



City Environmental Quality Review
ENVIRONMENTAL ASSESSMENT STATEMENT FULL FORM
Please fill out, print and submit to the appropriate agency (see instructions)

PART I: GENERAL INFORMATION

PROJECT NAME NYCDEP Green Infrastructure Plan

1. Reference Numbers

CEQR REFERENCE NUMBER (To Be Assigned by Lead Agency) 12DEP054Y	BSA REFERENCE NUMBER (If Applicable) N.A.
ULURP REFERENCE NUMBER (If Applicable) N.A.	OTHER REFERENCE NUMBER(S) (If Applicable) (e.g., Legislative Intro, CAPA, etc.) N.A.

2a. Lead Agency Information	2b. Applicant Information
NAME OF LEAD AGENCY NYC Department of Environmental Protection	NAME OF APPLICANT NYC Department of Environmental Protection
NAME OF LEAD AGENCY CONTACT PERSON Angela Licata, Deputy Commissioner	NAME OF APPLICANT'S REPRESENTATIVE OR CONTACT PERSON Angela Licata, Deputy Commissioner
ADDRESS 59-17 Junction Boulevard	ADDRESS 59-17 Junction Boulevard
CITY Flushing STATE NY ZIP 11368	CITY Flushing STATE NY ZIP 11368
TELEPHONE (718) 595-4398 FAX (718) 595-4479	TELEPHONE (718) 595-4398 FAX (718) 595-4479
EMAIL ADDRESS alicata@dep.nyc.gov	EMAIL ADDRESS alicata@dep.nyc.gov

3. Action Classification and Type

SEQRA Classification
 UNLISTED TYPE I; SPECIFY CATEGORY (see 6 NYCRR 617.4 and NYC Executive Order 91 of 1977, as amended): **617.4 (b)(6)(i)**

Action Type (refer to Chapter 2, "Establishing the Analysis Framework" for guidance)
 LOCALIZED ACTION, SITE SPECIFIC LOCALIZED ACTION, SMALL AREA GENERIC ACTION

4. Project Description:

The proposed Green Infrastructure Program involves the installation of various Green Infrastructure technologies throughout areas of NYC to manage stormwater from 1.5% of the impervious surfaces in CSO areas by the year 2015. The purpose of the Program is to improve water quality by diminishing the effect of combined sewer overflows. This approach avoids certain costly hard infrastructure improvements while simultaneously benefitting installation areas through greening. See "Description of the Green Infrastructure Program"

4a. Project Location: Single Site (for a project at a single site, complete all the information below)

ADDRESS	NEIGHBORHOOD NAME	
TAX BLOCK AND LOT	BOROUGH	COMMUNITY DISTRICT
DESCRIPTION OF PROPERTY BY BOUNDING OR CROSS STREETS		
EXISTING ZONING DISTRICT, INCLUDING SPECIAL ZONING DISTRICT DESIGNATION, IF ANY		ZONING SECTIONAL MAP NO:

4b. Project Location: Multiple Sites (Provide a description of the size of the project area in both City Blocks and Lots. If the project would apply to the entire city or to areas that are so extensive that a site-specific description is not appropriate or practicable, describe the area of the project, including bounding streets, etc.)

The assessment is not specific to a single site or area; the Program would be implemented throughout NYC in combined sewer areas, focused on target watersheds (see Attached "Description of the Green Infrastructure Program").

5. REQUIRED ACTIONS OR APPROVALS (check all that apply)

<p>City Planning Commission: YES <input type="checkbox"/> NO <input checked="" type="checkbox"/></p> <p><input type="checkbox"/> CITY MAP AMENDMENT <input type="checkbox"/> ZONING CERTIFICATION</p> <p><input type="checkbox"/> ZONING MAP AMENDMENT <input type="checkbox"/> ZONING AUTHORIZATION</p> <p><input type="checkbox"/> ZONING TEXT AMENDMENT <input type="checkbox"/> HOUSING PLAN & PROJECT</p> <p><input type="checkbox"/> UNIFORM LAND USE REVIEW PROCEDURE (ULURP) <input type="checkbox"/> SITE SELECTION—PUBLIC FACILITY</p> <p><input type="checkbox"/> CONCESSION <input type="checkbox"/> FRANCHISE</p> <p><input type="checkbox"/> UDAAP <input type="checkbox"/> DISPOSITION—REAL PROPERTY</p> <p><input type="checkbox"/> REVOCABLE CONSENT</p> <p>ZONING SPECIAL PERMIT, SPECIFY TYPE</p> <p><input type="checkbox"/> MODIFICATION OF</p> <p><input type="checkbox"/> RENEWAL OF</p> <p><input type="checkbox"/> OTHER</p>	<p>Board of Standards and Appeals: YES <input type="checkbox"/> NO <input checked="" type="checkbox"/></p> <p><input type="checkbox"/> SPECIAL PERMIT</p> <p>EXPIRATION DATE MONTH DAY YEAR</p> <p><input type="checkbox"/> VARIANCE (USE)</p> <p><input type="checkbox"/> VARIANCE (BULK)</p> <p>SPECIFY AFFECTED SECTION(S) OF THE ZONING RESOLUTION</p>
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Department of Environmental Protection: YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>	
Other City Approvals: YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>	
<input type="checkbox"/> LEGISLATION	<input type="checkbox"/> RULEMAKING
<input checked="" type="checkbox"/> FUNDING OF CONSTRUCTION; SPECIFY	<input type="checkbox"/> CONSTRUCTION OF PUBLIC FACILITIES
<input type="checkbox"/> POLICY OR PLAN; SPECIFY	<input type="checkbox"/> FUNDING OR PROGRAMS; SPECIFY
<input type="checkbox"/> LANDMARKS PRESERVATION COMMISSION APPROVAL (not subject to CEQR)	<input type="checkbox"/> PERMITS; SPECIFY
<input type="checkbox"/> 384(B)(4) APPROVAL	<input checked="" type="checkbox"/> OTHER; EXPLAIN See Attached "Description of the Green Infrastructure Program"
<input checked="" type="checkbox"/> PERMITS FROM DOT'S OFFICE OF CONSTRUCTION MITIGATION AND COORDINATION (OCMD) (not subject to CEQR)	
6. State or Federal Actions/Approvals/Funding: YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> IF "YES," IDENTIFY	
State Approvals: Although the Program does not require any State or Federal permits or approvals, specific projects could require permits or may be submitted for State Revolving Fund financing.	
7. Site Description: Except where otherwise indicated, provide the following information with regard to the directly affected area. The directly affected area consists of the project site and the area subject to any change in regulatory controls.	
GRAPHICS The following graphics must be attached and each box must be checked off before the EAS is complete. Each map must clearly depict the boundaries of the directly affected area or areas, and indicate a 400-foot radius drawn from the outer boundaries of the project site. Maps may not exceed 11x17 inches in size and must be folded to 8.5x11 inches for submission.	
See Attached "Description of the Green Infrastructure Program" and Figure 1.	
<input type="checkbox"/> Site location map	<input type="checkbox"/> Zoning map
<input type="checkbox"/> Sanborn or other land use map	<input type="checkbox"/> Tax map
<input type="checkbox"/> Photographs of the project site taken within 6 months of EAS submission and keyed to the site location map	<input checked="" type="checkbox"/> For large areas or multiple sites, a GIS shape file that defines the project sites
PHYSICAL SETTING (both developed and undeveloped areas)	
Total directly affected area (sq. ft.):	Type of waterbody and surface area (sq. ft.):
	Roads, building and other paved surfaces (sq. ft.):
Other, describe (sq. ft.):	
8. Physical Dimensions and Scale of Project (if the project affects multiple sites, provide the total development below facilitated by the action)	
Size of project to be developed: (gross sq. ft.)	
Does the proposed project involve changes in zoning on one or more sites? YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	
If "Yes," identify the total square feet owned or controlled by the applicant: N.A.	Total square feet of non-applicant owned development: N.A.
Does the proposed project involve in-ground excavation or subsurface disturbance, including but not limited to foundation work, pilings, utility lines, or grading? YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>	
If "Yes," indicate the estimated area and volume dimensions of subsurface disturbance (if known): See attached "Description of the Green Infrastructure Program"	
Area: sq. ft. (width x length)	Volume: cubic yards
	cubic feet (width x length x depth)
Does the proposed project increase the population of residents and/or on-site workers? YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	
Provide a brief explanation of how these numbers were determined:	Number of additional residents? Number of additional workers?
Does the project create new open space? YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> If Yes: (sq. ft)	
Using Table 14-1, estimate the project's projected operation solid waste generation, if applicable: N.A. (pounds per week)	
Using energy modeling or Table 15-1, estimate the project's projected energy use: N.A. (annual BTUs)	
9. Analysis Year CEQR Technical Manual, Chapter 2	
ANTICIPATED BUILD YEAR (DATE THE PROJECT WOULD BE COMPLETED AND OPERATIONAL): 2015	ANTICIPATED PERIOD OF CONSTRUCTION IN MONTHS: N.A.
WOULD THE PROJECT BE IMPLEMENTED IN A SINGLE PHASE? YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	IF MULTIPLE PHASES, HOW MANY PHASES: N.A.
BRIEFLY DESCRIBE PHASES AND CONSTRUCTION SCHEDULE: See Attachment C "Construction Impacts."	
10. What is the Predominant Land Use in Vicinity of Project? (Check all that apply)	
<input checked="" type="checkbox"/> RESIDENTIAL	<input checked="" type="checkbox"/> MANUFACTURING
<input checked="" type="checkbox"/> COMMERCIAL	<input type="checkbox"/> PARK/FOREST/OPEN SPACE
OTHER, Describe: See attached "Description of the Green Infrastructure Program"	

DESCRIPTION OF EXISTING AND PROPOSED CONDITIONS

The information requested in this table applies to the directly affected area. The directly affected area consists of the project site and the area subject to any change in regulatory control. The increment is the difference between the No-Action and the With-Action conditions.

	EXISTING CONDITION		NO-ACTION CONDITION		WITH-ACTION CONDITION		INCREMENT
Land Use							
Residential	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N.A. (For all N.A., please See attached "Description of the Green Infrastructure Program" and "CEQR Screening Analysis")
If yes, specify the following							
No. of dwelling units							
No. of low- to moderate-income units							
No. of stories							
Gross Floor Area (sq. ft.)							
Describe Type of Residential Structures							
Commercial	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N.A.
If yes, specify the following:							
Describe type (retail, office, other)							
No. of bldgs							
GFA of each bldg (sq. ft.)							
Manufacturing/Industrial	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N.A.
If yes, specify the following:							
Type of use							
No. of bldgs							
GFA of each bldg (sq. ft.)							
No. of stories of each bldg.							
Height of each bldg							
Open storage area (sq. ft.)							
If any unenclosed activities, specify							
Community Facility	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N.A.
If yes, specify the following							
Type							
No. of bldgs							
GFA of each bldg (sq. ft.)							
No. of stories of each bldg							
Height of each bldg							
Vacant Land	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N.A.
If yes, describe							
Publicly Accessible Open Space	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N.A.
If yes, specify type (mapped City, State, or Federal Parkland, wetland—mapped or otherwise known, other)							
Other Land Use	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N.A.
If yes, describe							
Parking							
Garages	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N.A.
If yes, specify the following:							
No. of public spaces							
No. of accessory spaces							
Operating hours							
Attended or non-attended							

	EXISTING CONDITION	NO-ACTION CONDITION	WITH-ACTION CONDITION	INCREMENT
Parking (continued)				
Lots	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	N.A.
If yes, specify the following:				
No. of public spaces				
No. of accessory spaces				
Operating hours				
Other (includes street parking)	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	
If yes, describe				
Storage Tanks				
Storage Tanks	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	N.A.
If yes, specify the following:				
Gas/Service stations:	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	
Oil storage facility:	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	
Other; identify:	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	
If yes to any of the above, describe:				
Number of tanks				
Size of tanks				
Location of tanks				
Depth of tanks				
Most recent FDNY inspection date				
Population				
Residents	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	N.A.
If any, specify number				
Briefly explain how the number of residents was calculated				
Businesses	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	N.A.
If any, specify the following:				
No. and type				
No. and type of workers by business				
No. and type of non-residents who are not workers				
Briefly explain how the number of businesses was calculated				
Zoning*				
Zoning classification ¹	N.A.	N.A.	N.A.	N.A.
Maximum amount of floor area that can be developed (in terms of bulk)	N.A.	N.A.	N.A.	N.A.
Predominant land use and zoning classification within a 0.25-radius of proposed project	N.A.	N.A.	N.A.	N.A.
Attach any additional information as may be needed to describe the project.				
If your project involves changes in regulatory controls that affect one or more sites not associated with a specific development, it is generally appropriate to include the total development projections in the above table and attach separate tables outlining the reasonable development scenarios for each site.				

* This section should be completed for all projects, except for such projects that would apply to the entire city or to areas that are so extensive that site-specific zoning information is not appropriate or practicable.

PART II: TECHNICAL ANALYSES

INSTRUCTIONS: For each of the analysis categories listed in this section, assess the proposed project's impacts based on the thresholds and criteria presented in the *CEQR Technical Manual*. Check each box that applies.

- If the proposed project can be demonstrated not to meet or exceed the threshold, check the 'NO' box.
- If the proposed project will meet or exceed the threshold, or if this cannot be determined, check the 'YES' box.
- For each 'Yes' response, answer the subsequent questions for that technical area and consult the relevant chapter of the *CEQR Technical Manual* for guidance on providing additional analyses (and attach supporting information, if needed) to determine whether the potential for significant impacts exists. Please note that a 'Yes' answer does not mean that EIS must be prepared—it often only means that more information is required for the lead agency to make a determination of significance.
- The lead agency, upon reviewing Part II, may require an applicant to either provide additional information to support the Full EAS Form. For example, if a question is answered 'No,' an agency may request a short explanation for this response.

YES	NO
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1. LAND USE, ZONING AND PUBLIC POLICY: CEQR Technical Manual, Chapter 4			
(a)	Would the proposed project result in a change in land use or zoning that is different from surrounding land uses and/or zoning? Is there the potential to affect an applicable public policy? If 'Yes,' complete a preliminary assessment and attach.		✓
(b)	Is the project a large, publicly sponsored project? If 'Yes,' complete a PlaNYC assessment and attach.		✓
(c)	Is any part of the directly affected area within the City's Waterfront Revitalization Program boundaries? If 'Yes,' complete the Consistency Assessment Form. See Attachment D	✓	
2. SOCIOECONOMIC CONDITIONS: CEQR Technical Manual, Chapter 5			
(a)	Would the proposed project:		
	• Generate a net increase of 200 or more residential units?		✓
	• Generate a net increase of 200,000 or more square feet of commercial space?		✓
	• Directly displace more than 500 residents?		✓
	• Directly displace more than 100 employees?		✓
	• Affect conditions in a specific industry?		✓
(b)	If 'Yes' to any of the above, attach supporting information to answer the following questions, as appropriate. If 'No' was checked for each category above, the remaining questions in this technical area do not need to be answered.	N.A.	N.A.
(1) Direct Residential Displacement			
	If more than 500 residents would be displaced, would these displaced represent more than 5% of the primary study area population?	N.A.	N.A.
	If 'Yes,' is the average income of the directly displaced population markedly lower than the average income of the rest of the study area population?	N.A.	N.A.
(2) Indirect Residential Displacement			
	Would the expected average incomes of the new population exceed the average incomes of the study area populations?	N.A.	N.A.
	If 'Yes,' would the population increase represent more than 5% of the primary study area population or otherwise potentially affect real estate market conditions?	N.A.	N.A.
	If 'Yes,' would the study area have a significant number of unprotected rental units?	N.A.	N.A.
	Would more than 10 percent of all the housing units be renter-occupied and unprotected?	N.A.	N.A.
	Or, would more than 5 percent of all the housing units be renter-occupied and unprotected where no readily observable trend toward increasing rents and new market rate development exists within the study area?	N.A.	N.A.

		YES	NO
(3) Direct Business Displacement			
Do any of the displaced businesses provide goods or service that otherwise could not be found within the trade area, either under existing conditions or in the future with the proposed project?		N.A.	N.A.
Do any of the displaced businesses provide goods or services that otherwise could not be found within the trade area, either under existing conditions or in the future with the proposed project?		N.A.	N.A.
Or is any category of business to be displaced the subject of other regulations or publicly adopted plans to preserve, enhance, or otherwise protect it?		N.A.	N.A.
(4) Indirect Business Displacement			
Would the project potentially introduce trends that make it difficult for businesses to remain in the area?		N.A.	N.A.
Would the project capture the retail sales in a particular category of goods to the extent that the market for such goods would become saturated as a result, potential resulting in vacancies and disinvestment on neighborhood commercial streets?		N.A.	N.A.
(5) Effects on Industry			
Would the project significantly affect business conditions in any industry or any category of businesses within or outside the study area?		N.A.	N.A.
Would the project indirectly substantially reduce employment or impair the economic viability in the industry or category of businesses?		N.A.	N.A.
3. COMMUNITY FACILITIES: CEQR Technical Manual, Chapter 6			
(a) Would the project directly eliminate, displace, or alter public or publicly funded community facilities such as educational facilities, libraries, hospitals and other health care facilities, day care centers, police stations, or fire stations?		✓	
(b) Would the project exceed any of the thresholds outlines in Table 6-1 in Chapter 6?			✓
(c) If 'No' was checked above, the remaining questions in this technical area do not need to be answered. If 'Yes' was checked, attach supporting information to answer the following, if applicable.		N.A.	N.A.
(1) Child Care Centers			
Would the project result in a collected utilization rate of the group child care/Head Start centers in the study area that is greater than 100 percent?		N.A.	N.A.
If 'Yes,' would the project increase the collective utilization rate by 5 percent from the No-Action scenario?		N.A.	N.A.
(2) Libraries			
Would the project increase the study area population by 5 percent from the No-Action levels?		N.A.	N.A.
If 'Yes,' would the additional population impair the delivery of library services in the study area?		N.A.	N.A.
(3) Public Schools			
Would the project result in a collective utilization rate of the elementary and/or intermediate schools in the study area that is equal to or greater than 105 percent?		N.A.	N.A.
If 'Yes,' would the project increase this collective utilization rate by 5 percent from the No-Action scenario?		N.A.	N.A.
(4) Health Care Facilities			
Would the project affect the operation of health care facilities in the area?		N.A.	N.A.
(5) Fire and Police Protection			
Would the project affect the operation of fire or police protection in the area?		N.A.	N.A.
4. OPEN SPACE: CEQR Technical Manual, Chapter 7			
(a) Would the project change or eliminate existing open space?		✓	
(b) Is the project located within an underserved area in the Bronx, Brooklyn, Manhattan, Queens, or Staten Island?		✓	
(c) If 'Yes,' would the proposed project generate more than 50 additional residents or 125 additional employees?			✓
(d) Is the project located within a well-served area in the Bronx, Brooklyn, Manhattan, Queens, or Staten Island?		✓	
(e) If 'Yes,' would the project generate more than 350 additional residents or 750 additional employees?			✓
(f) If the project is not located within an underserved or well-served area, would it generate more than 200 additional residents or 500 additional employees?			✓
(g) If 'Yes' to any of the above questions, attach supporting information to answer the following:			✓
• Does the project result in a decrease in the open space ratio of more than 5%?			✓
• If the project site is within an underserved area, is the decrease in open space between 1% and 5%?			✓
• If 'Yes,' are there qualitative considerations, such as the quality of open space, that need to be considered?		N.A.	N.A.

	YES	NO
5. SHADOWS: CEQR Technical Manual, Chapter 8.		
(a) Would the proposed project result in a net height increase of any structure of 50 feet or more?		✓
(b) Would the proposed project result in any increase in structure height and be located adjacent to or across the street from a sunlight-sensitive resource?		✓
(c) If 'Yes' to either of the above questions, attach supporting information explaining whether the project's shadow reach any sunlight-sensitive resource at any time of the year.	N.A.	N.A.
6. HISTORIC AND CULTURAL RESOURCES: CEQR Technical Manual, Chapter 9		
(a) Does the proposed project site or an adjacent site contain any architectural and/or archaeological resource that is eligible for, or has been designated (or is calendared for consideration) as a New York City Landmark, Interior Landmark or Scenic Landmark; is listed or eligible for listing on the New York State or National Register of Historic Places; or is within a designated or eligible New York City, New York State, or National Register Historic District? If "Yes," list the resources and attach supporting information on whether the proposed project would affect any of these resources.	✓	
7. URBAN DESIGN AND VISUAL RESOURCES: CEQR Technical Manual, Chapter 10		
(a) Would the proposed project introduce a new building, a new building height, or result in any substantial physical alteration to the streetscape or public space in the vicinity of the proposed project that is not currently allowed by existing zoning?		✓
(b) Would the proposed project result in obstruction of publicly accessible views to visual resources that is not currently allowed by existing zoning?		✓
(c) If "Yes" to either of the questions above, please provide the information requested in Chapter 10.	N.A.	N.A.
8. NATURAL RESOURCES: CEQR Technical Manual, Chapter 11		
(a) Is any part of the directly affected area within the Jamaica Bay Watershed? If "Yes," complete the Jamaica Bay Watershed Form.	✓	
(b) Does the proposed project site or a site adjacent to the project contain natural resources as defined in Section 100 of Chapter 11? If "Yes," list the resources: Attach supporting information on whether the proposed project would affect any of these resources. See Attached, "Natural Resources" under CEQR Screening Analysis	✓	
9. HAZARDOUS MATERIALS: CEQR Technical Manual, Chapter 12		
(a) Would the proposed project allow commercial or residential use in an area that is currently, or was historically, a manufacturing area that involved hazardous materials?		✓
(b) Does the proposed project site have existing institutional controls (e.g., (E) designations or a Restrictive Declaration) relating to hazardous materials that preclude the potential for significant adverse impacts?		✓
(c) Does the project require soil disturbance in a manufacturing zone or any development on or near a manufacturing zone or existing/historic facilities listed in Appendix 1 (including nonconforming uses)?	✓	
(d) Does the project result in the development of a site where there is reason to suspect the presence of hazardous materials, contamination, illegal dumping or fill, or fill material of unknown origin?	✓	
(e) Does the project result in development where underground and/or aboveground storage tanks (e.g., gas stations) are or were on or near the site?		✓
(f) Does the project result in renovation of interior existing space on a site with potential compromised air quality, vapor intrusion from on-site or off-site sources, asbestos, PCBs or lead-based paint?		✓
(g) Does the project result in development on or near a government-listed voluntary cleanup/brownfield site, current or former power generation/transmission facilities, municipal incinerators, coal gasification or gas storage sites, or railroad tracks and rights-of-way?		✓
(h) Has a Phase I Environmental Site Assessment been performed for the site? If 'Yes,' were RECs identified? Briefly identify:		✓
(i) Based on a Phase I Assessment, is a Phase II Assessment needed?		✓
10. WATER AND SEWER INFRASTRUCTURE: CEQR Technical Manual, Chapter 13		
(a) Would the project result in water demand of more than one million gallons per day?		✓
(b) Is the proposed project located in a combined sewer area and result in at least 1,000 residential units or 250,000 sq. ft. or more of commercial space in Manhattan or at least 400 residential units or 150,000 sq. ft. or more of commercial space in the Bronx, Brooklyn, Staten Island or Queens?		✓
(c) Is the proposed project located in a separately sewered area and result in the same or greater development than that listed in Table 13-1 in Chapter 13?		✓
(d) Does the proposed project involve development on a site five acres or larger where the amount of impervious surface would increase?		✓
(e) Would the proposed project involve development on a site one acre or larger where the amount of impervious surface would increase and is located within the Jamaica Bay Watershed or in certain specific drainage areas including: Bronx River, Coney Island Creek, Flushing Bay and Creek, Gowanus Canal, Hutchinson River, Newtown Creek, or Westchester Creek?		✓
(f) Would the proposed project be located in an area that is partially sewered or currently unsewered?		✓
(g) Is the project proposing an industrial facility or activity that would contribute industrial discharges to a WWTP and/or generate contaminated stormwater in a separate storm sewer system?		✓
(h) Would the project involve construction of a new stormwater outfall that requires federal and/or state permits?		✓
(i) If "Yes" to any of the above, conduct the appropriate preliminary analyses and attached supporting documentation. See Attached, "CEQR Screening Analysis"		

		YES	NO
11. SOLID WASTE AND SANITATION: CEQR Technical Manual, Chapter 14			
(a)	Would the proposed project have the potential to generate 100,000 pounds (50 tons) or more of solid waste per week?		✓
(b)	Would the proposed project involve a reduction in capacity at a solid waste management facility used for refuse or recyclables generated within the City?		✓
12. ENERGY: CEQR Technical Manual, Chapter 15			
(a)	Would the proposed project affect the transmission or generation of energy?		✓
13. TRANSPORTATION: CEQR Technical Manual, Chapter 16			
(a)	Would the proposed project exceed any threshold identified in Table 16-1 in Chapter 16?		✓
(b)	If "Yes," conduct the screening analyses, attach appropriate back up data as needed for each stage, and answer the following questions:	N.A.	N.A.
(1)	Would the proposed project result in 50 or more Passenger Car Equivalents (PCEs) per project peak hour? If "Yes," would the proposed project result in 50 or more vehicle trips per project peak hour at any given intersection? **It should be noted that the lead agency may require further analysis of intersections of concern even when a project generates fewer than 50 vehicles in the peak hour. See Subsection 313 in Chapter 16 for more information.	N.A.	N.A.
(2)	Would the proposed project result in more than 200 subway/rail or bus trips per project peak hour? If "Yes," would the proposed project result per project peak hour, in 50 or more bus trips on a single line (in one direction) or 200 subway trips per station or line?	N.A.	N.A.
(3)	Would the proposed project result in more than 200 pedestrian trips per project peak hour? If "Yes," would the proposed project result in more than 200 pedestrian trips per project peak hour to any given pedestrian or transit element, crosswalk, subway stair, or bus stop?	N.A.	N.A.
14. AIR QUALITY: CEQR Technical Manual, Chapter 17			
(a)	<i>Mobile Sources:</i> Would the proposed project result in the conditions outlined in Section 210 in Chapter 17? <i>Stationary Sources:</i> Would the proposed project result in the conditions outlined in Section 220 in Chapter 17?		✓
(b)	If "Yes," would the proposed project exceed the thresholds in the Figure 17-3, Stationary Source Screen Graph? (attach graph as needed)		✓
(c)	Does the proposed project involve multiple buildings on the project site?		✓
(d)	Does the proposed project require Federal approvals, support, licensing, or permits subject to conformity requirements?		✓
(e)	Does the proposed project site have existing institutional controls (e.g., (E) designations or a Restrictive Declaration) relating to air quality that preclude the potential for significant adverse impacts?		✓
(f)	If "Yes," conduct the appropriate analyses and attach any supporting documentation.	N.A.	N.A.
15. GREENHOUSE GAS EMISSIONS: CEQR Technical Manual, Chapter 18			
(a)	Is the proposed project a city capital project, a power plant, or would fundamentally change the City's solid waste management system?	✓	
(b)	If "Yes," would the proposed project require a GHG emissions assessment based on the guidance in Chapter 18?		✓
(c)	If "Yes," attach supporting documentation to answer the following; Would the project be consistent with the City's GHG reduction goal?	N.A.	N.A.
16. NOISE: CEQR Technical Manual, Chapter 19			
(a)	Would the proposed project generate or reroute the vehicular traffic?		✓
(b)	Would the proposed project introduce new or additional receptors (see Section 124 in Chapter 19) near heavily trafficked roadways, within one horizontal mile of an existing or proposed flight path, or within 1,500 feet of an existing or proposed rail line with a direct line of sight to that rail line?		✓
(c)	Would the proposed project cause a stationary noise source to operate within 1,500 feet of a receptor with a direct line of sight to that receptor or introduce receptors into an area with high ambient stationary noise?		✓
(d)	Does the proposed project site have existing institutional controls (e.g., E-designations or a Restrictive Declaration) relating to noise that preclude the potential for significant adverse impacts?		✓
(e)	If "Yes," conduct the appropriate analyses and attach any supporting documentation.	N.A.	N.A.
17. PUBLIC HEALTH: CEQR Technical Manual, Chapter 20			
(a)	Would the proposed project warrant a public health assessment based upon the guidance in Chapter 20?		✓

	YES	NO
18. NEIGHBORHOOD CHARACTER: CEQR Technical Manual, Chapter 21		
(a) Based upon the analyses conducted for the following technical areas, check 'Yes' if any of the following technical areas required a detailed analysis: Land Use, Zoning, and Public Policy; Socioeconomic Conditions; Open Space; Historic and Cultural Resources; Urban Design and Visual Resources; Shadows; Transportation; Noise.		✓
(b) If "Yes," explain here why or why not an assessment of neighborhood character is warranted based on the guidance in Chapter 21, "Neighborhood Character." Attach a preliminary analysis, if necessary.	N.A.	N.A.

19. CONSTRUCTION IMPACTS: CEQR Technical Manual, Chapter 22		
Would the project's construction activities involve (check all that apply):		
• Construction activities lasting longer than two years;		✓
• Construction activities within a Central Business District or along an arterial or major thoroughfare;		✓
• Require closing, narrowing, or otherwise impeding traffic, transit or pedestrian elements (roadways, parking spaces, bicycle routes, sidewalks, crosswalks, corners, etc);	✓	
• Construction of multiple buildings where there is a potential for on-site receptors on buildings completed before the final build-out;		✓
• The operation of several pieces of diesel equipment in a single location at peak construction;	✓	
• Closure of community facilities or disruption in its service;		✓
• Activities within 400 feet of a historic or cultural resource; or		✓
• Disturbance of a site containing natural resources.	✓	
<p>If any boxes are checked, explain why or why not a preliminary construction assessment is warranted based on the guidance of in Chapter 22, "Construction." It should be noted that the nature and extent or any commitment to use the Best Available Technology for construction equipment or Best Management Practices for construction activities should be considered when making this determination.</p> <p>Attachment "Impact Analyses," provides an analysis of potential construction period impacts, under the section "Construction Impacts."</p>		

20. APPLICANT'S CERTIFICATION	
<p>I swear or affirm under oath and subject to the penalties for perjury that the information provided in this Environmental Assessment Statement (EAS) is true and accurate to the best of my knowledge and belief, based upon my personal knowledge and familiarity with the information described herein and after examination of pertinent books and records and/or after inquiry of persons who have personal knowledge or such information or who have examined pertinent books and records.</p> <p>Still under oath, I further swear or affirm that I make this statement in my capacity as the</p> <p><u>Angela Licata, Deputy Commissioner of Sustainability</u> of <u>New York City Department of Environmental Protection</u> <small>APPLICANT/SPONSOR</small> <small>NAME OF THE ENTITY OR OWNER</small></p> <p>the entity which seeks the permits, approvals, funding or other governmental action described in this EAS.</p> <p>Check if prepared by: <input type="checkbox"/> APPLICANT/REPRESENTATIVE or <input checked="" type="checkbox"/> LEAD AGENCY REPRESENTATIVE (FOR CITY-SPONSORED PROJECTS)</p> <p><small>APPLICANT/SPONSOR NAME:</small> <u>Angela Licata</u> <small>LEAD AGENCY REPRESENTATIVE NAME:</small> <u>Angela Licata</u></p> <p><small>SIGNATURE:</small> <u><i>Angela Licata</i></u> <small>DATE:</small> <u>March 9, 2012</u></p>	

PLEASE NOTE THAT APPLICANT MAY BE REQUIRED TO SUBSTANTIATE RESPONSES IN THIS FORM AT THE DISCRETION OF THE LEAD AGENCY SO THAT IT MAY SUPPORT ITS DETERMINATION OF SIGNIFICANCE.

Table of Contents

DESCRIPTION OF GREEN INFRASTRUCTURE PROGRAM

1. INTRODUCTION 1

 1.1 BACKGROUND 3

 2011 Amended Consent Order 4

2. PROPOSED GREEN INFRASTRUCTURE PROGRAM 4

 2.1 ELEMENTS OF THE PROPOSED PROGRAM 4

 Capital Program 5

 Green Infrastructure Grant Program 6

 Neighborhood Demonstration Areas 6

 2.2 TYPICAL GREEN INFRASTRUCTURE TECHNOLOGIES 10

 Porous Paving 10

 Rain Garden and Bioinfiltration 10

 Rainwater Harvesting 10

 Right of Way 10

 Rooftops 11

 Subsurface Systems 11

3. PURPOSE AND NEED 15

 3.1 ENVIRONMENTAL REVIEW 15

 3.2 PERMITS AND APPROVALS 15

4. CONSTRUCTION SCHEDULE 16

CEQR SCREENING ANALYSES

5. INTRODUCTION 17

6. ENVIRONMENTAL SCREENING ANALYSES 17

6.1	LAND USE, ZONING, AND PUBLIC POLICY.....	17
	Waterfront Revitalization Program.....	17
6.2	SOCIOECONOMIC CONDITIONS	20
6.3	COMMUNITY FACILITIES AND SERVICES.....	21
6.4	OPEN SPACE	21
6.5	SHADOWS	21
6.6	HISTORIC AND CULTURAL RESOURCES	22
6.7	URBAN DESIGN AND VISUAL RESOURCES.....	22
6.8	NATURAL RESOURCES	24
6.9	HAZARDOUS MATERIALS	25
6.10	WATER AND SEWER INFRASTRUCTURE.....	25
6.11	SOLID WASTE AND SANITATION SERVICES.....	26
6.12	ENERGY.....	26
6.13	TRANSPORTATION.....	26
6.14	AIR QUALITY.....	27
6.15	GREENHOUSE GAS EMISSIONS.....	27
6.16	NOISE.....	28
6.17	PUBLIC HEALTH	28
6.18	NEIGHBORHOOD CHARACTER	28
6.19	CONSTRUCTION.....	29

ATTACHMENT A- HISTORIC RESOURCES

7.	HISTORIC AND CULTURAL RESOURCES.....	30
8.	ASSESSMENT	30
8.1	Initial Review.....	31
8.2	Documentary Study-Phase 1.....	31

8.3	Field Testing- Phase IB	32
9.	CONCLUSIONS	32

ATTACHMENT B- HAZARDOUS MATERIALS

10.	HAZARDOUS MATERIALS.....	33
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ATTACHMENT C- CONSTRUCTION IMPACTS

11.	CONSTRUCTION IMPACTS	36
11.1	LAND USE, ZONING, AND PUBLIC POLICY.....	39
11.2	HISTORIC AND CULTURAL RESOURCES	40
11.3	NATURAL RESOURCES	41
11.4	HAZARDOUS MATERIALS	41
11.5	TRANSPORTATION	42
11.6	NOISE AND VIBRATION	43
11.7	AIR QUALITY.....	44

ATTACHMENT D- WRP FORM AND ASSESSMENT

WRP FORM AND ASSESSMENT

List of Figures

Figure 1. Priority CSO Watersheds	2
Figure 2. Neighborhood Demonstration Area in the Jamaica Bay Watershed.....	7
Figure 3. Neighborhood Demonstration Area in the Newtown Creek Watershed	8
Figure 4. Neighborhood Demonstration Area in the Hutchinson Watershed	9
Figure 5. Pilot-Porous Pavement Installed in a DOT Parking Lot in Queens, NY	12
Figure 6. Pilot-Rain Garden Installed at the Bronx River Houses, Bronx, NY	12
Figure 7. Schematic of a Pilot Bioinfiltration System Under Construction at Shoelace Park, Bronx, New York.....	13
Figure 8. Pilot-Bioswale Installed in Brooklyn, New York.....	13
Figure 9. Green Roof Installed at Paerdegat Basin CSO Facility in Brooklyn, NY	14
Figure 10. Pilot-Blue Roof Installed at a DEP Facility, Queens, NY.....	14
Figure 11. Typical Bioswale Before and After	23

List of Tables

Table 1: Typical Equipment Used for the Construction of Green Infrastructure Technologies Included in the Proposed Program.....	37
Table 2: Potential Activities Associated with the Construction of Green Infrastructure Technologies Included in the Proposed Program	37

Description of the Green Infrastructure Program

1. INTRODUCTION

The New York City Department of Environmental Protection (DEP), on behalf of the City of New York, is developing a Green Infrastructure Program as part of an adaptive management approach comprised of “green” and “grey” projects to improve water quality in priority waterbodies within the City as outlined in the *New York City Green Infrastructure Plan* published in September 2010. This assessment focuses on the initial phase of implementation of green infrastructure projects through the proposed Green Infrastructure Program based on the analysis developed in the *NYC Green Infrastructure Plan*.

The primary objective of the proposed Green Infrastructure Program (or “Program”) is to reduce combined sewer overflow (CSO) and improve water quality while enhancing the City’s urban environment. The initial phase of the proposed Program, through 2015, would begin implementing green infrastructure projects (or “Projects”) to manage one inch of rainfall on 1.5% of the impervious surfaces in combined sewer areas (as measured against baseline conditions at the start of 2010). The Projects would be designed to control stormwater at its source and to reduce the need for end-of-pipe stormwater storage and treatment systems (or “grey” infrastructure) by managing stormwater through controlled release, infiltration, and evapotranspiration.

To achieve this goal, the proposed Program would be implemented comprehensively with multiple public and private projects. The Program would work in concert with existing and already-planned actions to manage target amounts of stormwater such as the recently amended stormwater release rates rule (15 RCNY Chapter 31) which applies to new development and expansions, and recent zoning amendments that require commercial and community facility parking lots to construct interior and perimeter landscaping to act as stormwater bio-retention cells. Construction is expected to begin in fiscal year (FY) 2012. Green infrastructure projects would be implemented throughout priority combined sewer areas in the right-of-way, on public properties and buildings, or on private property through the Green Infrastructure Grant Program (Figure 1). In addition, DEP has secured adequate capital and operating resources to implement the proposed Program.

Figure 1. Priority CSO Watersheds



1.1 BACKGROUND

Almost two-thirds of New York City's sewer system is a combined system that collects both sanitary wastewater and stormwater runoff from properties and streets. During heavy rainfall or snowmelt, flows can exceed the capacity of the sewer system and excess flow at the plant can wash out biological treatment unit organisms that break down and treat waste. To protect the treatment plants and to prevent upstream flooding during high rainfall, New York City's 149 miles of interceptor sewers are designed with "regulators" that have overflow weirs to divert combined stormwater and wastewater into New York City's surrounding waterways when storm flows exceed the capacity of the system (twice the dry weather flow). New York City's combined sewer system has 422 sewer regulators that discharge combined sewer overflow.

In a critical step towards improving the City's water quality, the City published its *Sustainable Stormwater Management Plan* in 2008 as a key initiative of the administration's PlaNYC 2030. The *Sustainable Stormwater Management Plan* was the product of an interagency task force and outlined the City's goal to improve water quality to allow for greater public access to the City's water sources by 2030. It was the first city-wide, comprehensive analysis of the costs and benefits of alternative methods for stormwater source controls.

In 2008, DEP began to design and build green infrastructure pilot projects to test various technologies around the City. The pilots are installed with monitoring equipment to determine the level of performance for each type of installation. The monitoring methodology collects both water quality and water quantity data (i.e. mass balance of water flowing in and out of the installations); the monitoring period is currently underway and will continue over the next few years. The data collected as part of the pilot projects will be integrated into the proposed Program by informing the design and implementation approach.

As mentioned above, the *NYC Green Infrastructure Plan* was published in 2010 and laid out the rationale for continuing to pursue green infrastructure projects in priority areas over the next 20 years. The Plan identified five key components: (1) construct cost effective grey infrastructure (i.e. sewer improvements, combined sewer overflow (CSO) facilities, and waste water treatment plant upgrades); (2) optimize the existing wastewater system through interceptor cleaning and other maintenance measures; (3) control runoff through green infrastructure; (4) institute an adaptive management approach to better inform decisions moving forward; and (5) engage stakeholders in the development and implementation of these green strategies.

The Plan's analysis revealed that there are opportunities to incorporate green infrastructure in approximately 52% of the land in combined sewer areas of the City, well above the area necessary to meet the 10% goal mentioned above. Land uses that provide opportunities include new development and redevelopment, streets and sidewalks, multi-family residential complexes, parking lots, parks, schools, other public properties, and vacant lots. The remaining 48% of the City's land area consists of existing development where stormwater retrofits may also be appropriate, and will be encouraged, but will be more difficult and expensive to build. The land use percentages identified in the Plan do not take into consideration site specific conditions that can affect the feasibility of implementing green infrastructure strategies; the Program will include evaluation criteria for selecting sites appropriate for best accomplishing the 10% goal.

2011 Amended Consent Order

The New York State Department of Environmental Conservation (NYSDEC) issued a Consent Order in 2005 to the City of New York which laid out milestones for grey CSO projects to achieve water quality standards in surrounding waterbodies, such as Flushing Bay, Jamaica Bay, Bronx River, Newtown Creek, Gowanus Canal, Hutchinson River, and tributaries to the East River, Long Island Sound, and Outer Harbor. In response to the 2005 Consent Order, the DEP completed the initial phases of CSO planning, submitted target grey infrastructure projects, and developed Long-Term Control Plans (LTCPs). In 2011, the NYSDEC and DEP modified the 2005 Consent Order, to include green infrastructure and cost-effective grey infrastructure for meeting water quality standards.

The resulting Modification to Consent Order CO2-20000107-8 (“NYC CSO Order”), requires – among other things – that the City manage the equivalent of stormwater generated by one inch of precipitation on 1.5% of impervious surfaces citywide in combined sewer areas by December 31, 2015; 4% of impervious surfaces in combined sewer areas by December 31, 2020; 7% of impervious surfaces in combined sewer areas by December 31, 2025; and 10% of impervious surfaces in combined sewer areas by December 31, 2030. The City will develop and submit to NYSDEC by June 30, 2016 performance metrics including equivalent rates of CSO volume reductions associated with green infrastructure application rates and based on data collected during the first implementation period. At the end of each subsequent five-year implementation period, the city will be responsible for reporting progress for each of these performance metrics.

2. PROPOSED GREEN INFRASTRUCTURE PROGRAM

To implement the goals laid out in the *NYC Green Infrastructure Plan*, DEP established the Office of Green Infrastructure (OGI) in January 2011. Within the City’s combined sewer watersheds shown in the *Plan*, OGI has coordinated with the Bureau of Environmental Planning and Analysis (BEPA) and Bureau of Wastewater Treatment (BWT) to further target priority tributary areas. Specifically, OGI’s target tributary areas were based on the results of cost-benefit analyses in the Green Infrastructure Plan, ongoing assessments of different storm events and related frequencies of CSO events, and continuing discussions with NYSDEC for the development of LTCPs. These priority tributary areas represent the wet weather drainage area for the combined sewer outfalls that have the highest volumes, most frequent overflow events, and the worst water quality. By identifying priority tributary areas, DEP is able to focus the capital funding for green infrastructure and target the most challenging tributary areas. Water quality modeling and watershed planning has and would continue to direct the implementation going forward. In addition, the continuous monitoring data DEP is collecting will also feedback into more cost-effective and efficient implementation as described above.

2.1 ELEMENTS OF THE PROPOSED PROGRAM

The main elements or programmatic areas by which the proposed Program would be implemented are:

- 1) Green Infrastructure Capital Program
- 2) Green Infrastructure Grant Program
- 3) Neighborhood Demonstration Areas

Capital Program

In December 2010, DEP and the Mayor's Office of Long-Term Planning and Sustainability convened a Green Infrastructure Task Force to support the interagency coordination for green infrastructure implementation. Through the Task Force, DEP and partnering agencies are able to identify planned capital projects in priority tributary areas where green infrastructure could be added (i.e. roof repairs, parking lot resurfacing, and/or landscape work). DEP would then supplement the budget to fund the green infrastructure elements of the project.

The Green Infrastructure Capital Program represents the large majority of funding DEP has budgeted for green infrastructure implementation. Within the priority tributary areas mentioned above, DEP has and would continue to select and secure specific sites suitable for green infrastructure through GIS analyses, property databases from City agencies, and ongoing coordination on planned capital projects through the Task Force. In addition, DEP, in partnership with city agencies, would initiate new area-wide green infrastructure contracts where existing projects are not numerous or substantial enough. Generally, these are sidewalks and right of way (ROW) spaces, public buildings, and other publicly owned hardscapes such as playgrounds, schoolyards, and parking lots.

For green infrastructure in the ROW, DEP has coordinated with the New York City Departments of Transportation (DOT), Parks and Recreation (DPR), and Design and Construction (DDC) to develop a series of Right of Way Bioswale Standard Details. These Standard Details would allow DEP to integrate bioswales easily into existing DOT roadway and DEP water and sewer projects quickly and efficiently. For the area-wide contracts, DEP would take into account the existing sewers serving the area, the catch basin locations, and the potential impervious tributary area that would be directed toward the bioswale. Once these assessments identify target locations, DOT and DPR would also approve various aspects associated with street/sidewalk safety, transit, existing street furniture, and existing street trees that may conflict with the proposed bioswale locations. All bioswale locations would be approved after a full design review, supportive soil boring results, supportive Falling Head Permeability Test results, and all partnering agency sign-offs. Design of the ROW green infrastructure systems of bioswales would be managed and completed by one of three agencies, DDC, DPR, or DEP, and construction would be bid through those agencies respectively. See Construction Impacts in Attachment C-Construction Impacts for detailed description of the construction of ROW green infrastructure.

For green infrastructure projects on other types of public property ("on-site locations"), DEP would identify potential sites through a GIS analysis, property databases from City agencies, ongoing coordination with planned capital projects, as well as new project initiation in partnership with respective agencies. DEP would facilitate a coordinated effort for the appropriate site selection, design, and construction. Each site would present unique opportunities and challenges and DEP would work with the partnering agency to ensure safety, cost-efficiency, and long-term success for each on-site project. All on-site locations would be approved after a full design review, all partnering agency sign-offs and, as necessary, supportive soil boring results, supportive Falling Head Permeability Test results, and structural analyses. Design of the on-site systems would be managed and completed by either the partnering agency or DEP, and construction would be bid through those agencies respectively. See Construction Impacts in Attachment C-Construction Impacts for detailed description of the construction of on-site green infrastructure.

Green Infrastructure Grant Program

The *Green Infrastructure Grant Program* (or the “Grant Program”) is and will continue to be designed to encourage partnerships between DEP and local stewards and community groups through the funding of green infrastructure projects on private property. Projects in all combined sewer areas are eligible. However, priority would be given to those projects that reduce runoff to the following waterbodies: Gowanus Canal, Newtown Creek, Westchester Creek, Hutchinson River, Bronx River, Jamaica Bay, and Flushing Bay. Each project would be selected based on a review committee made up of representatives of city agencies (such as DOT, DPR, DDC, and the Department of Buildings (DOB) and drainage engineers from DEP. The maintenance of the projects is and would be the sole responsibility of the property owner. Monitoring the projects is not required, but if it’s included as part of the proposal DEP would approve the Monitoring Plan and share in the ownership of the data. This data would be supplemental to the monitoring and data collection of the projects built under the Capital Program.

Neighborhood Demonstration Areas

Three Neighborhood Demonstration Areas (or “Demonstration Areas”) would be designed as a part of the proposed Program. These Demonstration Areas would be some of the first projects to be built as part of the Program and are located in the Jamaica Bay, Newtown Creek, and Hutchinson River watersheds (see Figure 2, 3, and 4). The Demonstration Areas would be 20-40 acres and served by combined sewers tributary to one medium sized sewer pipe where flow meters would be installed. The goal of the Demonstration Areas is to collect flow data during dry and wet weather before any green infrastructure is installed, then to build out a green infrastructure system within the Area, and monitor the difference in flow once the projects are built. The data collected as a result of the Demonstration Areas will give DEP a better understanding of the impact and effects of green infrastructure from a neighborhood perspective and would allow DEP to project those benefits for larger areas. The data will also support the analyses to be completed for the CSO Long Term Control Plans (LTCPs) for several waterbodies in the City.

The proposed Program would be implemented alongside an outreach effort responsible for ensuring that the public understands the Program’s goals and objectives. This aspect of the proposed Program is critical to garnering support from local constituents directly and indirectly affected by priority waterbodies. Many of the green infrastructure projects would be located in upland neighborhoods where residents do not typically associate themselves with a waterbody. DEP’s outreach initiative goals are to inform, educate, and notify residents about the types of green infrastructure being installed in their neighborhoods and why those locations were chosen. DEP would typically meet with elected officials, community boards, and other local community groups to discuss the proposed projects and explain the construction schedule. DEP would also coordinate with DDC, DOT, DPR, and other partnering agencies such as the New York City Housing Authority (NYCHA) and the Department of Education (DOE) to present projects to the community.

The maintenance, monitoring, partnerships, outreach, and community involvement aspects of the proposed Program are a key element of Green Infrastructure Program described above and the success of the overall proposed Program.

Figure 2. Neighborhood Demonstration Area in the Jamaica Bay Watershed

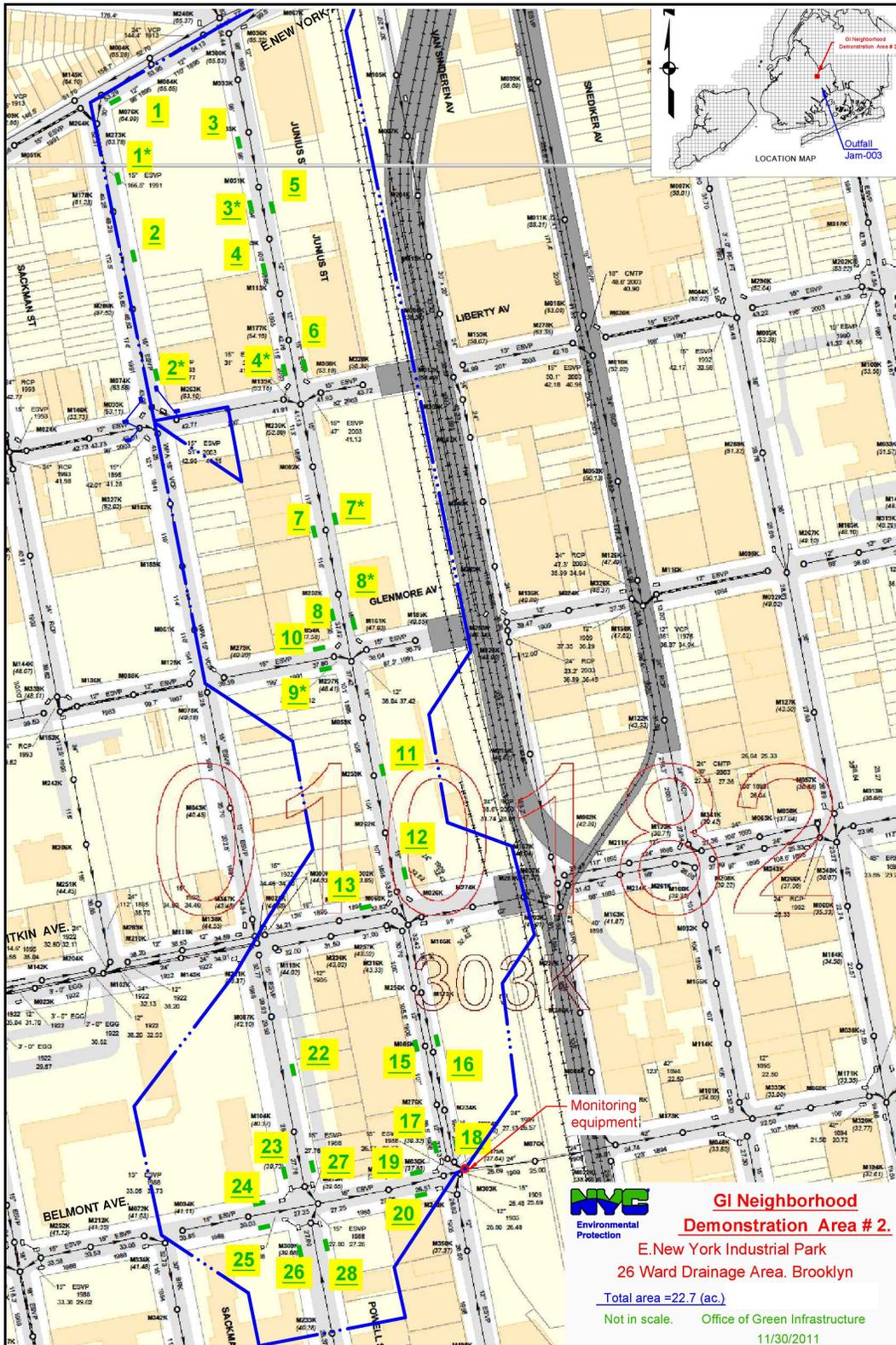


Figure 3. Neighborhood Demonstration Area in the Newtown Creek Watershed

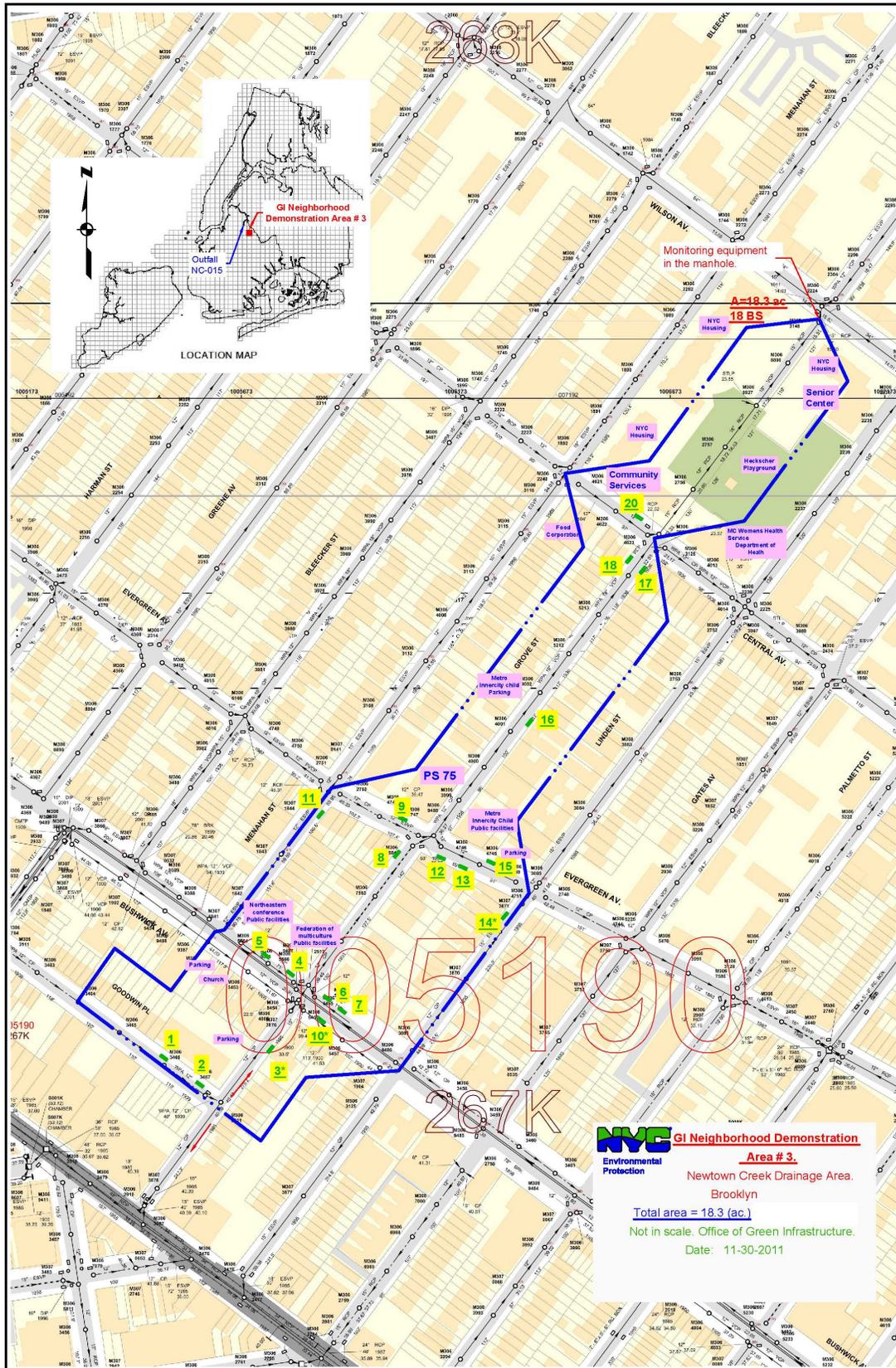
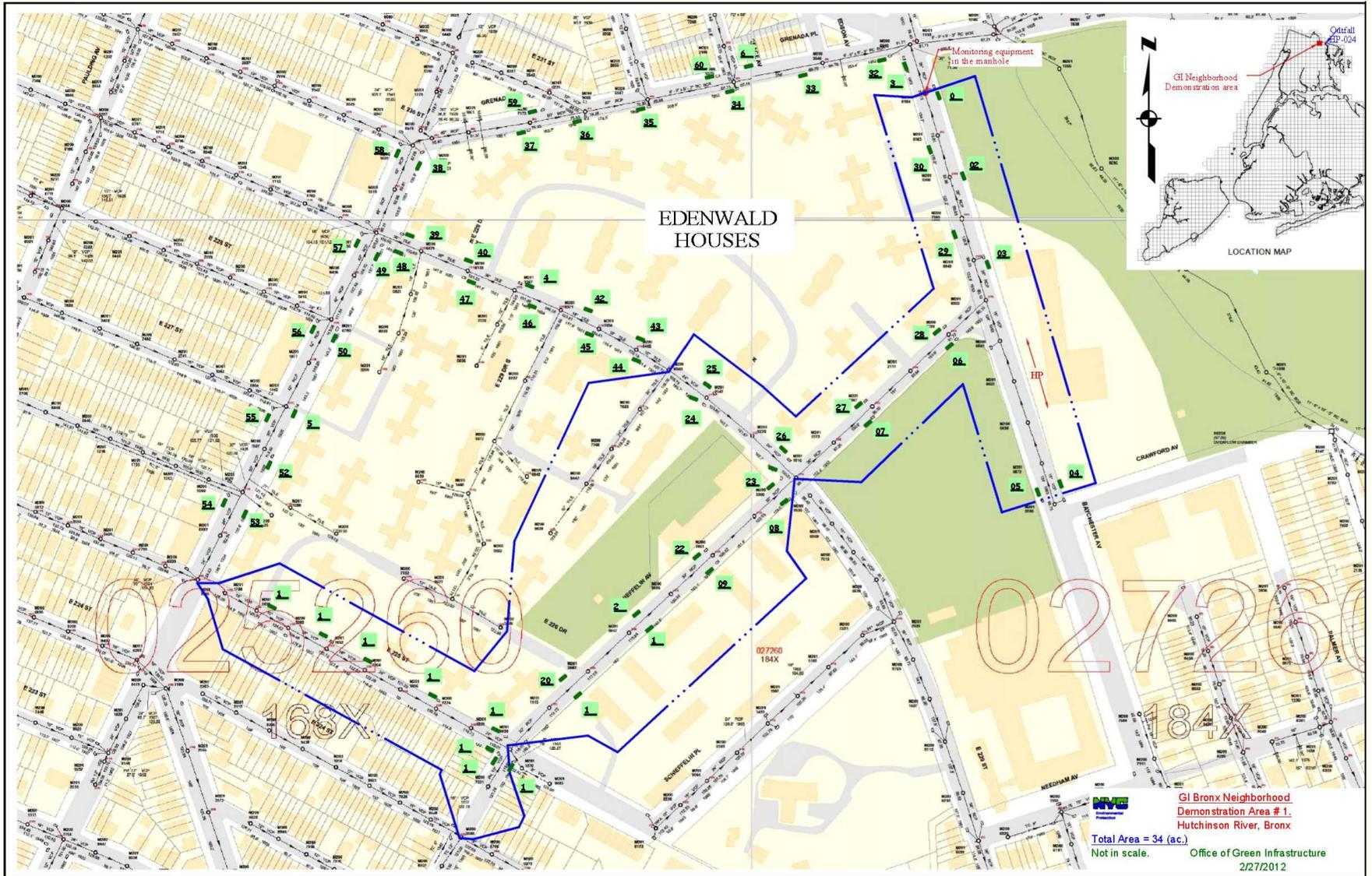


Figure 4. Neighborhood Demonstration Area in the Hutchinson Watershed



2.2 TYPICAL GREEN INFRASTRUCTURE TECHNOLOGIES

The following description of green infrastructure technologies is intended to provide a basic explanation of the variety of technologies included in the proposed Program and to describe their typical design and function. Each of these technologies is very adaptable to different site plans, building configurations, and surface and subsurface conditions.

Porous Paving

The use of porous or permeable pavements or pavers are proposed to manage stormwater by storing it in the sub-base layers and then to allowing it to percolate into the ground. Permeable pavements can be installed in sidewalks, parking lots, low traffic residential streets, recreation areas, or school yards. Figure 5 shows an comparison of a parking lot with permeable pavement and traditional pavement. Permeable pavement would not be used in areas where it would create restrictions on traffic and the installation of porous paving would not create a greater disturbance than standard pavement.

Rain Garden and Bioinfiltration

Rain gardens or bioinfiltration systems are a mechanism to convey, store, and filter stormwater. These systems are typically constructed in open areas, parks, or yards to allow for infiltration or detention with a regulated release. Stormwater from impervious areas or roof tops can be directed into bioinfiltration systems. Typically, systems that collect stormwater from trafficked areas would include an oil/water separator to provide pretreatment. In addition, these installations provide an ecosystem and open space benefit through the creation of diverse habitats of flora and fauna. Figure 6 shows an example of a rain garden installed in a lawn area of the Bronx River Houses in the Soundview section of the Bronx and a Figure 7 shows a bioinfiltration system that is currently under construction at Shoelace Park in the Bronx.

Rainwater Harvesting

Rainwater harvesting including rain barrels, cisterns, or other reuse systems collect stormwater from impervious surfaces, such as a roof, to be reused on the site for irrigation or other non-potable uses. Rain barrels and cisterns connect directly to a building's existing downspout, typically above ground at the base of the building, and store water until they're full after which the overflow is directed to the downspout drain. The device is connected to a hose at the bottom for watering lawns and gardens using gravity. Reuse systems (usually for larger, commercial or industrial users) also collect stormwater and can be pumped for process use such as washing.

Right of Way

Bioswales: The proposed right of way (ROW) bioswales are elongated, vegetated street tree pits built into the sidewalk that manage gutter runoff. They are typically installed upstream of existing catch basins. A curb-cut inlet directs runoff into the vegetated area (approximately 20'x5') that includes a tree and native plants. The vegetated area typically has approximately a foot of stone along the curb to allow passage on foot (if exiting a car or stepping off of the street) and is protected from the sidewalk by a three-sided steel tree pit guard that is tapered toward the curb so as not to prevent access to parked cars. The runoff feeds the tree and plant life and infiltrates into the layers of engineered soil, broken stone, and existing soils. Any overflow is directed out of the bioswale through a curb-cut outlet toward the catch basin. Bioswales promote infiltration and evapotranspiration and reduce the amount of stormwater runoff entering the combined sewer system. Figure 8 shows an example of a bioswale installed in Brooklyn, NY.

Stormwater Greenstreets: The Greenstreets Program is a partnership between the DPR, DEP and DOT. Originally launched in 1996 and further enhanced in 2007 with the PlaNYC initiative, the program is now primarily funded by DEP to design and build stormwater greenstreets. Similar to bioswales or street trees, Greenstreets transform underutilized roadbed area into active stormwater management installations in the ROW. Stormwater greenstreets provide increased urban greening and stormwater management, but also support DOT in implementing traffic calming measures and pedestrian safety into streetscapes.

Rooftops

Rooftop systems provide temporary storage of stormwater runoff on roof surfaces, slow release to the sewer system, and retention where evaporation or vegetative uptake is feasible. Selection of the appropriate rooftop system will depend on a number of factors, including siting, design and construction considerations specific to each development. Rooftops make up a significant amount of the impervious surfaces in the combined sewer areas. Two typical rooftop systems are described here. Additional guidance for the selection, siting, design and construction of rooftop systems can be found in NYC's Guidelines for the Design and Construction of Stormwater Management Systems (2012).

Green Roofs: The proposed green roofs would consist of a vegetated layer that would grow in a light weight growing media installed above a root barrier and sometimes drainage mats/layers. Green roofs also provide associated sustainability benefits such as reduction of air pollution through increased rooftop insulation and the creation of ecological habitats. An example of a green roof installed on the roof of the Paerdegat Basin CSO Facility is shown in Figure 9.

Blue Roofs: Unlike green roofs, blue roofs are non-vegetated source controls that detain stormwater for slow release to the sewer system (so that the flow largely enters the sewers after the overflows have stopped). Weirs at the roof drain inlets can create temporary storage and gradual release of stormwater on flat roofs. Figure 10 is a photo of a pilot blue roof tray system installed on the roof of a DEP facility in Brooklyn, NY.

Subsurface Systems

Subsurface systems provide temporary storage of stormwater runoff underground, slow release to the sewer system, and retention where infiltration into soils below is feasible. Three typical subsurface systems include gravel beds, perforated pipes or stormwater chambers and all can be lined to prevent infiltration or unlined to promote infiltration where suitable underlying soils and distance from bedrock exist. The void space within each system provides the storage volume within each system and affects the sizing of different systems.

Gravel beds have the lowest void ratio (approximately 30%) compared to the other subsurface systems and, as a result, require more space to detain a given volume of stormwater. The depth of each system depends on the volume of storage required, system configuration and available subsurface area, the desired head on the outlet orifice and elevation of the outlet connection to the sewer pipe. Subsurface systems can be installed below a variety of generally flat areas, such as lawns, gardens, parking spaces or lots, etc. as long as constructed with appropriate load-bearing requirements and where building foundations would not be necessary. Additional guidance for the selection, siting, design and construction of subsurface systems can be found in NYC's Guidelines for the Design and Construction of Stormwater Management Systems (2012).

Figure 5. Pilot-Porous Pavement Installed in a DOT Parking Lot in Queens, NY



Figure 6. Pilot-Rain Garden Installed at the Bronx River Houses, Bronx, NY



Figure 7. Schematic of a Pilot Bioinfiltration System Under Construction at Shoelace Park, Bronx, New York

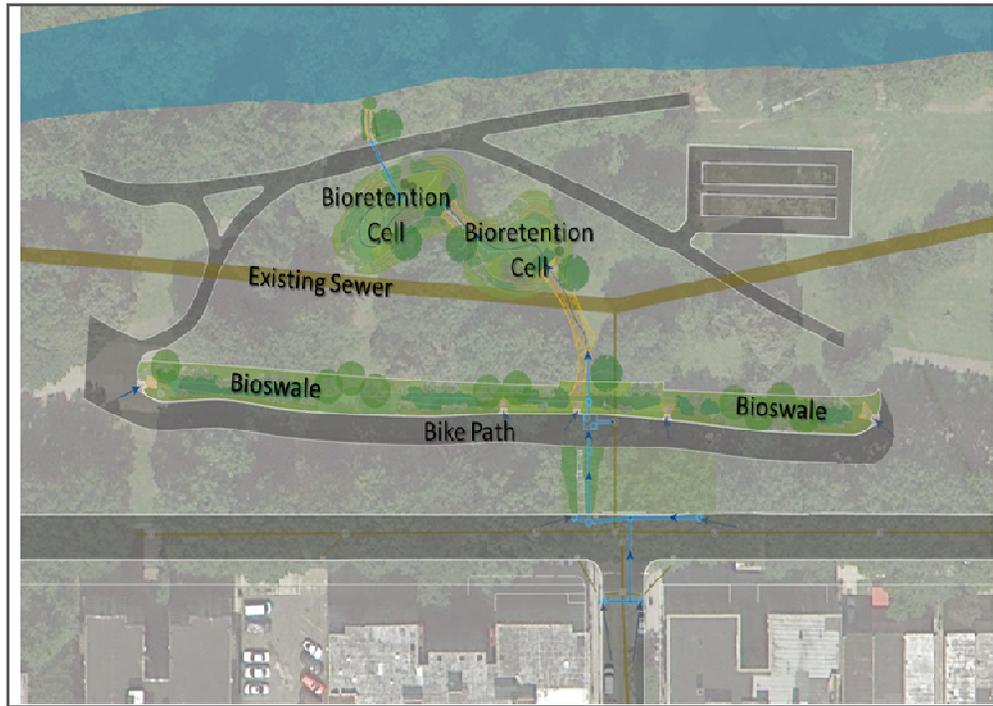


Figure 8. Pilot-Bioswale Installed in Brooklyn, New York



Figure 9. Green Roof Installed at Paerdegat Basin CSO Facility in Brooklyn, NY



Figure 10. Pilot-Blue Roof Installed at a DEP Facility, Brooklyn, NY



3. PURPOSE AND NEED

The City's goal is to manage the first inch of rainfall on at least 10% of the impervious areas in combined sewer watersheds through detention or infiltration techniques over 20 years. By preventing one inch of precipitation from becoming runoff that surges into the sewers over 10% of each combined sewer watershed's impervious area, DEP estimates that CSOs will be reduced by approximately 1.5 billion gallons per year (bg). Per the 2011 Amended Consent Order, DEP must meet this goal by achieving 1.5% impervious area managed by 2015, an additional 2.5% by 2020, an additional 3% by 2025, and the remaining 3% by 2030.

In contrast to grey tanks, tunnels, and expansions, which are single-function, below grade items that lay dormant unless there is a storm of sufficient size, green infrastructure benefits would begin to accrue immediately and build over time. Green infrastructure does not require the long lead times for design and construction and would not be subject to the intervening risks from changes in climate, labor, and economic conditions as well as regulatory requirements that impact grey infrastructure. Construction of green infrastructure projects would require less energy to operate, lead to less of an impact on greenhouse gas emissions, and require less material use in their construction.

In addition to water quality benefits, the proposed Program would also lead to public sustainability benefits that are not provided through grey infrastructure. Green infrastructure would help to improve air quality, reduce urban heat island effect, reduce energy use and greenhouse gas emissions, and beautify communities. Given these factors, the proposed Program presents more balanced benefits, fewer risks to the City, and greater sustainability benefits.

3.1 ENVIRONMENTAL REVIEW

This Environmental Assessment Statement has been prepared in accordance with both the City Environmental Quality Review Act (CEQR) and the State Environmental Quality Review Act (SEQRA). It has been prepared following the methodologies of the 2012 *City Environmental Quality Review (CEQR) Technical Manual*, which were used to assess the potential for environmental impacts.

The EAS was prepared to assess the program elements being undertaken beyond existing activities and programs, and cumulative impacts of the reasonably foreseeable actions, of the initial phase of the proposed Program (defined as managing stormwater on 1.5% of the combined sewer area by 2015). These analyses would be carried out as described in the Impact Analysis section of this EAS.

3.2 PERMITS AND APPROVALS

Typical Green Infrastructure Program projects may require one or more of the following permits and approvals:

Local

- New York City Department of Transportation (DOT) approval for construction activities affecting local streets and sidewalks including staging and storage of equipment.

- New York City Department of Buildings (DOB) approval for construction work related to private buildings or sites.
- New York City School Construction Authority (SCA) approval for any construction work on NYC school buildings or property.
- New York City Department of Parks and Recreation (DPR) for any construction work within a City park and forestry approvals.
- New York City Housing Authority (NYCHA) approval for any construction work within NYCHA property.
- Other NYC agency approvals for work on property under their jurisdiction or ownership.

State

- New York State Department of Environmental Conservation (NYSDEC) General Construction SPDES Permit for construction over one (1) or more acres and development of a Stormwater Pollution Prevention Plan (SWPPP).
- NYSDEC Wetlands Permits for activities in tidal wetlands and tidal wetlands adjacent areas or freshwater wetlands and freshwater wetlands adjacent areas.
- Industrial SPDES Discharge Permit for any temporary dewatering during construction.
- Long Island Well Permit for groundwater pumping work in Brooklyn or Queens.

Federal

- Army Corps of Engineers (USACE) Section 404 of the Clean Water Act (Waters of the United States) permit for the proposed placement of the project outfall within tidal wetlands (dredging and filling activities) and the proposed tidal wetland restoration.
- Department of Labor Occupational Health and Safety Administration (OSHA) Confined Spaces permit for construction activities as defined in Section 29 CFR 1926.

In addition, implementation of the proposed Program would be coordinated by DEP with many City agencies, including those listed above and may also include the Department of City Planning (DCP), the Department of Education (DOE), the Department of Sanitation (DSNY), the Department of Citywide Administrative Services (DCAS), the Department of Housing and Preservation and Development (HPD), and the New York City Economic Development Corporation (EDC).

4. CONSTRUCTION SCHEDULE

The schedule for implementation would be 2012 through 2015 based on the current capital budget of \$187 million. The proposed Program would occur in multiple phases of capital projects on public property in target CSO tributary areas and selected private projects throughout the City.

Technical Area Analyses

5. INTRODUCTION

This analysis has been prepared to assess the programmatic impacts of the proposed Green Infrastructure Program in accordance with the guidelines of the City's *CEQR Technical Manual* (2012). As described below, in most technical areas, impacts from the proposed Program are unlikely to be significant based on the size and nature of installations and the program. Potential impacts to Historic and Cultural Resources, Hazardous Materials, and Construction are analyzed separately in following sections.

6. ENVIRONMENTAL SCREENING ANALYSES

6.1 LAND USE, ZONING, AND PUBLIC POLICY

The 2012 *CEQR Technical Manual* states that a detailed assessment of land use, zoning, and public policy is appropriate if an action would result in a significant change in land use or would substantially affect regulations or policies governing land use. As described in the Project Description and below, the proposed Program would be implemented throughout the City, primarily within the combined sewered areas of Brooklyn, Queens, and the Bronx, but would not result in a significant change in land use or regulations and policies affecting land use.

The proposed green infrastructure projects may be constructed in the right-of-way (street or sidewalk) or on private or public properties in combined sewer areas. Projects within the right-of-way would include stormwater infiltration measures and vegetative plantings, while projects on private and public property may consist of stormwater infiltration or capture, vegetative plantings, or rooftop retrofit projects. However, the uses, zoning, bulk form and general character of each project site would remain unchanged once the proposed Program is implemented. While the projects may result in some temporary disruptions to local streets, park land, or public/private properties during construction, they would not result in long-term impacts to land use.

Waterfront Revitalization Program

Proposed actions subject to CEQR that are situated within the designated boundaries of New York City's Coastal Zone must be assessed for their consistency with the City's Local Waterfront Revitalization Program (LWRP). The LWRP consistency review includes consideration and assessment of other local, state, and federal laws and regulations governing disturbance and development within the Coastal Zone. The proposed action would be applicable in all zoning districts in the City; due to the citywide applicability of the action and focus on sensitive waterbodies, it is likely that some affected sites would be located within the WRP Coastal Zone. The completed LWRP Consistency Assessment Form and discussion, which supports the conclusion that the proposed zoning amendments are consistent with the NYC Waterfront Revitalization Program, is attached (See Attachment D-NYC Waterfront Revitalization Program).

As described in greater detail below, the proposed action is expected to be consistent with the City's coastal zone policies and specifically policies that address infrastructure and development in the coastal zone, protection and restoration of coastal ecosystems (e.g., wetlands), protection

of water quality, and minimizing coastal flooding and erosion impacts. The overall Program would also be consistent with the City's PlaNYC 2030 initiative and the Sustainable Stormwater Management Plan. As a result, no impacts on land use, zoning, or public policy would occur and the Program would be in line with the goals of greening the City. Rather than creating impacts to land use, the project would result in benefits and would be consistent with the City's sustainability initiatives as detailed in PlaNYC. Therefore, the proposed Program would not result in significant adverse impacts on land use, zoning, or public policy.

Applicable New York City Waterfront Revitalization Policies

Policy 1: Support and facilitate commercial and residential redevelopment in appropriate coastal zone areas.

The Program would not directly result in any new residential or commercial uses or redevelopment nor would it induce any new development through the installation of new infrastructure. Installation of the proposed Program would support existing (and appropriate) residential and commercial development to the underlying zoning of an area by providing green source controls to manage stormwater in available areas and thereby improve water quality in nearby coastal zone areas. Therefore, the Program will be consistent with this policy.

Policy 2: Support water-dependent and industrial uses in New York City coastal areas that are well-suited to their continued operation.

The Program would facilitate installation of green infrastructure technologies in combined sewer areas of the City, including in some Significant Maritime and Industrial Areas; however it would not change or adversely affect the uses in industrial or other areas, or services for specific users. The installation of green infrastructure would improve water quality and would therefore be consistent with this policy to support working waterfront uses and increasing the availability of supporting infrastructure capacity.

Policy 3: Promote use of New York City's waterways for commercial and recreational boating and water-dependent transportation centers.

The Program would not affect recreational and commercial boating opportunities but would improve water quality and further the City's goals of making water suitable for recreational contact and would therefore be consistent with this policy.

Policy 4: Protect and restore the quality and function of ecological systems within the New York City coastal area.

The Program would be implemented throughout combined sewer areas of the City including, potentially, in some Special Natural Waterfront Areas, Recognized Ecological Complexes, and Significant Coastal Fish and Wildlife Habitats and the drainage areas that affect the receiving waters in these areas. Because the Infrastructure Program entails source controls for stormwater before it enters the sewer system, the nature of the

Program makes it unlikely that green infrastructure will impact rare wildlife or ecological communities or the ecological functions of the coastal zone, including tidal wetlands and water quality. Any green infrastructure work in protected or regulated areas would be coordinated with the appropriate State and Federal permitting agencies to ensure that ecological communities are protected and restored. In addition, the proposed installation of green infrastructure systems would be done in a manner protective of the site's ecology by working with the existing topography and vegetation as well as implementing all necessary soil erosion and sediment control practices. Once installed, the green infrastructure systems would manage non-point pollution and improve water quality conditions and would therefore be consistent with the policy of protecting the ecological quality and habitat resources within these areas.

Policy 5: Protect and improve water quality in the New York City coastal area.

The Program would include the installation of green infrastructure to manage stormwater runoff (non-point sources) before it enters the combined sewer system and, during rain events, overflows to waterbodies. The construction of green infrastructure technologies will be focused on combined sewer areas and generally would not be expected to be constructed in or near marshes, estuaries, tidal marshes, or wetlands. Overall, by controlling stormwater run-off the proposed Program would improve water quality. Therefore, the Program will be consistent with this policy.

Policy 6: Minimize the loss of life, structures, and natural resources caused by flooding and erosion.

The Program would manage stormwater runoff and would decrease the volume of flow into the sewer system or to sheet flow runoff and should therefore decrease contribution to flooding from storms. Therefore, the Program will be consistent with this policy.

Policy 7: Minimize environmental degradation from solid waste and hazardous substances.

The Program does not involve the use, handling or storage of petroleum products. Any contamination identified during construction would be managed and remediated in accordance with all applicable regulations and standards and in compliance with a Health and Safety Plan. Therefore the Program would be consistent with this policy.

Policy 8: Provide public access to and along New York City's coastal waters.

The Program would not affect or alter public or visual access to and along New York City's coastal lands, waters, and open space. Installations would mostly be below-grade or at street level; retrofits on structures would have minimal expression above or beyond the existing structure and would not affect visual resources or view corridors. Any green infrastructure projects that would be implemented in parks and open space would be designed to minimize disruption during construction and to maintain usability of the site once the project is complete. Therefore, the Program will be consistent with this policy.

Policy 9: Protect scenic resources that contribute to the visual quality of the New York City coastal area.

The Program would not change or limit visual access to the urban context or the historic and working waterfront. Installations would mostly be below-grade or at street level; retrofits on structures would have minimal expression above or beyond the existing structure and would not affect visual resources or view corridors. Therefore, the Program will be consistent with this policy.

Policy 10: Protect, preserve, and enhance resources significant to the historical, archaeological, and cultural legacy of the New York City coastal area.

Work that involves historic buildings would be subject to review by the Landmarks Preservation Commission, which would protect and preserve the historic and cultural resources associated with that work. Work on public and private property would be submitted for review by Landmarks Preservation Commission if excavation would exceed the site's previously disturbed depth and area. Therefore, the Program will be consistent with this policy.

6.2 SOCIOECONOMIC CONDITIONS

The 2012 *CEQR Technical Manual* states that a detailed assessment of socioeconomic conditions is appropriate when a project would generate commercial development greater than 200,000 square feet (sf) or residential development of more than 200 units. According to the *CEQR Technical Manual*, the five principal issues of concern with respect to socioeconomic conditions are whether a proposed project would result in significant impacts due to: (1) direct residential displacement; (2) direct business and institutional displacement; (3) indirect residential displacement; (4) indirect business and institutional displacement; and (5) potential effects on specific industries. No displacement of businesses or residences would occur as a result of the proposed Program. The green infrastructure projects would not be permanently staffed after construction. The proposed Program would not directly or indirectly change population, housing stock, conditions within a specific industry, or any other demographic conditions.

Further, the Green Infrastructure Program represents a cost-effective approach to addressing combined sewer overflows, which is a significant area of capital investment by the City. The Program will accomplish the goals of the modified Consent Order in a more cost-effective manner than the traditional "grey" infrastructure (i.e. storage tanks and tunnels) that the City would otherwise be obligated to build. It is expected, therefore, that implementation of the Program will not result in increases to rates or utility expenses.

Therefore, the proposed Program would not result in significant adverse impacts on socioeconomic conditions.

6.3 COMMUNITY FACILITIES AND SERVICES

The 2012 *CEQR Technical Manual* states that a detailed assessment of community facilities and services is appropriate when a project would directly affect (by displacing or physically altering) a facility or indirectly affect a facility by increasing population, which would create additional demand on service delivery. The actions under the proposed Program would not directly or significantly increase the demand on services, displace any community facilities, or generate any demand for community services. On-site projects at public properties may involve physical alterations to public facilities, such as installing green roofs or rain gardens at public hospitals or schools; however DEP would partner with the involved agency to ensure that alterations are complimentary to the site's function and minimize disruption during installation. No on-site public installation would result in a change in function or the ability of that site to provide community services. Therefore, the proposed Program would not result in potential significant adverse impacts on community facilities and services.

6.4 OPEN SPACE

The 2012 *CEQR Technical Manual* states that a detailed open space assessment is appropriate if a proposed action would add 200 residents or 500 employees to an area, or if a proposed action would have a direct effect on an open space resource. The proposed Program would not introduce new residents or employees. The proposed Program may, however, include activities within City parkland or on vacant property. Any proposed projects implemented within a City park would be integrated into the natural park area, would include re-planting and restoration for areas affected by construction, and would be designed to limit the project's disturbance. In addition, any proposed project implemented in a school play area would not substantially affect the play area or access to the area. The implementation of green infrastructure projects would result in minor modifications to space and would largely include technologies such as porous or permeable pavements or subsurface detention systems. Vegetated elements or rain gardens may be incorporated in adjacent areas but would not encroach on school or park play grounds unless specifically requested by the managing agency. The technologies implemented in open space or play areas would be designed to minimize impacts and the space would provide aesthetic benefits, as well as shading and cooling benefits from trees. Also, full coordination effort with the Department of Parks and Recreation (DPR), New York City School Construction Authority, and individual schools would be initiated for each park or school project to ensure limited disruption to recreational programming.

Additionally, the proposed Program would create additional vegetated/green areas in the targeted CSO areas and would create a benefit to open space. In partnership with DPR, the Greenstreets Program is being enhanced to transform underutilized roadbed area into active stormwater management installations with increased greening, traffic calming, and pedestrian safety elements for greater usability. Therefore, the proposed Program would not result in potential significant adverse impacts on open space.

6.5 SHADOWS

The 2012 *CEQR Technical Manual* states that an assessment of shadows is appropriate for actions that would result in new structures or additions to existing structures of at least 50 feet in

height. The proposed Program would not result in any structures 50 feet in height or greater, nor would the Program result in significant or shadows-generating additions to existing structures. Rooftop retrofits would consist of green roofs or blue roofs; both of which involve changes to the rooftop surface on flat structures and minimal expression above the existing roofline. Therefore, the proposed Program would not result in significant adverse impacts due to shadows, and no further analysis is required.

6.6 *HISTORIC AND CULTURAL RESOURCES*

See Attachment A-Historic Resources.

6.7 *URBAN DESIGN AND VISUAL RESOURCES*

The 2012 *CEQR Technical Manual* states that an assessment of potential impacts to urban design is appropriate if a proposal would result in structures that are substantially different in height, bulk, form, setbacks, size, scale, use, or arrangement from those that already exist, or if a proposal would change the form, arrangement, or use of blocks and streets to interrupt the general pattern of an area or jeopardize the consistency of street walls, curb cuts, pedestrian flow, or other streetscape elements. A visual resources assessment is generally appropriate when above-ground construction would limit or alter existing view corridors. The proposed Program would install sub-surface and above grade projects. Based on a review of the impact assessment guidelines of the 2012 *CEQR Technical Manual*, it is concluded that none of the proposed green infrastructure projects would change the form or arrangement of blocks, the design of the streets, or sidewalks. Any streetscape elements to be constructed would be consistent with the existing pattern in the area or would create a visual benefit. In particular, the right of way bioswales would be designed to replicate the visual characteristics and enhance the functionality of a standard DPR street tree. In addition, the tree guards used for the bioswales would match the prevailing tree guard design along the block and in the neighborhood. None of the proposed projects would create significant aboveground structures and they would be at or below the existing grade. The proposed projects would also not significantly alter any structures or affect the built form nor would they be visually prominent in the urban design context. Lastly, the projects may modify the form or arrangement of local streets; however, these modifications will be minimal and will utilize materials and elements that are already in use within the streetscape and allowed by existing zoning. Figure 11 demonstrates a before and after projection of a typical street with bioswales installation. Changes to the pedestrian environment would not be significant and would not alter the pedestrian experience or create large scale developments. The image demonstrates the aesthetic benefit of implementing green infrastructure and the minimal impact these projects would create on the streetscape. Thus, the overall changes in the local urban design and visual character with the proposed Program are expected to be limited and would contribute positively to the local visual character, particularly along the public street frontages through increased trees and vegetated areas. Therefore, the proposed Program would not result in potential significant adverse impacts on urban design and visual resources.

Figure 11. Typical Bioswale Before and After



6.8 NATURAL RESOURCES

The 2012 *CEQR Technical Manual* states that a natural resources assessment is appropriate when a natural resource is present on or near a project site and when an action involves either the potential direct or indirect disturbance of that resource. As described above, the proposed Green Infrastructure Program would involve the installation of green infrastructure technologies, primarily in priority CSO tributary areas. The technologies would largely manage runoff from impervious surfaces and advance the City's efforts to increase ecological habitat, urban greening, and improve water quality. By providing vegetated, green spaces in priority CSO tributary areas, the Program would create habitat enhancements through the establishment of valuable space for nesting, migratory, and feeding habitats for a variety of birds, butterflies, bees, and other insects. The installation of green spaces in areas otherwise covered by buildings, streets and sidewalks, and other paved surfaces would enhance the livability of New York City neighborhoods for residents and wildlife by creating a balance between the built and natural environment, the establishment of interconnections between parks and wildlife areas, and the preservation of habitats and ecological function of the natural environment. In contrast to grey infrastructure which typically involves building treatment and storage facilities for managing runoff, green infrastructure employs natural systems such as vegetation, wetlands, and open space or subsurface detention systems to handle stormwater. Green infrastructure systems intercept stormwater either by providing temporary storage or by allowing stormwater to infiltrate the earth and be absorbed by plants or returned to the aquifer. Green infrastructure allows for a reduction in the amount of water flowing into conventional stormwater systems and, in some cases, provides a mechanism for the stormwater to be filtered, which is expected to result in water quality improvements. All green infrastructure projects are designed to manage the maximum amount of impervious surface within the tributary area, though the feasibility will vary based on site conditions. The ability for the green infrastructure technology to effectively remove pollutants would depend on the size of the tributary area and the infiltration rates. DEP is currently conducting monitoring programs to assess the performance of green infrastructure technologies in terms of retention volume, flow reduction, and pollutant removal through various pilot studies.

Because the green infrastructure projects will increase the infiltration of rainwater into the soil, there is the possibility that groundwater levels will increase. In order to minimize the potential of impacts due to raising the level of groundwater, DEP will not build infiltration projects in areas known to have high groundwater levels (at least 5 feet from the bottom of the installation). In addition, all potential sites will be tested (using an in situ Falling Head Permeability Test) to meet minimum permeability standards, ensuring that there is adequate vertical infiltration so the flow does not disperse laterally. All green infrastructure infiltration projects would be located at least ten feet from any structural elements to ensure that they will not come into any potential conflict with foundations, vaults, or basements; projects which store or manage large volumes of stormwater, such as subsurface detention systems, will be located further from subsurface structures. Some bioswales will be monitored with instruments that can measure the hydraulic head of the local groundwater; this will allow DEP to monitor any potential changes in the groundwater of the areas around green infrastructure projects.

Green infrastructure improves water quality by providing filtration and infiltration, but primarily through the reduction in volume and frequency of CSO events. By reducing and eliminating these events, green infrastructure reduces the discharge of untreated sewage and stormwater to,

and the potential for contamination of, receiving waterbodies. Therefore, the proposed Program would not result in any significant adverse impacts to natural resources.

6.9 HAZARDOUS MATERIALS

See Attachment B-Hazardous Materials.

6.10 WATER AND SEWER INFRASTRUCTURE

Water Supply

The 2012 *CEQR Technical Manual* states that an analysis of an action's impact on the New York City water supply system is appropriate for actions that would have exceptionally large demand for water, such as power plants, very large cooling systems, or large developments (e.g., those that use more than 1 million gallons per day). The proposed Program would not introduce new residents or employees and would not generate a new water demand. Green infrastructure can promote conservation by allowing stormwater to be captured and potentially reused, which would reduce demand. Therefore, the proposed project would not result in any adverse impacts to the City's water supply system and no further analysis is necessary.

Storm and Sanitary Drainage

The 2012 *CEQR Technical Manual* states that an analysis of wastewater and stormwater conveyance and treatment is appropriate if a project:

- Is located in a combined sewer area and would have an incremental increase above the No Action condition of 1,000 residential units or 250,000 square feet of commercial space in Manhattan;
- Is located in a separately sewered area and would exceed certain incremental development thresholds;
- Is located in an area that is partially sewered or currently unsewered;
- Involves development on a site five acres or larger where the amount of impervious surface would increase (e.g., tow-pounds, parking lots, and warehouse buildings);
- Would involve development on a site one acre or larger where the amount of impervious surface would increase and one of the following would apply:
 - Located within the Jamaica Bay watershed; or
 - Located in certain specific drainage areas including: Bronx River, Coney Island Creek, Flushing Bay and Creek, Gowanus Canal, Hutchinson River, Newtown Creek, and Westchester Creek.
- Would involve construction of a new stormwater outfall that requires federal and/or state permits.

The proposed Program would not introduce any new development or users that would add demands on the City's stormwater or sanitary drainage system. The proposed Program would help to reduce the amount of impervious surface and would create systems for stormwater to be captured, used, and retained, thus decreasing the burden on the existing sewer infrastructure. As such, no increase in sewage generation is expected, and the proposed Program would not result in significant adverse impacts to wastewater and sewage treatment infrastructure, but would rather enhance the natural hydrological system, and reduce stormwater runoff.

6.11 SOLID WASTE AND SANITATION SERVICES

The 2012 *CEQR Technical Manual* states that a solid waste and sanitation services assessment is appropriate when a project has the potential to cause a substantial increase in solid waste production (50 tons per week or more) that may overburden available waste management capacity or otherwise be inconsistent with the City's Solid Waste Management Plan (SWMP) or with state policy related to the City's integrated solid waste management system. The proposed Program would not introduce any new residents or employees; thus, no increase in solid waste generation is expected. The size of the typical right-of-way installations makes it likely that access to property frontage and sanitation services would be maintained; larger installations would include pathways for access that could also be used for garbage put out. Therefore, the proposed Program would not result in potential significant adverse impacts to solid waste or sanitation services.

6.12 ENERGY

The 2012 *CEQR Technical Manual* states that an analysis of energy is appropriate when a project has the potential to affect the consumption of energy, and when effects on the transmission of energy could result from the action. The proposed Program would not generate any additional demand for energy during its operation and would not affect the transmission of energy. Therefore, the proposed Program would not result in potential significant adverse impacts to energy supplies.

6.13 TRANSPORTATION

Traffic

The 2012 *CEQR Technical Manual* states that a traffic analysis is appropriate when a project would exceed 50 peak hour vehicle trips. The proposed Program would install green infrastructure projects, but would not generate new vehicular trips—nor would it open or close streets that would create any permanent traffic diversions (the need for any temporary limited traffic diversions during construction is discussed in Attachment C-Construction Impacts). During project design, proposed project sites would be evaluated and field visits would be conducted to assess the potential impact on street configurations and traffic flows. The design would be altered to minimize any effect and would not encroach on moving lanes. In addition, DEP would coordinate with DOT and all designs would comply with DOT street and sidewalk requirements and the DOT Street Design Manual. Therefore, the proposed Program would not result in potential significant adverse impacts to traffic.

Parking

The 2012 *CEQR Technical Manual* states an on- or off-street parking analysis is appropriate if the proposed project exceeds traffic threshold or if the proposed project exceeds the development densities for the specific land use and neighborhood as specified in the *Manual*. The proposed Program does not exceed the traffic threshold and does not include any changes in local on-street parking regulations; however, it may result in a temporary and permanent loss of on-street parking (any temporary loss of street parking along the segments of active construction is presented below in Attachment C-Construction Impacts). While there would be some displacement of on-street parking during construction, this impact would be temporary and short

in duration. The permanent impact of parking would result from the construction of the proposed stormwater greenstreets. The stormwater greenstreets would convert the paved area to either permeable pavement or vegetated areas for optimal stormwater capture from the right-of-way. While most stormwater greenstreets would be installed in sidewalks, a limited number may be installed as “bump-outs” which extend the curb into the parking lane. This loss of parking would be minimal, contingent on the existing street drainage, would be site specific, and is not expected to result in significant impacts. The impacts to parking would be considered on a case by case basis, however, these impacts would be minimal as design will be tailored to each site and could be designed to reduce any potential disturbance. Therefore, the proposed Program would not result in significant adverse impacts to parking.

Transit and Pedestrians

The 2012 *CEQR Technical Manual* states that transit and pedestrian transportation analysis is appropriate when a proposed project would generate greater than 200 pedestrian trips during the analysis peak hours, if the project proposes to remove or reduce capacity of a pedestrian element (for example, reducing the width of a sidewalk), or if the proposed project would result in greater than 200 peak hour subway/rail or bus transit riders. The proposed Program would not have any adverse impacts on trains stations or tracks. All the proposed work would not require any direct or permanent impacts to transit infrastructure. All projects to be built in the right-of-way would be designed with consideration for pedestrian safety, access, volumes, comfort and convenience of movement. Projects would be reviewed and approved by the Department of Transportation. Projects would be individually examined for possible impacts to pedestrians and transit and in no cases shall sidewalks be reduced to less than eight feet. Those projects not approved by DOT would not proceed. Therefore, the proposed Program would not result in potential significant adverse impacts to transit and pedestrian conditions.

6.14 AIR QUALITY

The 2012 *CEQR Technical Manual* states that air quality analysis is appropriate if a project would result in direct or indirect impacts on ambient air quality. Direct impacts stem from emissions generated by stationary sources on a project, such as emissions from fuel burned on site for heating, ventilation or air conditioning (HVAC) systems. Indirect impacts stem from emissions generated by motor vehicles traveling to and from the project site.

The proposed Green Infrastructure Program would improve air quality by offsetting air pollution by directly removing pollutants from the air, reducing emissions by decreasing the energy needed for heating and cooling, and reducing the high temperatures and sunlight that contributes to ozone formation. The program does not include the addition of any new stationary or mobile emission sources. Therefore, the proposed Program would not result in potential significant adverse air quality impacts.

6.15 GREENHOUSE GAS EMISSIONS

The 2012 *CEQR Technical Manual* states that greenhouse gas analysis is appropriate for projects where the project size is greater than 350,000 gross square feet, or projects that have unique energy demands (e.g., power plants, major modifications in transportation). The proposed Program does not include any new development or incremental energy demand. In addition, it

would not result in any mobile or stationary sources of air emissions. The proposed Green Infrastructure Program would improve air quality by offsetting air pollution by directly removing pollutants from the air, reducing emissions by decreasing the energy needed for heating and cooling, and reducing the high temperatures and sunlight that contributes to ozone formation. Thus, no further analysis of greenhouse gasses is required, and the proposed Program would not result in significant adverse impacts related to greenhouse gasses.

6.16 NOISE

The 2012 *CEQR Technical Manual* states that a noise analysis is appropriate if a proposed action would generate any mobile or stationary sources of noise or would place a new sensitive use in an area with high ambient noise levels. The proposed Green Infrastructure Program would not generate or reroute any traffic, nor does it include any new stationary sources. Therefore, the proposed Program would not result in potential significant adverse noise impacts.

6.17 PUBLIC HEALTH

The 2012 *CEQR Technical Manual* states that a public health analysis is appropriate for projects when there is a significant unmitigated adverse impact identified in other CEQR analysis areas, such as air quality, water quality, hazardous materials, or noise. If an unmitigated significant adverse impact is identified in one of these analysis areas, the lead agency may determine that a public health assessment is warranted for that specific technical area.

As described above, the proposed Green Infrastructure Program would not result in significant adverse impacts to traffic, air quality, water quality or noise, nor would any applicable City, State, or Federal standards that protect air and noise conditions be exceeded. The proposed Green Infrastructure Program would provide public health benefits and improve air quality by offsetting air pollution by directly removing pollutants from the air, reducing emissions by decreasing the energy needed for heating and cooling, and reducing the high temperatures and sunlight that contributes to ozone formation. The proposed Program would not involve solid waste management practices that would attract vermin or pest populations. In addition, any hazardous materials encountered during construction would be handled in accordance with all federal, state, and local regulations. With these protection measures in place, impacts from hazardous materials on construction workers or local residents would be avoided. Therefore the proposed Program would not result in potential significant adverse public health impacts.

6.18 NEIGHBORHOOD CHARACTER

The 2012 *CEQR Technical Manual* states that neighborhood character is considered a cumulative assessment of various elements that collectively give a neighborhood its distinct personality. These elements typically include land use, urban design and visual resources, socioeconomics, traffic, air quality, and noise. An assessment of neighborhood character is appropriate when a project would exceed preliminary thresholds in any one of the following areas of technical analysis: land use, urban design and visual resources, historic resources, socioeconomic conditions, transportation, or noise. As described in greater detail in other sections of this EAS, the proposed Program does not require detailed analysis and would not result in any significant adverse impacts with respect to these neighborhood conditions.

Moreover, the proposed Program would reduce CSO events, improve water quality of local water bodies, and create pockets of green space throughout the city. This would result in a positive impact for the neighborhood and provide stormwater benefits along with cooling shade, cleaner air, and greener urban streetscapes. Therefore the proposed Program would not result in potential significant adverse impacts to neighborhood character.

6.19 CONSTRUCTION

See Attachment C-Construction Impacts.

7. HISTORIC AND CULTURAL RESOURCES

This chapter considers the effects of the proposed Green Infrastructure Program on historic resources, including architectural and archaeological resources. Architectural resources include historically important buildings, structures, objects, sites, and districts. Archaeological resources are physical remains, usually subsurface, of the prehistoric (Native American) and historic periods, including burials, foundations, artifacts, wells, and privies. Consultation with the LPC and SHPO would be established as appropriate throughout the site evaluation process to ensure that potential resources are considered and that no significant impacts would result.

Architectural Resources

Historic architectural resources include designated New York City Landmarks (NYCLs); or properties calendared for landmark status; properties listed on or eligible for listing on the State and/or National Register of Historic Places (S/NR); and National Historic Landmarks (NHLs).

Archaeological Resources

For archaeological resources, the study area is defined as the project site, i.e., the area that would be disturbed by project construction. Generally, the New York City Landmarks Preservation Commission (LPC) and the New York State Office of Parks, Recreation and Historic Preservation (OPRHP) – State Historic Preservation Office (SHPO) will determine whether the proposed actions would have an adverse impact on archaeological resources. DEP will work with LPC as described below to ensure that archeological resources are identified and that impacts are avoided. On projects which receive State permits, approvals or funding, including State Revolving Fund financing through the New York State Environmental Facilities Corporation, DEP will consult with or require coordination with SHPO to ensure there are no adverse impacts and that funding eligibility requirements are met.

8. ASSESSMENT

Architectural Resources

The proposed Program would likely not have direct or indirect impacts on historic architectural resources. The proposed on-site green infrastructure technologies such as blue and green roofs would result in minimal or no structural changes to the building and would result in a minimal change to the building's visual character. Any on-site green infrastructure taking place at a property in a historic district or a site which is designated or eligible for landmark status would require LPC approval (a Certificate of No Effect on protected architectural features, Certificate of Appropriateness, or Permit of Minor Work) under the New York City Landmarks Law.

Similarly, bioswales, which are nearly visually identical to street trees, would be integrated into the surroundings in historic districts (i.e., by using the predominate tree guard style in the area). Thus, the proposed Program would not alter the setting or character of historic architectural resources. In addition, the Program is not expected to alter or eliminate sight lines or publicly accessible views of historic architectural resources or result in changes to shadows or sunlight

penetration to architectural resources. Therefore, the proposed Program would not have potential significant adverse impacts on historic architectural resources.

Archaeological Resources

For Green Infrastructure projects taking place on the street or sidewalk right-of-way (stormwater Greenstreets and bioswales), it is not expected that the installations would result in potential for archaeological impacts. The limited size of the individual installations, typically constructed along curbs to a maximum depth of five feet, would have a very low likelihood of discovery given that they would be exclusively built within streetbeds in developed neighborhoods. These projects would be very similar in nature and size to street trees, catch basins and other utility work which is likely to have taken place already along these streets. Should any potentially significant resources be discovered during installation of street work, LPC would be contacted and appropriate measures would be undertaken to protect and preserve cultural resources.

For Green Infrastructure projects on public and private property, an investigation would be conducted to assess whether the site may contain archaeological sensitive resources or any listed or eligible resources that could be impacted by the proposed project. This assessment would be site-specific and depend on project activities; the extent of site disturbance would be considered in light of previous disturbance at the site. If the project would involve excavation beyond the previous site disturbance (in depth or footprint), further archaeological coordination would be undertaken as described below.

8.1 Initial Review

DEP would submit proposed project information to LPC to determine if any archaeological work will be necessary. The project information would include the project location(s) (Block and Lot or area of street work), plans and description of the type and dimensions of the work proposed, photos of the site showing existing conditions, Sanborn map detail, and the project timeframe.

8.2 Documentary Study-Phase I

If there is a potential that one or more proposed work areas contains historic resources that could be disturbed by the proposed on-site work, a Documentary Study or Phase I would be prepared to determine whether the proposed project contains any archeologically sensitive areas, cultural areas, or historic structures that may be affected by the proposed project and to locate all potentially significant cultural resources within the proposed project area. A Phase I is divided into two specific tasks, a Phase IA, which is a literature and document review, and a Phase IB, which requires field testing. The decision to do a Phase IB is dependent on the findings of the Phase IA. If the potential exists for an adverse impact, a Phase IB may be required. The decision to do a Phase IA and IB will be made on a project to project basis.

The Phase IA for archeological resources shall:

- Document the site's use and occupation;
- Assess whether the site had past disturbance;
- Assess the probability that potential archaeological resources will be disturbed by the proposed project; and
- Explain why further archaeological work should or should not be required.

To complete the Phase IA, the following sources should be utilized:

- Consultation with the LPC for assistance in this process;
- Review of state and regional site files (SHPO, LPC, etc.);
- Sanborn map, historic maps and atlases, building and public utility records;
- Research of historical reports, archaeological reports, soil surveys, environmental reports, deeds and census records, tax assessment and conveyance records, etc;
- Interviews with landowners, local historians, archaeologists, etc; and
- Site visits to check for ground disturbance, terrain, visible cultural resources.

8.3 *Field Testing- Phase IB*

If a review of the documentary study concludes that potentially significant archaeological resources may be found at the site in question and that proposed construction might disturb or destroy them the process moves onto the next step – Phase IB, archaeological field testing by a professional archaeologist. Testing may involve various methods such as mechanical, shovel testing, or hand excavation to identify structures that have cultural, architectural, or historic distinction.

If field testing indicates that significant resources are not present, the review process ends, and no further work is necessary. If testing proves that resources are present, and examination shows them to be significant, a mitigation plan would be implemented to preserve or mitigate disturbances, or the project may be redesigned or relocated to avoid impacts. Mitigation would be developed on a case-by-case basis with LPC and/or SHPO, and could involve avoidance (redesign), field testing or monitoring, excavation, stabilization and analysis of artifacts, and/or curation in an appropriate repository.

9. CONCLUSIONS

With respect to architectural resources, it's believed that the proposed Program would not alter the setting of identified or potential historic architectural resources. On-site work at a historic landmark or in a historic district will be coordinated with LPC to ensure all necessary approvals are secured to document that the projects would have no impacts. Therefore, the proposed Program would not result in potential significant adverse impacts to historic and cultural resources.

With respect to archaeological resources, an initial survey and, if warranted, a Phase IA study would be conducted for on-site projects to determine if the site would have archaeological sensitivity. Depending on the results of the study, a Phase 1B archaeological test would be conducted at the sites. The Phase 1B report would be submitted to LPC and/or SHPO for review and approval, and approved recommendations to avoid impacts would be implemented as part of those projects.

Attachment B

10. HAZARDOUS MATERIALS

This section assesses the potential for hazardous materials impacts from exposure during construction or operation of the proposed Green Infrastructure Program (“Program”). The descriptions and analyses are based on an understanding of the potential presence of contamination found in buildings, soils, or groundwater as a result of activities, industrial and otherwise, that were once common in New York City and other urbanized areas; and the potential for exposure or contamination through the nature of the various Green Infrastructure Program technologies.

As described in the CEQR Technical Manual, a hazardous material is defined as any substance that poses a threat to human health or to the environment. Such substances include but are not limited to metals, volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), and some substances used in building materials and fixtures, such as asbestos-containing material (ACM), mercury, or lead-based paint.

Many areas of the City, including developed combined-sewer areas with high impervious surface coverage where the Program would be implemented, have a land use and developmental history which may be associated with hazardous materials. Particularly, manufacturing and industrial uses were common in large areas of the City and have resulted in the potential for the residual presence of contaminants. Further, many parts of the City were leveled or graded for development using imported fill material which often contained ash and waste products. Petroleum and fuel oil use and storage has also been common, with gas and auto service stations throughout the City and through the pervasive use of fuel oil for heating buildings; the fuel oil is stored in above ground or belowground storage tanks, which have only recently been regulated for safety and environmental protection.

Certain types of green infrastructure would not – by their nature – be expected to result in a pathway of exposure. Specifically, rain barrels or cisterns that are installed above ground would not disturb or expose building materials (such as ACM or light fixtures) or soil contaminants. Some projects, however, could result in exposure to building materials (for instance green roof or blue roof retrofit projects on existing buildings) or in exposure of workers or the environment to soil contamination (such as infiltration projects like bioswales or subsurface detention). These projects, and the measures necessary to avoid impacts, are discussed below.

Rooftop Projects

Green infrastructure retrofit projects that take place on rooftops, such as green roofs and blue roofs, may involve construction activities involving disturbance or removal of the existing flashing and/or roof membranes, which historically have asbestos containing materials. Appropriate site investigations would be conducted prior to construction to determine if asbestos is present in any materials that are affected by the green infrastructure projects. To avoid any significant adverse impacts to human health or the environment, the investigation and abatement activities would be conducted in accordance with applicable City, State and Federal laws and regulations. DEP, under Title 15 RCNY Chapter 1, regulates building surveys, professional certifications, and asbestos abatement procedures. Local Laws 70/1985 and 21/1987, administered by the New York City Department of Sanitation, govern the transport, storage, and

disposal of asbestos waste in the City. The New York State Industrial Code 56, administered by the New York State Department of Labor, and the EPA-administered National Emissions Standards for Hazardous Air Pollutants also regulate asbestos activities. Asbestos laboratories are regulated by the New York State Department of Health under the Environmental Laboratory Approval Program. By complying with applicable regulations for handling and disposal of ACM, as well as for any found or disturbed mercury or PCB-containing fixtures or lead-based paint, unprotected exposure to hazardous materials would be avoided and rooftop retrofit projects would not result in significant hazardous materials impacts.

Infiltration Projects

Green infrastructure projects that would be built in the right-of-way or on-site may require limited excavation and therefore could disturb soils in areas where there is the potential for presence of hazardous materials based on prior uses or filling activity on-site or in the surrounding area. As a result there is potential for the projects to result in exposure of workers or site users to contaminated soils or for groundwater to be exposed to contamination by creating new routes of infiltration.

However, because all infiltration projects include the removal of material to a level that allows infiltration (usually around five feet) and the placement of surface or subsurface devices (i.e. – porous pavement or subsurface detention systems) or the placement of clean material as cover media (in the case of rain gardens or bioswales), infiltration projects are not expected to result in exposure of subsurface contamination to surface users. In effect, the project itself includes removal and capping of any soil contamination.

Because the projects would allow or increase infiltration to groundwater, conditions at installation sites could result in the dispersion of pollutants into the groundwater or ecosystem. Therefore DEP would monitor groundwater levels and conditions through monitoring devices which would be installed in some of the infiltration projects. Groundwater conditions would be assessed as the Program continues to develop; if any potential for ecological deterioration is identified, adjustments would be made to lessen the potential for disturbance or dispersion of contamination at sites of concern. DEP would not encourage the infiltration of stormwater into contaminated areas where pollution could be disturbed or migrate off-site. However it is not anticipated that projects that would allow or increase infiltration would occur at locations with significant levels of groundwater failing the toxicity characteristic leaching procedure (TCLP).

All construction contracts for the Program would include provisions to sufficiently address any hazardous materials encountered in the field. The contracts would be performed by agencies with extensive experience working within and around the streets of New York City. In-field assessment would be done on a case-by-case basis to establish whether any soil characterization would be required. Standard operating procedures would be followed to allow the construction projects to limit pathways of exposure of any hazardous materials encountered.

To protect workers on projects where the identified levels of contamination would allow the project to proceed with modification, contract documents for construction would require the following: the contractor to submit a Material Handling Plan which identifies the specific protocol and procedures that would be utilized to manage waste in accordance with applicable regulations; dust control procedures in place during excavation activities to minimize the creation and dispersion of fugitive airborne dust; precautions necessary to protect workers and downwind communities from exposure by preparing a site-specific construction Health and

Safety Plan (construction HASP). With these measures in place, the proposed Program would not result in potential significant adverse impacts due to hazardous materials.

11. CONSTRUCTION IMPACTS

The proposed Green Infrastructure Program to manage stormwater on 1.5% of impervious surfaces in CSO areas of the City would be implemented through various discreet (but sometimes coordinated) construction projects through the year 2015, focused in specific priority combined sewer areas. The proposed Program would install green infrastructure projects that manage one inch of rain on the tributary impervious surfaces including but not limited to rooftop retrofits, subsurface systems, right of way bioswales, permeable pavement, and bioinfiltration systems.

Multiple capital projects in specific priority areas would be necessary to fully implement the City's goal of managing one inch of rainfall on 1.5% of impervious surfaces in CSO areas through green infrastructure and other source controls. Current Program planning assumes that construction would commence with capital projects in fiscal year 2012 and would last through 2015.

General Construction Practices

Construction practices for green infrastructure projects would be temporary and short in duration. As the proposed Program is a decentralized system of green infrastructure projects, the individual projects (i.e., one bioswale) would take less than a week to construct, however the network of bioswales (i.e., over 100 bioswales) within a given area may take 3-6 months. Similarly, typical on-site projects would take between one and three months but larger projects, where multiple technologies would be installed over several acres, could take up to a year or more but would be constructed in phases in coordination with the property owner. Construction would generally be seasonally dependent to coincide with the planting season.

For both individual installations and networked systems, DEP would take appropriate measures to maintain all required precautions for pedestrians, traffic, air and noise, and other possible activities to ensure no construction impacts. Table 1 presents the typical equipment used in the construction of green infrastructure projects and Table 2 presents the typical green infrastructure technologies and the typical construction activity associated with the Program's implementation. Table 2 provides a general description of the environmental protection measures, construction practices and environmental controls that would be implemented during construction for each type of project.

Construction of green infrastructure activities may require staging areas separate from the work zone for the purposes of storing vehicles, construction equipment, and materials. The selection of a construction staging site would be at the discretion of the contractor and, if it involves street or sidewalk area, would be subject to DOT permits and approval. Any use of private lands for staging would be contingent upon landowner approval, and the need for any fencing or erosion control measures would be the responsibility of the contractor. If other City lands are used, staging areas on City owned property would require restoration to at least pre-construction conditions after construction is completed. Construction-limit fencing may be used to delineate the limits of staging areas at project sites and would help protect adjacent properties. In all cases, sites used for staging would be restored as part of the project's proposed landscaping.

Table 1: Typical Equipment Used for the Construction of Green Infrastructure Technologies Included in the Proposed Program

Equipment
Backhoes
Hauling Trucks
Concrete Trucks
Jackhammers
Excavators
Bobcats
Cranes
Dump trucks
Grading equipment
Hand-help power equipment
Electric chainsaws

Table 2: Potential Activities Associated with the Construction of Green Infrastructure Technologies Included in the Proposed Program

GI Technology	Activities
Porous Paving	Construction staging Partial and phased in-street work, including temporary sidewalk, travel lane, and/or parking lane closings Demolition of existing sidewalk or roadway material Installation of permeable pavement material
Rain Garden/Bioinfiltration	Construction staging Clearing of vegetated surface and/or demolition of existing impervious surface Grading/Excavation Final landscaping and grading
Rainwater Harvesting	Installation of rain harvesting barrel, cistern or collection system For larger above ground systems installation may include excavation of a few inches of soil and installation of gravel/level foundation to support the collection barrel, cistern, or collection system For subsurface systems, see subsurface section below
Right of Way: Bioswales/Stormwater Greenstreets	Construction staging Partial and phased in-street work, including temporary sidewalk, travel lane, and/or parking lane closings Demolition of existing sidewalk or roadway material Clearing Excavation Grading and filling with crushed stone and soil Curb-cut installation Tree and shrub planting

	Tree guard installation
Rooftop: Blue Roof/ Green Roof	Construction staging Reroofing/waterproofing Asbestos remediation Installation green roof system – including protection and drainage layers and growing media/plants Installation of detention mechanisms at drains or on the roof surface
Subsurface Detention Systems: Gravel Beds/ Perforated Pipe Systems/Stormwater Chamber Systems	Construction staging Excavation Grading Geotextile installation Subsurface system installation (gravel, perforated pipe, storm chambers, etc) Installation of embedded stone Backfill Paving

Construction Methods

Construction techniques and duration would vary for each green infrastructure project, depending on design and the location.

Rooftop Projects: Installation of green or blue roofs would depend the building roofing system specifications, and the specific green or blue roof system. At a minimum, green roofs should consist of vegetation, growing media, a protection course (fabric layer, insulation, and sheet drain) and a root barrier. Blue roofs generally consist of flow drains that are controlled by weirs or orifices to regulate the rate of runoff from the roof, but may include components such as trays or check dams that would be installed across the rooftop.

Prior to any construction of a rooftop system, an inspection of the building’s roof and structural system would be required to verify that the building, as constructed, has the capacity to support roof loads from the rooftop system, and that the existing roof is intact and free of leaks. In cases where the existing roof would require reroofing and removal of existing material, compliance with asbestos abatement requirements and all necessary permits or approvals would be obtained prior to construction.

Once structural approval of the building is obtained, the roof assembly should be carefully inspected and tested for watertightness to determine if there are any leaks. Any leaks identified would need to be repaired before the blue or green roof system and a leak detection system (if applicable) would be installed. Installation of green roof systems typically include the placement of multiple layers such as water proofing insulation, a root barrier layer, reservoir sheet or a granular drainage layer, and filter fabric. Following the installation of the multi-course roof system, four to five inches of growing media specifically designed for water retention and the selected plant species are added. All necessary downspouts, scuppers, and controlled flow roof

drains, based on the design, would then be installed. Blue roof installation includes waterproofing insulation and membrane, corrugated plastic to create a flat surface, geotextile drainage layers, aluminum trays, and gravel for storage. In addition, blue roof systems include controlled roof drains, downspouts, and scuppers to allow for the detention of stormwater.

Right of Way Projects: Right of way projects may require the temporary closing of sidewalks, travel lanes, or parking lanes to allow for the installation of the proposed project. Construction of the bioswales and stormwater green streets would begin with the demolition of the existing street sections or sidewalk, clearing of the site, and excavation of the area to the depth for which the system was designed. Once the area is excavated, it may require grading to be uniform and level. Next, a gravel or broken stone layer can be installed to form the subsurface storage area. The thickness and compaction of the bedding stone or gravel would be specified by the design. Geotextile is then installed along the excavation sidewalls to help prevent soil migration into the system. Following the geotextile or pipe installation (if needed), the area is backfilled with engineered soil to a grade that would allow for the necessary depression or pitch to capture stormwater. Lastly, new curb cuts are installed, the area is landscaped according to the site's planting plan, and a tree guard is installed around the perimeter to protect the site. All necessary permits or approvals for these activities would be obtained prior to construction.

On-Site Projects (at/below grade): On-site projects at or below grade include porous pavement, rain gardens, rain water harvesting systems, bioinfiltration, and subsurface systems. Construction is similar to the right of way projects and may require demolition of existing impervious material and clearing of the site. Installation of the project begins with the excavation of the area to the depth for which the system was designed and is followed by the addition of a gravel or crushed stone layer and the geotextile layer. At this point in construction, any subsurface structures or necessary piping would be installed. Prior to backfilling of the area or planting of vegetation, stone would be installed over the subsurface system. The site's final grading and landscaping would be determined by the design, which would specify types of plants and plant spacing onsite. All necessary permits or approvals for these activities would be obtained prior to construction.

In general, backhoes, dump trucks, and grading equipment, along with hand-held power equipment, may be necessary for excavation and installation or fill of material such as stone or gravel. Applicable manufacturer installation instructions regarding loading and cover requirements for heavy construction equipment would be followed and, once stone or geotextile layers were installed, the use of heavy machinery would be restricted to avoid excessive soil compaction. In addition, all necessary soil erosion and sediment control practices would be implemented at proposed project sites.

The analysis below examines the potential for construction-period impacts as a result of these proposed activities.

11.1 LAND USE, ZONING, AND PUBLIC POLICY

Construction of the proposed Green Infrastructure Program is expected to take place within the mapped street right of way, or on public or private property. It is expected that construction may result in disruptions to local traffic as well as the noise and other short term impacts associated with construction activities. However, construction impacts under the proposed Green

Infrastructure Program would be localized and temporary in nature. It is not expected that the construction of green infrastructure projects would have any long term impacts on land use, nor would it conflict with local zoning or public policies. Any land disturbance would be temporary in nature and the bulk of the project sites would be restored to pre-existing conditions following the completion of the construction activities. Therefore, the proposed project is not anticipated to have any adverse impacts on surrounding land uses. In addition, the construction period impacts are necessary in order to provide the proposed infrastructure which is a long term beneficial impact of local land uses as a result of the proposed Program.

11.2 HISTORIC AND CULTURAL RESOURCES

ARCHITECTURAL RESOURCES

It is unlikely that the proposed activities would impact buildings near the site of the Green Infrastructure Programs unless the project is implemented on a landmark-designated building, but even then the proposed activity would conform to the existing structure's footprint, and would visually integrate into the surroundings, as well as become part of the local visual setting. Thus, the proposed Program would not alter the setting of the identified potential historic architectural resources.

If architectural resources are identified adjacent to the project site, the resources would be afforded additional protection from construction-related impacts under DOB regulations applicable to all buildings located adjacent to construction sites under Building Code Section 27-166 (C26-112.4). For all construction work, Building Code Section 27-166 (C26-112.4) serves to protect buildings by requiring that all lots, buildings, and service facilities adjacent to foundation and earthwork areas be protected and supported in accordance with the requirements of Building Construction Subchapter 7 and Building Code Subchapters 11 and 19. A second protection would be afforded to properties listed as New York City Landmarks, properties within New York City Historic Districts, or National Register-listed properties under the New York City Department of Buildings' *Technical Policy and Procedure Notice #10/88*, (*TPPN #10/88*). *TPPN #10/88* supplements the standard building protections afforded by Building Code C26-112.4 by requiring a monitoring program to reduce the likelihood of construction damage to adjacent New York City Landmarks and National Register-listed properties (within 90 feet) and to detect at an early stage the beginnings of damage so that construction procedures can be changed. With the required measures of *TPPN #10/88* in place, there would be no significant adverse construction-related impacts on New York City Landmarks or properties listed on the National Register that are located within 90 feet of development resulting from the proposed actions.

Therefore, the proposed Green Infrastructure Program would not result in potential significant adverse impacts to architectural resources during construction (see Attachment A- Historic Resources).

ARCHAEOLOGICAL RESOURCES

Green Infrastructure projects taking place in the street and sidewalk are not expected to result in the potential for archaeological impacts. The limited size of the individual installations, typically constructed along curbs in streets that already have catch basins and combined sewers (which are constructed to an equal or greater depth), would have a very low likelihood of discovery of resources. Should any potentially significant resources be discovered during installation of street

work, the New York City Landmarks Preservation Commission would be contacted and appropriate measures would be undertaken to protect and preserve cultural resources.

Construction activities associated with public and private on-site projects could potentially disturb subsurface archaeological resources, if present, at certain project locations. Initial surveys will be conducted and, if the specific project sites require further investigations, then the proper protocol specific to the New York State Office of Parks, Recreation and Historic Preservation and New York City Landmarks Preservation Commission would be followed. If necessary, a Phase I Archaeological Survey would be conducted, which involves background investigation, site inspection and limited sub-surface investigations to determine if a site has possible historical and archaeological potential, with Phase IA focusing on the background investigation through a document search and Phase IB focusing on site investigation. If sensitive areas are identified during the investigations the necessary recovery and analysis would be conducted and avoidance or other mitigation techniques would be incorporated into the design during construction activities. Therefore, it is not anticipated that there would be any potential impacts to the historic and archaeological resources due to the proposed Green Infrastructure Program (see Attachment A-Historic Resources).

11.3 NATURAL RESOURCES

LAND COVERAGE AND WETLANDS

Construction of the proposed Green Infrastructure Program would occur primarily on built streets or on-site and would not have significant adverse impacts on land coverage or wetlands. By the nature of the Program, which is designed to manage stormwater runoff from impervious surfaces, it is unlikely that projects will be sited in or near wetlands. However, any projects in regulated wetlands or adjacent area would be required to obtain the appropriate permits from NYSDEC and incorporate any measures deemed necessary to avoid adverse impacts. In locations where green infrastructure projects may be implemented in open space, park land, or vacant properties, the temporary construction and permanent project impacts would need to be considered. Therefore, the proposed Green Infrastructure Program would not result in potential significant adverse impacts on natural resources.

11.4 HAZARDOUS MATERIALS

Many sites in urban areas either contain soil and/or groundwater that are known to be contaminated or involve buildings which may have been built with materials considered to be hazardous. The proposed Program may involve the disturbance of soil in areas where there is the potential for presence of hazardous materials based on prior uses on site or in the surrounding area; or construction on a building that contains hazardous materials. At building sites where structure hazardous materials may be present, all applicable handling, testing, and disposal regulations would be followed. If impacts are identified, a Construction Health and Safety Plan would be implemented in accordance with regulatory requirements. Therefore, the proposed Green Infrastructure Program would not result in potential significant adverse impacts due to the presence of hazardous materials during construction (see Attachment B-Hazardous Materials).

11.5 TRANSPORTATION

CONSTRUCTION TRAFFIC

Construction Workers

The proposed Program would generate trips from workers traveling to and from the site, as well as from the movement of goods and equipment. The estimated average number of construction workers on site at any one time would vary, depending on the stage of construction, but is estimated from 5-15 individuals.

Given typical construction hours (typically 7:00 AM to 3:00 PM), worker trips occur in off-peak travel times and would not represent a substantial increase in local traffic. Typical peak hours are around 8:00 AM to 9:00 AM and 5:00 PM to 6:00 PM. Temporary increases in vehicular traffic during construction of the proposed projects would not be expected to exceed the CEQR 50-peak hour trip threshold requiring further analysis. Therefore, the proposed Program would not result in potential significant adverse effects to traffic during construction.

Truck Traffic

Truck traffic, including removal and delivery of soil, delivery of engineered fill and asphalt for road repaving, landscape materials for vegetated areas, and materials for system construction, would be spread throughout the weekday, and generally be limited to weekdays. The following estimated numbers of trucks (for delivery of soils, materials, and concrete) are anticipated during the various stages of construction based upon experience for other construction projects would include approximately 2-10 trucks per day.

Traffic Diversions

The proposed Program may require work in local streets for the installation right-of-way projects. This may require some temporary lane closures and disruption of local traffic. It is expected that traffic flows would be only partially and temporarily affected by the proposed Program and if any full street closures are required, these would be temporary. Overall, work in local streets is expected to be short term at any one site. In addition, the contractor would be required to restore the full width of the street at the end of each daily construction period to allow free flow of traffic. Lastly, all construction activities and closures would be subject to DOT approval under a street and sidewalk construction permit that would involve a plan for the maintenance and protection of traffic. Impacts associated with construction of the proposed Program including traffic diversions would be temporary and short-term in duration. Therefore, the proposed Program would not result in potential significant adverse impacts to traffic during construction.

Parking

Construction of right-of-way projects may temporarily affect curbside parking along streets affected by construction. It is expected that the affected curbside parking areas would be limited and temporary. All construction activities and temporary removal of street parking would be subject to DOT approval under a street and sidewalk construction permit. Impacts associated with construction of the proposed Program including on-street parking would be temporary and short-term in duration. Therefore, the proposed Program would not result in potential significant adverse impacts to on-street parking during construction.

Pedestrians

It is expected that the proposed Program may require some temporary sidewalk closure along the segment of construction for the purposes of implementing right-of-way installations. It is also expected that the closure time would be limited and that an adequate temporary diversion could be provided for each phase of street construction. During construction, any sidewalk diversions would be provided with the appropriate protection measures and all sidewalks and pedestrian paths would be restored as part of the street reconstruction. All construction activities and sidewalk closures would be subject to DOT approval under a street and sidewalk construction permit, and impacts associated with temporary sidewalk closures would be temporary and short-term in duration. Therefore, the proposed Green Infrastructure Program would not result in potential significant adverse impacts to pedestrians during construction.

11.6 NOISE AND VIBRATION

NOISE

Construction activities associated with the proposed Green Infrastructure Program may result in localized temporary noise increases. Impacts on community noise levels during construction typically result from two sources (1) construction equipment operation; and (2) construction vehicles and delivery vehicles traveling to and from the site. Noise levels at a given location typically depend on the number and types of construction equipment being operated, distance of the receptor from the construction site, and any shielding effects (attenuation due to structures or natural barriers). Noise levels caused by construction activities also vary widely and depend on the construction phase. Typically, the loudest noise associated with construction is produced by jackhammers and pile driving.

Construction noise is regulated by the New York City Noise Control Code (Local Law 113) and the Environmental Protection Agency noise emission standards for construction equipment. These federal and local requirements mandate that certain classifications of construction equipment and motor vehicles meet specified noise emissions standards. Except under exceptional circumstances, construction activities must be limited to weekdays between the hours of 7:00 AM and 6:00 PM.

In addition, in accordance with City regulations, a noise control plan would be developed and implemented to minimize intrusive noise into nearby areas and effects on sensitive receptors. The noise control plan may include such restrictions as locations of generators and avoiding unnecessary evening construction activities. A copy of the noise mitigation plan would be kept on-site for compliance review by the DEP and the New York City Department of Buildings (DOB).

Compliance with noise control measures would be ensured by including them in the contract documents as specifications and directives to the construction contractors for each green infrastructure project. In conclusion, impacts associated with construction noise would be temporary and short-term in duration with a number of controls in place to minimize construction noise impacts. Therefore, the proposed Green Infrastructure Program would not result in potential significant adverse noise impacts during construction.

VIBRATION

Vibrations generated by construction activities can be perceptible and in some cases potentially damaging to structures. No blasting or pile driving is necessary for the implementation of green infrastructure projects; however, or drilling may be conducted for some projects. Most Green Infrastructure projects are limited in size and surface area, and involve little or no foundation work requiring heavy construction. In general, vibratory levels at a receptor are a function of the source strength (which in turn is dependent upon the construction equipment and construction methods utilized), the distance between the equipment and the structural receptor, characteristics of the transmitting medium, and the receiver building construction. Construction activities can cause ground vibrations that are transmitted through the ground, but decrease in strength with distance. Truck and heavy equipment operation, even in locations close to major roads, typically does not result in perceptible vibration levels, unless there are irregular road surfaces. With the exception of the case of fragile, historically significant structures or buildings, typical construction activities do not attain the levels that result in architectural or structural damage, but they can achieve levels that are perceptible. During construction of green infrastructure projects, monitoring may be utilized to determine if vibration levels are potentially damaging to nearby structures.

Impacts associated with green infrastructure projects, including vibration, would be temporary and short-term in duration. Measures such as monitoring can be used to assist in avoiding project impacts due to vibration. Therefore, the proposed Green Infrastructure Program would not result in potential significant adverse impacts due to vibration during construction.

11.7 AIR QUALITY

Emissions generated during construction can include mobile source emissions from vehicles (e.g., trucks and automobiles) and particulate matter from dust. These emissions typically may result from trucks delivering or hauling construction and demolition materials and removing debris, worker vehicles, and construction equipment. While it would be expected that there would be a limited localized increase in mobile source emissions during construction, these emissions are not expected to significantly impact air local quality. Moreover, these impacts would be temporary. Construction activities would also be subject to New York City Local Law 77, which requires the use of Best Available Technology (BAT), such as diesel particulate filters or diesel oxidation catalysts, for construction equipment. The contractor would also be required to implement a dust control plan with fugitive dust control measures and specifications. For example, watering could be used for excavation and earthmoving activities to ensure that soils are dampened as necessary to avoid the suspension of dust into the air. Loose materials could be watered, stabilized with a biodegradable suppressing agent, or covered. In addition, the soil erosion and sediment control practices presented above would have the dual benefit of providing dust suppression.

Impacts associated with construction of the proposed Green Infrastructure Program, including air quality, would be temporary and short-term in duration. Therefore, the proposed Program would not result in potential significant adverse impacts to air quality during construction.

Proposed Activity Cont'd

- 4. If a federal or state permit or license was issued or is required for the proposed activity, identify the permit type(s), the authorizing agency and provide the application or permit number(s), if known:

- 5. Is federal or state funding being used to finance the project? If so, please identify the funding source(s).

- 6. Will the proposed project require the preparation of an environmental impact statement?
 Yes _____ No _____ If yes, identify Lead Agency:

- 7. Identify **city** discretionary actions, such as a zoning amendment or adoption of an urban renewal plan, required for the proposed project.

C. COASTAL ASSESSMENT

Location Questions:

Yes No

- 1. Is the project site on the waterfront or at the water's edge? _____
- 2. Does the proposed project require a waterfront site? _____
- 3. Would the action result in a physical alteration to a waterfront site, including land along the shoreline, land underwater, or coastal waters? _____

Policy Questions

Yes No

The following questions represent, in a broad sense, the policies of the WRP. Numbers in parentheses after each question indicate the policy or policies addressed by the question. The new Waterfront Revitalization Program offers detailed explanations of the policies, including criteria for consistency determinations.

Check either "Yes" or "No" for each of the following questions. For all "yes" responses, provide an attachment assessing the effects of the proposed activity on the relevant policies or standards. Explain how the action would be consistent with the goals of those policies and standards.

- 4. Will the proposed project result in revitalization or redevelopment of a deteriorated or under-used waterfront site? (1) _____
- 5. Is the project site appropriate for residential or commercial redevelopment? (1.1) _____
- 6. Will the action result in a change in scale or character of a neighborhood? (1.2) _____

Policy Questions cont'd

Yes No

7. Will the proposed activity require provision of new public services or infrastructure in undeveloped or sparsely populated sections of the coastal area? (1.3) _____
8. Is the action located in one of the designated Significant Maritime and Industrial Areas (SMIA): South Bronx, Newtown Creek, Brooklyn Navy Yard, Red Hook, Sunset Park, or Staten Island? (2) _____
9. Are there any waterfront structures, such as piers, docks, bulkheads or wharves, located on the project sites? (2) _____
10. Would the action involve the siting or construction of a facility essential to the generation or transmission of energy, or a natural gas facility, or would it develop new energy resources? (2.1) _____
11. Does the action involve the siting of a working waterfront use outside of a SMIA? (2.2) _____
12. Does the proposed project involve infrastructure improvement, such as construction or repair of piers, docks, or bulkheads? (2.3, 3.2) _____
13. Would the action involve mining, dredging, or dredge disposal, or placement of dredged or fill materials in coastal waters? (2.3, 3.1, 4, 5.3, 6.3) _____
14. Would the action be located in a commercial or recreational boating center, such as City Island, Sheepshead Bay or Great Kills or an area devoted to water-dependent transportation? (3) _____
15. Would the proposed project have an adverse effect upon the land or water uses within a commercial or recreation boating center or water-dependent transportation center? (3.1) _____
16. Would the proposed project create any conflicts between commercial and recreational boating? (3.2) _____
17. Does the proposed project involve any boating activity that would have an impact on the aquatic environment or surrounding land and water uses? (3.3) _____
18. Is the action located in one of the designated Special Natural Waterfront Areas (SNWA): Long Island Sound- East River, Jamaica Bay, or Northwest Staten Island? (4 and 9.2) _____
19. Is the project site in or adjacent to a Significant Coastal Fish and Wildlife Habitat? (4.1) _____
20. Is the site located within or adjacent to a Recognized Ecological Complex: South Shore of Staten Island or Riverdale Natural Area District? (4.1and 9.2) _____
21. Would the action involve any activity in or near a tidal or freshwater wetland? (4.2) _____
22. Does the project site contain a rare ecological community or would the proposed project affect a vulnerable plant, fish, or wildlife species? (4.3) _____
23. Would the action have any effects on commercial or recreational use of fish resources? (4.4) _____
24. Would the proposed project in any way affect the water quality classification of nearby waters or be unable to be consistent with that classification? (5) _____
25. Would the action result in any direct or indirect discharges, including toxins, hazardous substances, or other pollutants, effluent, or waste, into any waterbody? (5.1) _____
26. Would the action result in the draining of stormwater runoff or sewer overflows into coastal waters? (5.1) _____
27. Will any activity associated with the project generate nonpoint source pollution? (5.2) _____
28. Would the action cause violations of the National or State air quality standards? (5.2) _____

Policy Questions cont'd

Yes No

29. Would the action result in significant amounts of acid rain precursors (nitrates and sulfates)? (5.2C)

30. Will the project involve the excavation or placing of fill in or near navigable waters, marshes, estuaries, tidal marshes or other wetlands? (5.3)

31. Would the proposed action have any effects on surface or ground water supplies? (5.4)

32. Would the action result in any activities within a federally designated flood hazard area or state-designated erosion hazards area? (6)

33. Would the action result in any construction activities that would lead to erosion? (6)

34. Would the action involve construction or reconstruction of a flood or erosion control structure? (6.1)

35. Would the action involve any new or increased activity on or near any beach, dune, barrier island, or bluff? (6.1)

36. Does the proposed project involve use of public funds for flood prevention or erosion control? (6.2)

37. Would the proposed project affect a non-renewable source of sand ? (6.3)

38. Would the action result in shipping, handling, or storing of solid wastes, hazardous materials, or other pollutants? (7)

39. Would the action affect any sites that have been used as landfills? (7.1)

40. Would the action result in development of a site that may contain contamination or that has a history of underground fuel tanks, oil spills, or other form or petroleum product use or storage? (7.2)

41. Will the proposed activity result in any transport, storage, treatment, or disposal of solid wastes or hazardous materials, or the siting of a solid or hazardous waste facility? (7.3)

42. Would the action result in a reduction of existing or required access to or along coastal waters, public access areas, or public parks or open spaces? (8)

43. Will the proposed project affect or be located in, on, or adjacent to any federal, state, or city park or other land in public ownership protected for open space preservation? (8)

44. Would the action result in the provision of open space without provision for its maintenance? (8.1)

45. Would the action result in any development along the shoreline but NOT include new water-enhanced or water-dependent recreational space? (8.2)

46. Will the proposed project impede visual access to coastal lands, waters and open space? (8.3)

47. Does the proposed project involve publicly owned or acquired land that could accommodate waterfront open space or recreation? (8.4)

48. Does the project site involve lands or waters held in public trust by the state or city? (8.5)

49. Would the action affect natural or built resources that contribute to the scenic quality of a coastal area? (9)

50. Does the site currently include elements that degrade the area's scenic quality or block views to the water? (9.1)

Policy Questions cont'd

Yes No

51. Would the proposed action have a significant adverse impact on historic, archeological, or cultural resources? (10)

_____ ✓

52. Will the proposed activity affect or be located in, on, or adjacent to an historic resource listed on the National or State Register of Historic Places, or designated as a landmark by the City of New York? (10)

✓ _____

D. CERTIFICATION

The applicant or agent must certify that the proposed activity is consistent with New York City's Waterfront Revitalization Program, pursuant to the New York State Coastal Management Program. If this certification cannot be made, the proposed activity shall not be undertaken. If the certification can be made, complete this section.

"The proposed activity complies with New York State's Coastal Management Program as expressed in New York City's approved Local Waterfront Revitalization Program, pursuant to New York State's Coastal Management Program, and will be conducted in a manner consistent with such program."

Applicant/Agent Name: Angela Licata, Deputy Commissioner

Address: 59-17 Junction Boulevard

Flushing, NY 11373

Telephone 718-595-4398

Applicant/Agent Signature:  Date: 3/8/12

NEW YORK CITY WATERFRONT REVITALIZATION PROGRAM POLICY CONSISTENCY ASSESSMENT

The New York City Department of Environmental Protection is undertaking the Green Infrastructure Program to adaptively manage stormwater in combined sewer areas of the City as outlined in the *New York City Green Infrastructure Plan* published in September 2010.

The review of the Program is not site-specific, but looks at the types of potential impacts resulting from installation and operation of the available technologies throughout the City. Therefore, as a citywide project, the Program includes areas within the boundaries of New York City's Coastal Zone and therefore was assessed for its consistency with the City's Local Waterfront Revitalization Program (LWRP). The LWRP establishes the City's Coastal Zone and includes a set of 10 policy statements that addresses the waterfront's resources. The Consistency Assessment Form is attached.

Policy 1: Support and facilitate commercial and residential redevelopment in areas well-suited to such development.

Policy 1.1: Encourage commercial and residential redevelopment in appropriate coastal zone areas.

The Program does not involve residential or commercial redevelopment. The Program would be consistent with or supportive of development to the underlying zoning of an area by providing green source controls to manage stormwater in available areas and thereby improve water quality in nearby coastal zone areas.

Policy 1.2: Encourage non-industrial development that enlivens the waterfront and attracts the public.

The Program does not involve or encourage development but would be consistent with this policy by improving water quality conditions and providing green features in priority areas.

Policy 1.3: Encourage redevelopment in the coastal area where public facilities and infrastructure are adequate or will be developed.

The Program does not involve or encourage redevelopment; however it would be consistent with this policy by improving and strengthening stormwater infrastructure service.

Policy 2: Support water-dependent and industrial uses in New York City coastal areas that are well-suited to their continued operation.

Policy 2.1: Promote water-dependent and industrial uses in Significant Maritime and Industrial Areas.

The Program would facilitate installation of green infrastructure technologies in combined sewer areas of the City, including in some Significant Maritime and Industrial Areas; however it would not change or adversely affect the uses in industrial or other areas.

Policy 2.2: Encourage working waterfront uses at appropriate sites outside the Significant Maritime and Industrial Areas.

The Program would not affect or change the use of sites, along the waterfront or otherwise. However, by improving water quality, it would support working waterfront uses both in and outside of Significant Maritime and Industrial Areas.

Policy 2.3: Provide infrastructure improvements necessary to support working waterfront uses.

The Program is not designed to provide infrastructure services for specific users (such as port or rail facilities); however the installation of green infrastructure would improve water quality and would be consistent with the policy of supporting working waterfront uses and increasing the capacity of the existing combined sewer infrastructure.

Policy 3: Promote use of New York City's waterways for commercial and recreational boating and water-dependent transportation centers.

Policy 3.1: Support and encourage recreational and commercial boating in New York City's maritime centers.

The Program does not affect recreational and commercial boating opportunities but would improve water quality and further the City's goals of making water suitable for recreational contact and would therefore be consistent with this policy.

Policy 3.2: Minimize conflicts between recreational, commercial, and ocean-going freight vessels.

This policy is not applicable.

Policy 3.3: Minimize impact of commercial and recreational boating activities on the aquatic environment and surrounding land and water uses.

The Program would not affect or change the impact of boating activities on the environment; however by improving water quality through reduction of non-point pollution, the Program should work together with ongoing efforts to reduce boating impacts and would therefore be consistent with this policy.

Policy 4: Protect and restore the quality and function of ecological systems within the New York City coastal area.

Policy 4.1: Protect and restore the ecological quality and component habitats and resources within the Special Natural Waterfront Areas, Recognized Ecological Complexes, and Significant Coastal Fish and Wildlife Habitats.

The Program would be implemented throughout combined sewer areas of the City, including in some Special Natural Waterfront Areas, Recognized Ecological Complexes, and Significant Coastal Fish and Wildlife Habitats and the drainage areas that affect the receiving waters in these areas. Installation of green infrastructure systems would be done in a manner protective of the site's ecology by working with the existing topography and vegetation as well as implementing all necessary soil erosion and sediment control practices. Once installed, the green infrastructure systems would manage non-point pollution and improve water quality conditions and would therefore be consistent with the policy of protecting the ecological quality and habitat resources within these areas.

Policy 4.2: Protect and restore tidal and freshwater wetlands.

Because the Program is designed to manage stormwater runoff from impervious surfaces, it is not likely that green infrastructure would be installed in or near tidal or freshwater wetlands (they would be designed at opportunity areas at the entry point to combined sewer systems). However, any green infrastructure work that falls within a regulated wetland or wetland adjacent area would be coordinated with the appropriate State and Federal permitting agencies to ensure that wetlands are protected and restored. Therefore the Program would be consistent with this policy.

Policy 4.3: Protect vulnerable plant, fish, and wildlife species, and rare ecological communities. Design and develop land and water uses to maximize their integration or compatibility with the identified ecological community.

The nature of the Program makes it unlikely that green infrastructure would be installed in areas that support rare wildlife or ecological communities. However, any work in a regulated or protected area would be subject to approval by the appropriate agencies and would involve any necessary coordination on protected and rare species. The program is expected to result in more green areas to support habitat and improved water quality and therefore would be consistent with this policy.

Policy 4.4: Maintain and protect living aquatic resources.

The Program would involve landside management devices to manage stormwater, and would not result in work in water or disruption to aquatic resources. Further, as the Program is designed to improve water quality, it would be consistent with this policy.

Policy 5: Protect and improve water quality in the New York City coastal area.

Policy 5.1: Manage direct or indirect discharges to waterbodies.

The Program includes the installation of green infrastructure throughout combined sewer areas of the City to manage stormwater runoff (non-point sources) before it enters the combined sewer system and, during rain events, overflows to waterbodies. By 2015, the City is aiming to manage stormwater from 1.5% of the impervious areas in combined sewer drainage areas. Therefore the Program is consistent with this policy.

Policy 5.2: Protect the quality of New York City's waters by managing activities that generate non-point source pollution.

Although the Program would not directly manage activities that generate non-point source pollution, it invests in the widespread installation of green infrastructure throughout combined sewer areas of the City to manage stormwater runoff before it enters the combined sewer system and contributes to water pollution. Therefore the Program is consistent with this policy.

Policy 5.3: Protect water quality when excavating or placing fill in navigable waters and in or near marshes, estuaries, tidal marshes or wetlands.

Because the Program is designed to manage stormwater runoff before it enters the sewer system, it is not likely that installations would be construction in or near marshes, estuaries, tidal marshes or wetlands (they would be installed up the sewer system from any discharge or overflow point). However, any work that is within a regulated area, including marshes, estuaries, tidal marshes or wetland and their adjacent area, would be subject to approval by state or federal agencies and would include measures to protect water quality. All

installations would include sediment and erosion control during construction. Therefore the Program is consistent with this policy.

Policy 5.4: Protect the quality and quantity of groundwater, streams, and the sources of water for wetlands.

The Green Infrastructure Program would manage stormwater through various devices including detention, reuse, and infiltration. Infiltration would allow stormwater to filter through media (gravel or sand) and reach the groundwater. Site surveys and, as necessary, environmental testing would be conducted to ensure that the Program does not result in the spread of contamination through infiltration in areas with hazardous materials. The Program would manage stormwater in a more natural setting rather than draining flow through pipes to overflow points or the treatment plant. Therefore the Program is consistent with this policy.

Policy 6: Minimize the loss of life, structures, and natural resources caused by flooding and erosion.

Policy 6.1: Minimize losses from flooding and erosion by employing non-structural and structural management measures appropriate to the condition and use of the property to be protected and the surrounding area.

The Program would help manage stormwater runoff and would decrease the volume of flow into the sewer system or to sheet flow runoff. All installations would be considered for appropriate conditions based on the property or right-of-way conditions.

Policy 6.2: Direct public funding for flood prevention or erosion control measures in those locations where the investment will yield significant public benefit.

The Program would not construct flood prevention or erosion control measures, but would be designed to manage stormwater runoff and should therefore decrease contribution to flooding from storms.

Policy 6.3: Protect and preserve non-renewable sources of sand for beach nourishment.

This policy does not apply.

Policy 7: Minimize environmental degradation from solid waste and hazardous substances.

Policy 7.1: Manage solid waste material, hazardous wastes, toxic pollutants, and substances hazardous to the environment to protect public health, control pollution, and prevent degradation of coastal ecosystems.

The Program would not result in the handling or storage of solid waste and hazardous substances. Site surveys and, if necessary, environmental borings would be undertaken to ensure that proposed installations in areas with potential contamination would incorporate measures to protect human health and the environment. Therefore the Program would be consistent with this policy.

Policy 7.2: Prevent and remediate discharge of petroleum products.

The Program does not involve the use, handling or storage of petroleum products. Any contamination identified during construction would be managed and remediated in

accordance with all applicable regulations and standards and in compliance with a Health and Safety Plan. Therefore the Program would be consistent with this policy.

Policy 7.3: Transport solid waste and hazardous substances and site solid and hazardous waste facilities in a manner that minimizes potential degradation of coastal resources.

The Program does not involve the use, handling or storage of petroleum products. Any contamination identified during construction would be managed and remediated in accordance with all applicable regulations and standards and in compliance with a Health and Safety Plan. Therefore the Program would be consistent with this policy.

Policy 8: Provide public access to and along New York City's coastal waters.

Policy 8.1: Preserve, protect, and maintain existing physical, visual, and recreational access to the waterfront.

The Program would not affect or alter public access to and along New York City's coastal waters.

Policy 8.2: Incorporate public access into new public and private development where compatible with proposed land use and coastal location.

The Program would not result in or affect development or limit access.

Policy 8.3: Provide visual access to coastal lands, waters, and open space where physically practical.

The Program would not change or limit visual access to coastal lands, waters, and open space. Installations would mostly be below-grade or at street level; retrofits on structures would have minimal expression above or beyond the existing structure and would not affect visual resources or view corridors.

Policy 8.4: Preserve and develop waterfront open space and recreation on publicly owned land at suitable locations.

The Program would include projects in parks and open space; however by its' nature (managing stormwater before it enters the sewer) most projects would not be at a waterfront location. Where installations would be done in parks or lands used for recreation, agency coordination would be undertaken to ensure that disruptions to access would be minimal or temporary.

Policy 8.5: Preserve the public interest in and use of lands and waters held in public trust by the State and City.

The Program would include work in parks and other public lands as well as in street rights-of-way. Projects would be designed to minimize disruption during construction and to maintain usability of the site once the project is complete.

Policy 9: Protect scenic resources that contribute to the visual quality of the New York City coastal area.

Policy 9.1: Protect and improve visual quality associated with New York City's urban context and the historic and working waterfront.

The Program would not change or limit visual access to the urban context or the historic and working waterfront. Installations would mostly be below-grade or at street level; retrofits on structures would have minimal expression above or beyond the existing structure and would not affect visual resources or view corridors.

Policy 9.2: Protect scenic values associated with natural resources.

The Program would not affect scenic values or limit visual resources of natural areas. Installations would mostly be below-grade or at street level; retrofits on structures would have minimal expression above or beyond the existing structure and would not affect visual resources or view corridors.

Policy 10: Protect, preserve, and enhance resources significant to the historical, archaeological, and cultural legacy of the New York City coastal area.

Policy 10.1 Retain and preserve designated historic resources and enhance resources significant to the coastal culture of New York City.

Work undertaken as part of the program would be coordinated with the Landmarks Preservation Commission when in a historic district or designated landmark. Most green infrastructure projects would be below grade or in street rights-of way; however retrofit projects on buildings, if landmarked, would be coordinated for approval to ensure the historic resource is preserved and protected.

Policy 10.2: Protect and preserve archaeological resources and artifacts.

Surveys and, if necessary, documentary studies and investigations would be undertaken for on-site projects in order to identify, protect and preserve archaeological resources and artifacts.