



Jamaica Bay & Tributaries

Combined Sewer Overflow

Long Term Control Plan

Public Status Update Meeting

Jamaica Bay Wildlife Visitor Center
October 19, 2017

	Topic	Speaker
1	Welcome & Introductions	Mikelle Adgate
2	Jamaica Bay & Tribs LTCP Time Extension	Keith Mahoney
3	Planned Projects in Jamaica Bay Watershed	Mikelle Adgate
4	Southeast Queens Program Overview	Mikelle Adgate
5	Green Infrastructure and Bluebelt Projects	Mikelle Adgate
6	Public Outreach and Education	Mikelle Adgate
7	Discussion and Q & A Session	All

Welcome & Introductions

Mikelle Adgate
Director of Stormwater Outreach
DEP - BPA

Jamaica Bay & Tributaries LTCP Time Extension

Keith Mahoney
Director of Water Quality Planning
DEP - BEDC

Long Term Control Plan (LTCP)

identifies appropriate CSO controls to achieve applicable water quality standards

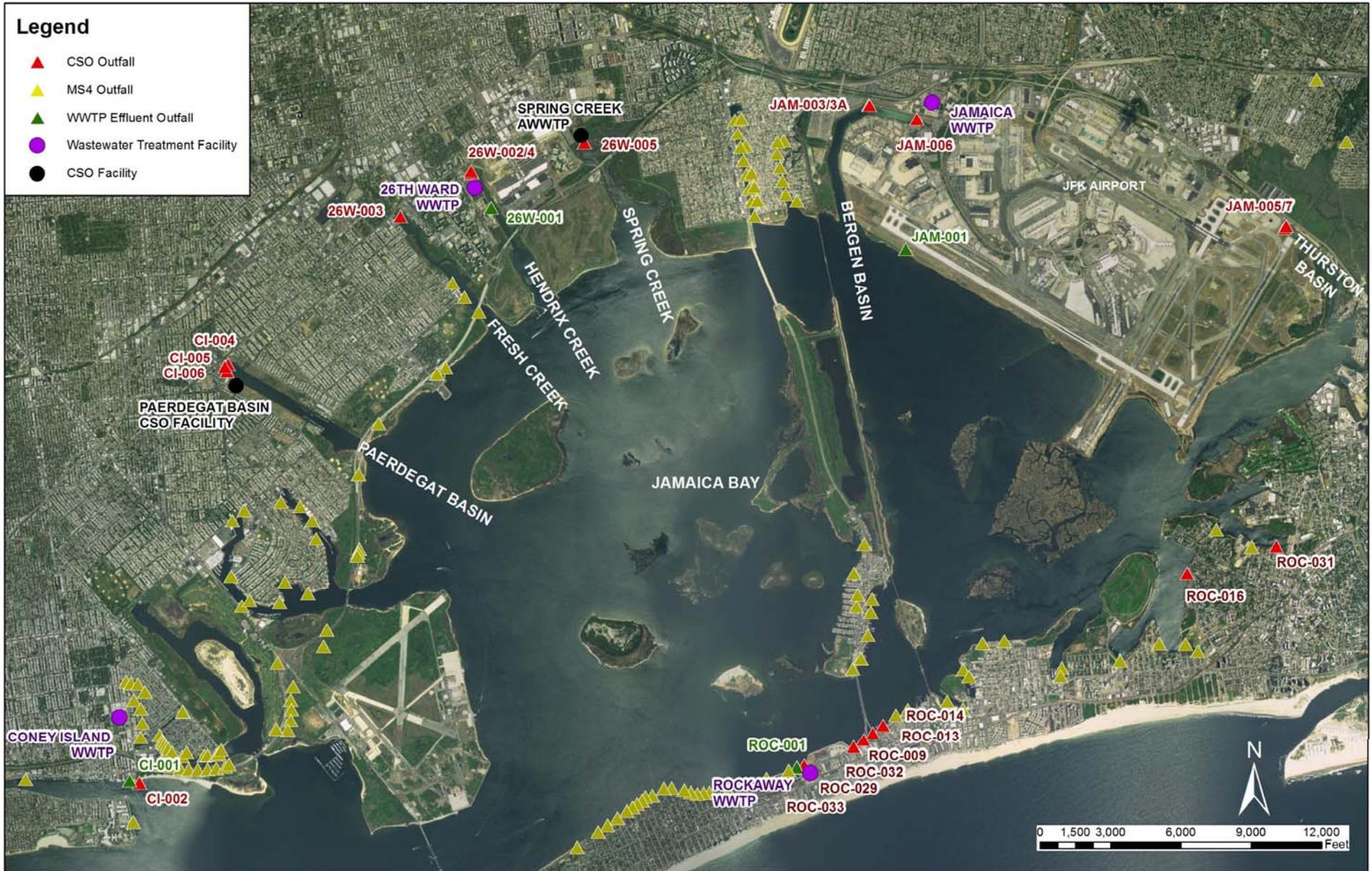
consistent with the Federal CSO Policy and Clean Water Act

CSO Consent Order

an agreement between NYC and DEC that settles past legal disputes without prolonged litigation

DEC requires DEP to develop LTCPs and mitigate CSOs

Jamaica Bay and Tributaries



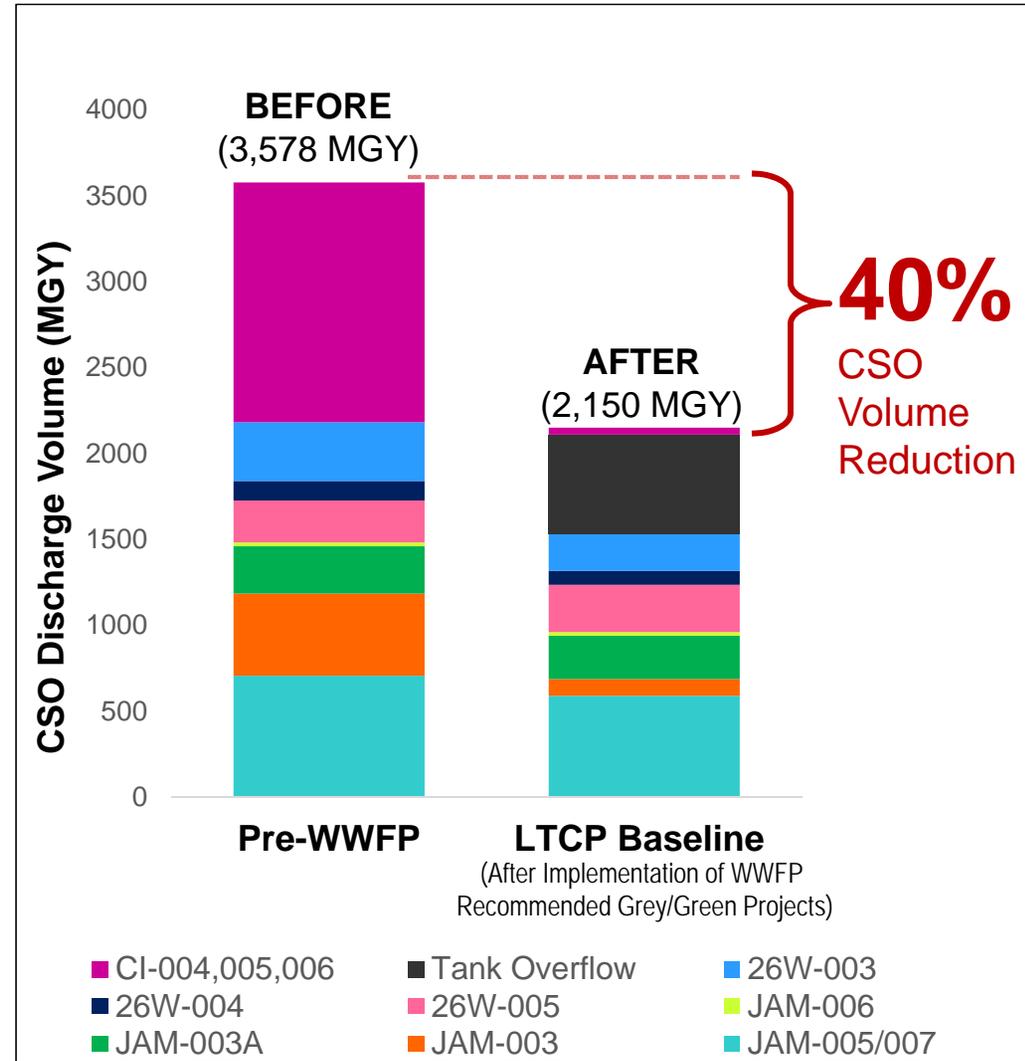
Committed CSO Mitigation Projects

Project	Construction Cost (\$ Millions, 2011)	Status
1 Automation of Regulator JA-2	\$2	Complete
2 Spring Creek Auxiliary WWTP Upgrade	\$87	Complete
3 26 th Ward WWTP Drainage Area Sewer Cleaning	\$4	Complete
4 Hendrix Creek Dredging	\$13	Complete
5 Regulator Improvements at J3, J6 & J14	\$7	Complete
6 New Parallel Sewer West Interceptor	\$20	Complete
7 New Bergen Basin Lateral Sewer	\$12	Ongoing
8 26 th Ward WWTP Wet Weather Stabilization	\$128	Ongoing
9 26 th Ward High Level Sewer Separation	\$300	Ongoing
10 Green Infrastructure	TBD	Ongoing
Total		> \$573 M



Projected Jamaica Bay Wet Weather Volumes

Location	Outfalls	CSO Volume (MG) ¹		Activation Frequency ¹	
		Pre-WWFP	LTCP Baseline ²	Pre-WWFP	LTCP Baseline ²
Thurston Basin	JAM-005 /007	707	590	38	28
Bergen Basin	JAM-003	478	97	48	17
	JAM-003A	275	252	49	34
	JAM-006	22	22	38	38
Spring Creek	26W-005	244	275	6	6
Hendrix Creek	26W-004	114	81	31	24
Fresh Creek	26W-003	342	217	15	12
Paerdegat Basin	Tank Overflow	-	576	-	12
	CI-004, 005, 006	1,396	40	51	5
Jamaica Bay	Rockaway Outfalls ³	-	-	-	-
Total		3,578	2,150	51	38



Notes:

- 1) CSO volumes and activations frequency are based upon overflows at the respective regulator weirs and do not account for stormwater contributions to the outfall downstream of the regulator with the exception of Thurston Basin which is the sum of the CSO discharges downstream of Regulators JA-06, JA-07 and JA-08.
- 2) LTCP Baseline = After implementation of WWFP recommended Green/Grey projects.
- 3) Rockaway CSOs do not activate during the typical 2008 rainfall year.
- 4) Preliminary model results only; final values pending receipt of final delineations of the MS4 subcatchments and stormwater categories from BWSO.

* Approximately 11 BGY of storm water being discharged into Jamaica Bay and an additional 6 BGY of flow entering Head of Bay from Nassau County.

- DEP requested and DEC approved a one year extension for the Jamaica Bay LTCP submittal to June 2018, so that DEP could coordinate with other ongoing projects

Activities		Benefit
1	Evaluate impacts and needs of JFK Airport Expansion	<ul style="list-style-type: none"> • Preliminary estimates of capacity needs can be used in regional planning efforts • Consider relocation of interceptor for improved access
2	Coordinate with Jamaica Redevelopment Zone sewer capacity improvements	<ul style="list-style-type: none"> • Improved calibration of upstream collection system • Allows for modeling of RDII in upstream trunk sewers • Facilitates integrated planning efforts
3	Consider results of Spring Creek Disinfection Pilot Study	<ul style="list-style-type: none"> • Provides a better understanding of the effectiveness of disinfection processes and long term maintenance needs
4	Coordinate with BWSO's storm sewer build-out program	<ul style="list-style-type: none"> • Identify overlapping or complimentary projects • Evaluate opportunities for expediting collection system capacity improvements
5	Evaluate opportunities to relieve capacity limitations of upstream trunk sewers	<ul style="list-style-type: none"> • Flooding relief • Improved conveyance to WWTP • Reduce CSOs
6	Coordinate GI and Bluebelt Projects with MS4 program	<ul style="list-style-type: none"> • Enables integrated planning and consideration of the WQ impacts of stormwater in addition to CSO

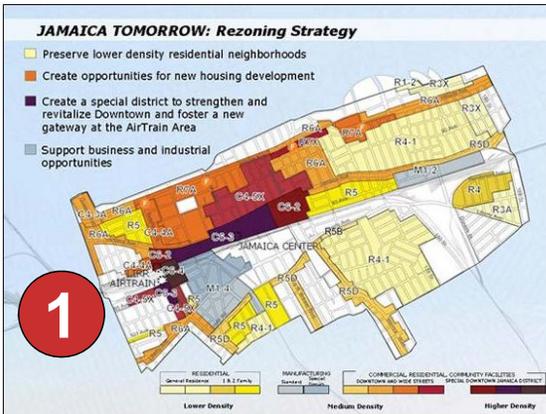
Jamaica Bay LTCP Status

TODAY

Task	Completion Date	2017					2018					
		August	September	October	November	December	January	February	March	April	May	June
MODELING												
IW Model Calibration	COMPLETE											
IW Baseline & % Controls Modeling	COMPLETE											
WQ Model Calibration	COMPLETE											
WQ Baseline & Performance Gap Modeling	COMPLETE	█	█									
IW & WQ Modeling for Retained Alternatives	Mar 2018			█	█	█	█	█				
IW and WQ Modeling for LTCP Recommendation	May 2018									█	█	
ALTERNATIVES DEVELOPMENT												
Development of Potential Alternatives	COMPLETE											
Alternatives Evaluation & DEP Review Meetings	Jan 2018	█	█	█	█	█	█					
DEP Selects Retained Alternatives	Jan 2018						█					
Evaluation of Retained Alternatives	Apr 2018						█	█	█	█		
DEP Selects LTCP Recommendations	Apr 2018									█		
PUBLIC OUTREACH												
Public Kick-off Meeting	COMPLETE											
Public Briefing	Oct 2017			█								
Public Alternatives Meeting	Mar 2018									█		
LTCP DEVELOPMENT												
Draft LTCP Sections	May 2018						█	█	█	█	█	
DEP Review of LTCP Sections	Jun 2018										█	█
Final QA, Production & Submittal LTCP to DEC	6/30/2018											█

Planned Projects in Jamaica Bay Watershed

Mikelle Adgate
Director of Stormwater Outreach
DEP - BPA



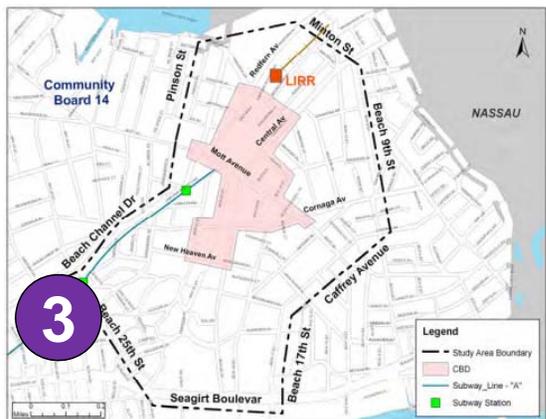
1) Jamaica Rezoning Plan

- **Preserve lower density neighborhoods:** low-rise mixed building, 1- and 20- family character
- **Create new, affordable housing opportunities:** Inclusionary zoning to limit development of unaffordable housing units
- **Urban Renewal Area:** Includes signature parks, residential, hotel, office/retail, public parking



2) Jamaica Infrastructure Improvements

- **The Sutphin Underpass (Complete):** Improve pedestrian circulation; create new retail space
- **Atlantic Avenue Extension:** Create one-way streets; develop 3 new public parks
- **Station Plaza Redevelopment:** Create wider sidewalks and turning lanes; create new plazas and subway entrances



3) Far Rockaway Urban Design and Reconstruction

- **Comprehensive urban design plan and streetscape improvements:** encourage safer pedestrian circulation and environmental resiliency in storms
- **Storefront improvements:** support small businesses with renovation projects



4) Watershed Restoration Pilot Studies

- **Oyster and Eel Grass Restoration:** small scale projects to establish costs, benefits, and success
- **Ribbed Mussel Restoration:** evaluate the filtering capacity and population densities required for water quality improvements
- **Salt Marshes and Beach Habitats:** identify and inventory sites for restoration; preserve recently restored areas
- **Algae and Sea Lettuce Harvesting:** determine if skimmer boats are a feasible, cost-effective method to remove plants and improve DO concentrations



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5) JFK Expansion

- **Interconnect Terminals:** redevelop older terminals, expanding newer terminals
- **Expand Taxiways:** reduce ground delays and add new flight slots
- **Redesign Airport Roadways:** develop a “ring road” configuration for easier, quicker access
- **Centralize and Expand Parking Lots:** incorporate into “ring road” with short/long-term parking options
- **Provide World-Class Amenities:** including fine dining and best-in-class retail, hotels, and conference facilities



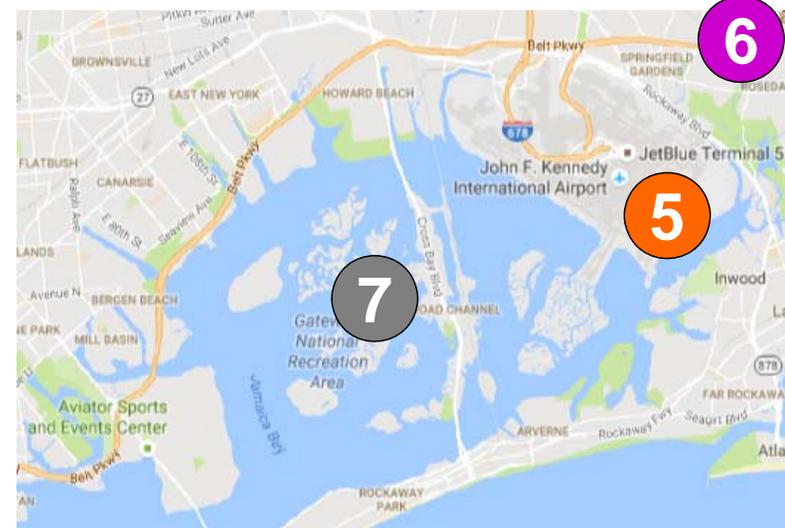
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6) Southeast Queens Drainage Plan

- **Flooding Remediation:** \$1.7 billion allocated over the next 10 years towards infrastructure improvement to alleviate flooding (mainly in Community Boards 12 and 13)
- **Grey/Green Infrastructure:** installation of bioswales and other green spaces to absorb rainwater runoff
- **Storm Sewer Infrastructure:** installation of catch basins, storm sewers and High Level Storms Sewers to improve stormwater drainage and reduce flooding



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7) NY Rising

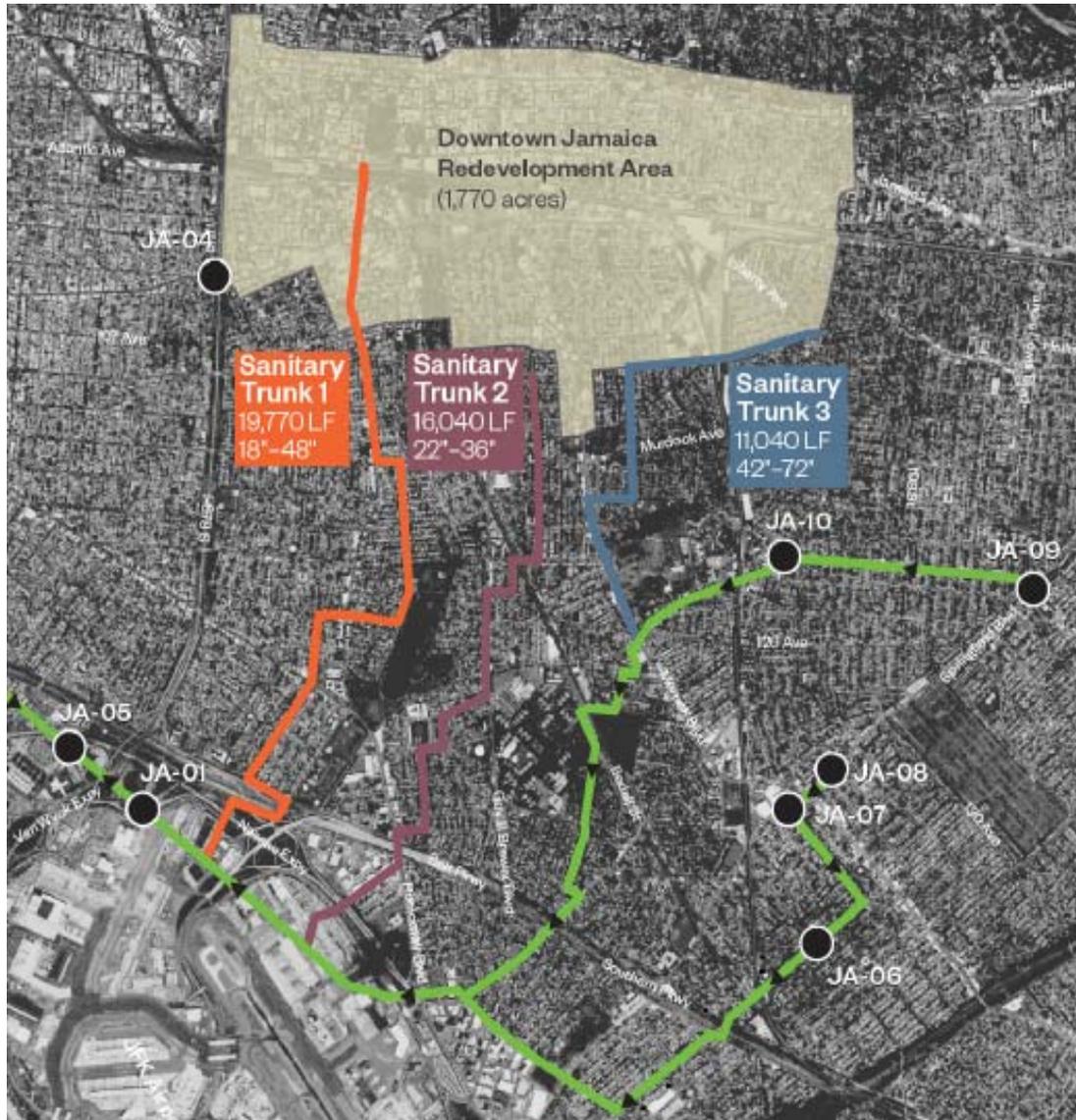
- New York City has 15 NY Rising Communities distributed over the five boroughs.
- The recovery and resiliency efforts will provide a unique combination of social and infrastructure-based assistance to communities, some of which are low-income, hard hit by Superstorm Sandy.
- Each locality is eligible for between \$3 million and \$25 million of Community Development Block Grant (CDBG) funding, as it implements new and innovative strategies that aim to establish a stronger and better future.

Sources:

www.governor.ny.com.gov/news/governor-Cuomo-presents-2nd-proposal-2017-state-of-state-transforming-jfk-international-airport

www.nyc.gov/html/press_releases/

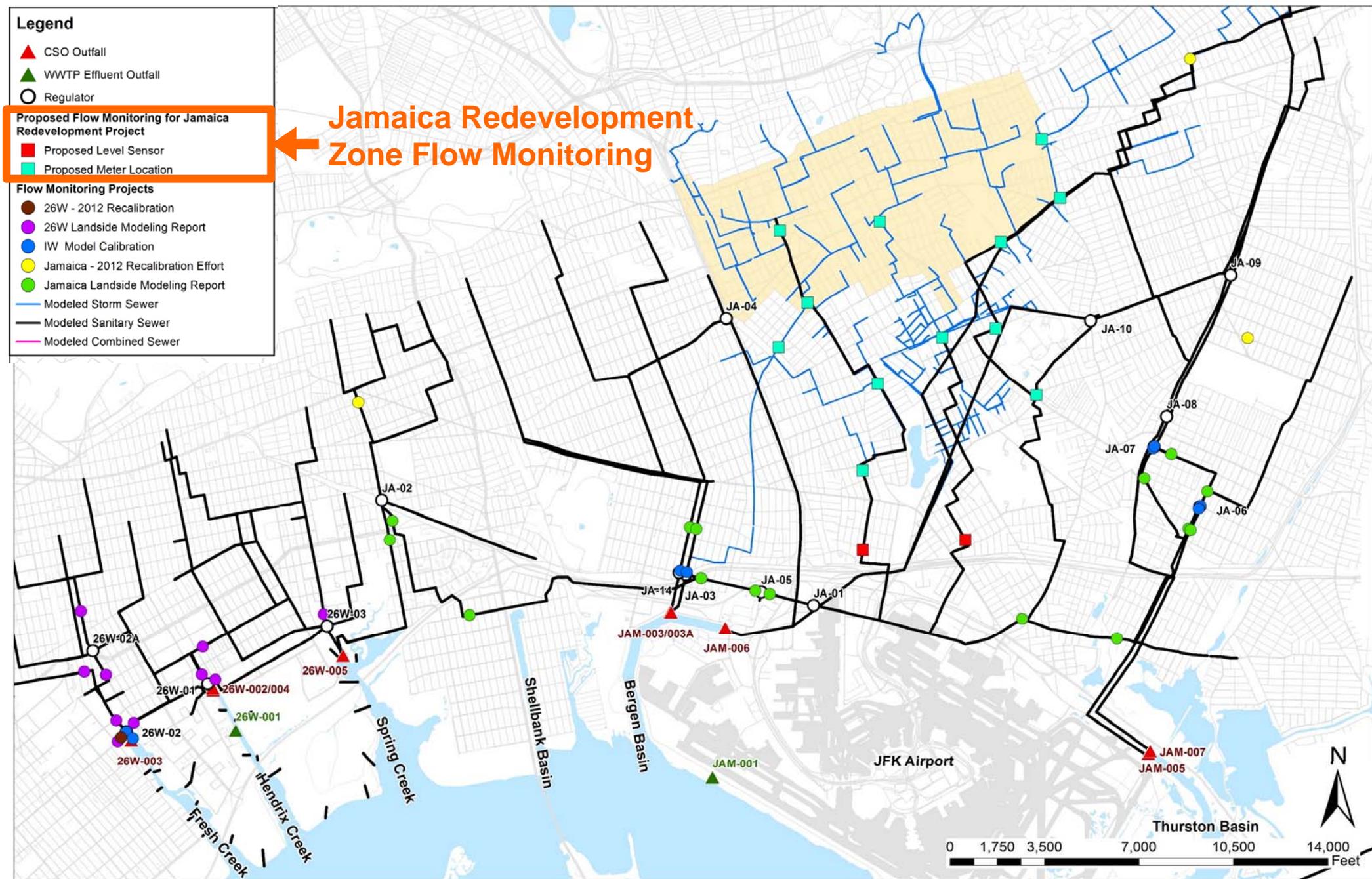
<https://stormrecovery.ny.gov/community-regions/new-york-city>



- **Jamaica Redevelopment Zone** (1,770 acres) will create new business and residential districts that will increase sewage flows to the Jamaica WWTP
- The three existing sanitary trunk sewers that service this area exhibit significant capacity limitations during peak dry and wet weather conditions
- **Goal:** Evaluate alternatives to convey additional flow from the Redevelopment Zone along with relieving the inundated nearby trunk sewers to the Jamaica WWTP
- DEP intends to conduct an 18-month evaluation to better quantify flow rates, constructability, and develop alternatives.
- Preliminary Alternatives Under Consideration:
 - New Sanitary Pump Station and Force Main
 - New Gravity Trunk Sewers
 - Clean-Out/Improvements to Existing Trunk Sewers

● Regulator ➤ Interceptor

Flow Monitoring Efforts



Southeast Queens Program Overview

Flooding in Southeast Queens

- Flooding is not a new problem in Southeast Queens
- Increasing rainfall, loss of permeable surfaces, lack of drainage infrastructure have worsened conditions
- Over the past ten years, Community Boards 12 and 13 have had more flooding complaints than any other area of New York City



- OneNYC identifies alleviating flooding in Southeast Queens as a priority initiative
- The 10 Year Capital Budget allocates \$1.7 billion over the next decade to plan and begin full sewer buildout and to provide short term relief wherever possible
- Full buildout requires approximately 450 miles of new storm sewers, and upgrade 260 miles of sanitary sewers and 30 miles of combined sewers over many years

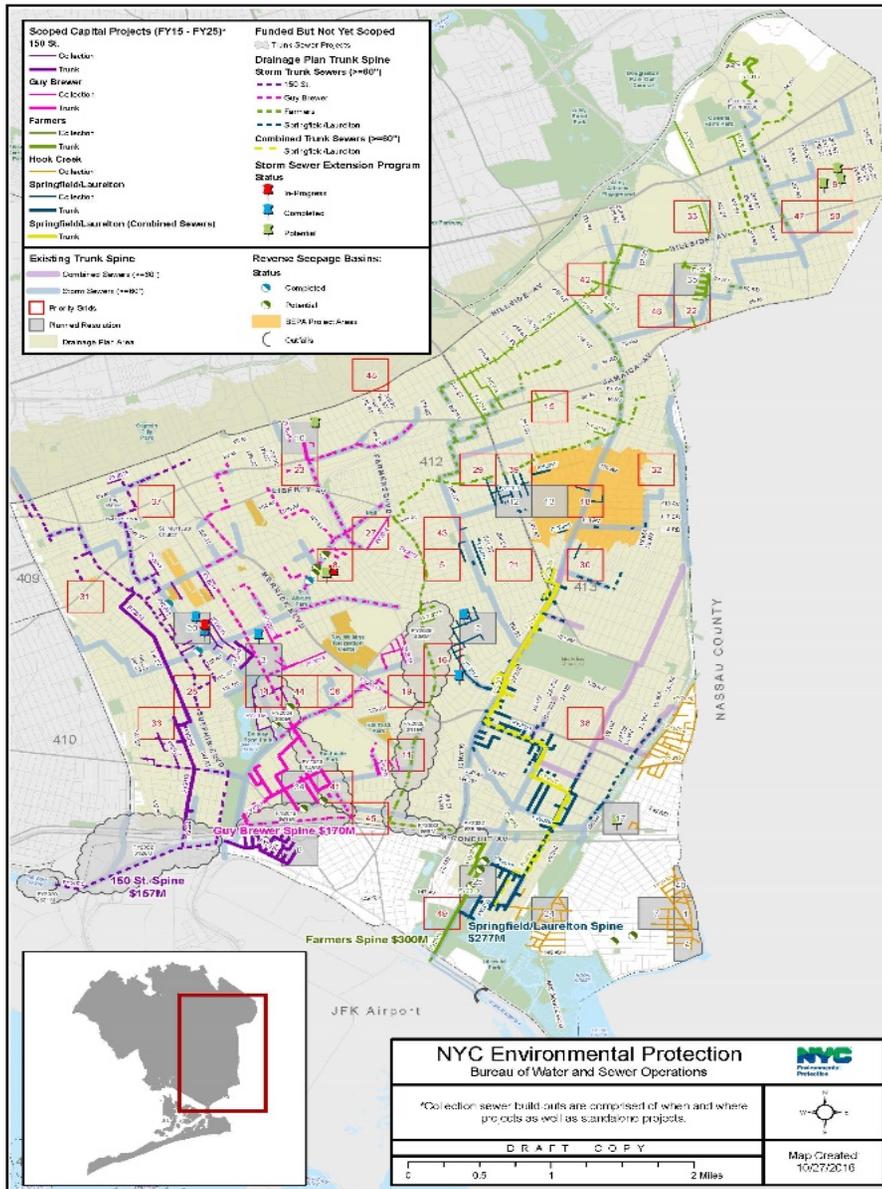


The City has funded a \$1.7 billion capital program to respond to the dual challenge of increased/more intense rainfall and lack of stormwater infrastructure in Southeast Queens. The program is designed to:

1. Accelerate the planning and design work to build large trunk sewers
2. Build early action storm sewers in the hardest hit areas as quickly as possible
3. Intercept as much stormwater before it gets to the storm sewer system as possible using green infrastructure
4. Partner with the community to share information on steps property owners can take

The Basics: Trunk Sewer Construction

Proposed Sewer Build-Out: Capital Projects FY2015 - FY2025 Community Districts 412 & 413, Queens



Strategy:

Accelerate the planning and design work to build large trunk sewers

Process Overview:

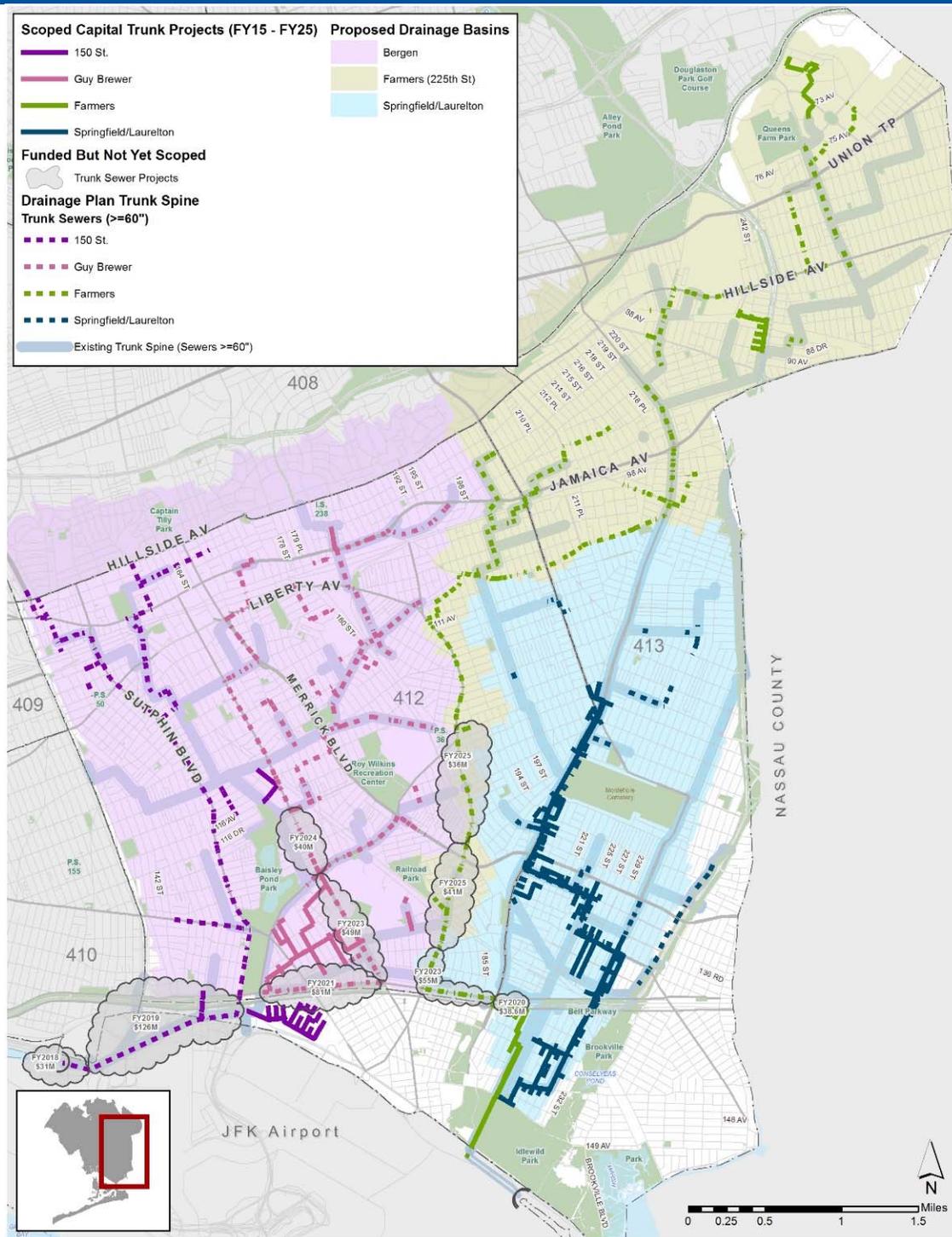
1. Develop drainage plan for Southeast Queens (completed 2007)
2. Allocate budget for projects in 10 Year Capital Plan
3. Deliver project scopes to DDC
4. DDC designs, bids out, and manages the construction of trunk sewers

Trunk Sewers Overview

➤ Southeast Queens is served by four trunk sewer lines. These trunk sewers are the main highways for stormwater to flow from the neighborhood streets to Jamaica Bay. They are called the:

1. 150th Street Spine
2. Guy Brewer Blvd Spine
3. Farmers Blvd Spine
4. Springfield/Laurelton Spine

➤ Trunk sewer construction begins at the southernmost point and moves northward in phases



The Basics: Early Action Sewer Connections

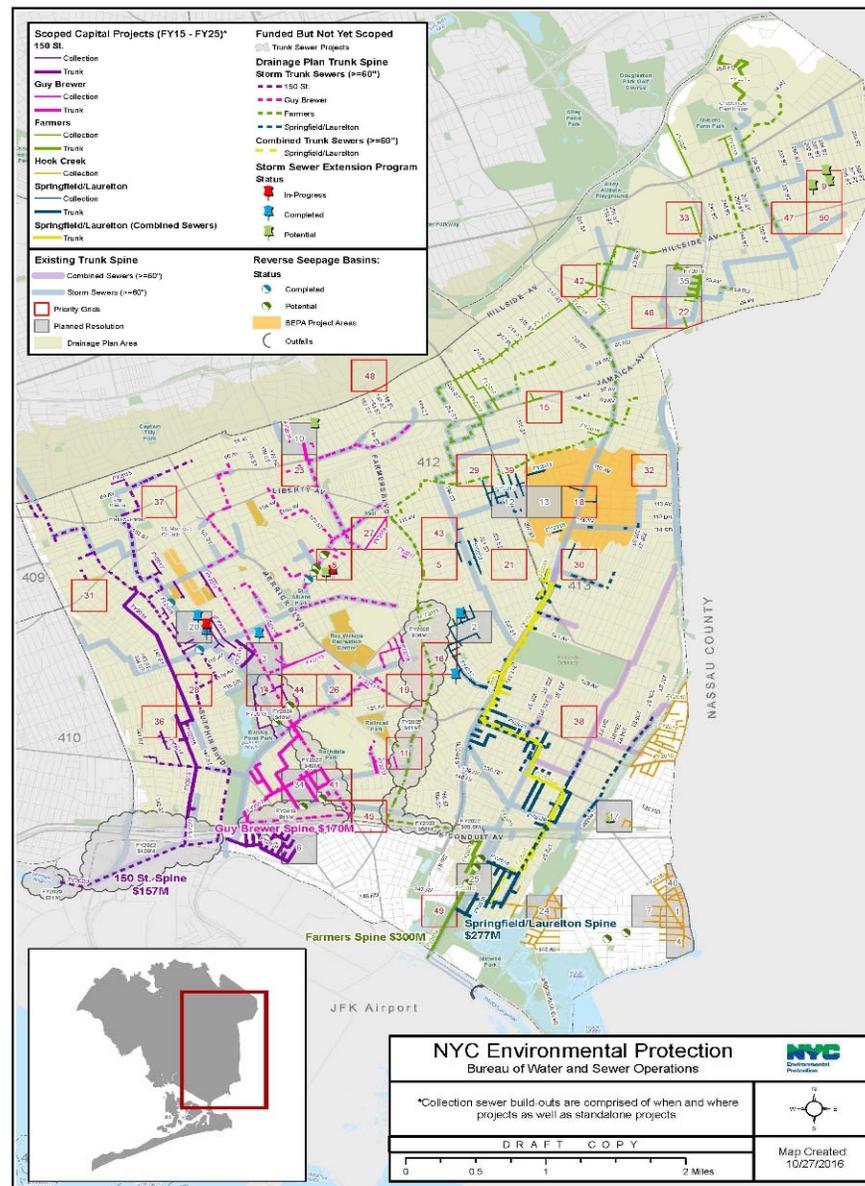
Strategy:

Build early action storm sewers in the hardest hit areas as quickly as possible

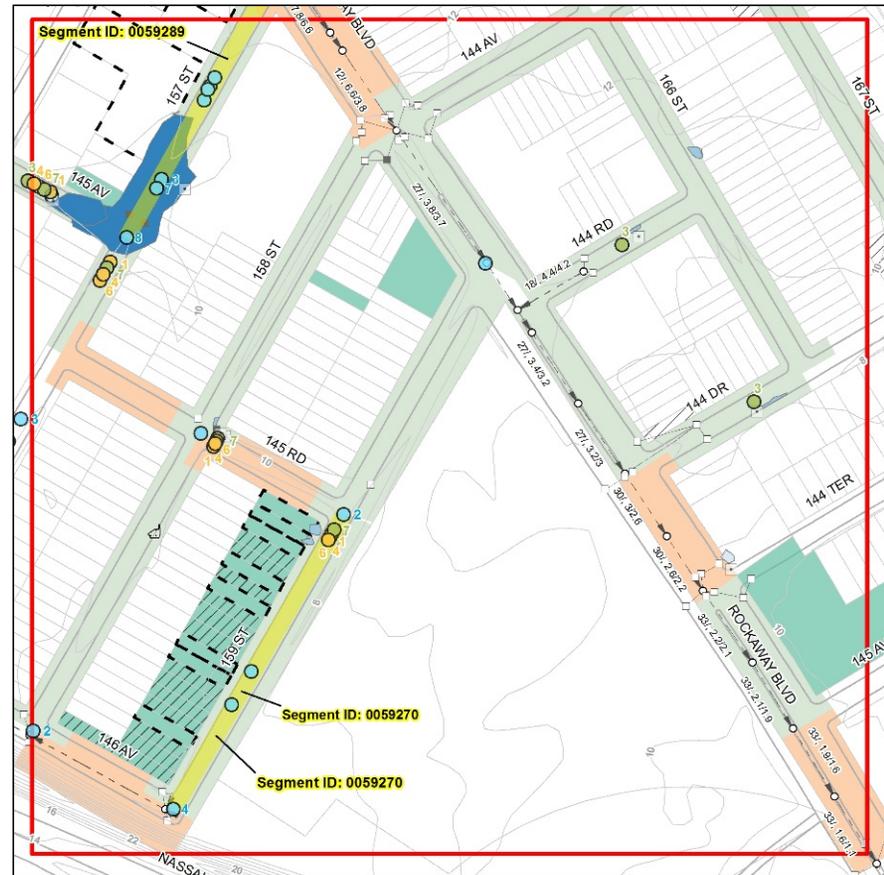
Process Overview:

1. Accelerate scoped projects scheduled for future construction
2. Use complaint data to identify hardest hit areas
3. Complete wet and dry weather site investigations to identify root causes
4. Design and construct site-specific solutions

Proposed Sewer Build-Out: Capital Projects FY2015 - FY2025
Community Districts 412 & 413, Queens



- DEP examined five years of 311 data to identify the areas with the highest density of flooding complaints; 50 priority grid areas were identified
- Teams of engineers were sent to each of the grids during wet and dry weather to catalogue ponding conditions, existing infrastructure, and street defects.
- This data was then mapped, block by block, for each grid.
- After the field analyses were complete, each grid was analyzed for site-specific solutions. These solutions can include:
 - Drainage plan sewers (under “when and where” contracts)
 - Storm sewer extensions
 - Green infrastructure
 - Street regrading or curb installation
 - Private property protections



Ponding Water Amount	Study Area Curb Height
Small	< 1 inch
Medium	1 - 3 inches
Large	3 - 6 inches
	<Null>

Legend

- Top Wet Weather Flooding Complaint Segments
- Wet Weather Flooding Complaints* (Count of Complaints Labeled)
- Street Dips Depressions and Other Defects
- Parcels Inspected
 - Driveway Depressed W/ No Hump
 - Unprotected Basement/Below Grade Entrance
 - First Floor Below Street Grade

Sewer

- (Width/Height, From/To Invert Elev)
- Combined
- Storm
- Manhole
- Basin
- Basin with Defects
- 2ft. Contour
- Photo Point

AECOM Solutions:

- Long Term
- Short Term

Green Infrastructure and Bluebelt Projects

Strategy:

Intercept as much stormwater before it gets to the storm sewer system as possible using green infrastructure

Process Overview:

1. Identify potential public properties to site green infrastructure, in partnership with other city agencies
2. Evaluate feasibility/soil conditions
3. Design and build green infrastructure
4. Collect data to evaluate system performance

Parties Involved:



- Area-wide Right of Way Projects
- Select Right of Way Projects in SE Queens
- Public Property Retrofits – combined and separate areas
- Cloudburst Planning and Pilots
- Grant Program for private property owners

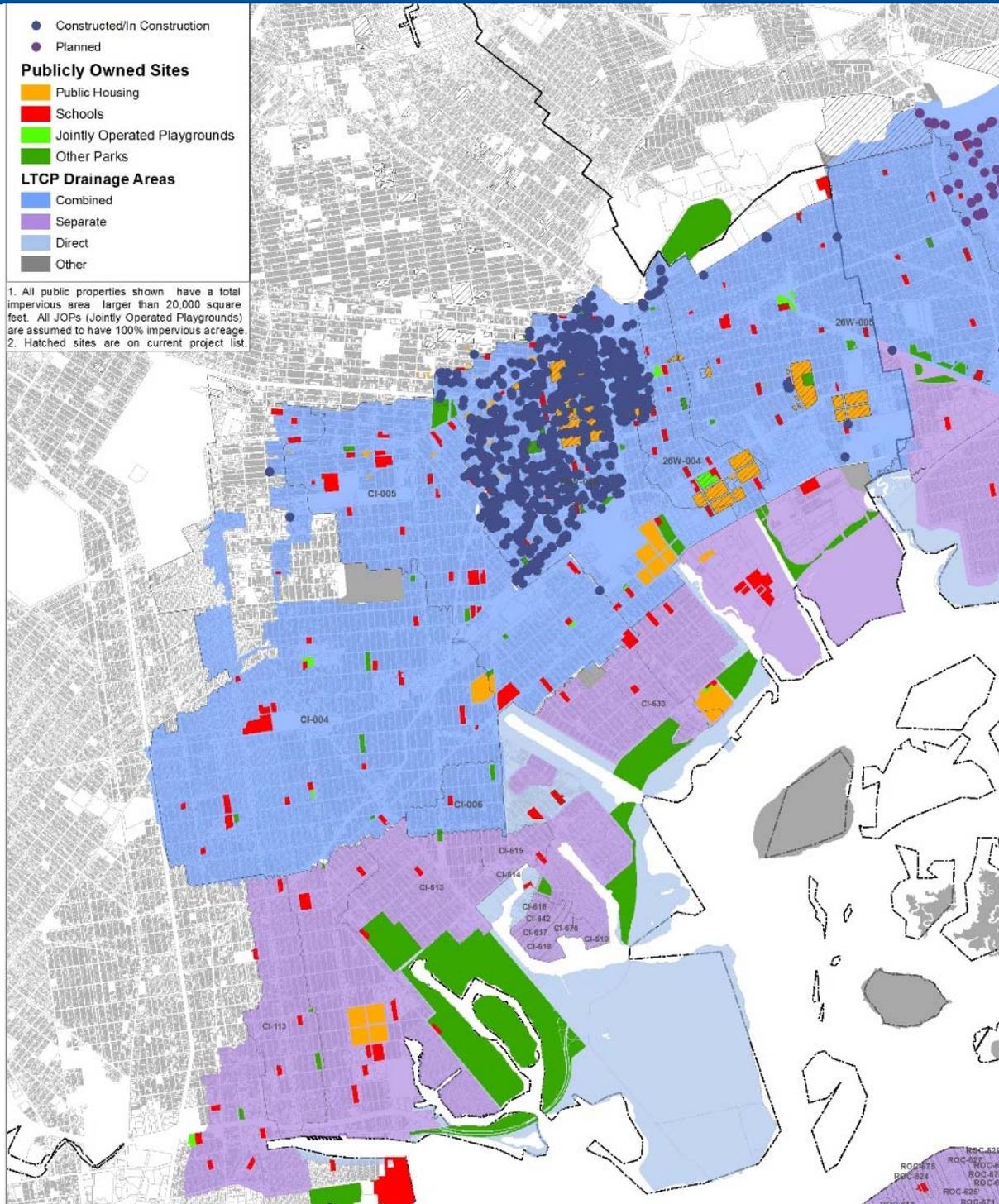


Rain Gardens



Grant Project

Public Property and ROW – Jamaica Bay, BK



Public Property and ROW – Jamaica Bay, BK



1. All public properties shown have a total impervious area larger than 20,000 square feet. All JOPs (Jointly Operated Playgrounds) are assumed to have 100% impervious acreage.
 2. Hatched sites are on current project list



Rain Gardens



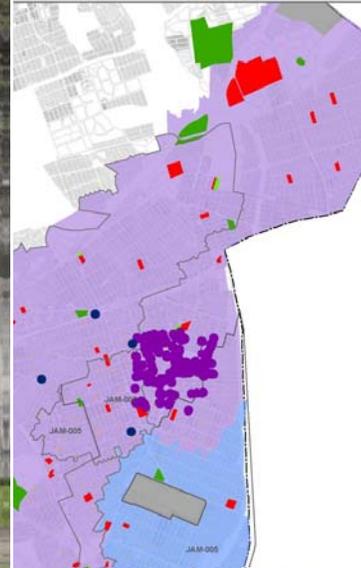
JHS 218 -



JHS 218 – After



South Jamaica Houses
Future Concept (Dry)



South Jamaica Houses
Future Concept (Wet)



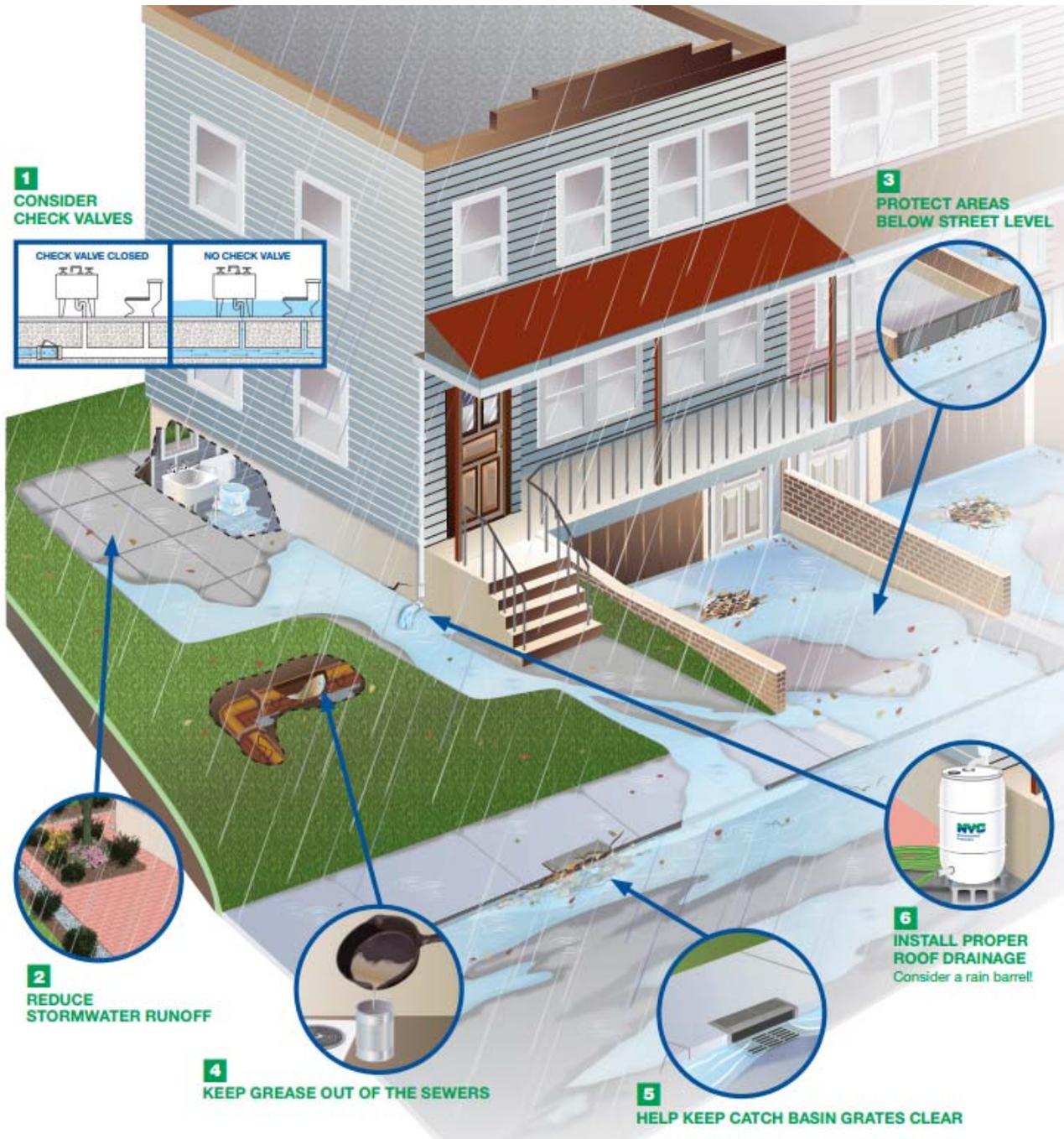
Location	Status/Next Step	Techniques
Right-of-way (ROW)	In design Construction start 2018	Rain Gardens (Approx. 200)
PS 40	In construction Construction complete 2020	Rain Gardens Downspout Disconnection
PS 50	In construction Construction complete 2018	Rain Gardens Subsurface Retention System
South Jamaica Houses I & II, St. Albans, Beach 67th St	In concept/planning Design start 2018	TBD (Cloudburst designs, Runoff Capture)
Roy Wilkins Park	In design Construction start spring 2019	Pond Restoration/Expansion ROW Runoff Capture
Railroad Park	In design Construction start summer 2020	ROW Runoff Capture
Det. Keith Williams Park	In design Construction start fall 2020	ROW Runoff Capture

- Bluebelts are integrated drainage systems that combine conventional storm sewers and natural wetlands and streams to responsibly manage stormwater.
- Bluebelts provide community open spaces and diverse wildlife habitats and preserve natural drainage corridors, including streams, ponds, and other wetland areas.
- Bluebelt projects in Southeast Queens include Brookville Triangle (in design), Baisley Pond (in construction), Twin Ponds (in construction), and Springfield Lake (completed).

Springfield Lake Bluebelt

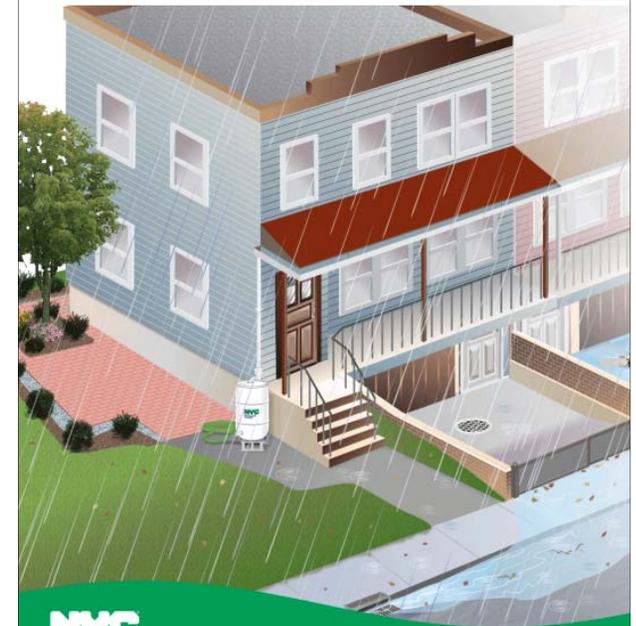


Public Outreach and Education



Homeowner's Guide to Rain Event Preparedness:

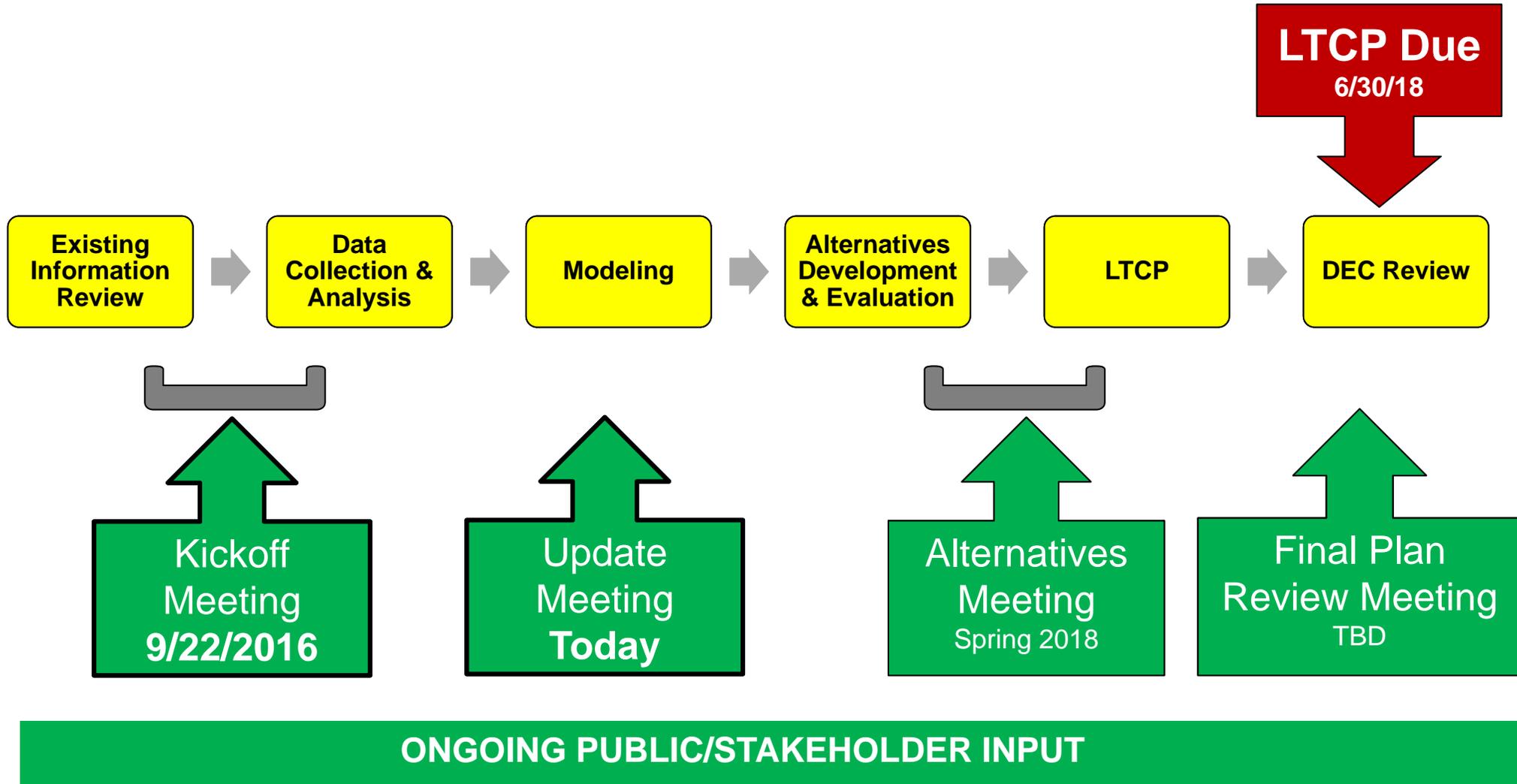
Tips to help you protect your home from sewer backups and flooding due to rainfall events



NYC
Environmental
Protection

Bill de Blasio, Mayor
Emily Lloyd, Commissioner

Next Steps



➤ Go to www.nyc.gov/dep/ltcp to access:

- Presentation and handouts
- Submitted CSO LTCPs
- CSO Consent Order
- NYC's Green Infrastructure Plan
- NYC Waterbody Advisory Program
- Upcoming meeting announcements
- Other LTCP updates

Discussion and Q&A Session