ATTACHMENT #1

Environmental Protection

NYC Green Infrastructure Program

Queens Community Board 2

June 4, 2015

What is a Combined Sewer Overflow?

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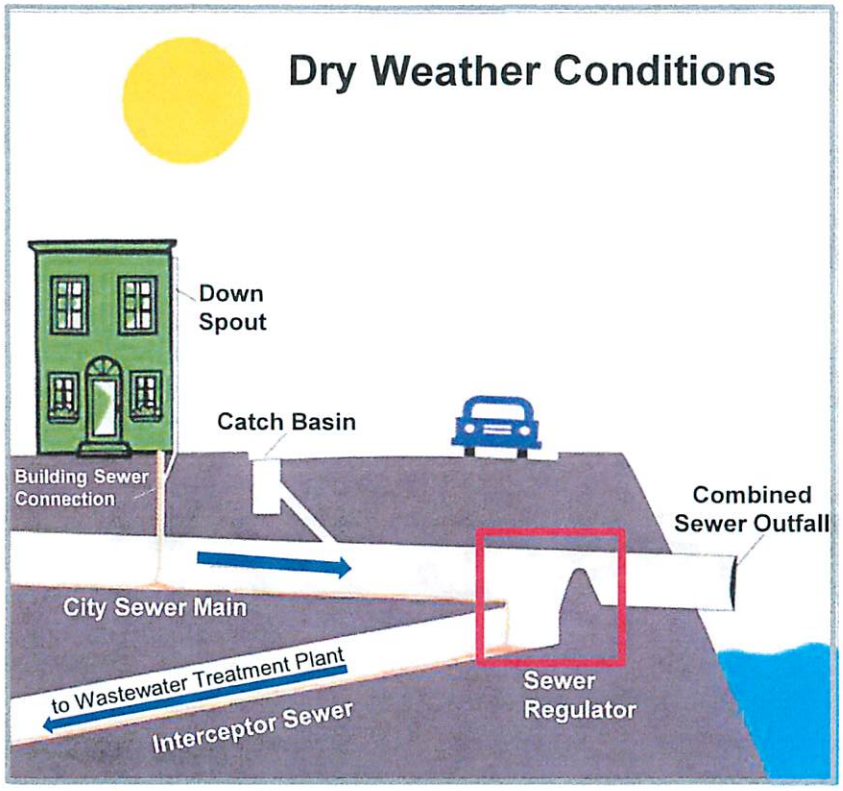
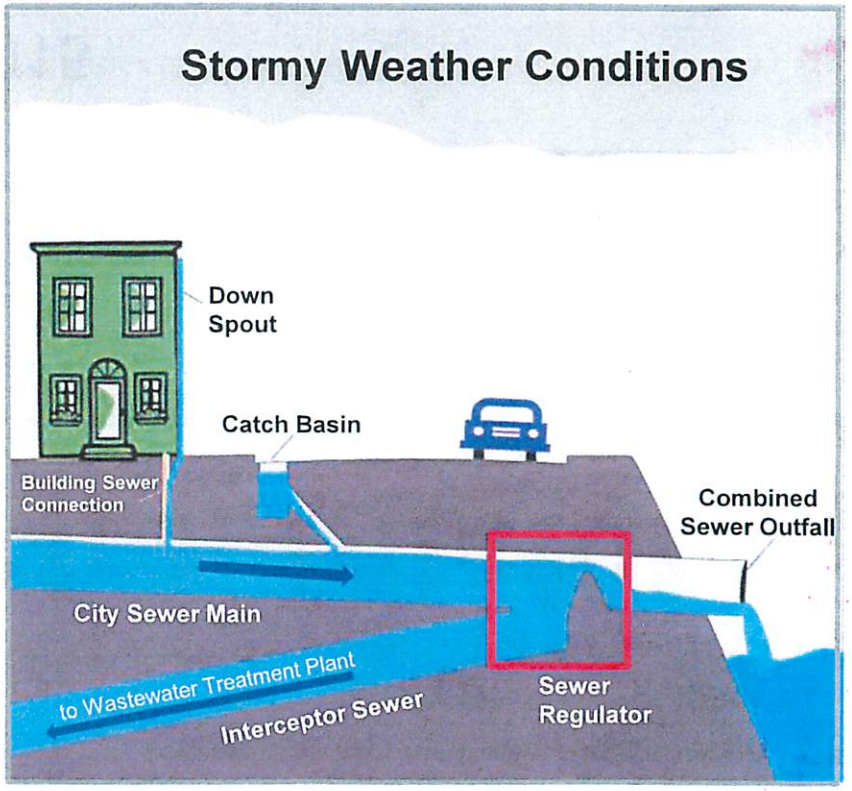
- NYC's sewer system is approximately 60% **combined**, which means it is used to **convey both sanitary and storm flows**.





- When the sewer system is at full capacity, a diluted mixture of rain water and sewage are released into local waterways. This is called a combined sewer overflow (CSO).

Green Infrastructure in New York City

NYC Environmental Protection

Green infrastructure (GI) practices are designed, constructed and maintained to collect stormwater runoff when it rains.

Green Infrastructure on City Streets and Sidewalks

Types of Green Infrastructure

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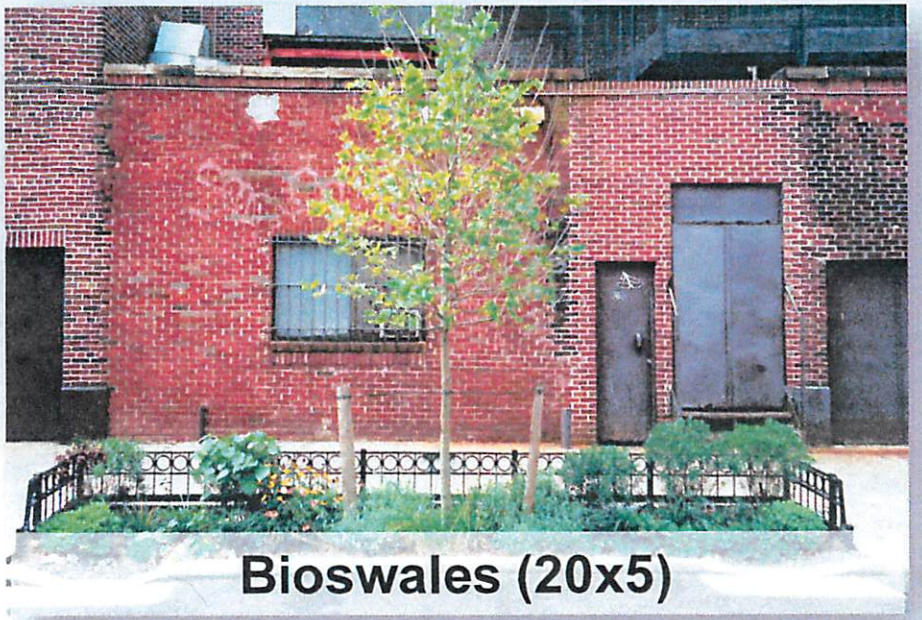
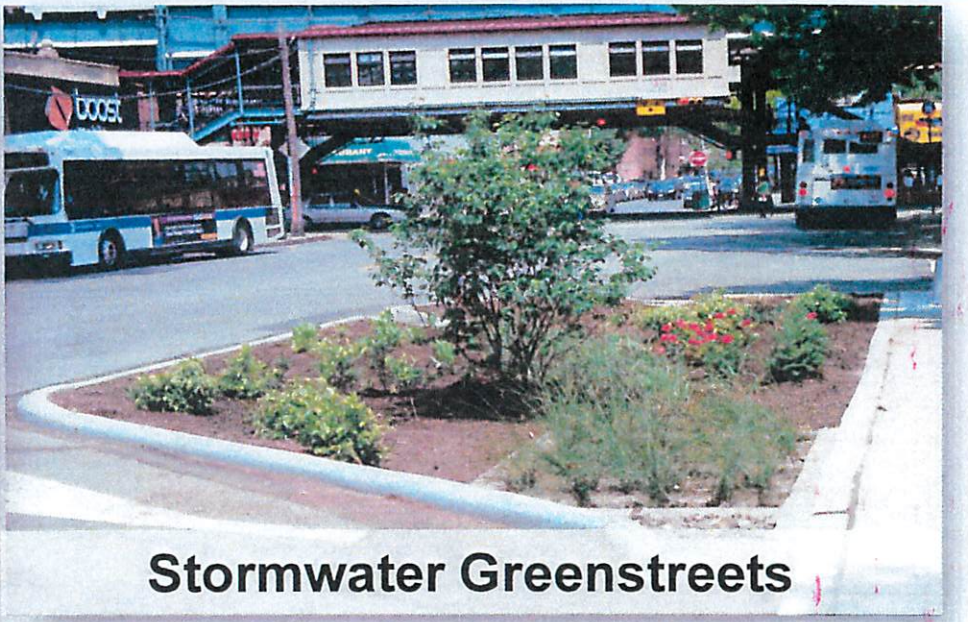
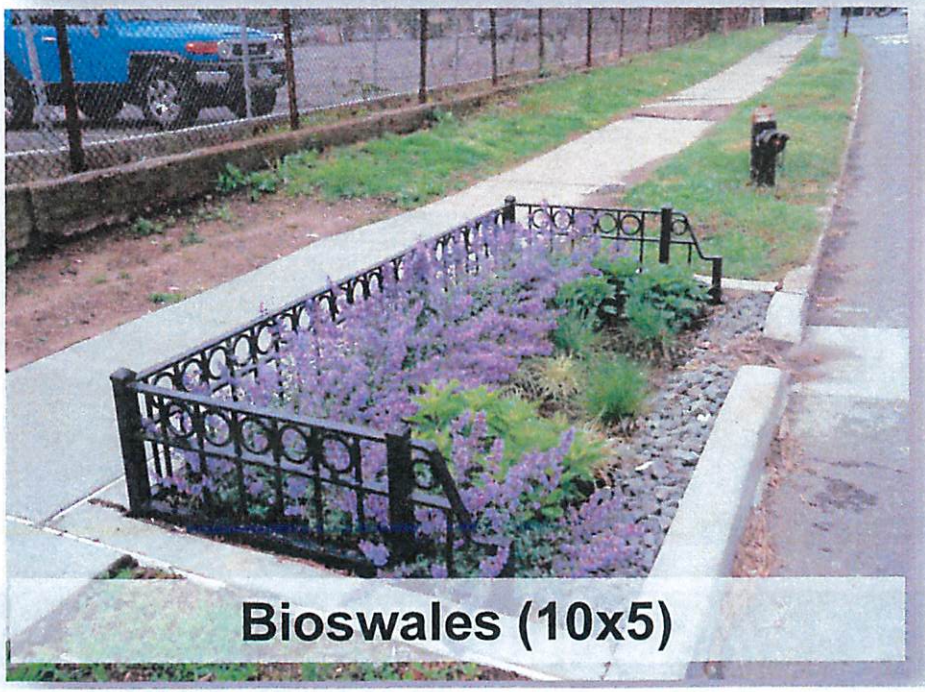


Bioswales (20x5)



Stormwater Greenstreets



Bioswales (10x5)

Stormwater Greenstreets

Right-of-Way Bioswale (ROWB)

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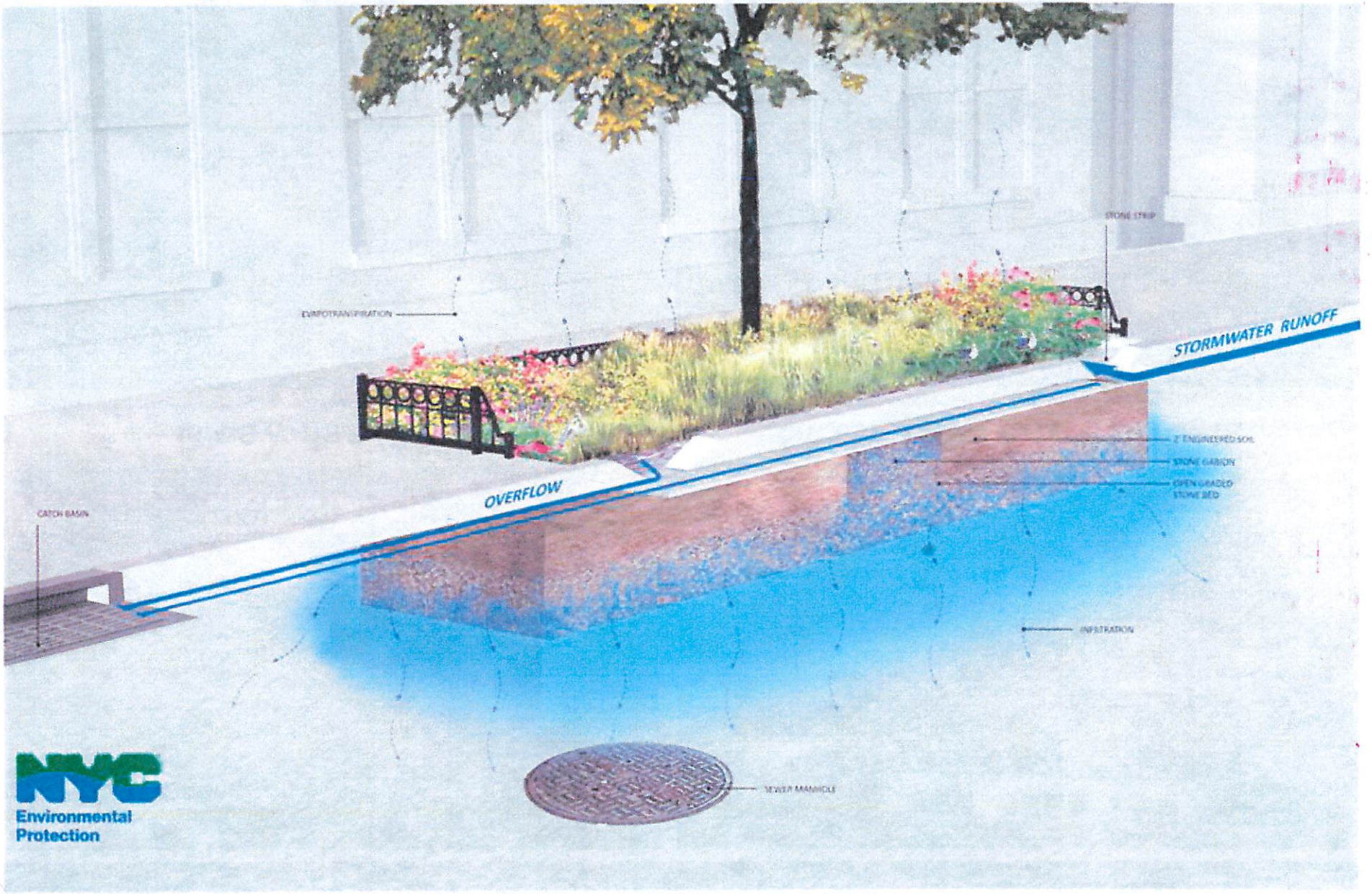

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Green Infrastructure in Community Board 2

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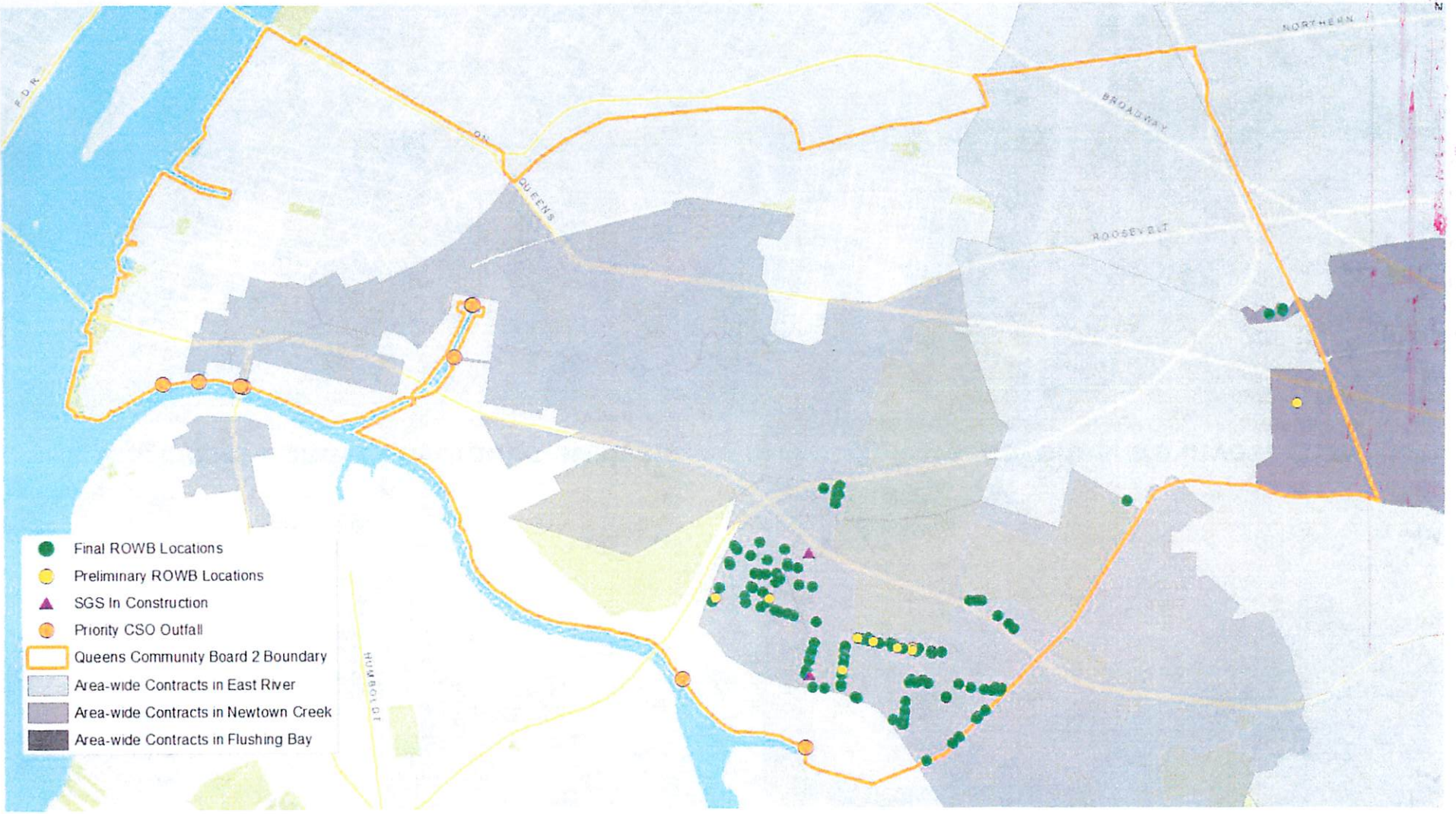

Design and Siting Process

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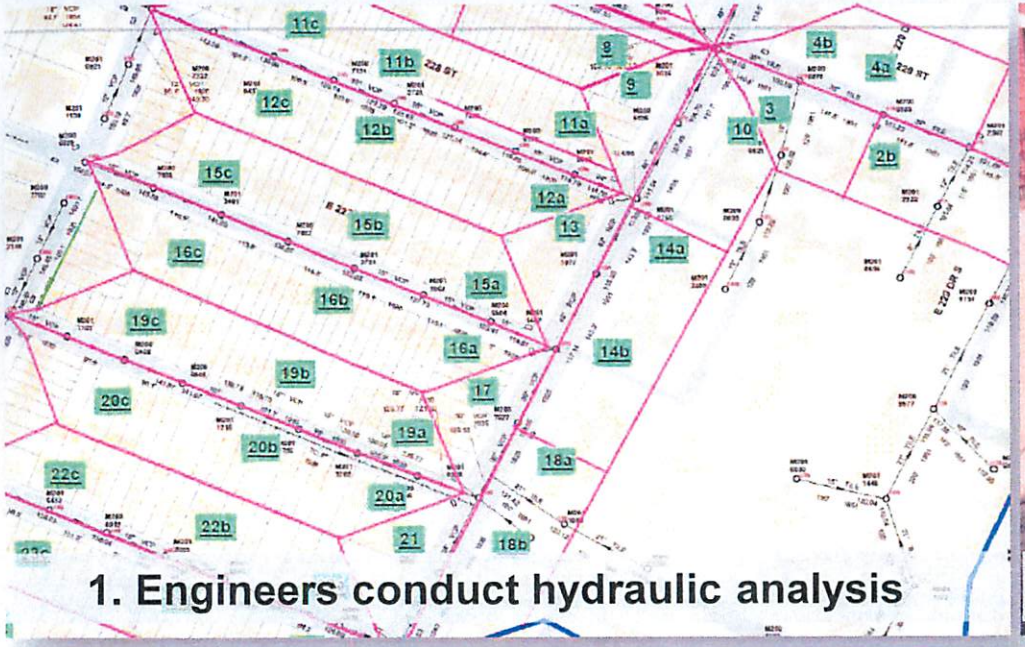
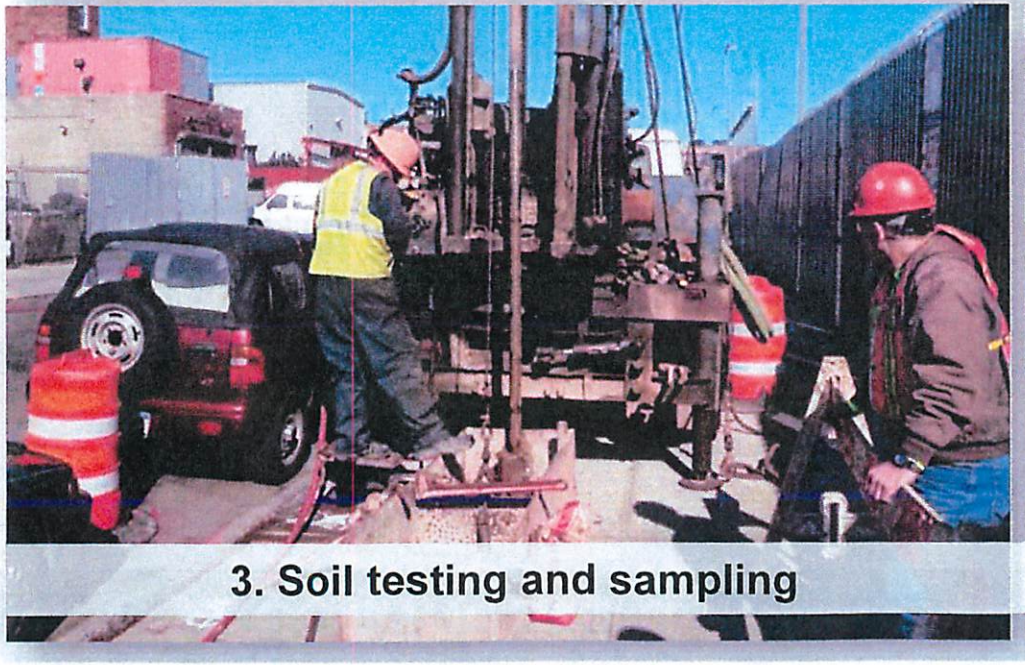


1. Engineers conduct hydraulic analysis

2. Potential sites are investigated



3. Soil testing and sampling

4. Surveys are performed

Construction Sequencing

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- Preferred sequence:
  - Sidewalk Markouts and Sawcut pavement
  - Excavate bioswale
  - Private utility service line protection
  - Backfill with stone
  - Place engineered soil/install tree
  - Perform concrete work
  - Install tree guard
  - Perform planting/fine grading

Maintenance of Green Infrastructure

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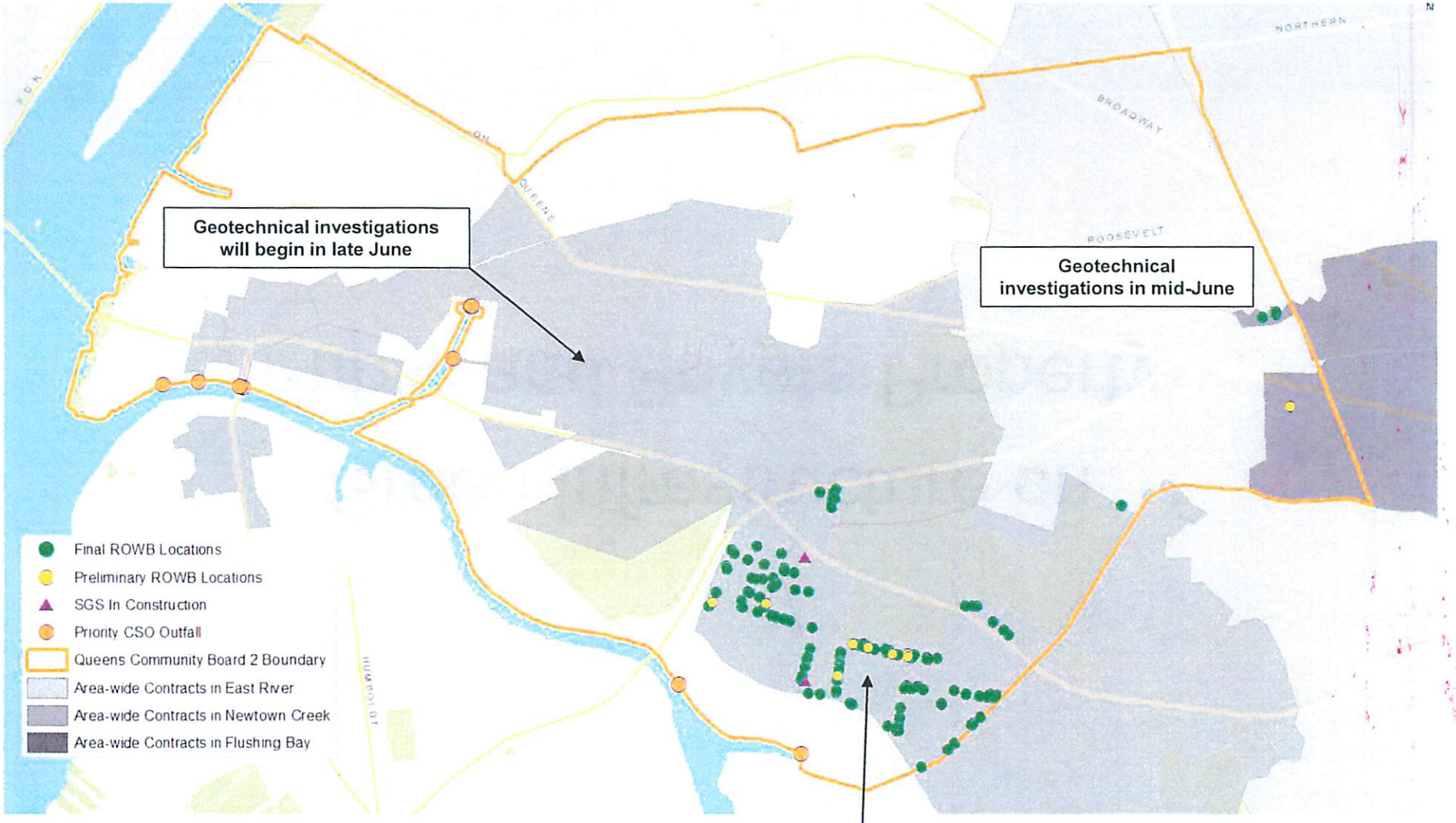
All green infrastructure in the public right-of-way is maintained by the City

- 2 yr contractor guarantee
- Locations are visited regularly to:
  - Remove litter and dead leaves
  - Replace plants
  - Prune trees
  - Clear inlets/outlets
- Coordination with the Department of Sanitation

Next Steps


Geotechnical investigations will begin in late June
Geotechnical investigations in mid-June
Bioswale construction will begin in early July
Final ROWB Locations
Preliminary ROWB Locations
SGS In Construction
Priority CSO Outfall
Queens Community Board 2 Boundary
Area-wide Contracts in East River
Area-wide Contracts in Newtown Creek
Area-wide Contracts in Flushing Bay
BROADWAY
NORTHERN
ROOSEVELT
QUEENS

Green Infrastructure on Public and Private Property

Green Infrastructure on Public Property

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P.S. 261 - BEFORE

- **Partnerships:**
  - NYC Parks Department
  - NYC Housing Authority
  - NYC Dept. of Education/ School Construction Authority and Trust for Public Land

P.S. 261 AFTER ($263,000 in GI)

GI Opportunities for Private Property Owners

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❖ GI Grant Program

- DEP provides up to 100% reimbursement for design and construction of GI on private property in combined sewer areas

❖ Green Roof Tax Abatement

- City provides a 1 year property tax abatement for private properties that install a green roof

❖ 2012 Stormwater Rule

- Site Connection Proposals may use GI technologies to meet the new allowable flow rate

Brooklyn Navy Yard - Rooftop Farm

Banana Kelly – Community Garden

Questions?

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Street Trees vs. Right-of-way Bioswales

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- Older trees were planted in smaller tree beds that limited tree longevity.
- Older tree roots in small tree beds may lift or break sidewalks while seeking water and oxygen.
- ROWB range from 10-20 feet long and are 4 to 6 feet wide so that roots have room to grow, and smaller tree species selected for smaller bioswales.
- Trees in ROWB are planted at least 6 inches below the sidewalk and the pit is graded with a depression in the center.
- ROWB are designed to collect stormwater runoff so the trees and plants receive plenty of water.