project eligible for funding and was submitted to FEMA’s Building Resilient Infrastructure and in Communities (BRIC) grant program.
- **\$11.3M grant** award announced in August 2023 and **construction likely to begin Summer 2024**.



Stormwater Ordinance Projects



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DWSD IS ADVANCING MULTIPLE INITIATIVES TO REDUCE IMPACTS FROM STORMWATER ACROSS THE CITY



PEAK FLOW CONTROL

Reducing the intensity of runoff to the DWSD and GLWA system.



SOURCE REMOVAL

Removing unnecessary impervious area from the sewer system.



REDEVELOPMENT

Activating underutilized open space, promoting density and managing runoff via ordinance.



COLLABORATION

Bigger projects result in impactful benefits with higher return on investment.

**Creating Capacity. Reducing Flooding.
Keeping Basements Dry.**

Reporting Metrics

Stormwater Management Ordinance

**Total Number of
Projects** **78**

**Peak Flow
Reduction Volume
Provided** **40 Million Gallons**

*10 and 100 year peak flow
detention volume*

**Volume Reduction
Provided** **2.5 Million Gallons**

Retention Volume



Reporting Metrics

DWSD GSI Program - Completed Projects

Number of Projects	19*
Project Construction Cost (estimated)	\$13.9M
Volume provided for peak flow reduction	2.2 Million Gallons
<i>Design Target 2 yr-24 hr Event</i>	
Annual Volume Reduction Provided	53 Million Gallons
<i>Retention Volume and Direct Discharge</i>	

*Includes Joy Road (GSI funding only)



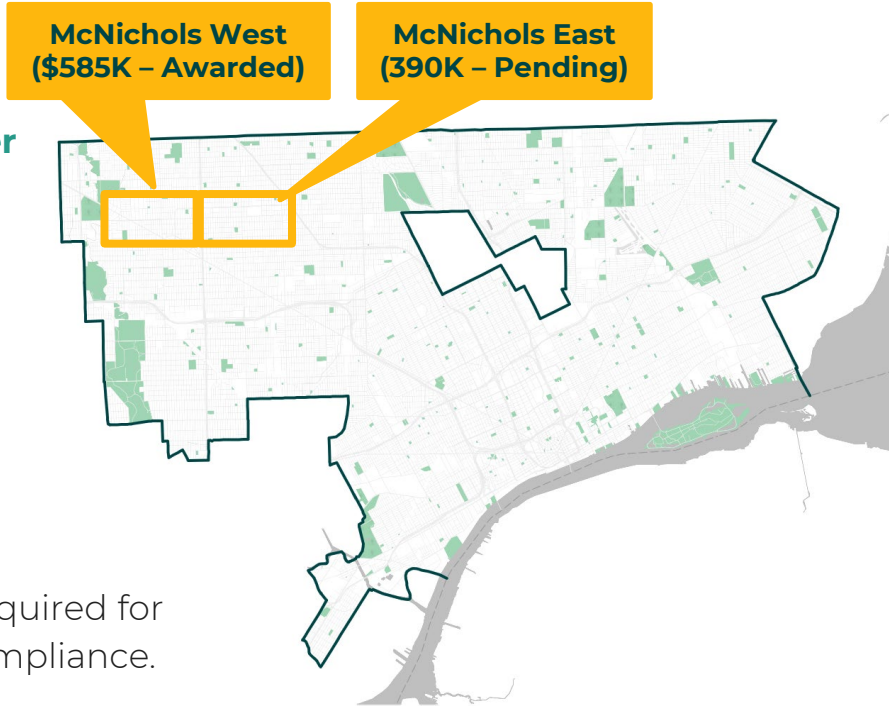
Flood Mitigation Projects in Planning, Design and Construction



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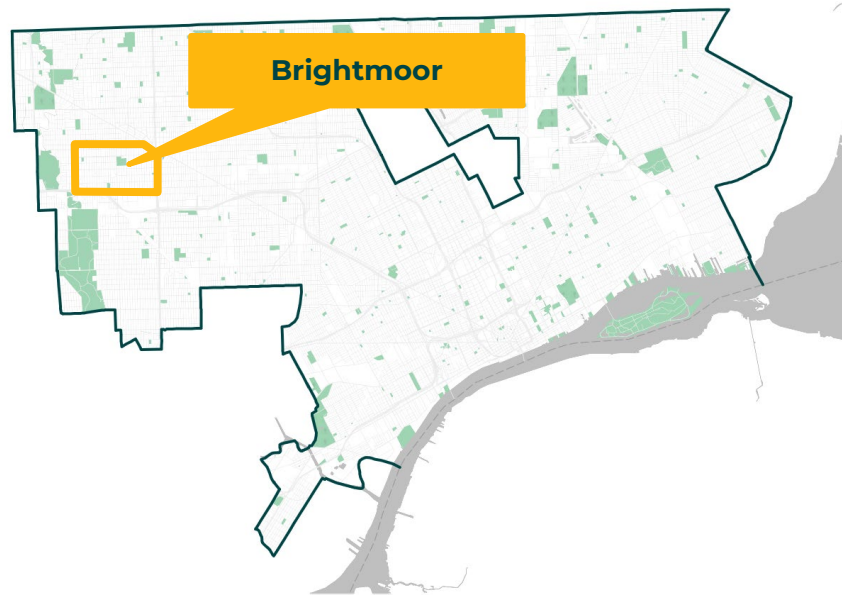
McNichols West and McNichols East FEMA Grants

- DWSD requested **\$975K in grants to study the viability of direct discharge to the Rouge River along McNichols Road between the Rouge River and the Southfield Freeway.**
 - \$585,000 awarded; \$390,000 pending
- The study will complement ongoing work by GLWA to create in-line storage within the combined sewer system and eventually convert the McNichols Relief Sewer to manage stormwater only.
- Study to help advance preliminary engineering required for future construction projects for NPDES permit compliance.
- The projects will also reduce the risk of localized flooding of streets and buildings.



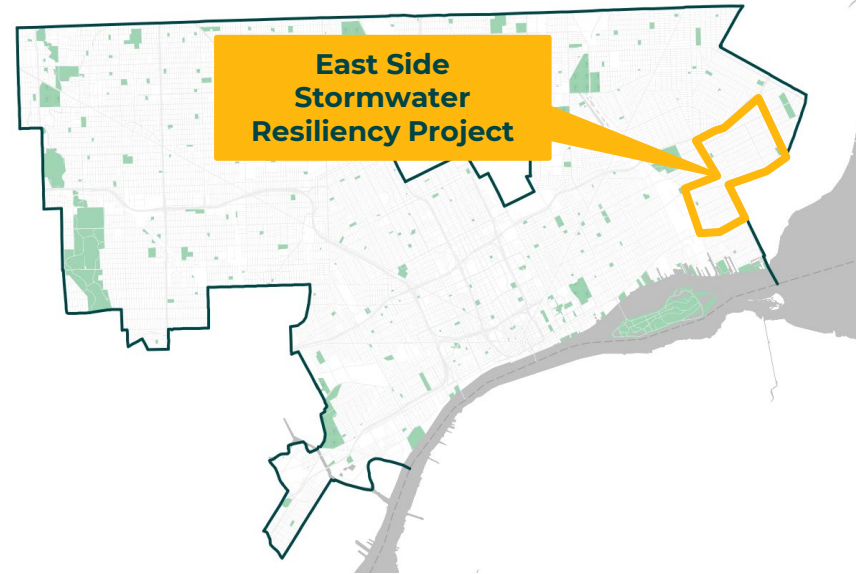
Brightmoor Improvements (Planning)

- DWSD is proposing a **\$30M+ stormwater improvements** for Brightmoor.
- The project makes use of low-lying, DWSD-held DLBA parcels for the creation of a stormwater collection system.
- Work is underway with a study including a 30 acre-pond. DWSD is engaging impacted residents/PREs to acquire land. The project's future is based on buy-in from residents.
- The project will create capacity and reduce flooding risk in Brightmoor and neighborhoods to the east.



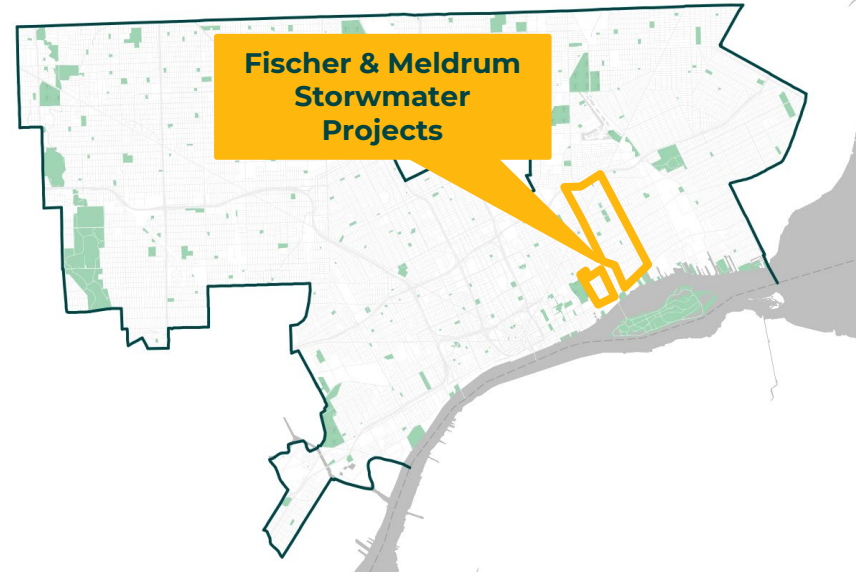
Eastside Stormwater Resiliency Project (Planning through 2026)

- **Grand funded (\$660K) study for developing resilient stormwater solutions** for eastside neighborhoods affected by 2021 storm events: Fox Creek, Morningside, East English Village & Jefferson North (EGLE \$480K; NFWF \$180K).
- The project will explore generational improvements that will **redirect stormwater from a 2000+ acre area to the Fox Creek** reducing reliance on the regional sewer system for extreme weather events.
- The project will consider and coordinate with ongoing/future regional and City efforts within the study area.



Fischer / Meldrum Stormwater Project (Planning – through 2027)

- **Grand funded (\$380k) study for developing resilient stormwater solutions** for Indian Village and Islandview neighborhoods affected by 2021 storm events (\$330K for Fischer; \$50K for Meldrum)
- The project is funded via the HUD-CDBG Disaster Recovery Grant.
- The project will coordinate with GLWA efforts related to the I-94 reconstruction project.



B032/B033 Sewer Improvement Project (Design)



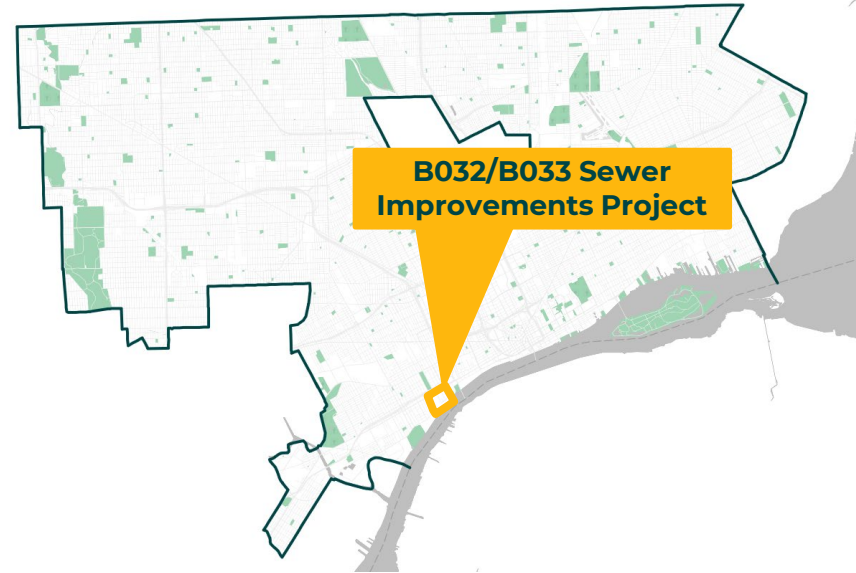
\$6M project funded secured via a fund swap with the City of Centerline / American Rescue Plan Act.



Removal of approximately 50 acres of residential and industrial land from sewer system.

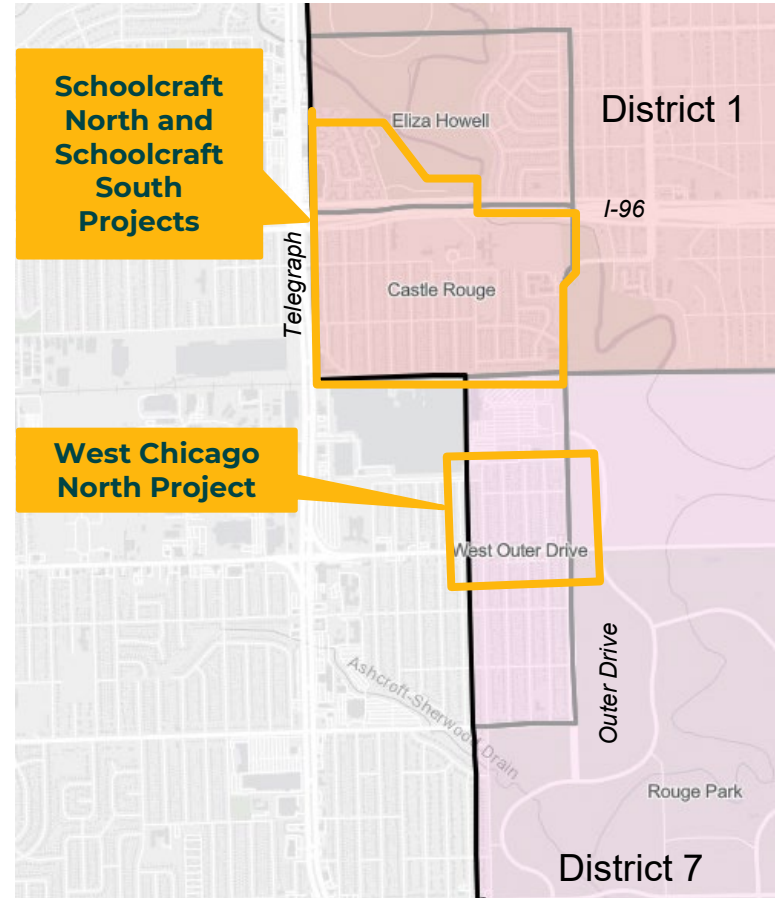


Elimination of two combined sewer overflows to the Rouge River.



Schoolcraft and West Chicago North (Shovel-Ready – May 2024)

- **More than \$61M of designed stormwater improvements** for the West Chicago, Schoolcraft North and Schoolcraft South Areas.
- Targeted investment to **remove stormwater from combined sewer systems and improve water quality** of the Rouge River by reducing combined sewer overflows.
- Combination of gray and green infrastructure designed to maximize performance, create native landscapes.
- Funding sought through State of Michigan Clean Water Revolving Fund.



Fenkell Stormwater Projects (Construction - 2024)



Implementation of 22 bioretention practices including one street vacation – planting ~300 trees



\$1.6M grant funds secured (matched by DWSD) & Economic Redevelopment Opportunities



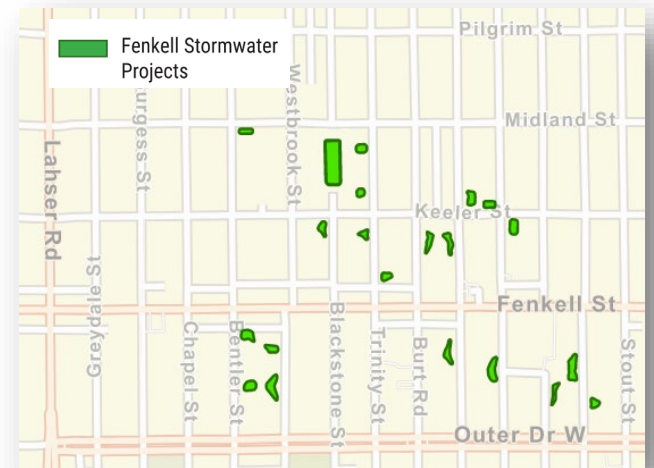
Stormwater runoff managed from roughly 50 acres



9 million gallons of peak flow controlled



Benefits several hundred occupied homes in close proximity (neighborhood amenities, public space, habitat, etc.) and reduces flooding for the entire neighborhood



West Chicago South (Construction 2024)



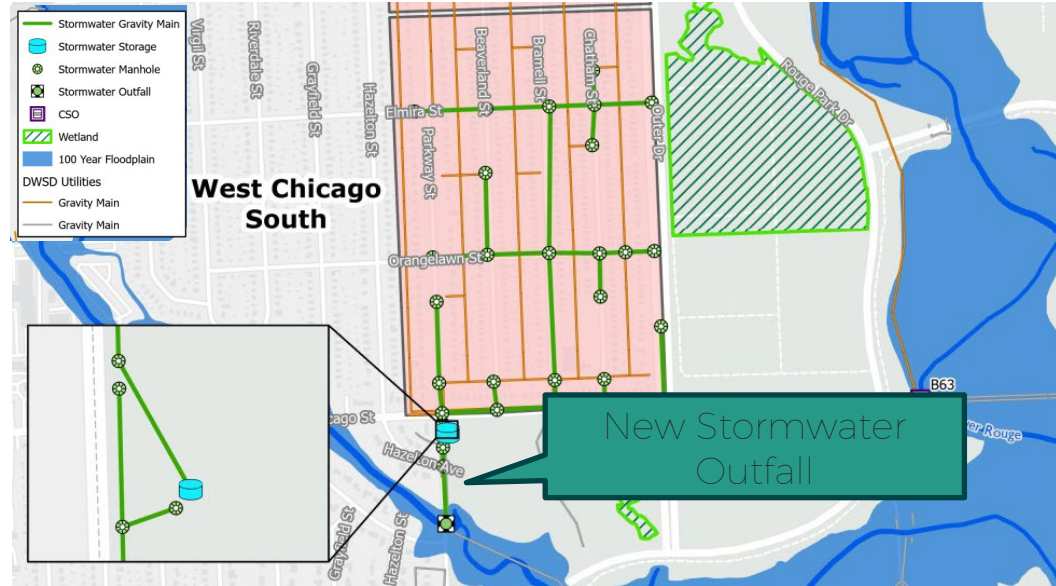
\$19.1M grant funds secured through the Clean Water State Revolving Fund / American Rescue Plan Act



Stormwater runoff managed from roughly 79 acres



50% reduction in CSO activity within the local combined sewer system



Far West Detroit Stormwater Improvement Project (Under Construction)



\$32M stormwater improvements
funded by Evergreen/Farmingington



2.5 MG of peak flow reduction



100+ MG removed annually



Use of city-owned Rouge Park
creates highly visible amenity

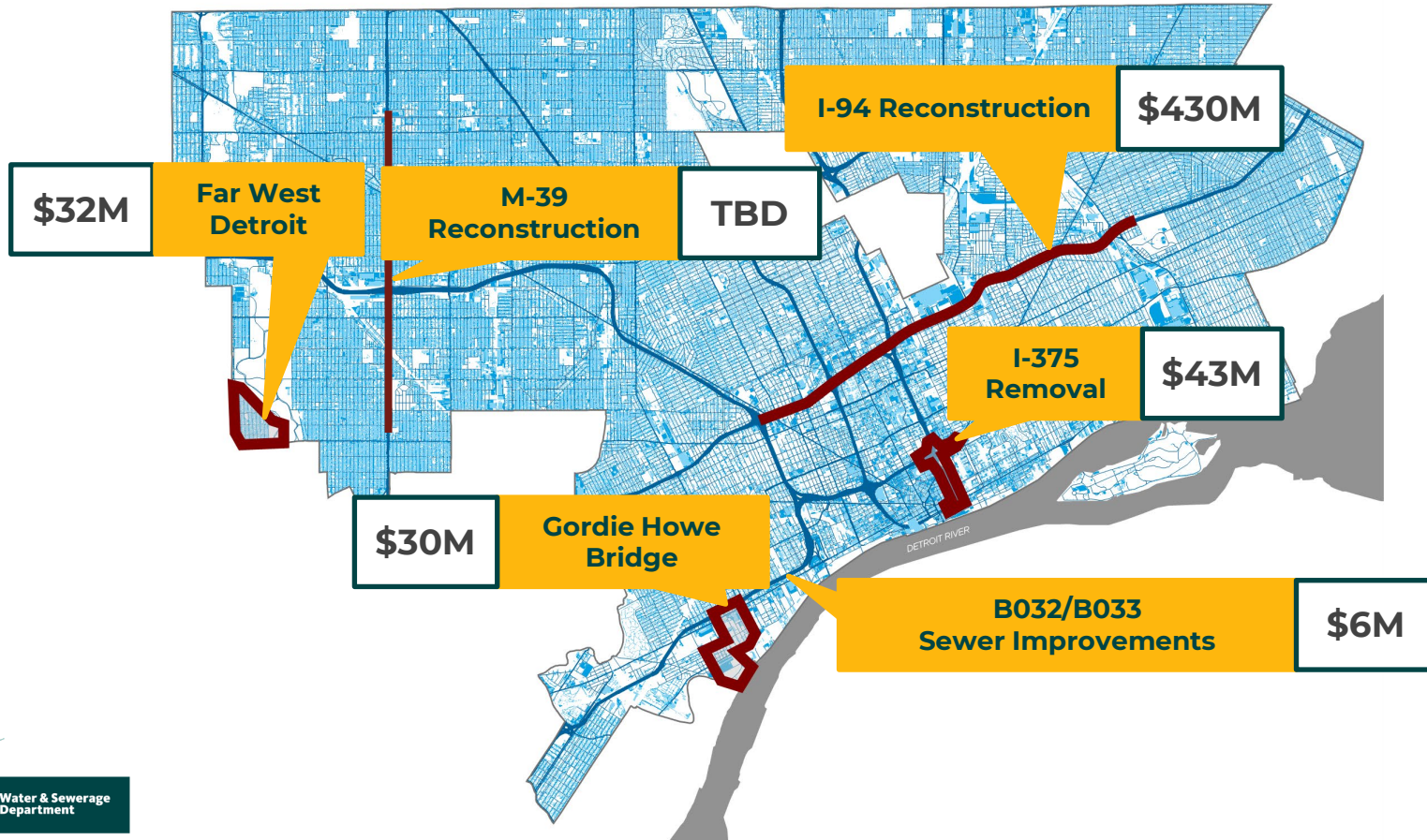


Stormwater Management Collaboration



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Collaboration Projects



Basement Backup Protection Program

The City of Detroit's **Basement Backup Protection Program** provides flood prevention services to 11 flood prone neighborhoods. Home eligibility is based on need and includes assessments by a City inspector and a licensed plumber. The following services are offered to participating homeowners/landlords:

- Camera inspection of sewer lateral service line
- Disconnect downspouts and install extensions
- Install backwater valve *(outside installation included in Phase 2)*
- Install sump pump with overflow
- Sewer lateral repair *(included in Phase 2)*

ONLY BACKWATER VALVE PROGRAM IN NORTH AMERICA THAT SECURES THE CONTRACTORS AND PAYS FOR THE ENTIRE COST!

324 Homes Completed: Phase 1

Spring 2022-Summer 2023: 324 homes received a backwater valve and/or sump pump in following neighborhoods:

Aviation Sub

Vitoria Park

Jefferson Chalmers *(internal only)*

East English Village *(internal only)*

Warrendale *(internal only)*



What's Next: Phase 2

Underway in Jefferson Chalmers starting in February 2024

East English Village

Jefferson Chalmers

Moross-Morang

Morningside

Barton-McFarland

Cornerstone Village

Chadsey Condon

Garden View

Warrendale



Grant Funding Secured

Secured

- **\$1.6M in state and federal grants** for the Fenkell Stormwater Project to install 24 bioretention gardens – community engagement underway, construction begins 2024
- **EGLE ARPA Grants \$32.99M** for water main and lead service line replacement on various streets
- **EGLE \$480,000 grant** to support East Side Resiliency Planning Project to study and determine a stormwater management project(s) – waiting on second grant approval (see next slide)
- **EGLE CWSRF (ARPA) \$19.1M grant** for constructing stormwater sewers within the West Chicago – South Area
- **FEMA BRIC \$11.3M grant** for upsizing sewers in Jefferson Chalmers
- **FEMA HMGP \$3.2M grant** for Basement Backup Protection Program for Aviation Sub and Warrendale neighborhoods
- **GLWA Capital Contribution Agreement \$31.6M** for complete neighborhood drainage improvements and Green Stormwater Infrastructure (GSI) features in Rouge Park

Grant Funding Applied

Allocated, Waiting Approval

- **HUD CDBG Disaster Recovery \$43M** for private sewer repairs following June 25-26, 2021 rain event
- **FEMA - Building Resilience in Communities (BRIC) \$900K** for stormwater planning study on McNichols West and McNichols East

Applied

- **EGLE Clean Water State Revolving Fund \$61M in grants** for four westside stormwater projects – expect approval by September (West Chicago North and Schoolcraft North/South areas)
- **National Fish & Wildlife Foundation \$540,000 grant** to support East Side Resiliency Planning Project to study and determine a stormwater management project(s) – expect response by January 2024
- **MI State Police ORG3785 Safeguarding Tomorrow Through Ongoing Risk Mitigation Revolving Loan Fund Program \$10M** to upsize certain sewer segments to reduce combined sewer system surcharging near the Conner sewer
- **U.S. Department of Homeland Security HMGP \$1.9M** to support Basement Backup Protection Program in Jefferson Chalmers neighborhood
- **U.S. Department of Homeland Security HMGP \$21M** to conduct engineering, environmental, feasibility and/or benefit cost analyses for the Fischer Sewer improvements project
- **U.S. Department of Homeland Security HMGP \$13.4M** to support the Design and Planning of the Near Eastside Sewer improvements
- **U.S. Department of Homeland Security HMGP \$9.4M** to conduct engineering, environmental, feasibility and/or benefit cost analyses for East English Village Sewer improvements project
- **MSP Storm Grant \$10M** for the Annshury and Norcross Village Stormwater Improvements Project
- **FEMA \$1.3M BRIC Grant** for westside scoping of sewer system

Thank You!

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