

Rebuilding an Urban Roadway in Buffalo, NY

NYS County Highway Superintendents Association
2019 Annual Winter Conference

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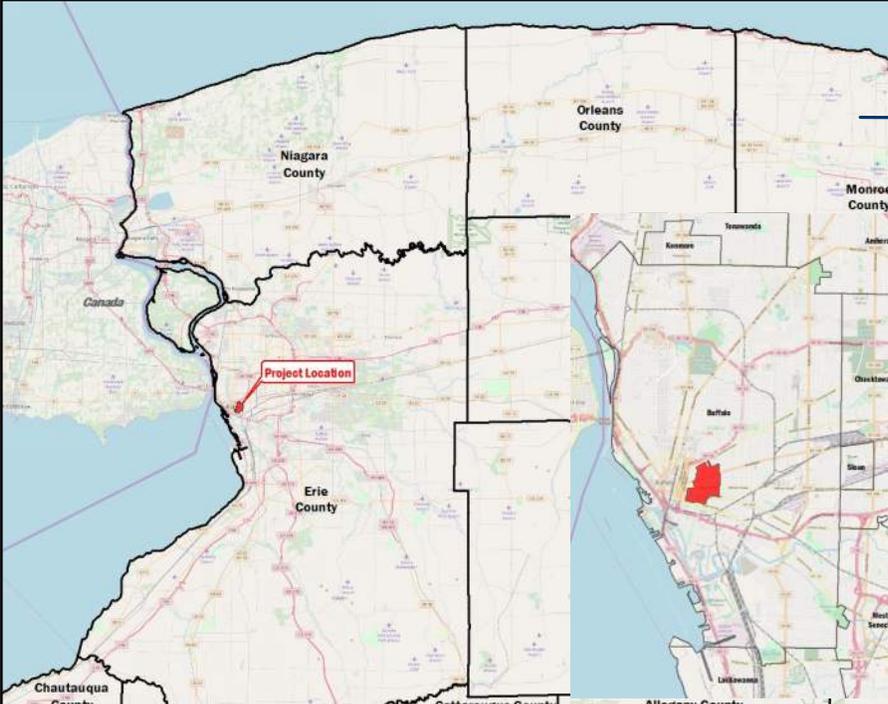
NEW YORK STATE OF OPPORTUNITY.

Environmental Facilities Corporation









ROAD MAP

- Introduction/Background
- Project Goals
- Public/Student Education
- Conceptual Design
- Final Projects
- Lessons Learned/
Next Steps

WILLERT PARK NEIGHBORHOOD/SPP 281

- The Willert Park Neighborhood Roughly Mimics the Boundary of SPP 281
- SPP = Sewer Patrol Point (i.e. overflow weir)
- SPP Drainage Area = 321 acres
- Approximately 79 Acres of Impervious Area
- SPP 281 is a Sub Shed to CSO 017
- No pre-determined locations for Green Infrastructure





WALKING TOURS OF THE NEIGHBORHOOD

- All Members of the Team
 - Engineers
 - Landscape Architects
 - Buffalo Sewer Authority
 - Public Outreach Specialist
 - Public
- Where Does GI Make Sense in the Context of the Neighborhood?



PUBLIC EDUCATION

- Interactive Activities
- Preliminary & Final Design Updates
- Water WORX – Student Education



SITING GREEN INFRASTRUCTURE

- Data Collection
 - Field Survey
 - Aerial Analysis
- Web-Based GIS Mapping
- Walking Tours
- Define Constraints
- Develop Conceptual Designs





DATA COLLECTION/GIS WEB MAP

DEFINE YOUR CONSTRAINTS

- Maintenance
- Property Ownership
- Utilities
- Cost/Area Treated





CONCEPTUAL DESIGN

- Preliminary Estimates of:
 - Cost
 - Area Treated
 - Additional Benefits
 - Potential Issues
- Meetings with City Agencies
- Meetings with the Public
- Reach Consensus

Project Name	Area (in acres)		
	Total	Impervious	Pervious
William Street	25.20	13.47	11.73
JFK Community Center	0.48	0.38	0.10
Pratt Willert Community Center	0.42	0.32	0.10

FINAL PROJECTS (39,000 FT³ OF WQV)

- Construction Cost = \$3.6 Million (Bid Open: Feb 2017)
- Selected Based on:
 - Meeting the Target for LTCP, Best Cost/Benefit
 - Geographic Location, Public Visibility, Existing Infrastructure
 - Potential for Additional Benefits
 - Public Buy-in

WILLIAM STREET

- Four Types of Green Infrastructure
 - Impervious Area Reduction
 - Porous Asphalt
 - Bioretention
 - Infiltration Galleries
- Included Other Improvements
 - New Sidewalk, ADA Ramps
 - Road Mill/Overlay
 - New Bike Lanes
 - New Signal & Signal Improvements
 - Jesse Clipper Square



WILLIAM STREET - RENDERING



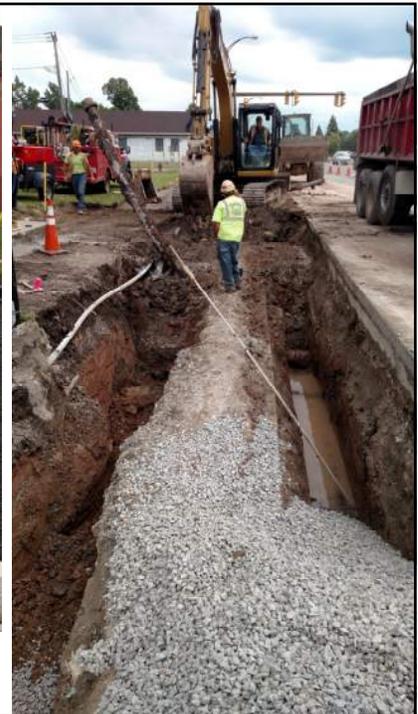
WILLIAM STREET – IMPERVIOUS AREA REDUCTION



**WILLIAM STREET
DRAINAGE
AREAS**

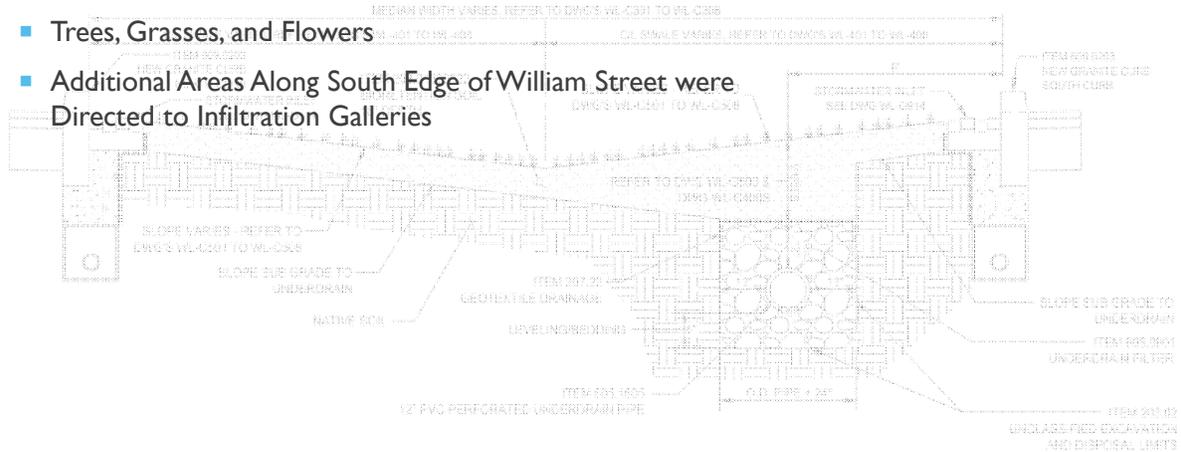


POROUS ASPHALT - CONSTRUCTION

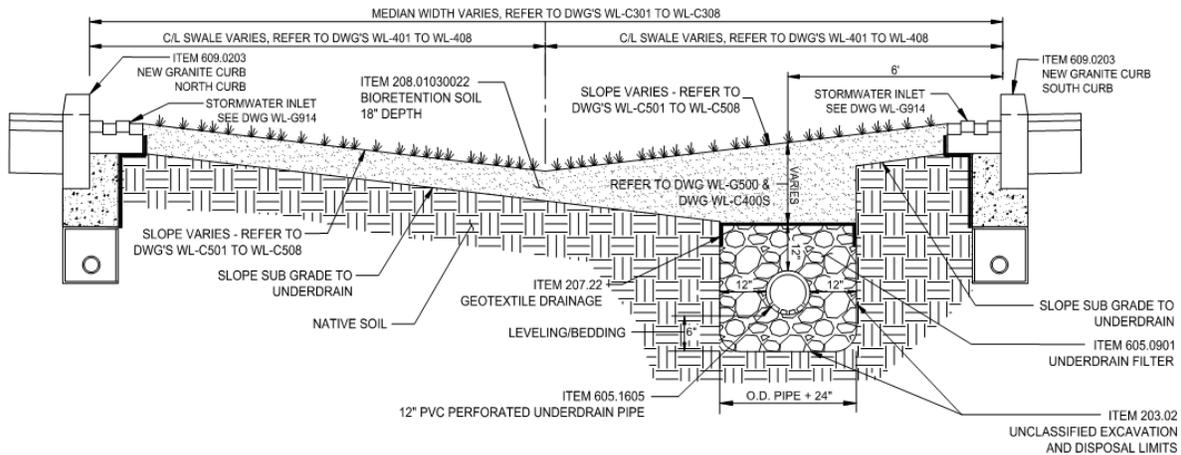


WILLIAM STREET – BIORETENTION/INFILTRATION

- Median Provided a Unique Opportunity for Bioretention
- Trees, Grasses, and Flowers
- Additional Areas Along South Edge of William Street were Directed to Infiltration Galleries



WILLIAM STREET – BIORETENTION/INFILTRATION







WILLIAM STREET – SEPTEMBER 2018

WILLIAM STREET – JESSE CLIPPER SQUARE

- Dedicated to the Memory of the First African-American Soldier from Buffalo Killed in WWI.
- Expanded Park from 0.27 to 0.48 Acres
- Incorporated Design Plans from 1938





JFK COMMUNITY CENTER



JFK COMMUNITY CENTER



JFK COMMUNITY CENTER - CONSTRUCTION



JFK COMMUNITY CENTER - SEPTEMBER 2018



PRATT WILLERT COMMUNITY CENTER



PRATT WILLERT COMMUNITY CENTER



PRATT WILLERT COMMUNITY CENTER



PRATT WILLERT COMMUNITY CENTER – SEPTEMBER 2018



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EFC Overview

- Public benefit corporation that provides low-cost capital and grants for water-quality improvement projects
- Provides financial assistance for local wastewater and drinking water infrastructure through Clean Water and Drinking Water State Revolving Fund Programs
- New York's Water Infrastructure Bank



National Leader in Water Infrastructure Investment

- NYS leads the nation with the largest annual investment in water-quality infrastructure
- Since 2011, EFC has provided more than \$11.5 billion in subsidized loans, grants and loan re-financings to local governments



GREEN INFRASTRUCTURE

What is Green Infrastructure?

- **Green infrastructure** includes a wide array of practices at multiple scales that manage wet weather and that maintain and restore natural hydrology by infiltrating, evapotranspiring and harvesting and using stormwater.
- On a **regional scale**, green infrastructure is the preservation and restoration of natural landscape features, such as forests, floodplains and wetlands, that help reduce overall imperviousness in a watershed.
- On a **local scale**, green infrastructure consists of site- and neighborhood-specific practices, such as bioretention systems, stormwater street trees, and permeable pavements.

Source: US EPA Green Project Reserve FY2012



Practices Eligible for Green Infrastructure Funding

- Bioretention
- Construction or Restoration of Floodplains, Riparian Buffers, Streams, or Wetlands
- Downspout Disconnection
- Green Roofs and Green Walls
- Porous Pavements
- Stormwater Harvesting & Reuse
- Stormwater Street Trees/ Urban Forestry
- Stream Daylighting





INTEGRATED SOLUTIONS CONSTRUCTION (ISC) GRANT

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Taking a Traditional Gray Project and Integrating Green



The ISC program was created to incentivize the incorporation of green infrastructure into traditional gray infrastructure project



How Can Combining Green Infrastructure with Gray Infrastructure Benefit My Community?

- Water management and flood alleviation
- Creating areas of natural beauty
- Health and well-being
- Land and property values
- Source water protection
- Climate change adaptation and mitigation
- Recreation
- Biodiversity

*Concept Image
Green Street Pilot Project
Buffalo, NY*



Integrated Solutions Construction (ISC) Grant Program

- Provides grant dollars for the incorporation of green infrastructure practices into CWSRF-financed CSO / SSO / stormwater projects
- Grant covers 50% of green construction cost
- Green infrastructure practices must treat a minimum of 25% of the water quality volume from a combined, sanitary, or storm sewer system area
- CWSRF program requirements will apply and grant must be partnered with CWSRF financing

ISC Grant Application

To be considered for the next round of ISC grant funding, applicants must:

- Be listed on the Annual List of the 2019 IUP
- Submit an acceptable CWSRF financing application indicating an interest in the ISC grant
- Submit an engineering report or amendment that describes the green infrastructure features
- Additional information on EFC's website: <http://efc.ny.gov/ISC>



GREEN INNOVATION GRANT PROGRAM (GIGP)

Green Innovation Grant Program (GIGP)

GIGP grants are available to fund transformative projects that:

- Utilize green infrastructure components to protect and improve water quality
- Spur innovation in the field of green infrastructure for stormwater
- Build capacity to construct and maintain green infrastructure
- Provide multiple benefits in the communities where they are built



GIGP Grant Award

\$15 Million

in 2018

To Date

\$155 Million

awarded to
205 GIGP projects

- GIGP grants are awarded on a competitive basis to projects that improve water quality and demonstrate green stormwater infrastructure in New York
- In the latest round:
 - ✓ Grant amount was limited to a minimum of 40% to a maximum 90% of the total eligible project costs
 - ✓ A minimum of 10% up to a maximum 60% match from state or local sources was required

GIGP Grant Application & Awards

- GIGP grants are awarded as part of the State's Consolidated Funding Application (CFA) process
- Grants are announced by the Governor as part of the Regional Economic Development Competition Awards Ceremony
- Apply for GIGP Grants through the CFA



<http://regionalcouncils.ny.gov/>



LESSONS LEARNED/NEXT STEPS

- Think About GI in Winter
- Utilities
 - Even with Test Pits Things will be Missed
- Public Engagement
 - Use Many Different Methods
- Maintenance During Construction



BIORETENTION AREA DAMAGE & OUR SOLUTION

THANK YOU!

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