

CITY OF WATERVLIET

ROUTE 32

GREEN INFRASTRUCTURE
PROJECT

Albany

Cohoes

Rensselaer

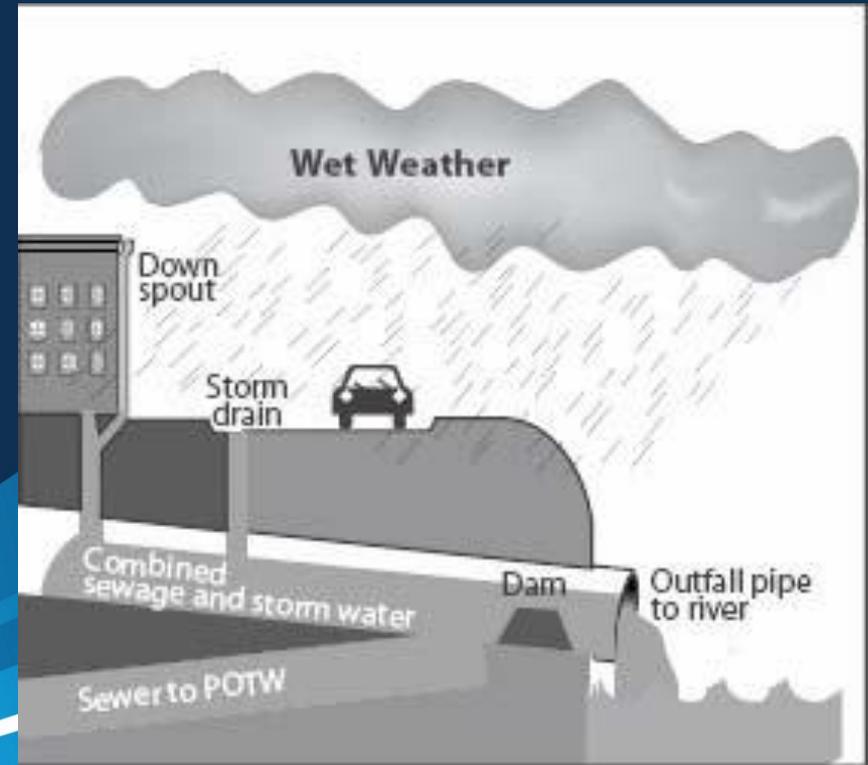
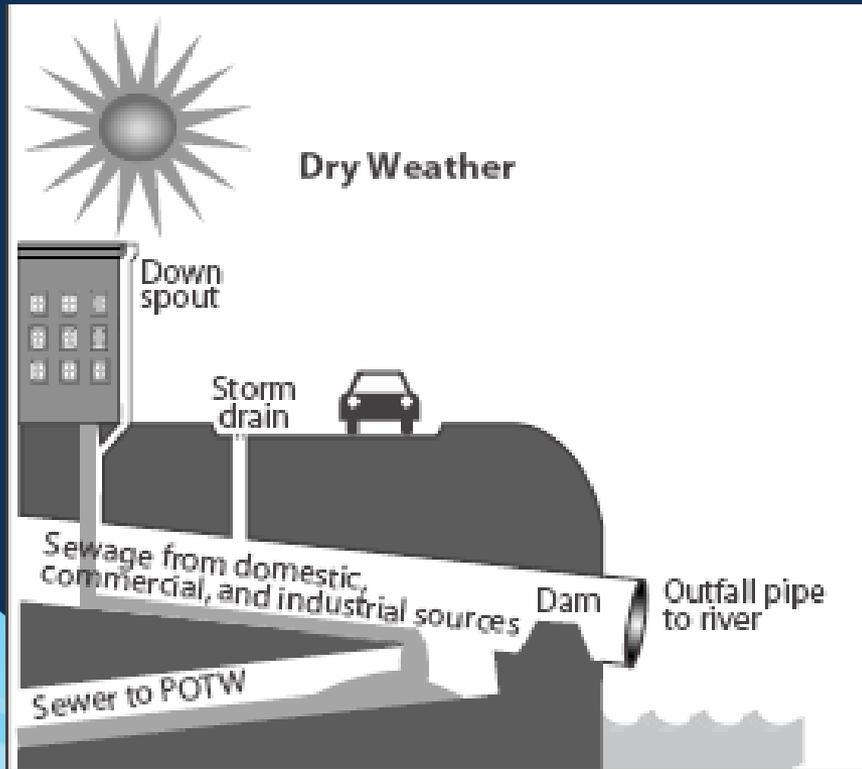
Troy

Watervliet

Green Island

Defining Combined Sewer Systems

- Combined systems are found in older communities
- Combined Sewers are designed to discharge to a waterbody during wet weather when total flow exceeds the capacity of the sewer system or the treatment plant
- Combined systems treat the “first flush”



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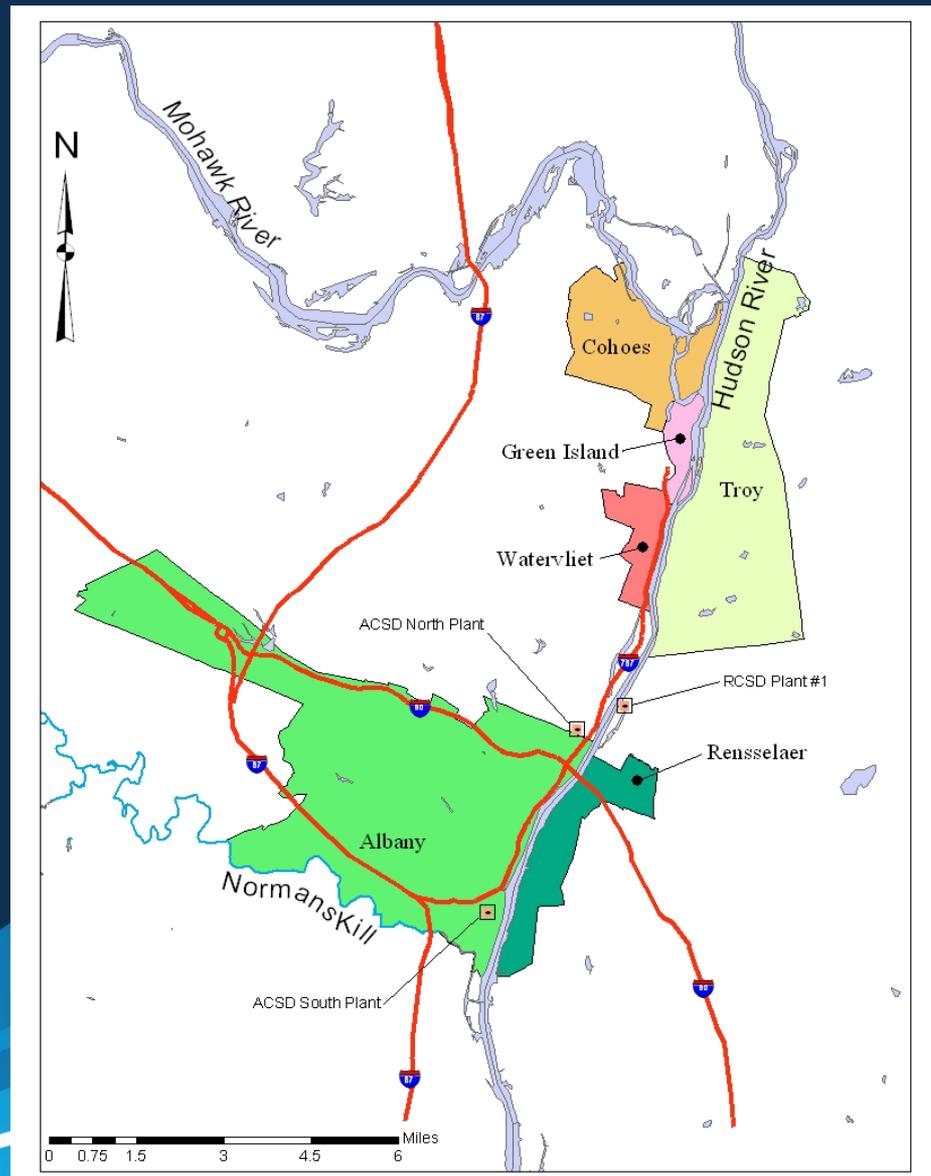
Troy

Watervliet

Green Island

Combined Sewer Systems on the Hudson

- **6 communities**
 - City of Albany
 - City of Cohoes
 - Village of Green Island
 - City of Rensselaer
 - City of Troy
 - City of Watervliet
- **92 discharge points**
- **2 sewer districts (Advisory role)**
 - Albany County Sewer District
 - Rensselaer County Sewer District



CSOs By Community

Community	Volume of Overflow	Number of Events
Cohoes	21	61
Green Island	4.6	41
Watervliet	4.8	44
ACSD North	30	
Albany/ ACSD South	739	58
Rensselaer	20	52
Troy	447	65
RCSD	467	
Albany Pool Total	1,236	65

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Why develop Long Term Control Plans?

- 1994 EPA CSO Control Policy
- 2000 Clean Water Act Amendment (Wet Weather Water Quality Act)
 - prohibit dry weather overflows
 - specify that impacts to the environment must be minimized
 - **require the creation and implementation of a LTCP**
 - require public involvement in the process
 - permit a phased approach to addressing CSO issues
 - permit third party lawsuits

Demonstratable goals of the CSO LTCP

Areas of Concern	Baseline	Post Construction of Recommended Projects
Untreated CSO Volume (Mgal)	1236	610
Number of Events	65	65
Wet Weather Flow Treated at WWTPs (Mgal)	2827	3453
Pool-Wide Percent Capture	69.5%	85%
CSO Flow Receiving Floatables Capture	27	454
Pool-Wide Treatment & Floatables Capture	70.1%	88.8%
Disinfection at WWTPs	No	Seasonal
Fecal Coliform WQ Standard Violations	30	0

Consent Order

- Resolves potential NYSDEC enforcement of alleged CSO violations by each Community.
- Mandates schedule and project deliverables
- Establishes stipulated penalties.
- Requires Post Construction Compliance Monitoring Program to measure success
- Codifies reporting and administrative requirements

Agreement with NYSDEC on terms of Consent Order reached on January 15, 2014.

Projects and Programs in 15 year LTCP

•Disinfection Projects	\$9.66 million
•WWTP Process Improvements	\$3.62 million
•BMPs and System Optimization Projects	\$35.26 million
•Sewer Separation and Storage Projects	\$22.9 million
• Green Infrastructure Program	\$5.08 million
•Satellite Treatment and Floatables Control	\$55.87 million
•Tributary Enhancements	\$2.13 million
•Additional Pool-Wide Projects	\$2.01 million

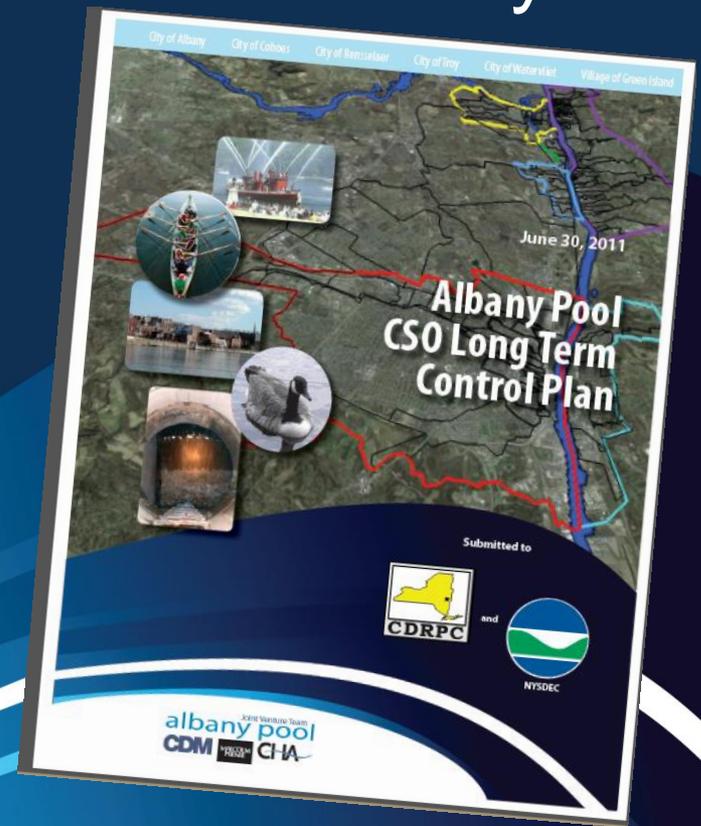
- **Gross cost of program:\$136.5m**
- **Gross cost Community Projects:
\$102m**

NY CSO LTCP Program Cost Comparison

	Albany Pool Communities	Buffalo Sewer Authority	Onondaga County
Population (thousands)	180	Approx. 300	139
Service Area (sq. mi.)	80	110	100
CSO Area (sq. mi.)	22	43	11
Number of CSOs	92	59	63
Overflow Volume (Bgal/yr)	1.3	1.75	1.0
Compliance Costs (millions)	\$136M	\$350M	\$640M

Allocation Formula

- Weighted 85% by CSO Flow from each Community, 15% by Population (2010 Census).
- Percentage shares for each Community
 - Albany – 58.68%
 - Troy – 34.76%
 - Cohoes – 2.74%
 - Rensselaer – 2.13%
 - **Watervliet – 1.16%**
 - Green Island – 0.53%



Albany

Cohoes

Rensselaer

Troy

Watervliet

Green Island

PROJECT SPECIFICATIONS & ENGINEERING

WESTON & SAMPSON

AUGUST BOHL

Albany

Cohoes

Rensselaer

Troy

Watervliet

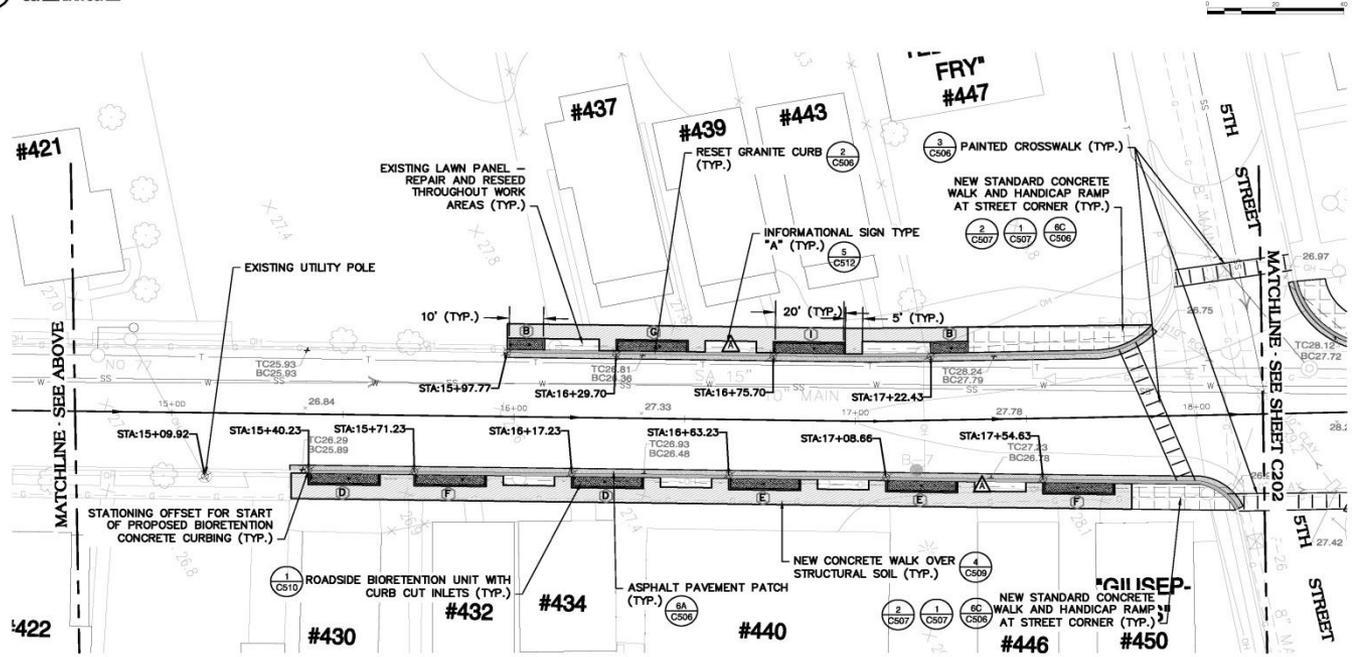
Green Island

GI SPECIFICATIONS

- 5,100 S.F. POROUS PAVEMENT
- 12,000 S.F. SIDEWALK (8,000 OVER STRUCTURAL SOIL)
- 2 RAIN GARDENS
- BIORETENTION AREA
- INFILTRATION GALLERY
- HYDRODYNAMIC SEPERATOR
- 34 ROADSIDE BIORETENTION PLANTING UNITS

SITE PLAN 4TH TO 5TH

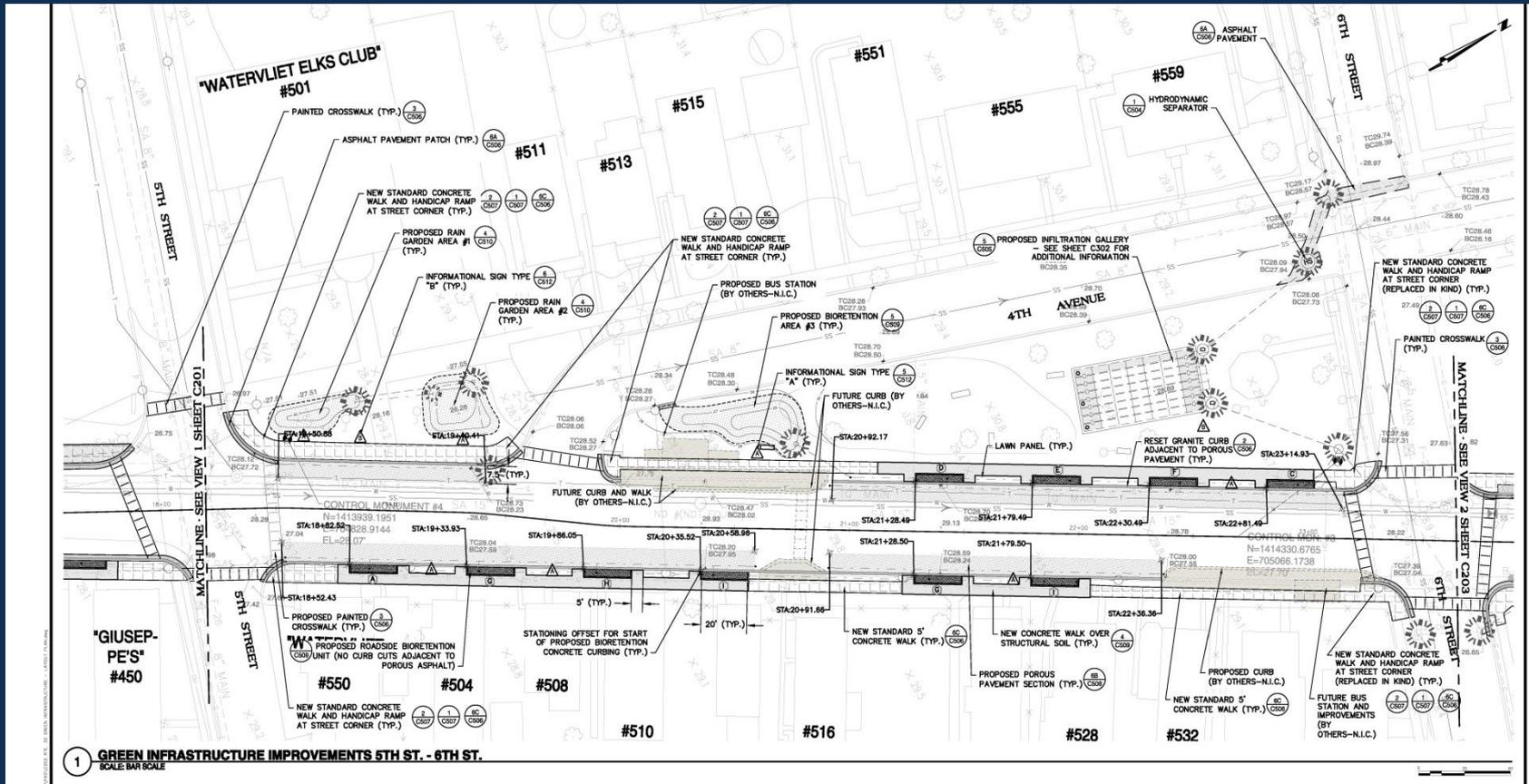
1 GREEN INFRASTRUCTURE IMPROVEMENTS 4TH ST. - 5TH ST. SCALE: BAR SCALE



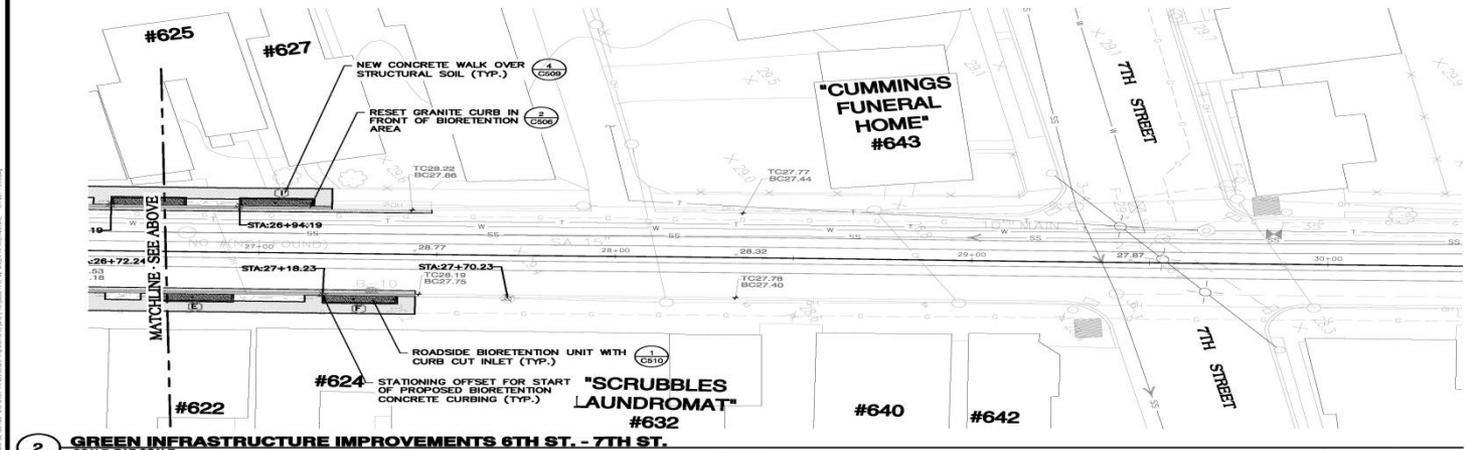
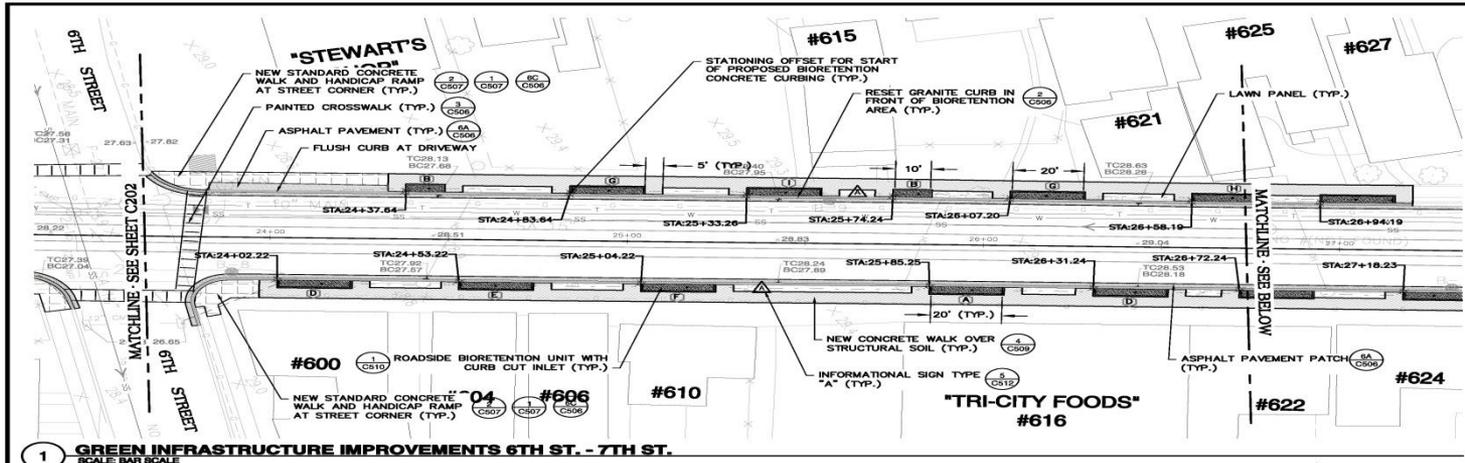
2 GREEN INFRASTRUCTURE IMPROVEMENTS 4TH ST. - 5TH ST. SCALE: BAR SCALE

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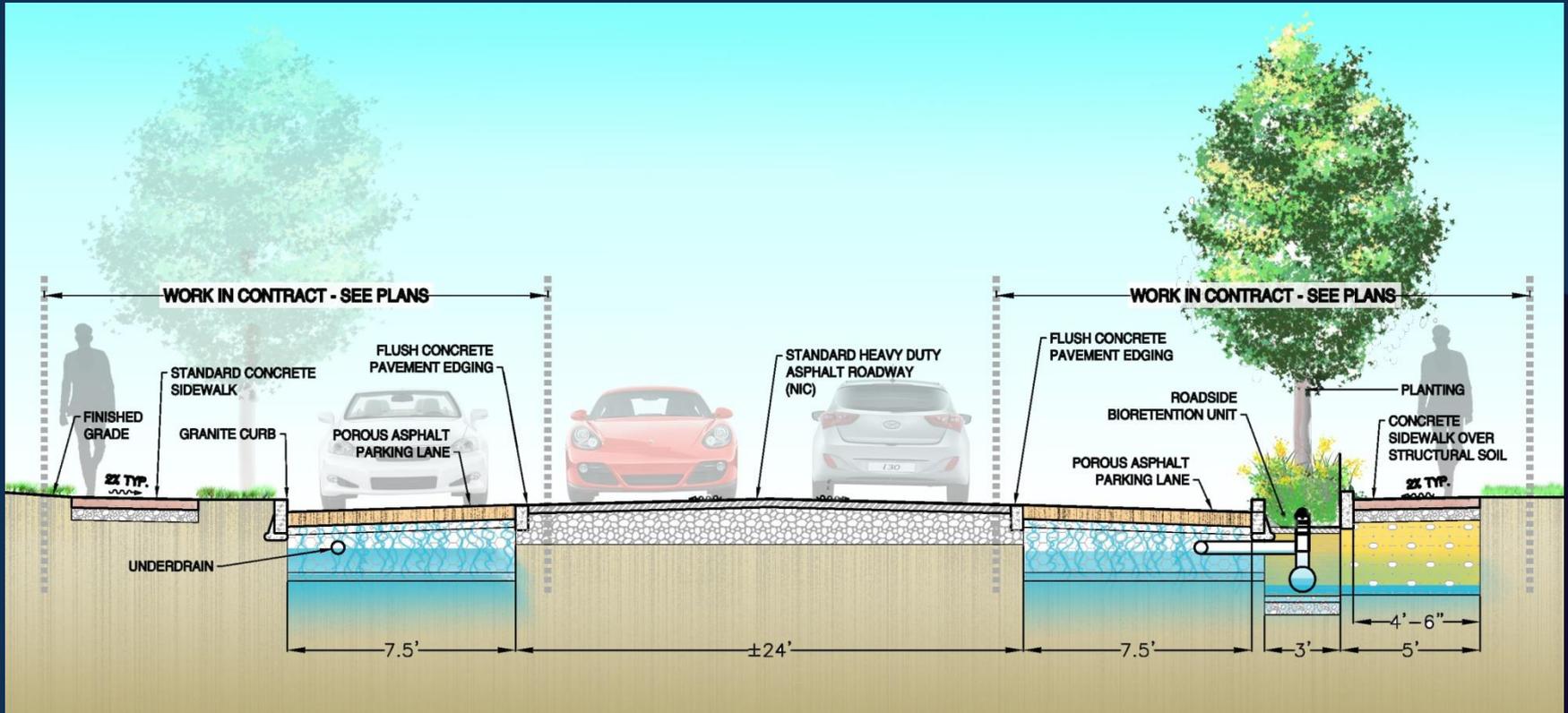
SITE PLAN 5TH TO 6TH

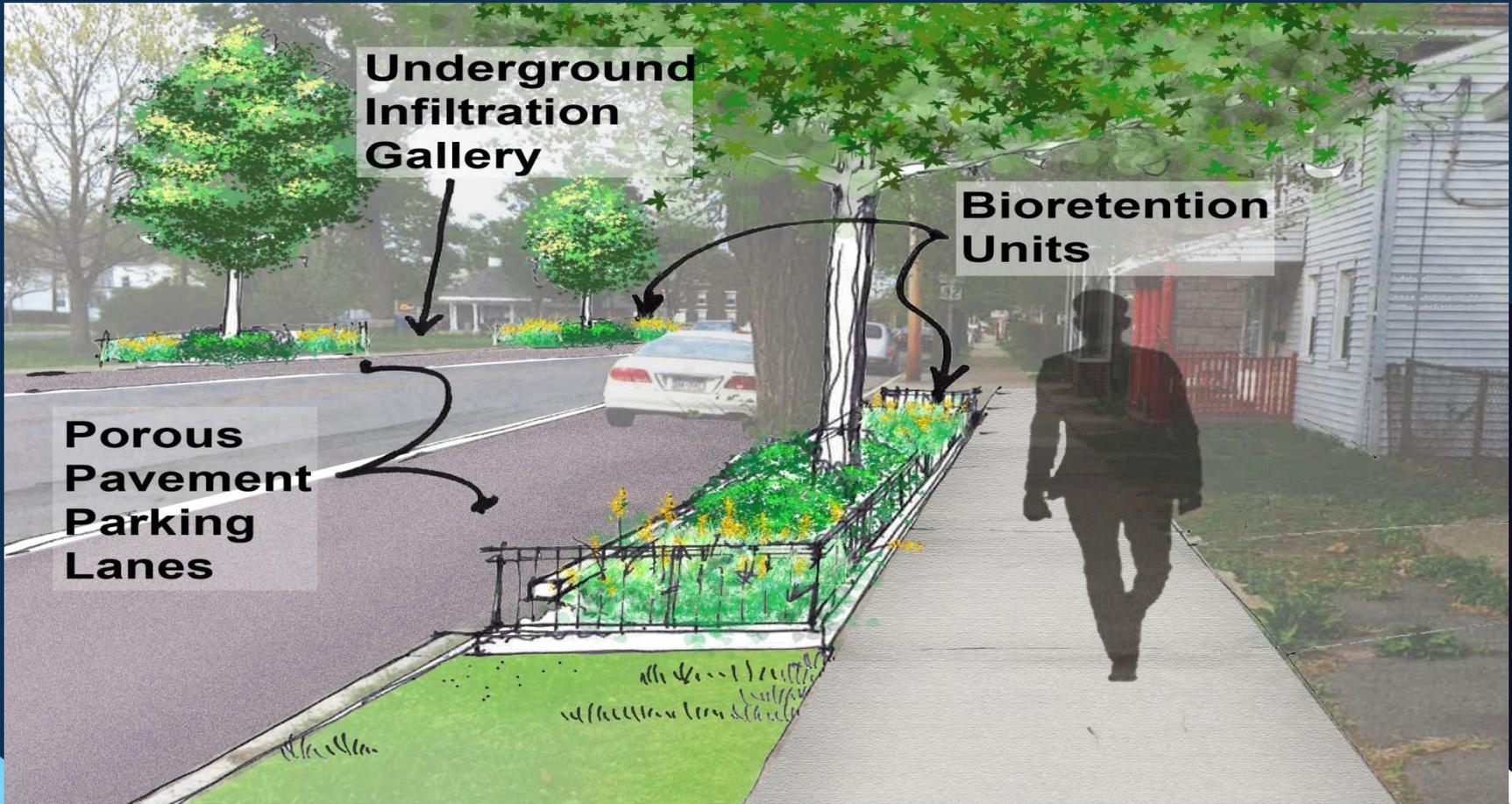


SITE PLAN 6TH TO 7TH



CROSS SECTION





FUTURE OF ROUTE 32

- GREEN INFRASTRUCTURE – 2016
- MILL & FILL OF ROADWAY – 2017
- UNDERGROUND INFRASTRUCTURE
- CDTA BRT ROUTE
- MHBHT BIKE PATH - 2018

Albany

Cohoes

Rensselaer

Troy

Watervliet

Green Island