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 **Capital Project SEQ200508-Bay 32nd Street and Beach 32nd Street Infrastructure Improvements**

1. *Reference Numbers*

CEQR REFERENCE NUMBER (To Be Assigned by Lead Agency)	BSA REFERENCE NUMBER (If Applicable)
10DEP022Q	N.A.
ULURP REFERENCE NUMBER (If Applicable)	**OTHER REFERENCE NUMBER(S) (If Applicable) (e.g., Legislative Intro, CAPA, etc.)**
N.A.	N.A.

2a. *Lead Agency Information*

NAME OF LEAD AGENCY: NYC Department of Environmental Protection

NAME OF LEAD AGENCY CONTACT PERSON: Angela Licata, Deputy Commissioner

ADDRESS: 59-17 Junction Boulevard

CITY: Flushing | STATE: NY | ZIP: 11368

TELEPHONE: (718) 595-4398 | FAX: (718) 595-4479

EMAIL ADDRESS: alicata@dep.nyc.gov

2b. *Applicant Information*

NAME OF APPLICANT: NYC Department of Design and Construction

NAME OF APPLICANT'S REPRESENTATIVE OR CONTACT PERSON: N. Venugopalan, Assistant Commissioner

ADDRESS: 30-30 Thomson Avenue

CITY: Long Island City | STATE: NY | ZIP: 11101

TELEPHONE: (718) 391-2283 | FAX: (718) 391-2277

EMAIL ADDRESS: venugopa@ddc.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):*

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 capital project involves the replacement of an existing outfall with a new storm sewer outfall to into Norton Basin, within the Jamaica Bay Watershed, at the western terminus of Dwight Avenue in the Far Rockaway area of Queens. The proposed action also involves the installation of new stormwater collection sewers, relocation of water mains, and upgrade of sanitary sewer lines along with the reconstruction of affected streets. The location of the proposed outfall and affected streets and project area are shown in Figure C-1 (see also Attachment A, "Project Description").

4a. *Project Location: Single Site* *(for a project at a single site, complete all the information below)* **See Attachment A, "Project Description," and C, "EAS Graphics," for a description of the project area, maps, and zoning.**

ADDRESS	NEIGHBORHOOD NAME	
See Figure C-1	Far Rockaway	
TAX BLOCK AND LOT	**BOROUGH**	**COMMUNITY DISTRICT**
See Figure C-2	Queens	14

DESCRIPTION OF PROPERTY BY BOUNDING OR CROSS STREETS

EXISTING ZONING DISTRICT, INCLUDING SPECIAL ZONING DISTRICT DESIGNATION, IF ANY: R1-2, R2, R4-1, R4A, R6, R6A, C4-4 | ZONING SECTIONAL MAP NO: 31a

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 project area is approximately 34 acres in size. (area served by the proposed sewers)

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

City Planning Commission: YES ☐ NO ■

- ☐ CITY MAP AMENDMENT
- ☐ ZONING MAP AMENDMENT
- ☐ ZONING TEXT AMENDMENT
- ☐ UNIFORM LAND USE REVIEW PROCEDURE (ULURP)
- ☐ CONCESSION
- ☐ UDAAP
- ☐ REVOCABLE CONSENT
- ☐ ZONING CERTIFICATION
- ☐ ZONING AUTHORIZATION
- ☐ HOUSING PLAN & PROJECT
- ☐ SITE SELECTION—PUBLIC FACILITY
- ☐ FRANCHISE
- ☐ DISPOSITION—REAL PROPERTY

Board of Standards and Appeals: YES ☐ NO ■

- ☐ SPECIAL PERMIT

EXPIRATION DATE MONTH DAY YEAR

- ☐ VARIANCE (USE)
- ☐ VARIANCE (BULK)

SPECIFY AFFECTED SECTION(S) OF THE ZONING RESOLUTION

ZONING SPECIAL PERMIT, SPECIFY TYPE

- ☐ MODIFICATION OF
- ☐ RENEWAL OF
- ☐ OTHER

Department of Environmental Protection: YES ☐ NO ■

Other City Approvals: YES ■ NO ☐

- ☐ LEGISLATION
- ■ FUNDING OF CONSTRUCTION; SPECIFY **Capital Project**
- ☐ POLICY OR PLAN; SPECIFY
- ☐ LANDMARKS PRESERVATION COMMISSION APPROVAL (not subject to CEQR)
- ☐ 384(B)(4) APPROVAL
- ■ PERMITS FROM DOT'S OFFICE OF CONSTRUCTION MITIGATION AND COORDINATION (OCMD) *(not subject to CEQR)*
- ☐ RULEMAKING
- ☐ CONSTRUCTION OF PUBLIC FACILITIES
- ☐ FUNDING OR PROGRAMS; SPECIFY
- ☐ PERMITS; SPECIFY
- ■ OTHER; EXPLAIN **See Attachment A, "Project Description."**

6. ***State or Federal Actions/Approvals/Funding:*** YES ■ NO ☐ IF "YES," IDENTIFY

State Approvals: NYSDEC 401 Water Quality Certification; NYSDEC Tidal Wetlands Permit; NYSDEC SPDES MS4 Permit (Modification); NYSDEC SPDES General Permit for Stormwater Discharges from Construction Activity; Long Island Well Permit.
Federal Approvals: ACOE Section 10, Construction in Navigable Waters; ACOE Section 404, Dredging and Filling of Navigable Waters.
See also Attachment A, "Project Description," under "Permits and Approvals."

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 Attachment C, "EAS Graphics," for all graphics.

■ Site location map ■ Zoning map ■ Photographs of the project site taken within 6 months of EAS submission and keyed to the site location map
■ Sanborn or other land use map ■ Tax map ■ 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.):
±175,250[1]	Norton Basin ±3,210	±135,250

Other, describe (sq. ft.): **40,000 sq. ft. of vacant City-owned land within the mapped but unbuilt segment of Dwight Avenue**

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: **The proposed project, including sewer installation and street reconstruction, is largely at or below grade, with the exception of the headwall position of the proposed outfall and the proposed wetland restoration.** (gross sq. ft.)

Does the proposed project involve changes in zoning on one or more sites? YES ☐ NO ■
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 ■ NO ☐
If 'Yes,' indicate the estimated area and volume dimensions of subsurface disturbance (if known):
Area: **±175,250** sq. ft. (width x length) Volume: **±7,000 cubic yards** cubic feet (width x length x depth)

Does the proposed project increase the population of residents and/or on-site workers? YES ☐ NO ■ Number of additional residents? Number of additional workers?
Provide a brief explanation of how these numbers were determined:

Does the project create new open space? YES ☐ NO ■ 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):	ANTICIPATED PERIOD OF CONSTRUCTION IN MONTHS:
2012	12 months

WOULD THE PROJECT BE IMPLEMENTED IN A SINGLE PHASE? YES ■ NO ☐ IF MULTIPLE PHASES, HOW MANY PHASES: **N.A.**

BRIEFLY DESCRIBE PHASES AND CONSTRUCTION SCHEDULE: **See Attachment B, "Impact Analyses," under "Construction."**

10. ***What is the Predominant Land Use in Vicinity of Project?*** *(Check all that apply)*

■ RESIDENTIAL ☐ MANUFACTURING ■ COMMERCIAL ■ PARK/FOREST/OPEN SPACE ☐ OTHER, Describe:

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[1] Includes approximately 3,505 linear feet of City streets (at 50-60 feet wide) including 1,000 along Dwight Avenue the majority of which is mapped but not built.

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 ☐ No ■	Yes ☐ No ■	Yes ☐ No ■	N.A.
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 ☐ No ■	Yes ☐ No ■	Yes ☐ No ■	N.A.
If yes, specify the following:				
Describe type (retail, office, other)				
No. of bldgs				
GFA of each bldg (sq. ft.)				
Manufacturing/Industrial	Yes ☐ No ■	Yes ☐ No ■	Yes ☐ No ■	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 ☐ No ■	Yes ☐ No ■	Yes ☐ No ■	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 ■ No ☐	Yes ■ No ☐	Yes ■ No ☐	N.A.
If yes, describe	**Mapped but unbuilt City street (Dwight Avenue) (±40,000 sq. ft.)**			
Publicly Accessible Open Space	Yes ☐ No ■	Yes ☐ No ■	Yes ☐ No ■	N.A
If yes, specify type (mapped City, State, or Federal Parkland, wetland—mapped or otherwise known, other)[1]				
Other Land Use	Yes ■ No ☐	Yes ■ No ☐	Yes ■ No ☐	N.A.
If yes, describe	**City streets (±135,250 sq. ft.)**			

[1] The site of the proposed outfall, Dwight Avenue, is a mapped City street situated between City and State parkland. Much of the street is unbuilt and is publically accessible, although as a mapped street it is not open space. The proposed project would install a below grade outfall, but would not alter the public access along the mapped right of way with the exception of the location of the small area that would be occupied by the proposed outfall and headwall.

Parking	EXISTING CONDITION	NO-ACTION CONDITION	WITH-ACTION CONDITION	INCREMENT
Garages	Yes ☐ No ■	Yes ☐ No ■	Yes ☐ No ■	N.A
If yes, specify the following:				
No. of public spaces				
No. of accessory spaces				
Operating hours				
Attended or non-attended				
Lots	Yes ☐ No ■	Yes ☐ No ■	Yes ☐ No ■	N.A.
If yes, specify the following:				
No. of public spaces				
No. of accessory spaces				
Operating hours				
Other (includes street parking)	Yes ☐ No ■	Yes ☐ No ■	Yes ☐ No ■	N.A.
If yes, describe				
Storage Tanks				
Storage Tanks	Yes ☐ No ■	Yes ☐ No ■	Yes ☐ No ■	N.A.
If yes, specify the following:				
Gas/Service stations:	Yes ☐ No ☐	Yes ☐ No ☐	Yes ☐ No ☐	
Oil storage facility:	Yes ☐ No ☐	Yes ☐ No ☐	Yes ☐ No ☐	
Other; identify:	Yes ☐ No ☐	Yes ☐ No ☐	Yes ☐ No ☐	
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 ☐ No ■	Yes ☐ No ■	Yes ☐ No ■	N.A.
If any, specify number				
Briefly explain how the number of residents was calculated				
Businesses	Yes ☐ No ■	Yes ☐ No ■	Yes ☐ No ■	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* **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.*				
Zoning classification[1]	R1-2, R2, R4-1, R4A, R6, R6A, C4-4	R1-2, R2, R4-1, R4A, R6, R6A, C4-4	R1-2, R2, R4-1, R4A, R6, R6A, C4-4	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	R1-2, R2, R4-1, R4A, R6, R6A, C4-4	R1-2, R2, R4-1, R4A, R6, R6A, C4-4	R1-2, R2, R4-1, R4A, R6, R6A, C4-4	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.				

[1] The area of the proposed action is within City streets. The zoning classifications apply to the study area.

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
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.	✓	
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.		
(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?		✓
	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?		✓
(2)	***Indirect Residential Displacement***		
	Would the expected average incomes of the new population exceed the average incomes of the study area populations?		✓
	If 'Yes,' would the population increase represent more than 5% of the primary study area population or otherwise potentially affect real estate market conditions?		✓
	If 'Yes,' would the study area have a significant number of unprotected rental units?		✓
	Would more than 10 percent of all the housing units be renter-occupied and unprotected?		✓
	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?		✓

		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?		✓
	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?		✓
	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?		✓
(4)	***Indirect Business Displacement***		
	Would the project potentially introduce trends that make it difficult for businesses to remain in the area?		✓
	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?		✓
(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?		✓
	Would the project indirectly substantially reduce employment or impair the economic viability in the industry or category of businesses?		✓
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.		
(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?		
	If 'Yes,' would the project increase the collective utilization rate by 5 percent from the No-Action scenario?		
(2)	***Libraries***		
	Would the project increase the study area population by 5 percent from the No-Action levels?		
	If 'Yes,' would the additional population impair the delivery of library services in the study area?		
)	***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?		
	If 'Yes,' would the project increase this collective utilization rate by 5 percent from the No-Action scenario?		
(4)	***Health Care Facilities***		
	Would the project affect the operation of health care facilities in the area?		
(5)	***Fire and Police Protection***		
	Would the project affect the operation of fire or police protection in the area?		
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?		✓

		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.		
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.		
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 Attachment B, "Impact Analyses," under "Natural Resources."***	✓	
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 or 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: ***Fill of unknown origin***	✓	
(i)	Based on a Phase I Assessment, is a Phase II Assessment needed? **Yes. A Phase 2 Limited Corridor Investigation has been prepared and is summarized in Attachment B, "Impact Analyses," under "Hazardous Materials."**	✓	
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?		✓
		YES	**NO**
(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 Attachment B, "Impact Analyses."***		
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:		
	(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.		
	(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?		
	(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?		
14. *AIR QUALITY:* *CEQR Technical Manual, Chapter 17*			
(a)	*Mobile Sources:* Would the proposed project result in the conditions outlined in Section 210 in Chapter 17?		✓
	Stationary Sources: Would the proposed project result in the conditions outlined in Section 220 in Chapter 17? 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.		
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?		
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.		

	YES	NO
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?		✓
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.		
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.	✓	

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.

Attachment B, "Impact Analyses," provides a full examination of potential impacts from construction, under the section "Construction Impacts."

20. *APPLICANT'S CERTIFICATION*

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.

Still under oath, I further swear or affirm that I make this statement in my capacity as the

New York City Department of Design and Construction (APPLICANT/SPONSOR) of New York City Department of Environmental Protection (NAME OF THE ENTITY OR OWNER)

the entity which seeks the permits, approvals, funding or other governmental action described in this EAS.

Check if prepared by: ☐ APPLICANT/REPRESENTATIVE or ☐ LEAD AGENCY REPRESENTATIVE (FOR CITY-SPONSORED PROJECTS)

N. Venugopalan, Assistant Commissioner	Angela Licata, Deputy Commissioner
APPLICANT/SPONSOR NAME:	LEAD AGENCY REPRESENTATIVE NAME:
N. Venug	6.21.11
SIGNATURE:	DATE:

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.

A. DESCRIPTION OF PROPOSED ACTION

OVERVIEW

The New York City Department of Design and Construction (DDC), on behalf of the New York City Department of Environmental Protection (DEP), is proposing Capital Project No. SEQ200508, Bay 32nd and Beach 32nd Street Infrastructure Improvements. The project area is located in Queens Community Board 14 within the Bayswater and Edgemere sections of Far Rockaway, Queens with in the Jamaica Bay watershed. The project area is largely a residential community with waterfront open space along Norton Basin, including a City Park (Michaelis-Bayswater Park) and a State Park, the Norton Basin Natural Resource Area.

The proposed action involves the replacement of an existing outfall in disrepair with a new stormwater outfall, the installation of new stormwater collection sewers, the relocation of water mains, and the relocation and upgrade of sanitary sewer lines along with the reconstruction of affected streets. Streets affected by the proposed action include B ay 32nd Street (between Dwight and Healy Avenues), Bessemund Avenue (between Bay 32nd Street and Bay 30th Street), Rockaway Freeway (between Beach 32nd Street and Sea Girt Boulevard) and Bay 32nd Street (between Far Rockaway Boulevard and Rockaway Freeway). The corridor within which the proposed storm sewer outfall would be constructed is located along Dwight Avenue, a City-owned 60-foot-wide mapped street that extends approximately 1,000 feet west of Bay 32nd Street to the Norton Basin bulkhead line and consists of mowed grass, maritime forest/shrub, dune, and intertidal habitats at the shoreline. Of the total length, approximately 130 linear feet of the street is built and the balance, about 870 linear feet, is not built (see Figure C-3). Specifically, the proposed action includes the following:

- Replacement of an existing storm sewer outfall with a new storm sewer outfall into Norton Basin extending west from Bay 32nd along Dwight Avenue to the bulkhead line (see Figure C-1). The proposed sewer outfall would be 42 inches in diameter to replace the existing 24 inch storm sewer. The proposed sewer would be a reinforced concrete pipe encased in concrete and supported by 20-ton timber piles. An apron of 500-pound stone boulders will extend approximately 160 linear feet from the end of the outfall into the adjacent areas or tidal wetlands of Norton Basin. The headwall and apron would be constructed within this area.
- Installation of new stormwater collection sewers over an approximately 34-acre project area (the "drainage area"). The storm collection sewers would be located along segments of Rockaway Freeway, Bay 32nd Street, and Bessemund Avenue.
- Upgrade of the existing 8-inch sanitary sewers to 10-inch sanitary sewers in some locations to comply with NYCDEP's sanitary sewer design criteria.

- Relocation and replacement of water mains in certain street segments within the bed of the existing built streets.
- All streets and sidewalks affected by the sewer installation work would be reconstructed.
- Restoration of the area affected by the proposed outfall construction would occur on site within the corridor easement. Additional wetland restoration for permanent wetland impacts associated with this project and five other proposed outfall projects within the Jamaica Bay Watershed are included in the Beach 88th/94th Street Restoration Plan located at Beach 88th and Beach Channel Drive.

PROPOSED WETLAND RESTORATION PLAN

PROPOSED ON-SITE RESTORATION PLAN

Design of the proposed Bay 32nd Street outfall has been developed with the objective of limiting disturbance to tidal wetlands, to the extent feasible, while providing the necessary restoration for areas disturbed during construction. All areas disturbed by construction would be restored with in-kind restoration of habitat(s) and restoration of pre-construction grades within the mapped street of Dwight Avenue.

PROPOSED BEACH 88TH/94TH RESTORATION PLAN

Permanent wetlands impacts from the proposed outfall structure would be addressed as part of a proposed restoration plan at the Beach 88th/94th Street outfall project site which is also located on Jamaica Bay immediately to the west of this project site.

The Beach 88th/94th Restoration Plan would provide compensatory restoration for the permanent tidal wetland impacts for this project and five other outfall projects within the Jamaica Bay watershed. The Beach 88th/94th Street Restoration Plan will be constructed on Block 16109 and Lots 70 and 185, which is City park property (see Figure C-4). Prior to the City acquiring Lot 70, the former private property owner was required by Consent Order to remove illegal fill placed within the waters of Jamaica Bay on the lot to an elevation of 7 feet above sea level. This work has been completed, and the regrading provides a less steep slope for enhanced restoration and public access opportunities.

DDC and DEP are proposing a restoration plan for Lots 70 and 185 of Block 16109 that would include debris removal and additional regrading along the shoreline, construction of a pedestrian accessway over the new outfall structure, drill-seeding of maritime grasses, some upland planting to secure the site, and the removal of a crumbling concrete retaining wall to re-establish tidal flow and permit the establishment of wetland vegetation. Seeding is proposed to be done immediately after the prepared soil is placed at the site in order to minimize competition with unwanted and invasive species.

It is anticipated that this off-site restoration plan would compensate for the permanent tidal wetland impacts for the following proposed outfall projects: Capital Project SEQ200533 Beach 42nd Street (FY 2009), Capital Project QED983 Beach 88th Street (FY 2010), Capital Project SE-795 Chandler Street (FY 2011), Capital Project SEQ200508 Bay 32nd Street (FY 2011), Almeda Avenue Outfall (FY 2013), and Shellbank and 95th Street Outfall (FY 2012) all of which are in the Jamaica Bay watershed. The Beach 88th/94th Street Restoration Plan was developed to address the cumulative permanent impacts identified during the design and environmental review for each proposed outfall project. As stated above, the "temporary" (or

construction period) wetland impacts shown in Table A-1 will be addressed as part of the Bay 32nd Street on-site, in-kind wetland restoration.

Table A-1
Wetland Area of Impact for the Jamaica Bay Outfall Projects

Wetland Type	Impact Type	SEQ-200533 Beach 42nd Street Outfall (FY 2009)	QED-983 Beach 88th Street Outfall (FY 2010)	SE-795 Chandler Street Outfall (FY 2011)	SEQ-200508 Bay 32nd Street Outfall (FY 2011)	Other Proposed Outfall Projects (FY 2012 and 2013)
Littoral Zone	Permanent	0	0	0	275	260
	Temporary	0	0	0	160	320
Intertidal Vegetated	Permanent	105	0	1,775	1,275	0
	Temporary	400	0	4,785	1,120	0
Intertidal Unvegetated	Permanent	115	2,085	0	0	0
	Temporary	215	1,885	0	0	0
High Marsh	Permanent	140	0	230	60	0
	Temporary	475	0	4,340	230	0
Open Water	Permanent	0	0	0	0	0
	Temporary	0	0	0	0	0
Adjacent Area	Permanent/ Temporary	22,770	6,785	1,920	5,570	0

Source: Hazen and Sawyer, April 2011.

The Beach 88th/94th Street Restoration Plan is to be funded through the capital budget for the proposed Chandler Street Outfall Project (Capital Project SE-795). Construction of the Restoration Plan would commence after the new sewer outfall at Beach 88th Street is complete. DDC and DEP believe that the Beach 88th/94th Street Restoration Plan would serve multiple objectives, including wetland and upland restoration opportunities, with additional public access to Jamaica Bay. These objectives are consistent with the DEP Jamaica Bay Watershed Protection Plan and many other Jamaica Bay environmental objectives. The proposed restoration plan has been reviewed by New York State Department of Environmental Conservation (NYSDEC) and is the preferred plan for the restoration of the six outfall projects.

B. PURPOSE AND NEED FOR THE PROPOSED ACTION

The proposed outfall segment of the proposed action would provide the needed drainage outlet for the collected stormwater. It is necessary to construct the outfall in order to properly convey stormwater collected from the local streets out to Norton Basin/Jamaica Bay, and thereby relieve street flooding. There is an exiting 24-inch outfall along the corridor; however it is undersized and needs to be replaced. In addition, the proposed outfall would be above the mean low water line, which would improve stormwater drainage and reduce street flooding in the drainage area. The site of the proposed outfall has several advantages. First, it is within an existing City property and a mapped City street right of way (Dwight Avenue), such that no land acquisition is required. Secondly, there is an existing storm sewer along the corridor that is undersized and in disrepair. In addition, the area is partially disturbed by an existing built segment of Dwight Avenue. The site also has direct construction and maintenance access from Bay 32nd Street and the built segment of Dwight Avenue.

C. CONSTRUCTION SCHEDULE

Construction of the proposed action is expected to begin in fall 2011 and is expected be completed in fall 2012. Thus, the duration of construction is expected to be approximately 12 months, including on-site restoration of the project area. Construction of the proposed Beach

88th Street Restoration Plan would take approximately 60-90 days and may be completed in two phases. The Restoration Plan would be initiated once the outfall portion of that project is completed. The Beach 88th/94th Street Outfall Project is scheduled to begin in summer of 2011. A more detailed description of the proposed action's construction program is provided in Attachment B, "Impact Analyses."

D. ENVIRONMENTAL REVIEW, PERMITS AND APPROVALS

ENVIRONMENTAL REVIEW

This Environmental Assessment Statement (EAS) has been prepared in accordance with the requirements of 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 2001 *City Environmental Quality Review (CEQR) Technical Manual*, which were used to assess the potential for environmental impacts resulting from the proposed action.

PERMITS AND APPROVALS

This EAS has been prepared in support of the following applications and approvals that must be issued prior to construction.

LOCAL (NEW YORK CITY)

- New York City Department of Transportation (NYCDOT) street and sidewalk construction permit for the work in local streets.
- Approval from the New York City Department of Parks and Recreation (DPR) to install the proposed new storm outfall within an existing mapped street (Dwight Avenue) and the clearing of trees within that right-of-way.

STATE (NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION)

- Tidal Wetlands Permit for activities in tidal wetlands and tidal wetlands adjacent areas (Article 25).
- Water Quality Certification for the activities in state waters (protection of waters, Article 15, Section 401).
- The proposed outfall would be added to DEP's MS4 SPDES Permit (NY0026221).
- A State Pollution Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activity (GP-0-10-001) would be obtained by the contractor.
- Industrial SPDES Discharge Permit for any temporary dewatering during construction and a Long Island Well Permit for groundwater pumping, if necessary.

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.
- Section 10 permit for structures in navigable waters.

With respect to the USACE permits, the construction of the new storm sewer and outfall would be covered under Nationwide Permit 7–Outfall Structures and Associated Intake Structures,

which authorizes activities related to the construction or modification of outfall structures and associated intake structures where the effluent from the outfall is authorized, conditionally authorized, or specifically exempted, or are otherwise in compliance with regulations issued under the National Pollutant Discharge Elimination System Program. Authorizations under Nationwide Permit 7 require Pre-Construction Notification under General Condition 27. This submission is intended to supply the information needed for the General Condition 27 notification requirement. No permit-specific regional conditions for the nationwide permit apply to this project. ✳

Table of Contents

List of Tables

List of Figures (see Attachment C)

A. INTRODUCTION

This environmental assessment has been prepared to examine the potential environmental impacts of the proposed action. As described in detail in Attachment A, "Project Description," the proposed action includes installation of new outfall to replace an existing 24-inch outfall, new stormwater collection sewers, relocation of water mains and upgrading of sanitary sewers in certain street segments, street reconstruction in areas affected by infrastructure installation, and restoration of tidal wetlands affected by the proposed construction (temporary impacts). In addition, a wetland restoration plan for the structural (permanent) impacts from a number of DEP/DDC storm sewer outfall projects in the Jamaica Bay area will be implemented at the Beach 88th/94th Restoration Plan (see the Beach 88th/94th Street Infrastructure Improvements EAS, July 2010, CEQR No. 09DEP041Q) and will include wetland restoration and enhanced public access to the Jamaica Bay waterfront. The project site is located in Queens Community District 14 in the Bayswater and Edgemere sections of Far Rockaway, Queens (see Figure C-5).

What follows are the environmental impact analyses for the proposed action that have been prepared following the methodologies of the City's *CEQR Technical Manual*. Figures referred to in this attachment (e.g., land use) are provided in Attachment C, "EAS Graphics."

B.1 LAND USE, ZONING, AND PUBLIC POLICY

INTRODUCTION

This section examines the existing land use, zoning, and public land use policies that apply to the proposed action. It presents the current land use conditions in the project area and identifies any anticipated changes in land use, zoning, and public policy that are expected to occur independently of the proposed action by 2012 (the project's build year). The analysis then assesses any potential adverse impacts to or conflicts with land use, zoning, and public policy that would occur as a result of the proposed action. The land use, zoning, and public policy study area includes the area within 400 feet of the proposed infrastructure improvements.

LAND USE

The project area is primarily developed with residential uses and limited commercial uses fronting along wide commercial streets that extend through the Bayswater and Edgemere neighborhoods of Far Rockaway, Queens. The major roads include Rockaway Freeway, Bay 32nd Street, Bessemund and Dwight Avenues. Many of the roads are wide and provide multiple travel lanes, parking lanes, landscaped medians, and sidewalks. With the exception of a short segment near Bay 32nd Street, Dwight Avenue is a mapped but unbuilt street.

As shown in Figure C-5, the predominant land uses in the study area are residential and open space, which together account for about half of the study area land use (see also Table B-1).

Table B-1
Land Uses in Study Area

Land Uses	Bay 32nd Street (acres)	Beach 32nd Street (acres)	Total Acres	Percentage of Total Study Area
Residential	17.9	8.8	26.7	35.4
Other (e.g. road and rail corridor)	14	7.4	21.4	28.4
Open Space	15.07	0.8	15.87	21.1
Vacant Lands	1.61	3.8	5.41	7.2
Transportation and Utility	-	3.4	3.4	4.5
Commercial and Office Buildings	-	1.9	1.9	2.5
Public Facilities and Institutional	-	0.7	0.7	0.9
Total Study Area	**48.58**	**26.8**	**75.3**	
Source: AKRF, December 2009.				

Included in the open space is Michealis-Bayswater Park, a City-owned park that occupies about 30 acres along the waterfront of Norton Basin, and Norton Basin Natural Resource Area, a State park located immediately to the north and occupies about 12 acres along the waterfront of Norton Basin. Michaelis-Bayswater Park provides facilities for active recreation including ballfields, tennis and handball courts, and play equipment and for toddlers and young children. In addition, a portion of the park was recently used for planting trees as part of the City's million trees planting program (see also "Open Space" below). In contrast, Norton Basin Natural Resource Area is waterfront open space that is largely dedicated to the preservation of a coastal natural area comprised of upland woods and wetlands along the Norton Basin shoreline. This state park has some trails, but its primary function is a natural area park.

The residential uses in the area are comprised predominantly of one- and two-family homes with supporting community facilities. There are some commercial retail uses fronting on Beach Channel Drive. An elevated train runs along Rockaway Freeway (the Long Island Rail Road [LIRR] Rockaway Rail Station is just outside of the study area). There are a few vacant parcels within the study area, but they are limited. Table B-1 provides a detailed breakdown of land uses in the study area.

In the future without the proposed action, it is assumed that the study area would remain largely unchanged. There are no known major development proposals for the area or rezoning actions in the area (see also the discussion below under "Zoning") that are expected to alter the local land use pattern.

The proposed action would not directly or indirectly displace any uses nor would it conflict with local land uses. Rather, the proposed action would provide street improvements that would benefit the project area residential and commercial uses through improved infrastructure. The proposed action would provide storm sewers in an area of the Far Rockaways that is not currently provided with storm sewers, which would support the local land uses through reduced street flooding and improved streets.

Therefore, the proposed action would not result in significant adverse impacts to land use.

ZONING

Currently, the project area is predominately zoned with low- to moderate-density residential zoning districts, including R2, R4A, R4-1, R6A and R6 zoning districts. A commercial use

overlay district is mapped over two blocks bounded by Beach Channel Drive to the north and west and Rockaway Boulevard to the south on the southerly portion of the study area with C1-2 and C2-2 zoning districts (see Figure C-6). The current zoning for the area also reflects the recently approved Rockaway Neighborhoods Rezoning. Under this rezoning, new regulations were implemented to preserve the special character of the Rockaway Peninsula. These zoning amendments were implemented to establish contextual controls relative to the scale of development and to protect the low scale development pattern of the peninsula's housing, while allowing some new housing and commercial development opportunities near transit stations.

In the future without the proposed action, it is assumed that the zoning for the area of the proposed actions would remain unchanged. There are no known additional zoning proposals for this area.

The proposed action would not require changes to existing zoning, nor would it conflict with existing zoning district regulations. Therefore, the proposed action would not result in potential significant adverse impacts to zoning.

PUBLIC POLICY

In addition to the City zoning regulations, there are two City public policies that apply to the project area. One is the Jamaica Bay Watershed Protection Plan (2007), which is discussed below under "Natural Resources." In addition, the proposed action is located within New York City's Coastal Zone management area. An analysis of the consistency of the proposed action with the City's Waterfront Revitalization Program (WRP policies) is also provided below under "Waterfront Revitalization Program."

WATERFRONT REVITALIZATION PROGRAM

Introduction

This section examines the proposed action's consistency with the City's Waterfront Revitalization Program.

The New York City Waterfront Revitalization Program (WRP), first adopted in 1982, encourages coordination among all levels of government to promote sound waterfront planning and requires consideration of the program's goals in making land use decisions. New York City Department of City Planning (DCP) administers the program which is designed to balance economic development and preservation by promoting waterfront revitalization and water-dependent uses while protecting fish and wildlife, open space and scenic areas, public access to the shoreline, and farmland; and minimizing adverse changes to ecological systems and in erosion and flood hazards.

Because the proposed action is located within the City's coastal zone (see Figure C-18), it is subject to a review of the policies under th e City's Coastal Zone Management Pro gram. Therefore, this section reviews the applicable WRP policies and assesses the consistency of the proposed action with specific policies. It also includes, where applicable, relevant recommendations from the "Plan for the Queens Waterfront." A completed New York City Waterfront Revitalization Program Consistency Assessment Form is also provided with this EAS (see Appendix A).

As described in greater detail below, the proposed action is expected to be consistent with the City's coastal zone policies specifically with respect to 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. Therefore, the proposed action would not have significant adverse impacts with respect the City's Waterfront Revitalization Program.

Applicable New York City Waterfront Revitalization Policies

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

The proposed action 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 (see the discussion below under "Growth Inducing"). Installation of the proposed infrastructure would support existing (and appropriate) residential and commercial development in the coastal zone as the new infrastructure would relieve local flooding and provide new and improve local infrastructure (see also "Attachment A: Project Description" under the section "Background Purpose and Need") supporting these existing uses, which is consistent with this policy.

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

A portion of the proposed outfall would be built within tidal wetlands along Jamaica Bay. In addition, the project site is located within the Waterfront Revitalization Program and the Jamaica Bay Special Natural Waterfront Area (SNWA) and is part of the New York State-designated Jamaica Bay Significant Coastal Fish and Wildlife Habitat and the Jamaica Bay Critical Environment Area. The proposed action involves the installation of a storm sewer system and the installation of a new outfall. As described above under "Natural Resources," and also below under "Construction Impacts" consistent with this policy, the proposed action would not adversely impact water quality and includes a restoration plan for tidal wetlands and adjacent areas. With these measures in place, and consistent with this policy, the proposed action would not result in significant adverse impacts on ecological systems and aquatic resources in Jamaica Bay.

In addition, in order to avoid impacts due to construction-period activity, consistent with this policy, the proposed action includes methods and measures to protect tidal wetlands from construction-period impacts. These protection and restoration measures are described below under "Construction" and would be implemented with the project construction program.

With these measures in place, it is concluded that the proposed action is consistent with this policy.

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

The proposed action would not have significant adverse impacts on local water quality during operation or construction of the proposed outfall. In addition, the proposed action would manage any direct or indirect discharges to waterbodies during construction through a Stormwater Pollution Prevention Plan (SWPPP). It is therefore concluded that the proposed action is consistent with this policy.

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

The proposed action is a publicly funded capital improvement project that would provide a new stormwater collection and conveyance improvements that would relieve flooding on local roadways in the Far Rockaway area. It would therefore provide the public benefits of reducing street flooding in this area of Queens. All construction activities would also be

performed in accordance with NYSDEC's technical standards for erosion and sediment control (e.g., use of silt fences, hay bales, and containment booms) that would be implemented in accordance with a SWPPP in order to minimize potential erosion impacts. With these measures in place, no significant erosion impacts are expected as a result of project construction. It is therefore concluded that the proposed action is consistent with this policy.

B.2 SOCIOECONOMIC CONDITIONS

The proposed action would not result in any new development or conflict with existing uses in the study area, nor would it generate new employees, or new residential or commercial uses. It would not displace either directly or indirectly any residents, businesses, institutions, or employees. Therefore, the proposed action would not result in potential significant adverse impacts on socioeconomic conditions.

B.3 COMMUNITY FACILITIES AND SERVICES

The *CEQR Technical Manual* states that proposed actions generally do not need to examine impacts to community facilities and services unless the proposed action would have a direct effect on a community facility. The proposed action would not directly significantly increase the demand on services, affect any community facilities, or generate any demand for community services. Therefore, the proposed action would not result in potential significant adverse impacts on community facilities and services.

B.4 OPEN SPACE

The *CEQR Technical Manual* recommends a detailed open space impact assessment if a proposed action would add 200 residents or 500 employees to an area, or if a proposed action would have a direct impact on an open space. The proposed action would not introduce new residents or employees to the project area.

Upland improvements would occur within the area of the mapped City street Dwight Avenue, a portion of which is built and a portion of which is mapped but not built. Dwight Avenue connects Bay 32nd Street to Norton Basin and runs between Michaelis-Bayswater Park to the south and Norton Basin Natural Resource Area to the north.

As stated above, Michealis-Bayswater Park, occupies about 30 acres along the waterfront of Norton Basin. Michaelis-Bayswater Park provides facilities for active recreation including ballfields, tennis and handball courts, and play equipment and for toddlers and young children. Along the mapped street there are no active recreational facilities; however a portion of the corridor is occupied by a tree planting area as part of the Million Trees NYC planting initiative, as well as upland and wetland natural resources. An assessment of the impacts of the proposed project on the natural resources of park is provided below under the section "Natural Resources."

Norton Basin Natural Area is immediately to the north of the proposed outfall and occupies about 12 acres along the waterfront of Norton Basin. This waterfront state park is an undeveloped coastal natural area with upland woods and shrubs and tidal wetlands fronting the Norton Basin shoreline. This park provides trails, but otherwise is dedicated to natural area preservation. The proposed sewer outfall installation within Dwight Avenue would be constructed in a mapped street right-of-way that is adjacent to, but not within, Michaelis-Bayswater Park or the Norton Basin Natural Area state parklands. In the future without the

proposed project, no changes in open space conditions are expected within either the City or state parks in the study area. Both are assumed to also continue in their current functions.

Currently, there is a trail within Michaelis-Bayswater Park that connects to the Norton Basin Natural Area State Park. While there would be temporary impacts to this access during construction, there would be no long-term direct impacts of the proposed action on the state park land area or its natural resources, nor would there be any indirect impacts on natural resources and habitats of the park (see also "Natural Resources" below). Post-construction, this north/south trail access would be re-opened.

The proposed project would require clearing along an approximately 35-foot-wide corridor within the 60-foot-wide mapped street. While there may be a temporary construction period impact to the public access along the existing east/west trail located immediately south of the proposed outfall, no long-term impacts are expected on public access to Norton Basin as the trail is located immediately to the south of the proposed sewer corridor.

Regarding the natural feature elements of both Michaelis-Bayswater Park and the Norton Basin Natural Resource Area, while the proposed sewer/outfall corridor is within the mapped street and not within the park, there are the adjacent natural habitats of both these open spaces. Therefore, an assessment of the potential for indirect impacts as these adjacent natural resources habitats is provided below under "Natural Resources."

It is estimated that approximately 27 trees of 4-inch or greater caliper (diameter at breast height) would be cleared in order to install the proposed outfall. (This does not include trees that were planted within the Dwight Avenue right of way as part of the City's Million Trees NYC initiative. DPR would relocate those trees as a separate action.) To address the impacts of the proposed action on trees, a tree relocation and replacement plan will be developed with DPR to ensure that the proposed project does not result in any adverse impacts regarding the trees located within the project area. As part of the proposed project, DDC, DEP, and DPR would continue to coordinate a compensatory tree replacement and relocation plan in order to avoid impacts to street trees within the proposed project.

Finally, the proposed project is part of the Beach 88th/94th Street Restoration Plan, which is under the jurisdiction of DPR and is proposed for the installation of a new outfall as well as a wetland restoration plan that has been developed to address the permanent construction related impacts of six DEP outfall projects proposed in the Jamaica Bay watershed, including this proposed project (see also Attachment A, "Project Description"). The Restoration Plan's temporary and limited impacts at the Beach 88th/94th site was previously analyzed in the Beach 88th/94th Street Infrastructure Improvements EAS (CEQR No. 09DEP041Q). The proposal to restore the site would not result in any adverse impacts on parkland. Thus there would not be any long-term impacts on open space from these activities and this proposed action's participation in that wetland restoration program would not result in any significant adverse impacts on open space.

Therefore, the proposed action would not result in potential significant adverse impacts on open space.

B.5 SHADOWS

The *CEQR Technical Manual* states that an assessment of shadows is generally necessary only for actions that would result in new structures or additions to existing structures of at least 50 feet in height. The proposed action would not develop any structures 50 feet in height or greater,

nor would it result in any new shadows. Therefore, the proposed action would not result in potential significant adverse impacts on shadows.

B.6 HISTORIC RESOURCES

INTRODUCTION

According to the *CEQR Technical Manual*, a historic resources impact assessment is required if there is the potential for a proposal to impact either archaeological or architectural (i.e., structural) resources. Actions that typically require a historic resources impact assessment for archaeology are those that involve in-ground disturbance, or below-grade construction and excavation. Actions that can trigger an assessment of impacts to architectural resources include new construction, demolition, or significant alteration to any historic building, structure, or object; a change in scale, visual prominence, or visual context of any historic building, structure, object or landscape; construction, activities near historic resources; additions to or significant removal, grading, or replanting of significant historic landscape features; screening or elimination of publicly accessible views of historic resources; or the introduction of significant new shadows over an historic landscape or historic structure with sunlight dependent features. The assessment of potential impacts to archaeological and historical resources is presented below.

ARCHAEOLOGICAL RESOURCES

On July 31, 2009 the New York Landmarks Preservation Commission provided an environmental review technical memorandum stating that the area of the proposed action is not sensitive for archeological resources. A Phase IA archaeological survey is therefore not required for the proposed action. Therefore, the proposed action would not result in potential significant adverse impacts on archaeological resources.

ARCHITECTURAL RESOURCES

There are no individual designated historic landmarks or historic districts in the area of the proposed action. Based on a review of LPC and State Historic Preservation Officer (SHPO) databases, there are also no individual or pending designated individual historic landmarks or historic districts in the study area. The site of the proposed sewer outfall is also not occupied by any structures and neither are the City streets where the proposed sewers would be installed. No historic structures would be directly or indirectly affected by the proposed action. Therefore, the proposed action would not result in potential significant adverse impacts to historic architectural resources.

B.7 URBAN DESIGN AND VISUAL RESOURCES

The *CEQR Technical Manual* states that an analysis of potential urban design and visual resources impacts is appropriate if a proposed action would result in new structures that are substantially different in height, bulk, form, setbacks, size, scale, use, or arrangement from those that already exist in the study area, or if a proposal would alter the form, arrangement, or use of blocks and streets that may then interrupt the general street grid of an area or conflict with an existing consistency of street walls, curb cuts, or other streetscape elements. A visual resources assessment is also generally appropriate when above-ground construction would limit or impede existing important public views.

The proposed action would not alter the local street grid or local development pattern, nor would it modify local block/lots or street corridors. It would install a below grade stormwater collection systems with final street improvements.

The proposed action would also install a new storm sewer outfall along Dwight Avenue between Bay 32nd Street on the east and Norton Basin on the west. The proposed outfall would be constructed along a portion of Dwight Avenue that has been, in part, been built (about 130 linear feet of the approximately 1,000 linear foot length is built). Under the proposed action, the balance of the corridor, about 870 linear feet and to a width of 35 feet would be cleared and the outfall would be installed below grade with a headwall and splash pad at Norton Basin. Upon completion, the surface over the outfall corridor would be stabilized with grasses and would remain open as an access corridor for DEP maintenance. In addition, the proposed action would restore the shoreline wetlands affected by the proposed outfall construction (the temporary impacts). The area occupied by the proposed outfall (the permanent impacts) would be restored as part of aforementioned restoration plan that would be implemented at the Beach 88/94th Street project outfall site (see Attachment A, "Project Description").

The below-grade infrastructure would not be visible, but the headwall and splash pad of the outfall and a portion of the outfall inland from the headwall would be visible throughout much of the day, particularly during low-tide. There is an existing 24-inch degraded outfall currently at the site that will be replaced by a new proposed outfall, which would be approximately 4 feet in diameter and would terminate at the Norton Basin shoreline where the new headwall and apron would be installed. At the shore line, the pipe is proposed above grade and will extend into Norton Basin to the U.S. Bulkhead line while the splash pad will extend to the mean low water line. The pipe will be encased in concrete to protect the outfall from weathering and erosion, unlike the existing outfall which has deteriorated and fallen into disrepair. While this proposal would introduce a new waterfront structure at the site, it would have limited visibility and would not significantly alter the urban design and visual setting of the area. At the headwall, existing shoreline vegetation in the area, coupled with the proposed restoration vegetation, would obscure much of the above-grade structure that would be visible, such that the presence of the outfall/headwall along the shoreline would not significantly impact views from the adjacent parklands.

In addition, the proposed project would clear a 35-foot-wide corridor to the water. The opening of this corridor and the clearing of vegetation is not expected to result in any significant adverse visual resource impacts.

Lastly, the proposed project would include a tree restoration and replacement plan for the 27 trees along the outfall corridor that would need to be cleared (see analysis above under "Open Space"). With this plan, which would be finalized between DDC, DEP, and DPR, no adverse impacts on the visual resources setting of the study area would occur.

Therefore, the proposed action would not result in potential significant adverse impacts to urban design or visual resources.

B.8 NATURAL RESOURCES

METHODOLOGY

In order to examine the potential for natural resources impacts of the proposed action, a 400-foot study area was delineated for the purposes of this natural resources analysis (see Figure C-7). In order to document existing conditions, field investigations were conducted on August 6, 2009

and August 15, 2010. The project site was investigated by a field team, and observations of flora and fauna were recorded. The site visits were conducted between 7:30 AM and 5:00 PM in order to observe wildlife at peak times of activity (i.e., morning and evening for bird feeding activity, etc.), and to determine vegetative species at peak season. Habitat classifications were determined based on the field surveys and related to general habitat classifications identified on Ecological Communities of New York State (Reschke [1990], Edinger et al. [2002]) based on the observed dominant cover types and current uses of the project site. In addition to the field surveys, existing conditions at the project site were summarized from information contained in the following literature sources, database, reports, maps, and other sources, including United States Geological Survey (USGS)—topographic quadrangle map for the Flushing quadrangle; NYSDEC—Breeding Bird Atlas, Critical Environmental Areas of Queens County, tidal wetlands maps, the Amphibian and Reptile Atlas Project, and reports pertaining to the Jamaica Bay Borrow Pit Evaluation Project; Federal Emergency Management Agency (FEMA)—Flood Insurance Rate Maps; United States Fish and Wildlife Service (USFWS)—National Wetland Inventory (NWI) maps; National Oceanic Atmospheric Administration (NOAA) National Marine Fisheries Service (NMFS)—Essential Fish Habitat (EFH); and DEP—Harbor Survey Program reports, Jamaica Bay and CSO Tributaries Waterbody/Watershed Facility Plan, and Jamaica Bay Watershed Protection Plan. A New York Natural Heritage Program (NYNHP) database search was performed for federal- and state-listed species for a distance of 0.5 miles from the project site. Information on rare, threatened and endangered species or special habitats within the vicinity of the study area was obtained by USFWS, NMFS, New York State Department of State (NYSDOS), and the New York Natural Heritage Program (NYNHP).

Potential impacts to natural resources from the proposed action were assessed by considering the existing and expected future natural resources at the project location and the potential changes in wetlands and aquatic habitat that would occur as a result of the proposed action.

The future conditions without the proposed action were assessed by considering existing natural resources within the project site and assessing potential effects to these resources from projects proposed within and adjacent to the project site that are expected to occur independent of the proposed action by the build year.

An analysis of the proposed action relative to trees is provided above under "Urban Design and Visual Resources" and "Neighborhood Character."

OVERVIEW

The project site is located in the southeastern portion of the Jamaica Bay Watershed along the north shore of the Rockaway Peninsula. Jamaica Bay is one of the largest coastal wetland ecosystems in New York State. The approximately 9,135 acres Jamaica Bay Wildlife Refuge encompasses southern shore of the City of New York, and straddles the boroughs of both Brooklyn and Queens, with the Rockaway Peninsula barrier beach forming the bay shoreline to the south. Jamaica Bay provides critical habitat for fish and wildlife, and contains extensive areas of salt marsh (1,000 acres), tidal flats, dredge material islands, dredged channels and basins, and upland habitats of shrub thickets, fields, and developing forests. Resident wildlife found on the islands and shorelines of the bay include reptiles, amphibians, and small mammals. Jamaica Bay is also part of the Atlantic Flyway bird migration route; more than 300 species of birds have been observed in the bay over the past 35 years. The bay provides a productive ecosystem for approximately 81 species of finfish, 121 benthic species, and other aquatic biota that use it for nursery and feeding habitats (USFWS 1997).

Jamaica Bay is also a unit in the National Park Service's Gateway National Recreation Area (GNRA), which also encompasses parts of South Shore Staten Island (Great Kills) and Sandy Hook National Park in New Jersey. The Jamaica Bay Unit has three components: the North Shore, Breezy Point, and the Jamaica Bay Wildlife Refuge, all of which provide open spaces with coastal and upland habitats. One of the most unique features of the Jamaica Bay Unit is the Jamaica Bay Wildlife Refuge, which includes mixed habitat zones with freshwater and brackish ponds, upland fields, developing forests and, most notably, a vast network of salt marshes and islands in the center of the bay (NPS 2004). NYSDEC has designated all tidal wetlands within Jamaica Bay as Critical Environmental Areas (CEA).[1] The project site and 400-foot study area are comprised of Jamaica Bay wetlands and upland habitats including high marsh, intertidal wetlands, tidal flats, and undeveloped and developed upland areas.

Jamaica Bay is typically described as a shallow waterbody, averaging 13 feet in depth, with the exception of the navigational channels and borrow pits reaching depths of 30 to 50 feet (DEP 2007a).

EXISTING CONDITIONS

WETLANDS

Overview

NYSDEC tidal wetlands are mapped along the Norton Basin shoreline. These tidal wetlands include low marsh, high marsh, and littoral wetlands (see Figure C-7). NYSDEC tidal wetland regulations state that water depths are the determining factor in whether or not an area is a regulated littoral zone wetland. (Areas with less than 6 feet of water depth at mean low water are considered littoral zone tidal wetlands). Thus, the regulated wetlands along the shoreline would extend out to this depth. As shown on Figure C-7, within the corridor of the proposed outfall, these wetlands (as mapped) include high marsh and littoral zone wetlands.

Tidal wetlands in the study area are also mapped on the USFWS National Wetlands Inventory (NWI) as E1UBL (see Figure C-8). An E1UBL wetland is an estuarine, deepwater tidal wetland habitat. The wetlands of Norton Basin are subject to variable salinity, and are semi-enclosed by land. In addition, this habitat contains continuously submerged substrate with unconsolidated bottom—at least 25 percent cover of particles smaller than stones (less than 6 to 7 centimeters [cm]), and a vegetative cover less than 30 percent. The substrate is permanently flooded with tidal water.

The observed intertidal plant community at the outfall site is composed of monotypic patches of saltmarsh cordgrass (*Spartina alterniflora*). This is an intact and healthy intertidal marsh community that hugs the shoreline and extends across the site of the proposed outfall and to the

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[1] NYSDEC indicates that "To be designated as a CEA, an area must have an exceptional or unique character with respect to one or more of the following: a benefit or threat to human health; a natural setting (e.g., fish and wildlife habitat, forest and vegetation, open space and areas of important aesthetic or scenic quality); agricultural, social, cultural, historic, archaeological, recreational, or educational values; or an inherent ecological, geological or hydrological sensitivity to change that may be adversely affected by any change. Following designation, the potential impact of any Type I or Unlisted Action on the environmental characteristics of the CEA is a relevant area of environmental concern and must be evaluated in the determination of significance prepared pursuant to Section 617.7 of SEQR."

north and south along the Norton Basin shoreline. At the project site, the high marsh is limited to small patches and is comprised of saltmeadow cordgrass (*Spartina patens*), sea lavender (*Limonium carolinianum*), salt grass (*Distichlis spicata*), and black grass (*Juncus gerardi*). Sea lettuce (*Ulva latuca*) was also observed along the sandy shore.

Visual evidence shows a low-sloping shoreline out into Norton Basin. Thus, observed water depths in the near shore zone are shallow and would be regulated as wetlands by NYSDEC, as would the low and high marsh wetlands. Wetlands at the littoral zone outfall location are bordered to the north by the Norton Basin Natural Resource Area and to the south by the DPR Michaelis-Bayswater Park. The ecological communities within the footprint of the proposed Dwight Avenue outfall are similar to the shoreline communities and habitats found in these open spaces, which includes low salt marsh.

Low salt marsh is a coastal marsh community that occurs in sheltered areas of the seacoast, in a zone extending from mean high water down to mean mid-water, and is regularly flooded by semidiurnal tides. The mean tidal range of low salt marshes on Long Island is about 80 cm, and they often form in basins with a depth of 1.6 m or greater. A monotypic stand of cordgrass (*Spartina alterniflora*) is the characteristic plant of this vegetative community; other plants, present in very low numbers, include glasswort (*Salicornia europaea*), salt marsh sand-spurry (*Spergularia marina*), and lesser sea blite (*Suaeda maritima*) (Edinger et. al 2002).

UPLAND

Proposed Sewer Corridor

The Dwight Avenue mapped street west of the built section and west to the wetlands includes mowed grass, maritime forest/shrub and due habitats, The mowed grass is maintained in association with the adjoining Michaelis-Bayswater Park. The maritime forest/shrubland comprises a much of the unbuilt Dwight Avenue segment of the outfall corridor. Edinger et al. describes this community as one which "occurs on dry seaside bluffs and headlands that are exposed to offshore winds and salt spray. This community typically occurs as a tall shrubland (two to three meters), but may include areas under one meter shrub height, to areas with shrubs up to four meters tall forming a shrub canopy in shallow depressions. These low areas may imperceptibly grade into shrub swamp if soils are sufficiently wet. Trees are usually sparse or absent (ideally less than 25 percent cover)." In the vicinity of the NYSDEC Norton Basin Natural Resource Area, this community is well represented as a tall shrubland dominated primarily by dense stands of black cherry and bayberry in the canopy. In the vicinity of the mapped Dwight Avenue and the proposed outfall, this shrubland community is degraded in comparison to that of the NYSDEC Norton Basin Natural Resource Area. Although bayberry and black cherry are still well represented and dominant in some locations, vegetation along trail edges and the edges of the project site are indicative of disturbed conditions. Tree species in the canopy include stands of invasive and successional species such as tree-of-heaven (*Ailanthus altissima)* and black locust (*Robinia pseudoacacia)*, with scattered winged sumac (*Rhus copallinum)* and olive (*Elaeagnus* sp.) in the shrub layer and sub-canopy. Asiatic bittersweet (*Celastrus orbiculata)*, Virginia creeper (*Parthenocissus quinquefolia)*, poison ivy (*Toxicodendron radicans)*, Japanese honeysuckle (*Lonicera japonica)*, and grape (Vitis sp.) are dominant vines located in all strata. Blackberry (*Rhus sp.*), common reed, mugwort (*Artemisia vulgaris),* Japanese brome grass (*Bromus arvensis)*, various fescues (*Festuca sp.*), spotted knapweed (*Centaurea stoebe)*, Queen-Anne's lace (*Daucus carota)*, Kentucky bluegrass (*Poa pratensis*), Canada bluegrass (*Poa compressa*), common milkweed (*Asclepias syriaca)*,

panicgrass (*Panicum sp.)*, crabgrass (*Digitaria Haller)*, orchard grass, and camphorweed (*Heterotheca subaxillaris)* are common throughout the herbaceous layer in the disturbed areas.

Maritime dune and grassland openings are also present in the vicinity of Dwight Avenue (to the south of the project site). The grasslands have limited species coverage and are dominated by sheep fescue. Other characteristic species include rabbits-foot clover (*Trifolium arvense)*, purple love grass (*Eragrostis spectabilis)*, downy chess (*Bromus tectorum)*, various flatsedge species (*Cyperus sp.*), and little bluestem. A maritime dune community meets grassland and maritime shrub areas within the vicinity of the mapped but unbuilt Dwight Avenue (it is also located to the south). Species observed in this area include the New York State threatened dune sandspur (*Cenchrus tribuloides*) and beach dunegrass (*Ammophila breviligulata*).

Table B-2 identifies the floral species observed along the outfall corridor.

Table B-2
Flora Observed Along the Outfall Corridor

Trees and Shrubs	
tree-of-heaven	*Ailanthus altissima*
groundsel bush	*Baccharis halimifolia*
marsh elder	*Iva frutescens*
white mulberry	*Morus alba*
Bayberry	*Myrica pensylvanica*
Norway maple	*Acer platanoides*
black locust	*Robinia pseudoacacia*
American holly	*Ilex opaca Aiton*
red cedar	*Juniperus virginiana*
Honeylocust	*Gleditsia triacanthos*
winged sumac	*Rhus copallinum*
Olive	*Elaeagnus sp.*
flatsedge species	*Cyperus sp.*
eastern white cedar	*Thuja occidentalis*
Sassafrass	*Sassafras albidum*
oak species	*Quercus sp.*
eastern cottonwood	*Populus deltoids*
white poplar	*Populus alba*
black cherry	*Prunus serotina*
Forbs	
Mugwort	*Artemisia vulgaris*
Queen Anne's Lace	*Daucus carota*
goldenrod species	*Euthamia/Solidago sp.*
sea lettuce	*Ulva latuca*
sea lavender	*Limonium nashii*
white sweet clover	*Melilotus alba*
Pokeweed	*Phytolacca Americana*
Japanese knotweed	*Polygonum cuspidatum*
seaside goldenrod	*Solidago sempervirens*
rough-stem goldenrod	*Solidago rugosa*
rugosa rose	*Rosa rugosa*
spotted knapweed	*Centaurea stoebe*
common milkweed	*Asclepias syriaca*
Camphorweed	*Heterotheca subaxillaris*
annual wormwood	*Artemisia annua*
Poorjoe	*Diodia teres Walter*
Horseweed	*Erigeron Canadensis*
salt grass	*Distichlis spicata*
moth mullein	*Verbascum blattaria*

Table B-2 (cont'd)
Flora Observed Along the Outfall Corridor

Vines	
asiatic bittersweet	*Celastrus orbiculata*
Japanese honeysuckle	*Lonicera japonica*
Virginia creeper	*Parthenocissus quinquefolia*
poison Ivy	*Toxicodendron radicans*
grape species	*Vitis sp.*
blackberry species	*Rhus sp.*
Grasses and Sedges	
orchard grass	*Dactylis glomerata*
Saltgrass	*Distichlis spicata*
common reed	*Phragmites australis*
saltmarsh cordgrass	*Spartina alterniflora*
saltmeadow cordgrass	*Spartina patens*
switch grass	*Panicum virgatum and Panicum sp.*
little bluestem	*Schizachyrium scoparium*
red fescue	*Festuca rubra*
Timothy	*Phleum sp.*
beach sedge	*carex silicea*
sheep fescue	*Festuca ovina*
Japanese brome grass	*Bromus arvensis*
sideoats grama	*Bouteloua curtipendula*
fescue species	*Festuca sp.*
Kentucky bluegrass	*Poa pratensis*
Canada bluegrass	*Poa compressa*
panicgrass	*Panicum sp.*
crabgrass	*Digitaria Haller*
downychess	*Bromus tectorum*
purple lovegrass	*Eragrostis spectabilis*
rabbitsfoot clover	*Trifolium arvense*
beach dunegrass	*Ammophila breviligulata*
peppergrass	*Lepidium papilliferum*
black grass	*Juncus gerardi*
dune sandspur	*Cenchrus tribuloides*
beach dunegrass	*Ammophila breviligulata*

Note: This list represents flora observed at the project site during multiple surveys conducted in August 2009.
Source: AKRF, Inc. field surveys, 2009.

Other areas of the park to the east are comprised of terrestrial cultural communities. Mowed lawn and baseball fields to the south border the natural communities In between the maintained portion of Michaelis-Bayswater Park is a newly planted swath in the vicinity of the Dwight Avenue right-of-way (see Figure C-9g). Species planted in this area include a number of oak species (*Quercus sp.*), sassafras (*Sassafras albidum*), and eastern white cedar (*Thuja occidentalis).* Dominant species in the herbaceous layer include purple love grass, crabgrass, annual wormwood (*Artemisia annua)*, peppergrass (*Lepidium papilliferum)*, poorjoe (*Diodia teres Walter)*, and rabbits-foot clover.

OTHER STUDY AREA HABITATS

A vacant lot located between Bessemund Avenue and Healy Avenue along Bay 32nd Street and a lot located along Beach 32nd between Far Rockaway Boulevard and Rockaway Beach Boulevard are characteristic of urban vacant lot communities. Edinger et al. defines an urban vacant lot as "an open site in a developed, urban area…cleared either for construction or following the demolition of a building. Vegetation may be sparse, with large areas of exposed

soil, and often with rubble or other debris. Characteristic trees are often exotics species such as Norway maple (*Acer platanoides)*, white mulberry (*morus alba*), and tree of heaven, a species native to northern China and introduced as an ornamental. Tree of heaven is fast-growing and tolerant of the harsh urban environment; it can dominate a vacant lot and form dense stands." In the two vacant lots within the project area, dominant species observed in the herbaceous layer include mugwort, Queen-Anne's Lace, horseweed (*Erigeron Canadensis)*, sweet white clover (*Melilotus alba)*, and Japanese knotweed (*Polygonum cuspidatum)*. Trees are mostly scattered along the periphery of these sites and include tree of heaven, eastern cottonwood (*Populus deltoids)*, honeylocust (*Gleditsia triacanthos)*, white poplar (*Populus alba)*, and white mulberry.

Edinger et al. would describe the terrestrial resources in the developed portions of the study area as paved road/path and mowed lawn. The paved road/path community is comprised of residential streets with landscaping/homes, parking lots, and the paved portion of Dwight Avenue.

FLOODPLAINS

Figure C-9 shows the 100-year floodplain (the area with a 1 percent chance of flooding each year) boundaries within the project area. As shown in the figure, much of area of the proposed action is located within the 100-year floodplain. FEMA maps indicate that Base Flood Elevation (BFE)[2] is eight feet (FEMA 2007).

WILDLIFE

Birds

The New York State Breeding Bird Atlas is an ongoing project to document the presence of avian breeders throughout the state. As defined by the Breeding Bird Atlas, the project site is located near the borders of Block 5949B and Block 5949D. Therefore, data for both blocks is presented below. Between 2000 and 2005, the Breeding Bird Atlas recorded 26 species of potential breeding birds within Block 5949B and 21 species within Block 5949D (see Tables B-3 and B-4). The upland and wetland features of the project site have the potential to provide suitable forage and breeding habitat for ring-necked pheasant (*Phasianus colchicus*), killdeer (*Charadrius vociferous*), barn swallow (*Hirundo rustica*), common yellowthroat (*Geothlypis trichas*), and red-winged blackbird (*Agelaius phoeniceus*). Breeding bird species listed for Blocks 5949B and 5949D and observed on or adjacent to the project site during the field survey conducted in August 2009 are indicated in the tables. Species observed on or adjacent to the project site during field surveys, but not listed in the Breeding Bird Atlas, included a juvenile yellow-crowned night heron (*Nycticorax violaceus*) and snowy egret (*Egretta thula*).

Mammals

Protected areas in and around Jamaica Bay provide habitat for mammals that are otherwise absent or limited in the urban core of New York City. Some of these species include opossum (*Didelphis virginiana*), white-footed mouse (*Peromyscus leucopus*), eastern cottontail rabbit (*Sylvilagus floridanus*), little brown myotis (*Myotis lucifugus*), meadow vole (*Microtus pennsylvanicus*), and gray squirrel (*Sciurus carolinensis*) (USFWS 1997). The terrestrial zones of the project site could provide habitat to small rodents, feral cats, raccoon, and Virginia opossum, while the aquatic zones could support muskrats and mammals that forage along the

[2] BFE is 10 feet National Geodetic Vertical Datum (1929) or ~7.28 feet Queens Highway Datum.

shore (i.e., raccoon and Virginia opossum). None of these species were observed during the field surveys.

Table B-3
Birds Listed in New York State Breeding Bird Atlas (Block 5949B)

Common Name	Scientific Name
Canada goose*	*Branta canadensis*
osprey	*Pandion haliaetus*
northern harrier	*Circus cyaneus*
American kestrel	*Falco sparverius*
ring-necked pheasant	*Phasianus colchicus*
clapper rail	*Rallus longirostris*
killdeer	*Charadrius vociferus*
American oystercatcher	*Haematopus palliatus*
willet	*Tringa semipalmata*
upland sandpiper	*Bartramia longicauda*
laughing gull	*Leucophaeus atricilla*
rock pigeon*	*Columba livia*
northern flicker	*Colaptes auratus*
American crow	*Corvus brachyrhynchos*
American robin	*Turdus migratorius*
gray catbird	*Dumetella carolinensis*
northern mockingbird	*Mimus polyglottos*
brown thrasher	*Toxostoma rufum*
European starling	*Sturnus vulgaris*
saltmarsh sharp-tailed sparrow	*Ammodramus caudacutus*
song sparrow	*Melospiza melodia*
northern cardinal	*Cardinalis cardinalis*
red-winged blackbird	*Agelaius phoeniceus*
eastern meadowlark	*Sturnella magna*
boat-tailed grackle	*Quiscalus major*
house sparrow*	*Passer domesticus*

Notes: * Observed during 2009 field surveys
[1] Piping plover is a federally listed threatened and state-listed endangered species; least tern is a federally- and state-listed threatened species; and common tern is a state-threatened species.
Sources: Breeding Bird Atlas Block 5949B 2005 Survey (NYSDEC 2007).

Reptiles and Amphibians

The NYSDEC Herp Atlas Project conducted a survey of reptiles and amphibians from 1990 to 1999, documenting the geographic distribution of New York's turtles, snakes, lizards, frogs, toads, and salamanders (NYSDEC 1999). Although habitats within Jamaica Bay have been found suitable for the reintroduction of several reptiles and amphibians, species that have the potential to use the project site would be limited to those tolerant of urban conditions and dependent on coastal habitats. These species, listed in the NYSDEC Herp Atlas Project, could include eastern milk snake (*Lampropeltis triangulum triangulum*), Fowler's toad (*Bufo woodhousii fowleri*), and northern brown snake (*Storeria dekayi dekayi)*. In addition, the mix of upland and salt marsh features could provide habitat for one important reptile, the northern diamondback terrapin (*Malaclemys terrapin*). The northern diamondback terrapin is a diurnal species of estuarine areas, brackish waters along coastal rivers and creeks, salt marshes, and tidal flats. The species is known to breed and forage for fish, crustaceans, mollusks, and insects (Conant and Collins 1998) throughout Jamaica Bay (USFWS 1997). In the bay, female terrapins are known to nest from early June through early August and oviposit at least two clutches per year. Nests occur in shrubland, dune, mixed-grassland habitats, sandy trails, and beaches (Feinberg and Burke 2003). No northern diamondback terrapin or nests were observed during the August 2009 field surveys.

Table B-4

Birds Listed in New York State Breeding Bird Atlas (Block 5949D)

Common Name	Scientific Name
ring-necked pheasant	*Phasianus colchicus*
piping plover[1]	*Charadrius melodus*
killdeer	*Charadrius vociferous*
American oystercatcher	*Haematopus palliates*
common tern	*Sterna hirundo*
least tern	*Sterna antillarum*
rock pigeon*	*Columba livia*
mourning dove	*Zenaida macroura*
willow flycatcher	*Empidonax traillii*
American crow	*Corvus brachyrhynchos*
barn swallow	*Hirundo rustica*
gray catbird	*Dumetella carolinensis*
northern mockingbird	*Mimus polyglottos*
European starling	*Sturnus vulgaris*
yellow warbler	*Dendroica petechia*
common yellowthroat	*Geothlypis trichas*
song sparrow	*Melospiza melodia*
northern cardinal	*Cardinalis cardinalis*
red-winged blackbird*	*Agelaius phoeniceus*
brown-headed cowbird	*Molothrus ater*
house sparrow*	*Passer domesticus*

Notes: *Observed during the 2009 field surveys.
[1] Piping plover is a federally listed threatened and state-listed endangered species; least tern is a federally- and state-listed threatened species; and common tern is a state-threatened species.
Source: Breeding Bird Atlas Block 5949D 2005 Survey (NYSDEC 2007).

AQUATIC RESOURCES

Water Quality

Water quality in Jamaica Bay is regulated by NYSDEC under Title 6 of the NYCRR (Part 703), which defines water classification standards for each New York City water body. The open waters of Jamaica Bay are classified as SB waters, designating that these waters should be suitable for bathing and secondary contact recreation. Water quality should also be suitable for fish propagation and survival. Standards for SB waters are listed in Table B-5.

Table B-5

New York State Water Quality Standards by Use Class

Parameter	SB
Fecal Coliform (per 100mL)	Monthly geometric mean shall not exceed ≤200 Colonies/100mL from 5 or more samples.
Total Coliform (per 100mL)	Monthly geometric mean shall not exceed ≤ 2,400 colonies/100 milliliters (mL) from 5 or more samples.
Dissolved Oxygen (DO) (mg/L)	≥5.0 mg/L
pH	Normal range shall not be extended by more than 0.1 of a pH unit.

Source: NYCRR, Title 6, Part 703, 2008.

The City of New York has monitored New York Harbor water quality for over 95 years through its Harbor Survey Program. Harbor Survey data show that water quality has improved significantly throughout the Harbor Estuary since the 1970s as a result of the construction, upgrade, and operational improvements to both City-operated and regional water pollution control plants. Water quality improvements include both reductions in fecal and total coliform concentrations and significant increases in DO concentrations. DEP evaluates surface water quality in four designated areas of the Harbor: the Inner Harbor, Upper East River-Western Long Island Sound, Lower New York Bay-Raritan Bay, and Jamaica Bay.

Coliform

The presence of coliform bacteria in surface waters indicates potential health impacts from human or animal waste. Elevated levels of coliform can result in the closing of bathing beaches and shellfish beds. Within Jamaica Bay, overall mean fecal coliform bacteria levels have been at or below 200 cells/100mL over the past 20 years. In 2006, water quality for much of Jamaica Bay was consistent with recent trends; summer fecal coliform concentrations were below 200 cells/100mL for all stations, and seven of nine open waters stations sites had geometric means below 50 cells/100mL (DEP 2007a). Although open waters of Jamaica Bay are meeting state standards for fecal coliform most of the time, tributaries of Jamaica Bay do receive combined sewer overflows (CSO).

Temperature, Salinity, and Dissolved Oxygen

Both temperature and salinity influence several physical and biological processes within aquatic ecosystems. Temperature has an effect on the spatial and seasonal distribution of aquatic species and affects oxygen solubility, respiration, and other temperature-dependent water column and sediment biological and chemical processes. Mean annual temperatures of Jamaica Bay range between 1° to 26° C (33.8° to 78.8° F) (Barry A. Vittor & Associates, Inc. 2001b). In general, temperatures in Jamaica Bay rarely exhibit a surface-to-bottom differential of greater than 1° to 2° C (1.8° to 3.6° F). However, in the borrow pits of Norton Basin as well as in Little Bay significant temperature stratifications have been identified between the surface and deep waters (Barry A. Vittor & Associates, Inc. 2001b).

Salinity fluctuates in response to tides and freshwater inputs. Salinity and temperature largely determine water density and can affect vertical stratification of the water column. Salinity is also an important habitat variable, as a number of aquatic species have a limited salinity tolerance. Surface and bottom water salinities of Jamaica Bay generally range between 23 and 27 ppt, but vary for different portions of the bay. Salinity levels are generally higher (above 26.5 ppt) in the western and southern areas and lower (below 26.5 ppt) in the eastern and northern portions of the bay (DEP 2007a).

The concentrations of DO in the water column are one of the most universal indicators of overall water quality in aquatic systems. Sufficient levels of oxygen are needed for the survival of marine life and for the prevention of nuisance conditions such as hydrogen sulfide odors produced from the anaerobic decay of organic material in sediments. Oxygen concentrations in coastal waters depend on a variety of interrelated chemical, physical, and biological factors such as salinity, temperature, photosynthesis, and respiration. Hypoxic conditions (DO < 3.0 mg/L), which can severely stress or kill aquatic organisms, are common in the New York region. Although DO levels have improved in Jamaica Bay, periods of low DO concentrations and hypoxia remain a problem in certain areas of the bay, particularly at the bottom of Norton and Conch Basin pits.

High levels of nutrients (ammonia, nitrates/nitrites) can lead to excessive plant growth (a sign of eutrophication), reduced water clarity, and a depletion of DO. This is s particular issue in

Jamaica Bay, where nitrogen and phosphorous are discharged by the WPCPs. An estimated 41,000 pounds per day of nitrogen enters the bay from waste water treatment plants (DEP 2005). Trends for nitrogen levels in Jamaica Bay have declined since 1995.

Secchi transparency is a measure of the clarity/turbidity in surface waters. Transparency greater than 5 feet (1.5 meters) is a sign of clear water in a turbid estuary. Decreased clarity can be caused by high suspended solid concentrations or plankton blooms. Secchi transparencies less than 3 feet (0.9 meters) are generally indicative of poor water quality conditions. Data show that average Secchi depths greater than 5.0 feet were common in the bay prior to 1993 (DEP 2005).

Sediment Quality

Sediments in the New York Harbor Estuary often contain evidence of contamination. A 1998 survey found that the mean sediment contaminant concentrations in the Harbor were statistically higher than other coastal areas of the East Coast for 50 of the 59 chemicals measured (Adams et al. 1998), and Newark and Jamaica Bays have been ranked as the Harbor's highest for the most toxic sediments on the basis of sediment chemistry, toxicity, and benthic community (Adams and Benyi 2003). Biological effects, measured by relative impacts on the benthic invertebrate community, were found to be associated with the chemical contamination. While the sediments of the Harbor are contaminated, the concentrations of contaminants have been decreasing over the past 30 years (Steinberg et al. 2002). Between 1993 and 1998, the percentage of sediment samplings with benthic macroinvertebrate communities considered impacted, or of degraded quality, also decreased throughout the Harbor (Steinberg et al. 2004).

Jamaica Bay has a complex distribution of sediments because of variable currents and a high degree of sediment input from both natural and human sources. Sediments in the bay vary from coarse sands and gravels in high-energy areas to fine-grained silts and clays in low-energy areas. Jamaica Bay's sediments are contaminated from combined sewer overflow inputs, landfill leachate, atmospheric deposits, and other sources and contain various metals, such as nickel, zinc, copper, and cadmium from sewage effluent and lead from storm sewers and atmospheric deposition. The atmospheric contribution of zinc, copper, and cadmium is a substantial portion of the metals in the bay, and landfill leachate appears to be a lesser source of contamination (Seidemann 1991).

Aquatic Biota

Primary Producers

Phytoplankton are microscopic plants whose movements within the system are largely governed by the prevailing tides and currents. Several species can obtain larger sizes as chains or in colonial forms. Light penetration, turbidity, and nutrient concentrations are important factors in determining phytoplankton productivity and biomass. In a 1993 survey of the Harbor, 29 taxa of phytoplankton were identified. Phytoplankton sampling conducted at five stations in Jamaica Bay from 1995 through 1996 identified 83 species of phytoplankton. The most abundant species, accounting for 21 percent of phytoplankton organisms collected, was the diatom *Skeletonema costatum* (EEA 1997).

Zooplankton

Zooplankton are an integral component of aquatic food web. They are primary grazers on phytoplankton and detritus material and provide a major food source for organisms of higher trophic levels. The higher-level consumers of zooplankton include forage fish, such as bay anchovy, striped bass, and white perch. Predacious zooplankton species can consume eggs and larvae and can have a detrimental effect on certain fish species.

Crustacean taxa are the most abundant group of zooplankton collected throughout the Harbor. The most dominant species include the copepods (*Acartia hudsonica, Acartia tonsa, Eurytemora affinis,* and *Temora longicornis)*, with each species being prevalent in certain seasons (Stepien et

al. 1981, Lonsdale and Cosper 1994, Perlmutter 1971, Lauer 1971, Hazen and Sawyer 1983). A total of 31 species of zooplankton were noted during EEA surveys of the bay from 1995-1996, with *Acartia hudsonica* representing 39.5 percent of all organisms collected (EEA 1997).

Benthic Invertebrates

Benthic invertebrates inhabit the sediments and surfaces of submerged objects such as rock, pilings, or debris. They are important to the energy flow of aquatic systems because they use detrital and suspended organic matter as food, and in turn provide an important food source for fish and waterfowl. Benthic invertebrates include those that are retained on a 0.5 millimeter (mm) screen (macroinvertebrates) and smaller forms (nematodes and harpacticoid copepods). Some of these animals live on top of the substratum (epifauna) and some within the substratum (infauna). Substrate type (rocks, pilings, sediment grain size, etc.) are the primary factors influencing benthic invertebrate communities. Secondary factors include currents, wave action, predation, succession, and disturbance.

Inventories of infaunal benthic organisms (i.e., mollusks, worms, arthropods) and epibenthos (i.e., organisms living on or above hard substrates, including barnacles, shrimp, and certain polychaete worms) were conducted as part of a 2001 Jamaica Bay Field Sampling and Analysis Program (HydroQual 2001a). Overall, the infaunal benthic community in Jamaica Bay can be characterized as abundant and somewhat diverse (DEP 2007b). The presence of a large number of pollution-tolerant species collected during this sampling program indicated a degree of habitat degradation, although some positive indicators of habitat quality (i.e., presence of amphipods) were also noted. A total of 34 taxa of benthic organisms were collected during Ponar grab samples in Jamaica Bay, predominantly representing Annelida, Arthropoda and Mollusca, with one Cnidarian collected. Annelids that are typically found in human-enriched sediments, including the polychaete mud worm (*Streblospio benedicti*) and family Capitellidae (i.e., lugworms), accounted for 59 percent of individuals collected (DEP 2007b). Patterns of polychaete worm abundance and species diversity in Jamaica Bay suggest the presence of overly enriched sediments (Gosner 1978, Weiss 1995). Two amphipod species (*Ampelisca* and *Corophium*) and the mollusc *Nassarius obsoletus* were also dominant. Amphipods are considered indicators of good localized environmental quality due to their limited mobility and susceptibility to pollution.

For epibenthos, the Harbor-wide Epibenthic Recruitment and Survival sampling program (Hydroqual 2001a) identified a total of 43 taxa of Annelida, Arthropoda, Bryozoa, Chlorophyta, Chordata, Cnidaria, Mollusca, and Porifera within Jamaica Bay (Hydroqual 2001a). Taxa dominant by weight included ivory barnacle (*Balanus eberneus*), the golden star tunicate (*Botryllus schlosseri*), the blue mussel (*Mytilus edulis*), and the cnidarians Tubularia and Campanularia. Epibenthic communities within the Harbor typically exhibit a vertical distribution on hard surfaces, such as piles and bulkheads, due to changes in water level, salinity, and DO associated with the tides and salinity stratification. The epibenthic sampling did not indicate a similar vertical distribution in Jamaica Bay, suggesting that low DO levels are not limiting to epibenthos in the lower portion of the water column in open areas of Jamaica Bay (DEP 2007b). During the May 2008 field inventory undertaken by AKRF, dense clusters of ribbed mussels (*Geuk*enzia demissa) were observed in a semi-infaunal state in the sediment and rhizomes of saltwater cordgrass.

Fish

Jamaica Bay is a highly productive and regionally significant habitat for finfish. Recent sampling identified 49 species of finfish within the bay (Kurtzke and Schriebman 2002), and a four-year survey in the 1980s identified 81 species (Scaglione 1991). Common marine species in Jamaica Bay include winter flounder (*Pleuronectes americanus*), weakfish (*Cynoscion regalis*), and windowpane (*Scophthalmus aquosus*). Forage fish species occurring in high abundances include Atlantic silverside (*Menidia menidia*), bay anchovy (*Anchoa mitchilli*), mummichog (*Fundulus heteroclitus*),

Atlantic menhaden (*Brevoortia tyrannus*), and striped killifish (*Fundulus majalis*). These species form an important prey base for other fish and birds that use Jamaica Bay. Important recreational fish species include, but are not limited to weakfish (*Cynoscion regalis*), bluefish (*Pomatomus saltatrix*), scup (*Stenotomus chrysops*), striped bass, and winter flounder (USFWS 1997). Winter flounder is considered the most important commercial and recreational fish of the bay in great numbers during all life stages (USFWS 1997). Anadromous species that use the bay include blueback herring (*Alosa aestivalis*), Atlantic sturgeon (*Acipenser oxyrhynchus*), alewife (*Alosa pseudoharengus*), American shad (*Alosa sapidissima*), and striped bass (*Morone saxatilis*). The single catadromous species common to the bay is American eel (*Anguilla rostrata*).

Table B-6 lists finfish species that are common to Jamaica Bay.

ESSENTIAL FISH HABITAT

The project site is within a portion of the Great South Bay estuary EFH that is situated in the NOAA/NMFS 10' x 10' square with coordinates (North) 40°40.0' N, (East) 73°40.0' W, (South) 40°30.0' N, (West) 73°50.0' W, which includes Atlantic Ocean waters within the square affecting the following areas of New York: Western Long Beach, Hewlett, Woodmere, Cedarhurst, Lawrence, Inwood, Far Rockaway, East Rockaway Inlet, eastern Jamaica Bay, Brosewere Bay, Grassy Bay, Head of Bay, Grass Hassock Channel, eastern Rockaway Beach, Atlantic Beach, Howard Beach, J.F.K. International Airport, Springfield, and Rosedale, along with many smaller islands. The eastern Jamaica Bay area containing the proposed action has been identified as EFH for 22 species of fish. Table B-7 lists the EHF species and their life stages in eastern Jamaica Bay.

Table B-6
Common Finfish of Jamaica Bay

Common Name	Scientific Name
Scup	*Stenotomus chrysops*
Bluefish	*Pomatomus saltatrix*
Atlantic silverside	*Menidia menidia*
Winter flounder	*Pseudopleuronectes americanus*
Windowpane	*Scophthalmus aquosus*
Blackfish or Tautog	*Tautoga onitis*
Weakfish	*Cynoscion regalis*
Mummichog	*Fundulus heteroclitus*
Atlantic sturgeon	*Acipenser oxyrhynchus*
American shad	*Alosa sapidissima*
Atlantic menhaden (bunker)	*Brevoortia tyrannus*
Bay anchovy	*Anchoa mitchilli*
Striped killifish	*Fundulus majalis*
Striped bass	*Morone saxatilis*

Sources: Reipe et al. (1989) "Finfish of Jamaica Bay"; USFWS 1997 "Significant Habitats and Habitat Complexes of the New York Bight Watershed."

Table B-7
Essential Fish Habitat Designated Species for Jamaica Bay

Species	Eggs	Larvae	Juveniles	Adults
Atlantic Salmon (*Salmo salar*)				X
Pollock (*Pollachius virens*)			X	
Whiting	X	X	X	
Red hake (*Urophycis chuss*)	X	X	X	
Winter flounder (*Pseudopleuronectes americanus*)	X	X	X	X
Windowpane flounder (*Scopthalmus aquosus*)			X	X
Atlantic sea herring (*Clupea harengus*)				X
Monkfish			X	X
Bluefish (*Pomatomus saltatrix*)			X	X
Atlantic butterfish (*Peprilus triacanthus*)	X	X	X	X
Atlantic mackerel (*Scomber scombrus*)	X	X	X	X
Summer flounder (*Paralicthys dentatus*)			X	X
Scup (*Stenotomus chrysops*)	N/A	N/A	X	X
Black sea bass (*Centropristus striata*)	N/A		X	
King mackerel (*Scomberomorus cavalla*)	X	X	X	X
Spanish mackerel (*Scomberomorus maculatus*)	X	X	X	X
Cobia (*Rachycentron canadum*)	X	X	X	X
Sand tiger shark (*Odontaspis Taurus*)		X		
Blue shark (*Prionace glauca*))				X
Dusky shark		X		
Sandbar shark (*Charcharinus plumbeus*)		X	X	X
Tiger shark		X		

Source: National Marine Fisheries Service. "Summary of Essential Fish Habitat (EFH) Designation" posted on the internet at http://www.nero.noaa.gov/hcd/STATES4/conn_li_ny/403073407340.html.

PROTECTED, ENDANGERED, THREATENED, AND SPECIAL CONCERN SPECIES

Introduction

Information on endangered, threatened, special concern, and rare species within ½ mile of the project site was requested from the USFWS, NMFS, and NYNHP. NYNHP records indicate that one state-listed endangered bird species and two state-listed endangered plant species are present within the ½-mile study area. In addition, two state-listed threatened bird species and one state-listed insect of special concern are present, while two state-listed threatened plants and two state-listed rare plants are present. In addition, a state-unlisted vegetative community is present within the ½-mile study area. A short description of these species is provided below.

NMFS indicated that there are no endangered, threatened, or special concern marine wildlife species that are expected along the shoreline of the proposed action (Salerno, 2009). As stated above, side-oats grama (state-listed endangered) and dune sandspur (state-listed threatened) were observed in the area during the August 2009 field survey.

Vegetative Communities and Individual Species

Dune sandspur is a state-listed threatened annual with habitat that includes dunes, loose sands, woodland fragments, and open areas (Duncan and Duncan 1987). The species flowers from the middle of June to the end of July, and exposes fruit in the middle of July to the end of October (Young 2007). As described above, this species was observed in great numbers within the study area near the western end of Healy Avenue in the Norton Basin Natural Area Reserve; no stems of this species were observed in the footprint of the proposed Dwight Avenue outfall during the August field investigations.

Seabeach amaranth is a federally listed threatened and state-listed endangered annual plant, with habitat that consists of dynamic barrier beach landscapes where there is low competition from other plants, as it is intolerant of vegetative competition. The plant often colonizes accreting shoreline, upper beach, foredune, overwash flat, dredge spoil, and sand/shell beach replenishment areas. Seabeach amaranth shares habitat with other endangered species, including piping plover and roseate tern (USFWS undated). The species flowers in the middle of August to the end of October, and exposes fruit in the beginning of September to middle of November (Young 2007). Seabeach amaranth was not observed during the August field investigations. Moreover, this species requires a habitat that is not found at the project site.

Seabeach knotweed (*Polygonum glaucum*) is a state-listed rare prostrate plant of sandy beaches, brackish swales, and edges of salt marshes (Duncan and Duncan 1987). This species was not observed during the 2009 field visit but will be further investigated during upcoming field visits in 2009. The species flowers from the middle of July to the middle of November, and exposes fruit from the Middle of August to the middle of November (Young 2007). Seabeach knotweed was not observed during the August field investigations and the project site does not provide the characteristic habitat for this species.

Side-oats grama (*Bouteloua curtipendula var. curtipendula*) is a state-listed endangered species with open habitats associated with dry limestone-derived soils and disturbed soils. Side-oats grama occurs in abandoned sandpits, pastures, railroads, and power line right-of-ways. The species flowers in the middle of July to the middle of August and exposes fruit from the beginning of August to the end of November (Young 2007). As described above, this species was observed in abundance (hundreds of stems) near the northern portion of the Norton Basin Natural Area Preserve; no stems were observed in the footprint of the proposed Dwight Avenue outfall during the August field investigations.

Historical Records

Retrorse flatsedge (*Cyperus retrorsus var. retrosus*) is a state-endangered plant that occurs in beach habitats and salt marshes. This species yields fruit from the middle of July through the end of October (Young 2007). It was last reported in the area in 1902 and therefore is not expected at the project site.

Slender crabgrass (*Digitaria filiformis*) is a state-threatened plant with habitat in sandy soils and sterile open fields that receive full sun. It yields fruit from the middle of August through the end of September (Young 2007). It was last reported in this area in 1873 and therefore is not expected at the project.

Wildlife

Common tern (*Sterna hirundo*) is the most widespread and abundant state-listed threatened tern in New York. Common terns arrive to breeding grounds in the Long Island area from late April to mid-May. Colonies may contain several hundred to several thousand birds, including roseate, least, and gull-billed terns, and black skimmers. Nests consist of a simple scrape, typically lined with vegetation, built above the high tide line in sand, gravel, shells, or seaweed. By mid-October, the terns depart for wintering grounds. In New York, common terns nest predominantly on Long Island, but they are also known to breed on small natural and artificial islands in the Great Lakes, the St. Lawrence and Niagara rivers, and Oneida Lake in central New York (NYSDEC, undated [b]). Common tern were not observed at the site during the field surveys; however, they may use the site for flyover or foraging in nearby waters.

Checkered White (*Pontia protodice*) is a state-listed special concern species with disturbed open habitat, usually near ground level in areas such as roadsides, farmlands, and old fields. Although not observed during August 2009 field investigation, this species has been found in open lots near the study area, and habitat within the study area may support this species.

Least tern (*Sternula antillarum*) is a state-listed threatened shorebird that arrives to breeding grounds in coastal areas by late April to the middle of May in New York State. Breeding habitat typically includes level expanses of open sand or gravel beach, dredge spoil, and open shoreline areas. In New York, migrants of this species are found on Long Island's outer coast and, rarely, on the lower Hudson River. By late August and early September, least terns leave their northern breeding grounds to head for wintering areas ranging from the Gulf Coast south to Brazil (NYSDEC, undated [a]). Least tern were not observed at the site during the field survey; however, they may use the site for flyover or foraging in nearby waters.

Piping plover (*Charadrius melodus)* is a federally listed threatened and state-listed endangered shorebird that arrives to coastal breeding grounds around mid-March in New York State. Breeding habitat is typically dry sandy beaches or areas filled with dredged sand, often near dunes, in areas with little or no beach grass. Although nests are typically sited in areas with little or no vegetation, on occasion, piping plovers will nest under stands of American beachgrass (*Ammophila breviligulata*) or other vegetation (USFWS 2007). Breeding takes place between April and September in the New York area (USFWS 2007). There are three known populations of piping plovers: one along the east coast, another on the upper Great Lakes, and a third on the major river systems and wetlands of the northern Great Plains. In the New York area, breeding occurs on Long Island's sandy beaches, from Queens and east to the Hamptons, particularly in the eastern bays and harbors of northern Suffolk County. In the New York City area, piping plover and the state-listed threatened least tern breed nest in a protected area on Rockaway Beach in the neighborhoods of Arverne, Queens (between Beach 44th and Beach 57th Streets) (DPR, undated). They have also been observed at Breezy Point on the western tip of the Rockaway peninsula. However, these species have not been observed at the site and the site does not provide a habitat in which piping plover are commonly found.

Shortnose sturgeon (*Acipenser brevirostrum*) is a federally listed endangered anadromous bottom-feeding fish. Though it can be found throughout the Hudson River system, it spawns, develops, and overwinters in the Hudson River well north of the project site and prefers colder, deeper waters for all lifestages. While documented as occurring below the Tappan Zee Bridge in the Hudson River (Colligan 2007), this portion of the river is not considered optimal shortnose sturgeon habitat (Bain 2004), and sturgeon would be expected to occur rarely south of the southern tip of Manhattan (Bain 1997). Therefore, the shortnose sturgeon would not be expected in Jamaica Bay or near the project site.

NATURAL RESOURCES POLICIES AND PROGRAMS

SIGNIFICANT COASTAL FISH AND WILDLIFE HABITAT DESIGNATION

NYSDOS has designated Jamaica Bay as a Significant Coastal Fish and Wildlife Habitat (Block NY-22, NYS Coastal Management Program Atlas 2002). To designate a Significant Coastal Fish and Wildlife Habitat, NYSDEC evaluates the significance of the habitat and, following a recommendation from NYSDEC, NYSDOS designates and maps the area.

The Jamaica Bay Significant Coastal Fish and Wildlife Habitat covers an approximately 9,100-acre area that is defined by the mean high water elevation along the shorelines of the bay and also includes fringing tidal marsh and adjacent upland areas, which are important for nesting

birds. The habitat does not include the deepwater portions of Beach Channel to the south. The fish and wildlife habitat is the entire bay, which includes extensive areas of salt marsh (1,000 acres), tidal flats, dredge material islands, dredged channels, and dredged basins. Some of the islands in the bay have upland communities including open field, shrub thicket, developing woodlands, and beach grass dune. Water depths in the bay average 16 feet, with depths up to 40 feet in the deepest portions of the dredged channels and basins. The tidal range averages about 5 feet, and the flushing rate for most of the bay is about 7 days while the back tributaries can take about 33 days. The designation recognizes that the only remaining significant natural inflow of surface water into Jamaica Bay is Hook Creek, which drains into the head of the bay area at the northeastern end of the habitat. Additional freshwater inputs are limited to runoff (40 percent) and sewage effluent (60 percent). As stated in the designation report, salinity in the bay ranges from 24 to 30 parts per thousand.

JAMAICA BAY CRITICAL ENVIRONMENTAL AREA DESIGNATION

Under the environmental laws of the State of New York, local agencies may designate specific geographic areas within their boundaries as "Critical Environmental Areas." State agencies may also designate geographic areas they own, manage, or regulate. To be designated as a Critical Environmental Area, an area must have an exceptional or unique character with respect to one or more of the following:

- A benefit or threat to human health;
- A natural setting (e.g., fish and wildlife habitat, forest and vegetation, open space and areas of important aesthetic or scenic quality);
- Agricultural, social, cultural, historic, archaeological, recreational, or educational values; or
- An inherent ecological, geological or hydrological sensitivity to change that may be adversely affected by any change.

Once designated, the potential impact of any Type I or Unlisted Action on the environmental characteristics of the Critical Environmental Area is determined to be a relevant area of concern and must be examined in accordance with the environmental review requirements of Part 617. In accordance with the above requirements, and in consideration of Jamaica Bay's role as a significant coastal fish and wildlife habitat, NYSDEC designated Jamaica Bay a Critical Environmental Area in the mid 1980s.

STATE AND REGIONAL PROGRAMS

New York/New Jersey Harbor Estuary Program (HEP) Projects

The New York/New Jersey Harbor Estuary Program (HEP) Final Comprehensive Conservation and Management Plan (CCMP) outlined a number of goals to improve water quality and aquatic resources throughout the Harbor. To achieve these goals, the CCMP outlines objectives for the management of toxic contamination, dredged material, pathogenic contamination, floatable debris, nutrients and organic enrichment, and rainfall-related sources. Most of these objectives aim to heighten knowledge and awareness of the bay's natural features and the extent of various sources of pollution (e.g., toxic chemicals, sewage overflows, and floatables), techniques for reducing these pollutants, and increasing the habitat and human use potential of the Harbor. The floatables action plan of HEP seeks to reduce the amount of debris entering the water. It includes marine debris survey collection programs, improved street cleaning, combined sewer overflow and stormwater abatement, enforcement of solid waste transfer regulations, shoreline cleanup programs, and public education.

The HEP Habitat Workgroup developed watershed-based priorities for acquisition, protection, and restoration of wetland, aquatic, and upland communities that included the following criteria: the presence of species or communities that are rare, endangered, or threatened at the federal, state, or local level; existing and potential ecological value and size; and economic and development factors. The U.S. Army Corps of Engineers (USACE) New York District, as part of the HEP Habitat Workgroup, began a feasibility study in 2001 to assess potential sites for habitat restoration in New York Harbor. In May 2003, the Regional Plan Association (RPA) also identified needs and opportunities for environmental restoration in the Hudson-Raritan Estuary. These sites include the preservation and enhancement of tidal wetlands that will provide improved habitat for fish and macroinvertebrates as well as the birds, mammals, and reptiles that depend on these habitats. HEP Acquisition and Restoration Sites in close proximity to the project site are listed below. HEP actions taken with respect to these sites could occur with or without the proposed action.

- *Conch Basin*—A sub-basin of Norton Basin, located approximately 0.3 miles from the project site, was identified for salt marsh restoration.
- *Healy Avenue and Michaelis Bayswater Park*—Located along Norton Basin, 0.3 miles northeast of the proposed action, was identified for salt marsh restoration.
- *Somerville Basin*—Located 0.2 miles east of the project site, was identified for salt marsh restoration.
- *Arverne Urban Renewal Area*—Located approximately 0.3 miles southeast of the project site on Rockaway Beach, was identified for beachfront habitat acquisition.
- *Dubos Point*—Located approximately 0.2 miles northeast of the project site, was identified for salt marsh restoration.

Hudson-Raritan Estuary Ecosystem Restoration Project

The Hudson-Raritan Estuary Ecosystem Restoration Project is a cooperative project led by USACE that was funded by a House of Representatives Resolution on April 15, 1999. PANYNJ is a co-sponsor of this project. Other agencies involved in this project include EPA, USFWS, NOAA, NRCS, the New Jersey Department of Environmental Protection (NJDEP), New Jersey Department of Transportation (Office of Maritime Resources) (NJDOT), NYSDEC, NYSDOS, DEP, DPR, and New Jersey Meadowlands Commission. The focus of the study is to identify the actions needed to restore the Hudson-Raritan Estuary and to develop a plan for their implementation. The study area for the program includes all the waters of the New York and New Jersey Harbor and the tidally influenced portions of all rivers and streams that empty into the Harbor and ecologically influence the Harbor. The program identifies measures and plans to restore natural areas within the estuary and enhance their ecological value, and address habitat fragmentation and past restoration and mitigation efforts that were piecemeal in nature.

Jamaica Bay Borrow Pit Evaluation Project

The New York district of the USACE in coordination with NYSDEC and several other federal, state, and local entities developed the Dredged Material Management Plan (DMMP) for NY/NJ Harbor. The DMMP identifies a number of options for the management of dredged material, but places a priority on options that "employ beneficial re-use" of dredged materials. The DMMP identified borrow pits (Grassy Bay, Norton Basin, Conch Basin, Jo-Co) as potential sites for the placement of dredged sediment (USACE, 1999). Between 2000 and 2003, NYSDEC and the New York District of the USACE conducted a number of ecological investigations, known as the Jamaica Bay Borrow Pit Evaluation Project, to determine the feasibility of beneficial re-use

of sediments dredged from the New York-New Jersey Harbor for the restoration of borrow pits in Jamaica Bay, and a multi-agency committee was established to review data and determine the ecological conditions in the borrow pits. The committee established that if these pits were deemed to be degraded, the next steps would be to apply hydrodynamic modeling to determine whether a net environmental benefit could result from material disposal and improved water exchange. Study findings indicate that benthic habitat functions are suboptimal; Conch Basin is significantly impaired (hypoxia persists within the pits during the summer months) and, as a result, the southern portion of Norton Basin and Conch Basin are sufficiently degraded. For these reasons, the Jamaica Bay Borrow Pit Evaluation Project technical committee recommended the implementation of the next step in the assessment process, which will include hydrodynamic modeling and an evaluation of alternatives for improving conditions in these pits (NYSDEC undated[d]).

RELATED DEP PROJECTS

Jamaica Bay Long Term Control Plan

A 2005 CSO Consent Order signed by NYSDEC and the City of New York (NYSDEC 2008) directs the City to develop and implement watershed and facility plans to address CSO discharges and bring waters into compliance with the CWA (DEP 2007a). The goal of the Jamaica Bay and CSO Tributaries Waterbody/Watershed Facility Plan is to reduce CSO discharges in Jamaica Bay and the CSO tributaries. The Long Term Control Plan includes some of the following measures: improvements related to WPCP drainage area infrastructure; separation of storm and combined sewers in the Rockaway WPCP service area (currently partially separated); and reductions in the number and volume of CSO discharges to CSO tributaries. The draft Jamaica Bay and CSO Tributaries Waterbody/Watershed Facility Plan was submitted to NYSDEC in June 2007.

Jamaica Bay Watershed Protection Plan

Overview

In October 2007, DEP released the Jamaica Bay Watershed Protection Plan (October 2, 2007). Preparation of the Plan was required by Local Law 71 of 2005, which mandated DEP to assess the "technical, legal, environmental and economical feasibility" of a diverse set of protection approaches for Jamaica Bay, with efforts to promote a comprehensive approach toward maintaining and restoring the ecosystems within the bay. The plan covers a number of major issues organized under six key elements: Water Quality; Restoration Ecology; Stormwater Management; Public Education and Outreach; Public Use and Enjoyment; and Implementation and Coordination. Within each of the six plan elements, recommendations related to implementation strategies are provided that promote a multifaceted approach to maintaining and restoring the integrity of the bay. Among the objectives and management strategies presented in the plan, it is recognized that several are being implemented through the City's CSO Long Term Control Plan for Jamaica Bay and the CSO Tributaries Waterbody/Watershed Facility Plan submitted to NYSDEC in June 2007 (see the discussion above). The recommended strategies, which are summarized below, use a combination of infrastructure and engineering solutions, pilot studies using new technology, and ecosystem-based approaches to improve conditions in the bay.

Water Quality

Four priority objectives were identified in the plan with respect to improving water quality including reducing nitrogen loading to the bay. DEP is undertaking a number of capital improvements to reduce nitrogen discharges to the bay.

Restoration Ecology

Federal, state, and City agencies as well as local environmental groups have been very active in restoring and preserving open spaces along the shoreline in Jamaica Bay and, to a lesser degree, portions of the upland. Restoration objectives of the plan focus on restoring the salt marsh islands within the bay and protecting natural areas along the shorelines of the bay.

Stormwater Best Management Practices (BMPs)

The City's Jamaica Bay Watershed Protection Plan calls for the treatment and control of stormwater at its source using both onsite (i.e., runoff captured on a single lot) and offsite (i.e., runoff captured from multiple parcels including streets and vacant lots) control measures as a way to reduce CSO and overland runoff currently entering the bay.

Wetlands Transfer Task Force

Local Law 83 of 2005 established a Wetlands Transfer Task Force (WTTF) established by the Mayor and City Council to evaluate the technical, legal, environmental, and economic feasibility of transferring City-owned properties containing wetlands to the jurisdiction of DPR. Two high priority assessment areas are located in the vicinity of Norton Basin: Edgemere Urban Renewal Area and Norton Basin. A number of parcels in Block 15961, including Lot 110, which borders the project site, are recommended for transfer to DPR by the Task Force, whose recommendations were submitted to the Mayor in September 2007.

FUTURE WITHOUT THE PROPOSED ACTION

In the future without the proposed action, natural resource conditions for the site and surrounding area are expected to remain essentially unchanged. Many of the significant resources and habitats of Jamaica Bay on City-, state-, or federally owned lands or are regulated by federal, state, and City agencies and special programs that have been developed to manage and protect the bay's natural resources. Among those at the federal level, NPS and USFWS own or manage wetland and upland habitats and aquatic resources within Jamaica Bay. As stated above, state designations include Significant Coastal Fish and Wildlife Habitat (NYSDOS) and CEA (NYSDEC). NYSDEC also regulated activities in wetland, as well as the protection of waters through its regulatory program. The City of New York has also identified Jamaica Bay as one of three Special Waterfront Natural Areas (SWNA) in its Waterfront Revitalization Program (WRP). DPR also manages habitat on properties within its purview, and DEP has also developed a Comprehensive Watershed Management Plan (1993), a Jamaica Bay Watershed Protection Plan (2007), and a Jamaica Bay and CSO Tributaries Waterbody/Watershed Facility Plan (2007) that have been prepared to protect water quality and habitats of the bay. These federal, state, and City programs and other programs are specifically directed at improving biological resources and habitats of Jamaica Bay and would be expected to improve water quality and natural resource habitats in the future without the proposed project.

IMPACTS OF THE PROPOSED ACTION

Provided below is an impact assessment of the permanent impacts of the proposed action with respect to natural resources. Impacts that would occur during the construction period are presented under the "Construction Impacts" section of this attachment.

WETLANDS

With the exception of the portion of the outfall and headwall that is below mean high water, the proposed action would not have a significant adverse direct or indirect impact on wetlands since it would be largely the installation of infrastructure within built streets. The proposed stormwater

outfall along Dwight Avenue would be partially built within a built street segment of Dwight Avenue; however, it would largely be installed in an area of natural land coverage including tidal wetlands on the Norton Basin end. This segment of the proposed action is therefore the focus of this wetland analysis.

The western segment of the proposed outfall includes installation of the proposed outfall, splash pad, and headwall. The affected area is within a 35-foot-wide corridor and an existing 60-foot-wide mapped street (Dwight Avenue). Tidal wetlands in this area are comprised of littoral zone, intertidal vegetated and high marsh and adjacent area. The extent of area within each of these wetland habitats that would be impacted by the proposed project is presented in Table B-8. This affected wetland area is minimal and the permanent impact on wetlands of this installed infrastructure would be addressed as part of the off-site restoration plan to be implemented at the Beach 88th/94th Street site (see also Attachment A, "Project Description"). As described below under "Construction," all areas affected by construction, except for the structural footprint area of the proposed storm sewer, would be re-vegetated post-construction. Areas to be cleared and re-vegetated post construction are considered temporary construction impacts (see "Construction Impacts," below).

Table B-8
Wetland Area of Impact for the Jamaica Bay Outfall Projects

Wetland Type	Impact Type	SEQ-200533 Beach 42nd Street Outfall (FY 2009)	QED-983 Beach 88th Street Outfall (FY 2010)	SE-795 Chandler Street Outfall (FY 2011)	SEQ-200508 Bay 32nd Street Outfall (FY 2011)	Other Proposed Outfall Projects (FY 2012 and 2013)
Littoral Zone	Permanent	0	0	0	275	260
	Temporary	0	0	0	160	320
Intertidal Vegetated	Permanent	105	0	1,775	1,275	0
	Temporary	400	0	4,785	1,120	0
Intertidal Unvegetated	Permanent	115	2,085	0	0	0
	Temporary	215	1,885	0	0	0
High Marsh	Permanent	140	0	230	60	0
	Temporary	475	0	4,340	230	0
Open Water	Permanent	0	0	0	0	0
	Temporary	0	0	0	0	0
Adjacent Area	Permanent/ Temporary	22,770	6,785	1,920	5,570	0

Source: Hazen and Sawyer, April 2011.

Therefore, the proposed project would not result in potential significant impacts to wetlands.

UPLAND HABITATS

In addition to the wetlands, the proposed project would also involve clearing of about 870 linear feet of upland habitat comprised of domestic grasses, (including a recently planted area of trees under Million Trees NYC that DPR will relocate—see below); and maritime shrub/forest. Assuming a project area about 35 feet in width, the affected upland habitat area is about 25,000 sq. ft. (about 0.57 acres). Post construction, the sewer would be below grade; however, the sewer corridor would remain opened and planted with a grass cover. Of the 0.57 acres of area to be cleared, about 0.21 acres is a combination of landscaped and maintained lawn associated with DPR Michaelis-Bayswater Park—this includes an area used for the planting of trees under the Million Trees NYC program, and the balance, about 0.36 acres, is maritime shrubland.

With the proposed project, the grassed area would see no net change, with the exception of clearing of trees that were recently planted under the Million Trees NYC program. This clearing

would not impact any natural habitats and, as stated above, DDC, DEP, and DPR would develop a tree relocation and replacement plan as part of the proposed project.

With respect to the approximately 0.036 acres of maritime shrubland, the affected area is largely comprised of black cherry and tree-of-heaven. The proposed design has also limited the width of the clearing area for the proposed sewer to 35 feet in order to limit vegetative clearing in this area. A review of study area resources has found that higher quality habitats exist in the Norton Basin Natural Resources Area, where they would be permanently preserved. Given the limited width and area of clearing, and that higher quality maritime shrubland is located in the preservation areas of Michaelis-Bayswater Park and the Norton Basin Natural Resources Area, it is not expected that this limited clearing would have a significant adverse impact. In addition, given that the proposed project would only clear 35 feet of the 60-foot-wide unbuilt, mapped right of way of Dwight Avenue, it is not expected that there would be any direct or indirect impacts of the project on the maritime dune or grassland communities located to the south of the project site.

Therefore, the proposed project would not result in potential significant impacts to upland habitiats.

FLOODPLAINS

The proposed action would not adversely affect the floodplain or exacerbate flooding conditions in the project area. New York City is affected by local street flooding (e.g., flooding of inland portions of the City from short-term, high-intensity rain events in areas with poor drainage), fluvial flooding (e.g., rivers and streams overflowing their banks), and coastal flooding (e.g., long and short wave surges that affect the shores of the Atlantic Ocean, bays such as Jamaica Bay, and tidally influenced rivers, streams, and inlets [FEMA 2007]). The mapped floodplain over the project area is the result of coastal flooding, which is caused by astronomic tides and meteorological forces (e.g., northeasters and hurricanes [FEMA 2007]). This floodplain would not be adversely impacted by the proposed action. Rather, the proposed action would provide beneficial impacts with respect to local flooding as one of the project goals is to reduce local street flooding.

Therefore, the proposed action would not result in potential significant adverse impacts on floodplains.

WATER QUALITY[3]

Introduction and Methodology

The proposed action involves a new storm sewer outfall to Norton Basin and expanded drainage area. The proposed stormwater collection sewers would drain a small area of approximately 34 acres. One of the sewers would drain approximately 20 acres into the proposed outfall at the end of Dwight Avenue. The second sewer collection system would convey runoff from about 14 acres to an existing stormwater sewer outfall at the head of Norton Basin. In order to provide a detailed assessment of potential water quality impacts from the proposed sewering, the Norton Basin/Little Bay Eutrophication Model (NB/LB) was used. The NB/LB model framework

[3] This analysis is based on the report "Water Quality Impact Assessment of the Proposed Bay 32nd Street Stormwater Outfall," HydroQual, Inc., November 2009.

allows for a more detailed analysis of possible water quality impacts throughout the tidal cycle, both on a local basis within Norton Basin/Little Bay and on a larger scale in the Jamaica Bay area from Thurston Basin to Grass Hassock Channel.

A baseline water quality condition was analyzed using the NB/LB Model that included an already proposed stormwater outfall at Beach 42nd Street draining to Norton Basin, and all existing point and nonpoint sources to Norton Basin, Little Bay, Grass Hassock Channel, and neighboring basins, such as Thurston Basin, Mott Basin, and Sommerville Basin. A projected water quality condition was then calculated, assuming the proposed action is in place. The baseline water quality condition was then used as a measure of the incremental change in water quality due to the new stormwater flows. The project water quality condition with the proposed stormwater outfalls was also compared with applicable water quality standards and guidance values to assess impacts.

Impacts on Norton Basin

Norton Basin is designated as a Class SB waterbody by NYSDEC, which has a best usage primary and secondary contact recreation and fishing. Based on these criteria, these waters should be suitable for fish propagation and survival. Dissolved oxygen (DO) water quality data in the Norton Basin/Little Bay area indicates that applicable Class SB water quality standards are attained in Norton Basin most of the time with the exception of bottom layer dissolved oxygen (DO) levels, which experience low periods below the 5 mg/L standard in Little Bay, and in the head to the middle reach of Norton Basin. These low DO levels, which occur in the bottom waters of the basin, are indicative of the effects of stratification in Norton Basin/Little Bay, during summer conditions. Though no actual water quality data was available for total coliform, fecal coliform, copper, lead or zinc in Norton Basin/Little Bay to compare with water quality standards, analyses of relative impacts were made for this analysis through the NB/LB Model. Analyses of enterococci and total suspended solids (TSS) were also made, but these two constituents do not have Class SB water quality standards.

An assessment of potential water quality impacts due to the proposed action was projected with the NB/LB Model for the maximum (i.e., short duration events) and median impacts (long term). Results of the water quality impact assessment for the proposed stormwater discharges were as follows:

- The NB/LB Model simulations in Norton Basin/Little Bay with the proposed stormwater discharges predicted that water quality would be in compliance with the applicable NYSDEC water quality standards for total coliform, fecal coliform, copper, lead, and zinc.
- Under baseline conditions, surface water DO levels would be in compliance with Class SB water quality standards most of the time, but could go below the standard during the summer months on occasion. Since the proposed outfalls would not change DO levels, this same scenario would occur with the proposed stormwater outfalls.
- Under baseline conditions, the bottom water summer DO levels in the Little Bay borrow pits, the Norton Basin borrow pits, and the middle of Norton Basin will go below the 5.0 mg/L limit or even to zero in the deepest area of basins. Since the proposed discharges would not change DO levels this same scenario would occur with the proposed stormwater outfall.
- There is a zero projected change to existing background DO levels due to the proposed action.

- Both baseline and projected worst case total, fecal, and enterococci monthly geometric means are below standards or the reference level in the case of enterococci.
- Existing water quality conditions within Norton Basin/Little Bay would not be significantly impacted due to the proposed stormwater discharges within Norton Basin/Little Bay. Water quality would continue to meet water quality standards with the exception of occasional surface DO and longer term summer bottom layer DO, which is expected to be below the water quality standard under both the baseline and projected conditions.

Therefore, the proposed action would not result in potential significant impacts on water quality conditions.

In addition, a cumulative water quality impact assessment was completed to assess the water quality for the impacted basins for all of these outfall projects discharging to Jamaica Bay. The analysis covered four proposed DEP/DDC proposed outfalls to Jamaica Bay.

In summary, the assessment found that existing water quality conditions within Vernam Basin, Mott Basin, and Norton Basin/Little Bay and in the larger Jamaica Bay, would not be significantly impacted due to the five proposed discharges. Water quality would continue to meet water quality standards for total coliform, fecal coliform, copper, lead, and zinc. Enterococcus reference levels would be met in all of the areas of the basins, with the exception of the south head of Mott Basin, for both the baseline and projected conditions. Since the predicted change from the baseline worst case enterococci monthly geometric mean of 38 MPN/100mL to the projected worst case enterococci monthly geometric mean of 44 MPN/100mL is small, it is considered to be a negligible impact.

Surface water DO would be in compliance with Class I water quality standards in Vernam and Mott Basins under both the baseline and proposed scenarios. Surface water DO is expected to be in compliance with Class SB water quality standards in Norton Basin and Little Bay except during the summer months in the Little Bay and Norton Basin borrow pits. Since the proposed discharges would not change DO levels, this same scenario would occur with the proposed stormwater outfalls, and it can be concluded that there is no cumulative impacts on surface DO in any of the three Basins due to the proposed discharges.

Bottom summer DO concentrations in Vernam Basin are above the 4.0 mg/L applicable standard under both the baseline and projected scenarios. Bottom summer DO concentrations in Mott Basin and in Norton Basin/Little Bay are below applicable water quality standards both under the baseline and projected scenarios. Since cumulative changes in DO due to the proposed discharge are small (0.11 mg/L change in minimum DO and median change of 0.02 mg/L in Norton Basin/Little Bay), it can be concluded that there are no significant cumulative impacts from the proposed discharges.

Since the differences between the baseline and proposed water quality are negligible and generally occur in the mid to head of the basins, leaving the mouths of the basins unaffected, the cumulative impact of the proposed discharges on water quality in the larger Jamaica Bay, where greater dilution will occur, is negligible.

Therefore, the proposed action would not result in potential significant adverse impacts on water quality during its operational phase.

AQUATIC BIOTA

The proposed action would permanently remove a limited area benthic habitat that would be occupied by the footprint of the proposed new outfall and headwall. This area is about 0.01

acres. There is no unique habitat at the project site that would be impacted, and the area of impact is very limited. Thus, this is a minimal direct impact on aquatic habitat and the associated biota of Jamaica Bay. In addition, the proposed action would also not have any adverse affects on water quality that could indirectly impact aquatic biota of Norton Basin or Jamaica Bay. Thus, the proposed action would not have any significant adverse impacts on primary producers, such as phytoplankton and zooplankton, nor would it be expected to adversely impact macroinvertebrate populations. In addition, no significant direct to indirect impacts to the aquatic shellfish or finfish resources are expected with the proposed action. Lastly, the proposed action would be part of a wetland restoration program at the Beach 88th/94th Street site (see Attachment A, "Project Description").

Therefore, the proposed action would not result in potential significant adverse impacts on aquatic biota.

ESSENTIAL FISH HABITAT

As described above, no significant direct impacts would occur with respect to essential fish habitat areas, since only a limited aquatic resource area is directly impacted by the proposed outfall. In addition, no significant adverse impacts on water quality would occur that could indirectly impact essential fish habitat. This would include no significant adverse impacts on any nesting or foraging areas as it relates to essential fish habitat.

Therefore, the proposed action would not result in potential significant adverse impacts on essential fish habitat.

WILDLIFE

For upland mammal, amphibian, reptile and avian wildlife, it also not expected that there would be significant impacts of individual or populations of species in the Jamaica Bay area. No significant population of species was observed using the project corridor for nesting or feeding during the field investigations. In addition, the project site is adjacent to active parkland on the south side and although a number of mammals and birds may use the site for foraging or flyover, the area of habitat that would be impacted is expected to be limited. Thus, any displaced wildlife individuals would also be limited and it is expected that individuals would relocate to habitats in adjoining City and State parklands (for example). It is therefore not expected that the proposed project would impact that mammal, amphibian, reptile and avian wildlife populations of Jamaica Bay.

Therefore, the proposed action would not result in potential significant adverse impacts on wildlife.

ENDANGERED, THREATENED, AND SPECIAL CONCERN SPECIES

Vegetation

As described, side-oats grama (state-listed endangered) was found within the study area during the August 2009 field investigation, and its required habitat is present within the study area. However, this species was not observed within the footprint of the proposed storm/sanitation sewer along Dwight Avenue and is therefore not expected to be adversely affected by the proposed action.

Dune sandspur (state-listed threatened) habitat, as described, is located within the study area and was observed in abundance. However, this species was also not observed within the footprint of

the proposed storm/sanitation sewer along Dwight Avenue and is therefore not expected to be adversely affected by the proposed action.

Because seabeach amaranth was not observed during the field investigations and requires habitat that is not provided within the study area/project site, it is highly unlikely that this species exists within the study area or on the project site. Thus, it would not be directly or indirectly impacted by the proposed action.

Because seabeach knotweed was not observed during the field investigations and is not provided with characteristic habitat within the study area/project site, it is also highly unlikely that this species exists within the study area or on the project site. Thus, it would not be directly or indirectly impacted by the proposed action.

It is also not expected that any historical record species, retrorse flatsedge or slender crabgrass, would be present on the project site. Therefore, the proposed project would not result in significant adverse impacts on endangered or special concern vegetation species.

Wildlife

Neither the project site nor the surrounding area provide as suitable habitat for the short- nosed sturgeon. Although piping plover have been observed in the New York City area (protected beaches on Rockaway Beach in the neighborhoods of Arverne, Queens and they have also been observed at Breezy Point on the western tip of the Rockaway peninsula), they prefer protected dune habitats that are not present at this site. Likewise, least tern (*Sternula antillarum*) and common tern (*Sterna hirundo*) are more common to the habitats of Long Island's outer coast. Neither were observed at the project site and their presence is unlikely. Checkered White (*Pontia protodice*) is a state-listed special concern species found in disturbed open habitat, usually near ground level in areas such as roadsides and old fields. Although not observed during field investigations, this species has been observed in open lots near the study area, and habitat within the study area would support this species. Since the upland elements of the proposed action would be developed within built streets, it is also concluded that the proposed action would not adversely impact this species.

Therefore, the proposed action would not result in potential significant adverse impacts on endangered, threatened, or special concern species.

NATURAL RESOURCES PROGRAMS AND POLICIES

The proposed action would not result in significant adverse impacts to wetlands, plant communities, wildlife, water quality, or the aquatic biota of Jamaica Bay. The proposed wetland restoration plan at the Beach 88th/94th Street site would be sited on a property that has been identified for protection. The proposed project would support the provision of a new access point to the Jamaica Bay waterfront in addition to supporting the goals and objectives of the Jamaica Bay Watershed Protection Plan. For these reasons, it is concluded that the proposed action would not conflict with the natural resources public policies of the Jamaica Bay Watershed Protection Plan, the Jamaica Bay Long-Term Control Plan, the Jamaica Bay Significant Coastal Fish and Wildlife Habitat, the New York and New Jersey Harbor Estuary Program, or the Hudson-Raritan Estuary Ecosystem Restoration Project.

Therefore, the proposed action would not result in potential significant adverse impacts to natural resources programs and policies.

B.9 HAZARDOUS MATERIALS

The *CEQR Technical Manual* states that the potential for significant impacts related to hazardous materials can occur when: 1) elevated levels of hazardous materials exist on a site; 2) an action would increase pathways to their exposure; or 3) an action would introduce new activities or processes using hazardous materials and the risk of human or environmental exposure is increased.

The Phase I Corridor Assessment Report was prepared and involved conducting a site reconnaissance to document currently property use and conditions; a review of historical Sanborn® Fire Insurance Maps to document past property use; a review of a regulatory agency database report to identify Corridor properties and adjoining sites of potential environmental concern; and a review of wetlands maps to determine the location of designated wetlands areas on or near the corridor. Land uses along the corridor consist primarily of residential properties. A vacant parcel, overgrown with vegetation, is located at the northeastern corner of Bay 32nd Street and Bessemund Avenue. Based on a review of historic Sanborn Fire Insurance maps, this parcel was apparently not previously developed.

Based on the Risk Criteria protocol established by DDC, the Phase I Corridor Assessment Report identified five sites categorized as initially having a "High" risk with respect to potential impact on the project, and three sites as initially having a "Moderate" risk. All five initial "High" risk sites and all three initial "Moderate" risk sites were then reclassified as "Low" risk sites. The sites were re-classified because they were found to be outside of the corridor limits or were identified on one or more of the regulatory agency databases, but additional information indicated a lower risk with respect to hazardous materials. That additional information included records of spills that had been closed by NYSDEC, sites identified on one or more databases with no evidence or records of spills or other concerns, or older sites that were redeveloped or located such that they no longer posed significant risks.

Therefore, the final conclusion of the Phase I was that there were no final "High" or "Moderate" risk sites along the proposed infrastructure routes. However, historical information indicates that portions of the corridor were once part of Norton Basin and were filled sometime between 1954 and 1966. The source of the fill material is not known. During this time period, the source of the material used to fill wetlands and shallow water bodies in the New York City area was often material dredged during the deepening of nearby channels and marine terminals. Studies conducted in the past 20 to 30 years have shown that dredged materials can be contaminated with heavy metals, polychlorinated biphenyls (PCBs), polynuclear aromatic hydrocarbons (PAHs), and other chemicals. Therefore, this fill material is a potential environmental concern with respect to hazardous materials and a Phase II Limited Subsurface Corridor Investigation Report was prepared.

Based on soil and groundwater testing performed as part of a Phase II site investigation, laboratory analytical results, and a comparison to applicable regulatory standards, the following conclusions are presented:

- Field screening did not identify evidence of contamination in any of the three (3) borings or the sediment sample.
- Subsurface soils contain elevated concentrations of metals that exceed Technical and Administrative Guidance Memorandum (TAGM) Recommended Soil Cleanup Objectives (RSCOs), but are below Unrestricted Use (Track 1) Soil Cleanup Objectives (SCOs) and 20 Times Resource Conservation and Recovery Act (RCRA) Hazardous Waste Levels. These elevated concentrations are attributed to natural (background) levels.

- The sediment sample collected from the Norton Basin shoreline immediately adjacent to the corridor did not contain concentrations of contaminants that exceed regulatory standards or guidance values.
- The subsurface soils and sediment did not exhibit hazardous waste characteristics.
- Diesel range organics (DRO) were detected in both the soil and the sediment waste characterization samples. The presence of DRO in the soil sample may be attributed to naturally occurring carbon or to impacts from the asphalt-paved roadways. The presence of DRO in the sediment sample may be attributed to naturally occurring carbon or to undocumented petroleum releases to Norton Basin.
- The groundwater sample contained concentrations of total suspended solids (TSS) th at exceeded the DEP Sewer Discharge Criteria. The presence of elevated levels of TSS in the groundwater is attributed to the fact that the (unfiltered) sample was collected from a temporary well point (TWP) and not a permanent monitoring well. However, the groundwater samples collected from TWPs are considered to be more representative of conditions to be encountered during construction activities.

Based on the testing results, the proposed action would include the following measures:

- A site-specific construction Health and Safety Plan (Construction HASP) should be prepared for the proposed construction project. The Construction HASP should be submitted to DEP for review/approval. Soil disturbance should not occur without DEP's written approval of the construction HASP.
- If de-watering into New York City storm or sewer drains would occur during construction, then a DEP Sewer Discharge Permit must be obtained prior to the start of any de-watering activities at the site. In this case, groundwater sampling for DEP Sewer Discharge Criteria should also be completed in any areas where de-watering is expected.

With these measures in place, the proposed action would not have potential significant adverse impacts from hazardous materials. In addition, based on a previous analyses, the proposed Beach 88th/94th Street Restoration Plan would not result in potential significant adverse impacts from hazardous materials.

B.10 WATER AND SEWER INFRASTRUCTURE

WATER SUPPLY SYSTEMS

The proposed action would not introduce new residents or employees and therefore would not increase water supply demands. Therefore, the proposed action would not result in potential significant adverse impacts to the City's water supply system.

STORM AND SANITARY DRAINAGE SYSTEMS

As stated above, the proposed action would not introduce any new development or employees that would add demands on the City's stormwater or sanitary drainage system. Thus, no increase in sewage generation is expected, and the proposed action would not result in significant adverse impacts to wastewater and sewerage treatment infrastructure. The proposed action would provide a substantial improvement in the local storm sewer collection system and provide an outfall for the discharge of collected stormwater runoff, thereby resulting in a positive impact on infrastructure and relieving local street flooding conditions. It would also upgrade local sanitary

sewers, as necessary. Therefore, the proposed action would not result in potential significant adverse impacts to storm and sanitary drainage infrastructure.

B.11 SOLID WASTE AND SANITATION SERVICES

The proposed action would not introduce any new residents or employees. Thus, no increase in solid waste generation is expected. Therefore, the proposed action would not result in potential significant adverse impacts to solid waste and sanitation services.

B.12 ENERGY

The proposed action would not generate any additional demand for energy. While additional energy demand would be generated during the construction phase, any increase in energy use would be negligible and temporary. Therefore, the proposed action would not result in potential significant adverse impacts to the consumption or supply of energy.

B.13 TRANSPORTATION

The impact methodology guidelines of the *CEQR Technical Manual* state that for projects generating more than 50 new vehicular trips due to actions such as the development of new residential or commercial buildings, the potential for traffic impacts should be analyzed. The proposed action would install new infrastructure, but would not generate new vehicular trips, nor would it open new streets that would create any permanent traffic diversions (the need for any temporary limited traffic diversions during construction is discussed below under "Construction Impacts"). Long-term, positive impacts of the proposed action would include the reconstruction of streets where the new sewer system would be installed, resulting in improved road surfaces and reduced street flooding.

The proposed action does not include any changes in local on-street parking regulations nor would result in the permanent loss of on any street parking (any temporary loss of street parking along the segments of active construction is discussed below under "Construction Impacts").

Therefore, the proposed action would not result in potential significant adverse impacts to traffic and parking conditions.

The proposed action involves the installation of new storm sewers and road reconstruction and would not result in any additional demands, pedestrians, rail, or bus patrons. It would not permanently adversely impact any transit service or pedestrian conditions (see also "Construction Impacts," below for a discussion of any temporary construction impacts). Therefore, the proposed action would not result in potential significant adverse impacts to transit and pedestrians.

B.14 AIR QUALITY

As described in the *CEQR Technical Manual*, an air quality analysis is appropriate if a project would result in direct or indirect impacts on ambient air quality.

Direct impacts include emissions generated by stationary sources, such as fuel burned on site for heating, ventilation or air conditioning (HVAC) systems. The proposed action does not include the addition of any new stationary emission sources. Therefore, the proposed action would not result in potential significant adverse impacts to air quality conditions due to stationary sources.

Indirect air quality impacts involve emissions generated by mobile sources, such as motor vehicles traveling to and from the site of the proposed action. The proposed action would not

generate new vehicle trips (see "Traffic and Parking" above). Therefore, the proposed action would not result in potential significant adverse impacts to air quality.

B.15 GREENHOUSE GAS EMISSIONS

The 2010 *CEQR Technical Manual* includes a chapter on the analysis of Greenhouse gasses under CEQR review. The manual recommends a greenhouse gas analysis for projects being analyzed in an Environmental Impact Statement 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 project does not include any developed square footage not would it have any measurable energy demand during its operation. In addition, it would not result in any mobile or stationary sources of air emissions. Thus, no further analysis of greenhouse gasses is required and the proposed project would not result in potential significant adverse impacts related to greenhouse gasses.

B.16 NOISE

According to the *CEQR Technical Manual*, a noise analysis is appropriate if a proposed project or would generate any mobile or stationary sources of noise or would be located in an area with high ambient noise levels. The proposed action would not generate new traffic, nor does it include any new stationary sources. The proposed actions would also not introduce any noise sensitive uses into an area with high ambient noise levels. Therefore, the proposed action would not result in potential significant adverse noise impacts.

B.17 PUBLIC HEALTH

According to the *CEQR Technical Manual*, public health may be impacted by air emissions from traffic or stationary sources, hazardous materials in soil or groundwater used for drinking water, significant adverse impacts related to noise or odors, solid waste management practices that attract vermin and pest populations, and actions that exceed city, state, or federal standards.

As described above, the proposed action would not result in significant adverse impacts to traffic, air quality, or noise, nor would any applicable city, state, or federal standards that protect air and noise conditions be exceeded. The proposed action 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, and in accordance with the protection measures described above under "Hazardous Materials." With these protection measures in place, impacts from hazardous materials on construction works of local residents would be avoided.

Therefore the proposed action would not result in potential significant adverse public health impacts.

B.18 NEIGHBORHOOD CHARACTER

A neighborhood character impact assessment is an evaluation of the many features that collectively describe a neighborhood. As stated in the *CEQR Technical Manual*, these features typically include land use, urban design and visual resources, socioeconomics, traffic, air quality, and noise conditions. As described below and in other sections of this attachment, the proposed action would not result in significant adverse impacts to any defining features or elements of the local neighborhood. Rather, the proposed action would reduce street flooding by

installing storm sewer structures along several streets in the project area and would also improve other infrastructure and street conditions. This is considered a positive impact for the neighborhood that would benefit the existing community. Moreover, the proposed action would not result in significant impacts to traffic, noise, or air quality conditions.

While the proposed action would clear about 27 trees from within the City owned right of way of Dwight Avenue the proposed action would also include a tree relocation and planting plan that would be developed with DPR. In addition, no streets from local streets would be affected. Thus, the visual character of the neighborhood of the project area would remain essentially unchanged. Therefore the proposed action would not result in potential significant adverse impacts on neighborhood character.

B.19 CONSTRUCTION IMPACTS

DESCRIPTION OF CONSTRUCTION ACTIVITIES

The proposed action involves the replacement and construction of a new outfall to Norton Bay/Jamaica Bay, a new stormwater collection system, upgrade of sanitary sewers and replacement and relocation of water mains (as necessary), restoration of wetlands impacted by project construction, tree relocation and replacement, and wetland restoration at an off-site location to address the permanent impacts of the proposed action (see also Attachment A, "Project Description"). Construction of the proposed action is expected to start in fall 2011 and be completed in about one year, or fall 2012. The major phases of construction are as follows:

- Project initiation and construction staging;
- Partial and phased in-street work with lane closings for the installation of new storm sewers, and upgrade of sanitary lines including street excavation, installation of pipe backfilling, and final paving and surfacing (it is assumed this construction would progress at about 40 to 80 feet per day);
- Construction of the western phase including excavation and installation of the proposed outfall and headwall within the Dwight Avenue right-of-way;
- Limited excavation in the area of the outfall headwall with the following detailed stages of construction: installation of a cofferdam to allow dewatering pumps to remove water from the construction area before dredging; a portable sediment tank to remove sediments from dewatered water prior to discharge into Jamaica Bay; mechanical dredging with dredge spoils transported in a sealed/watertight container and disposed of at a NYSDEC-approved upland disposal facility. Dredge material would undergo chemical analyses prior to disposal to satisfy requirements of the disposal facility (no dewatering effluent from the dredging operation will be discharged directly to the Jamaica Bay);
- Landscaping and wetland restoration for temporary impacts within the proposed outfall corridor;
- Tree replacement in coordination with DPR; and
- Restoration at the Beach 88th/94th Street site will provide restoration for permanent wetland impacts for this project and five other outfall projects including regrading, debris removal, targeted planting and seeding, the removal of a retaining wall, and the building of a pedestrian walkway over the outfall at the shoreline. Additional soil borings and testing will be completed before construction begins on Block 16109, Lot 185.

While it is expected that construction activities would overlap, the general duration of the activities is expected to be as follows:

- Project initiation and staging—45 days;
- Installation of storm sewers and street reconstruction—240 days;
- Outfall and headwall construction—120 days;
- Landscaping and wetland restoration—60 days; and
- Final finishes and close out—30 days.
- Proposed Beach 88th/94th Street Restoration Plan—60-90 days. The construction of the restoration plan will be coordinated with the outfall construction at the Beach 88th/94th Street site (CEQR No. 09DEP041Q).

Principal activities during construction are expected to include heavy equipment for construction of the storm sewers and the outfall including the use of backhoes and small cranes, pile driving, concrete and dump trucks for the delivery and removal of materials, tractor trailers that would deliver materials, and pavement cutters and pavers. Use of lighter duty vehicles and equipment would be used during the final landscaping and finishing work.

Construction activities are expected to primarily occur Monday through Friday, between 7:00 AM and 4:00 PM, although there may be special exceptions when it may be necessary to perform work outside these time periods. Construction staging for the in-street work is expected to be within the street itself and would be subject to NYCDOT permits and approval. Construction staging for the proposed project is expected to use local streets for the in-street phases of the proposed project. The contractor may also secure a local property for temporary construction staging (e.g., storage of materials, parking of vehicles). Construction staging for the proposed outfall may occur within the mapped right of way of Dwight Avenue (either the built or unbuilt sections), along Bay 32nd Street, or an off-site location to be determined by the contractor. If the street right or way is used, all construction activities including staging would be limited to the street area to ensure no impacts on adjoining parkland/natural areas.

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

LAND USE, ZONING, AND PUBLIC POLICY

The proposed action is expected to proceed along City streets at a pace of about 40–80 feet per day. All work would occur within mapped City streets, the majority of which are built with the exception of the short unbuilt segment of Dwight Avenue. Construction of the proposed outfall is expected to take about 3-4 months.

During the construction period, it is expected that there would be disruptions to local traffic as well as the noise and other short term impacts associated with construction activities.

Construction impacts with the proposed action would be typical for a sewer installation project in New York City and would be temporary and disruptive at times. Construction of the proposed action would not conflict with local zoning or public policies. The construction period impacts are necessary in order to provide storm sewers to the area, which is a long term beneficial impact of the proposed action. Therefore, the proposed action would not result in potential significant impacts on land use, zoning or public policy during construction.

PROPOSED BEACH 88TH/94TH RESTORATION PLAN

The proposed wetland restoration at the Beach 88th/94th Street site would involve construction activities such as regrading, removal of debris, removal of a retaining wall, and installation of wetland plants, and would therefore improve a formerly vacant lot for public use. This work is expected to last approximately 60-90 days. This proposed work would not result in potential significant impacts to land use, zoning, and public policy during construction.

HAZARDOUS MATERIALS

See "Hazardous Materials" above.

NATURAL RESOURCES

LAND COVERAGE AND WETLANDS

Construction of the proposed stormwater collection system, water mains, sanitary sewers, and street reconstruction would not have significant adverse impacts on land coverage or wetlands. Construction of the proposed stormwater outfall would impact wetlands (intertidal and high marsh, as well as wetland adjacent area) which are present within the construction zone.

The western segment of the proposed outfall would include installation of the proposed outfall and headwall within an existing 60-foot-wide mapped street right of ways—the width of the proposed construction corridor would be limited to 35 feet. This area is comprised of intertidal marsh and high marsh tidal wetlands along Norton Basin. It has been determined that during construction the proposed action would impact approximately 160 square feet of littoral zone, 1,120 square feet of intertidal marsh, and 230 square feet of high marsh, for a total affected wetland area during construction of 1,510 square feet. In addition, this includes a wetland adjacent area of 5,570 square feet (maritime shrubland) that would also be impacted. All areas affected by construction activities would be restored and re-vegetated post-construction and are considered temporary construction impacts. Under the proposed on-site restoration plan, these areas would be restored with species such as salt-meadow cord grass (S. patens), sea lavender (*Limonium carolinanum*), and spikegrass (Distichlis spicata) and slender salt marsh aster (*Aster tenuifolius*); and little bluestem (*Schizachyrium scoparium*); poverty grass (*Danthonia spicata*); common hairgrass (*Deschampsia flexuosa*); indian grass (*Sorghastrum nutans*); Pennsylvania sedge (*Carex pennsylvanica*); early frostweed (*Helianthemum propinquum*); flat-topped goldenrod (*Solidago graminafolia*); flat-topped white aster (*Aster umbellatus*); Greene's rush (*Juncus greenei*); and Atlantic goldenrod aster (*Chrysopsis falcate*). Therefore, the proposed project would not result in potential significant impacts to wetlands during construction.

WILDLIFE

As stated above, the majority of the project site and its adjacent areas are occupied by low and intertidal marsh wetlands. Construction of the proposed action would temporarily impact approximately 0.04 acres of tidal wetlands that would be re-vegetated post construction (excluding the area of permanent impact). Although it is expected that some species of birds, mammals, and other wildlife would be temporarily displaced during project construction, suitable habitat is located adjacent to the project site within Norton Basin and the larger Jamaica Bay area. In addition, it is expected that species would return to the project site post-construction with the proposed on-site restoration plan.

Therefore, the proposed action would not result in potential significant adverse impacts on wildlife populations or habitats during construction.

WATER QUALITY

Construction Phase

Bottom disturbing activities would include the installation of the proposed outfall within intertidal wetlands of Norton Basin. Water quality changes associated with increases in suspended sediment during construction are expected to be temporary and limited to the immediate area of the activity. Suspended sediments would be expected to dissipate shortly after the outfall is installed and would not result in long-term adverse water quality impacts. In addition, with respect to upland construction, all construction activities would be subject to and performed in accordance with NYSDEC's technical standards for erosion and sediment control and traditional practices for minimizing impacts to water quality for in-water construction activities (e.g., use of silt fences, straw bale dikes, portable sediment tanks, a stabilized construction entrance, cofferdams, and containment booms) that would be implemented in accordance with a Stormwater Pollution Prevention Plan (SWPPP) in order to minimize potential adverse impacts to water quality and aquatic biota during construction.

Therefore, with these measures in place, the proposed project would not result in potential significant adverse impacts on water quality during construction.

TERRESTRIAL RESOURCES

No significant impacts on terrestrial resources are expected with the construction of the proposed outfall. These activities would occur primarily within existing streets or the upland portion of the proposed outfall. Neither of these areas contains any sensitive upland features that would be impacted by construction activities. In addition, the upland areas along the outfall corridor would be stabilized with a vegetative cover post construction. Thus, the proposed action would not result in potential significant impacts on terrestrial resources during construction.

RUNOFF AND SEDIMENT CONTROL

All construction activities would be performed in accordance with NYSDEC's technical standards for erosion and sediment control (e.g., use of silt fences, hay bales, and containment booms) that would be implemented in accordance with a SWPPP in order to minimize potential adverse impacts to water quality and aquatic biota. With these measures in place, no significant impacts on the water quality of Jamaica Bay are expected as a result of project construction. This SWPPP must be in compliance with New York's State Pollutant Discharge Elimination System (SPDES) General Permit for Storm Water Runoff from Construction Activity.

The SWPPP would describe the specifics of Stormwater Management Practices (SMPs) to be used to reduce the pollutants in stormwater runoff, and would ensure that with the implementation of the prescribed SMPs the proposed action would not contravene water quality standards. The SWPPP also includes a soil and erosion control plan (SECP) in conformance with NYSDEC's "Standard and Specifications for Erosion and Sediment Control" that at a minimum includes, but is not limited to, the following control measures: construction limit fence, staked straw bales, reinforced silt fence, sediment trap with filter, sediment filter, portable sediment tank, storm drain inlet protection, and sandbags.

During construction, the contractor, in accordance with the SWPPP, must conduct a site inspection at least once a week and after each rainfall of 0.5 inches or more, and would perform

a final site inspection to certify that the site has undergone final stabilization using either vegetative or structural stabilization methods and that all temporary erosion and sediment controls (such as silt fencing) not needed for long term erosion control have been removed. The contractor would also be required to retain the services of a licensed/certified professional to develop and implement a SWPPP that would minimize the pollutants entering the storm sewer systems in compliance with New York's State Pollutant Discharge Elimination System (SPDES) General Permit for Storm Water Runoff from Construction Activity (GP-0-10-001).

Impacts associated with construction of the proposed action including runoff and sediment control would be temporary and short in duration. Therefore, the proposed action would not result in potential significant adverse impacts to water quality and aquatic resources during construction.

NATURAL RESOURCES AND WATER QUALITY PROTECTIONS

Construction of the proposed outfall segment of the project involves activities within tidal wetlands and tidal wetland adjacent areas. As a result, the following measures are proposed to avoid this potential impact:

- Sediment and erosion control practices would be made part of the contract requirements, including specific techniques and methods to control sedimentation and erosion, such as snow fencing and silt fence/surface water collectors along the particularly sensitive segments, as appropriate (see the discussion above).
- Within the wetland areas to be replanted, biodegradable erosion-control matting or jute mesh would be used to stabilize soils during the grown-in period. Individual plants would be planted after the mat has been installed. This matting reduces erosion and sedimentation from the created wetlands to existing wetlands by protecting soil during the period when new wetland plantings are taking root.
- Flagging and marking the edge of wetlands so that construction activities do not extend into wetland areas not intended for construction or restoration.
- Removal of debris and invasive species within the project area. With the installation of the proposed outfall, several measures would be undertaken to restore the areas disturbed under the current condition. This would include the removal of invasive plants as well as the removal of debris. Under this proposal, these disturbed areas would be planted with tidal plants that are native to Jamaica Bay and consistent with adjoining habitats.

In addition, to protect surface waters from the impacts of turbidity during construction, the proposed action would include techniques to minimize turbidity impacts and ensure that the proposed construction activity does not significantly adversely impact the Jamaica Bay water quality. These measures are expected to include the following.

- A cofferdam, to be installed prior to the start of any construction activities associated with the construction of the new storm sewer outfall. The cofferdam would be installed to allow dewatering pumps to remove water within the construction area before excavation.
- All dewatering activity would occur within the DEP easement and no dewatering effluent from the excavating operation would be discharged directly into Jamaica Bay.
- During construction, portable sediment tanks would be used to remove sediments from dewatering effluent prior to discharge into Jamaica Bay. If required, dewatering would be covered by a Long Island Wells permit, applied for by the construction contractor.
- When water level within the cofferdam rises, mechanical excavation would be performed.

It is expected that these measures would be indentified during the permit review process with NYSDEC and USACE. Impacts associated with construction of the proposed action including natural resources and water quality would be temporary and short-term in duration. Therefore, the proposed action would not result in potential significant adverse impacts to natural resources during construction.

AQUATIC BIOTA

As discussed above, the proposed action would have limited short-term construction related impacts to water quality and aquatic biota. These impacts may include localized increases in suspended sediment that is expected to result in fish avoidance and a *de minimis* disturbance to benthic communities during the installation of the outfall into Norton Basin. Water quality changes associated with these increases in suspended sediment are expected to be minimal, temporary, and limited to the immediate area of the activity. Protection measures (e.g., silt curtains, cofferdams, and portable sediment tanks) are also expected to be required during the NYSDEC and USACE permitting process.

In addition, as described above, the proposed action would comply with all construction period requirements for runoff control and sediment control practices, which would be specified in a SWPPP and the construction documents. Lastly, the proposed action would implement measures as required by the permits to protect tidal wetlands, water quality, and natural resources during construction.

The proposed action also includes a wetland restoration program for areas affected by construction (see Attachment A "Project Description"). With this wetland protection and restoration plan, benthic macroinvertebrates would be expected to recolonize the area shortly after construction is completed.

Impacts associated with construction of the proposed action including aquatic biota would be temporary and short in duration. Therefore, the proposed action would not result in potential significant adverse impacts to aquatic biota during construction.

PROPOSED BEACH 88TH/94TH STREET RESTORATION PLAN

The proposed off-site restoration plan at the Beach 88th/94th Street site would involve debris removal, regrading, removal of a retaining wall, hydro-seeding of maritime grasses, and targeted wetland plantings. Construction period activities for the restoration would employ all soil erosion and sediment control practices that are necessary and required by NYSDEC/USACE. Therefore, the wetland restoration element of the proposed action would not result in potential significant adverse impacts to natural resources during construction.

TRANSPORTATION

CONSTRUCTION TRAFFIC

Construction Workers

The project 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, as follows:

- Sewer installation and outfall work would require an average of approximately 10 to 20 individuals;

- Street and parking area construction work would require an average of approximately 10 to 15 individuals; and
- For lesser intensive work periods (e.g., wetland restoration), average workers at the site work would total from 5 to 10 individuals.

Given typical construction hours (described above), worker trips occur in off-peak travel times and are not represent a substantial increase in local traffic. Standard peak hours are from 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 outfall would not be expected to exceed the 50-peak hour trip threshold established by the CEQR guidelines during these time periods. Therefore, vehicle trips associated with construction are not expected to result in significant adverse effects on traffic during construction.

Truck Traffic

Truck traffic, including removal and delivery of soil, asphalt, piping, and materials would be spread throughout the weekday, and generally occur between the hours of 7:30 AM and 3:30 PM on weekdays. The following estimated numbers of trucks (for delivery of soils, materials, and concrete) are anticipated during the various stages of construction based upon DDC experience for other construction projects would be as follows:

- Sewer installation and outfall work: 10-15 trucks per day (e.g., dump trucks, concrete trucks)
- Street construction work: 7 trucks per day
- Other site work (e.g., staging): 2 trucks per day

It is assumed that all construction truck traffic work be distributed throughout the day and only a limited number of trips would occur in the standard traffic peak hours (e.g., 8:00 AM to 9:00 AM and 5:00 PM to 6:00 PM).

Impacts associated with construction of the proposed action including truck traffic generated during construction would be temporary and short-term in duration. For the level of construction activity proposed, it is also expected that truck traffic would not exceed CEQR thresholds for significant traffic impacts during the standard hours for analysis. Therefore, the proposed action would not result in potential significant adverse impacts due to truck traffic during construction.

TRAFFIC DIVERSIONS

The proposed action would require work in local streets for the installation of storm sewers. This would 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 action and if full street closures are required, these too would be temporary. Overall, work in local streets is expected to be short term and last for approximately three to four months, proceeding in segments. 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 NYCDOT 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 action including traffic diversions would be temporary and short-term in duration. Therefore, the proposed action would not result in potential significant adverse impacts to traffic diversions during construction.

PARKING

Construction may temporarily affect curbside parking along streets affected by construction. It is expected that the affected curbside parking areas would be limited and temporary (as stated above, about three to four months of street work). Street construction is expected to impact about 20 to 30 on-street parking spaces during the periods of more intensive street construction activities. These parking impacts would also occur in phases for various street segments as the construction program progresses along the project area. All construction activities and temporary removal of street parking would be subject to NYCDOT approval under a street and sidewalk construction permit.

Impacts associated with construction of the proposed action including on-street parking would be temporary and short-term in duration. Therefore, the proposed action would not result in potential significant adverse impacts to on-street parking during construction.

TRANSIT AND PEDESTRIANS

It is expected that the proposed action would require some temporary sidewalk closure along the segment of construction for the purposes of providing the street improvements. It is also expected that 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 NYCDOT approval under a street and sidewalk construction permit.

Impacts associated with construction of the proposed action including temporary sidewalk closures would be temporary and short-term in duration. Therefore, the proposed action would not result in potential significant adverse impacts to public pedestrians during construction.

PROPOSED BEACH 88TH/94TH STREET RESTORATION PLAN

The proposed off-site restoration at the Beach 88th/94th Street site would generate limited employee traffic and limited truck deliveries. There would also be limited truck traffic to haul debris/soil from the site. The site would have direct construction access from Beach Channel Drive. In addition, the majority of this project-generated traffic would occur outside of the peak travel periods. Lastly, the street parking demands during this phase of construction would be both limited and temporary. Therefore, the wetland restoration element of the proposed action would not result in potential significant adverse impacts to traffic and parking conditions during construction. The proposed wetland restoration element of the proposed action would occur outside of the local streets and would therefore not result in potential significant impacts on transit or pedestrians.

NOISE AND VIBRATION

NOISE

Construction activities associated with the proposed action would 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 restoration plan would be kept on-site for compliance review by the DEP and the New York City Department of Buildings (DOB). Significant noise impacts to sensitive receptors would not result from the proposed action due to the temporary nature and short duration of construction.

Compliance with these noise control measures would be ensured by including them in the contract documents as specifications and directives to the construction contractors. 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 action would not result in potential signif icant adverse noise impacts during construction.

VIBRATION

Vibrations generated by construction activities can be perceptible and in some cases potentially damaging to structures. No blasting is necessary for the proposed action; however, pile driving (or drilling) is expected for the proposed outfall. 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 the pile construction phase, monitoring would be used to determine if vibration levels are potentially damaging to nearby structures.

Impacts associated with construction of the proposed action, including vibration, would be temporary and short-term in duration. There would also be measures such as monitoring used to assist in avoiding project impacts due to vibration. Therefore, the proposed action would not result in potential significant adverse impacts due to vibration during construction.

PROPOSED BEACH 88TH/94TH STREET RESTORATION PLAN

In addition to being temporary in duration (approximately 60 to 90 days), this element of the proposed action would primarily require hand-operated equipment and limited heavy equipment.

Therefore, this element of the proposed action would not result in potential significant construction noise impacts during construction.

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. City regulations also require all project contractors to reduce particulate matter emissions to the extent practicable by employing relatively new equipment including diesel oxidation catalysts (DOCs). Construction activities would be subject to New York City Local Law 77, which requires the use of Best Available Technology (BAT) for equipment at the time of construction.[4]

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 earth-moving 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. In addition, all fugitive dust control measures would be employed as required by the City of New York to reduce the creation and spread of construction dust.

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

PROPOSED BEACH 88TH/94TH STREET RESTORATION PLAN

The proposed off-site wetland restoration phase of the proposed action would require minor disturbance of soil and limited vehicle traffic. Therefore, this element of the proposed action would not result in potential significant adverse impacts to air quality during construction.

B.20 GROWTH INDUCING

The area of the proposed project is largely developed with residential uses and a small commercial center (see Figure C-5). Of the approximately 74 acres that comprise the study area, only about 9 lots covering about 5 acres (or 7 percent of the study area) is undeveloped vacant land. The area has transportation access for vehicles and is also served by transit. It is also provided with utilities, including water supply and sanitary sewer service. The proposed project

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[4] New York City Administrative Code § 24-163.3, adopted December 22, 2003, also known as Local Law 77, requires that any diesel-powered non-road engine with a power output of 50 hp or greater that is owned by, operated by or on behalf of, or leased by a city agency shall be powered by ultra low sulfur diesel fuel (ULSD), and utilize the best available technology (BAT) for reducing the emission of pollutants, primarily particulate matter and secondarily nitrogen oxides. NYCDEP is charged with defining and periodically updating the definition of BAT.

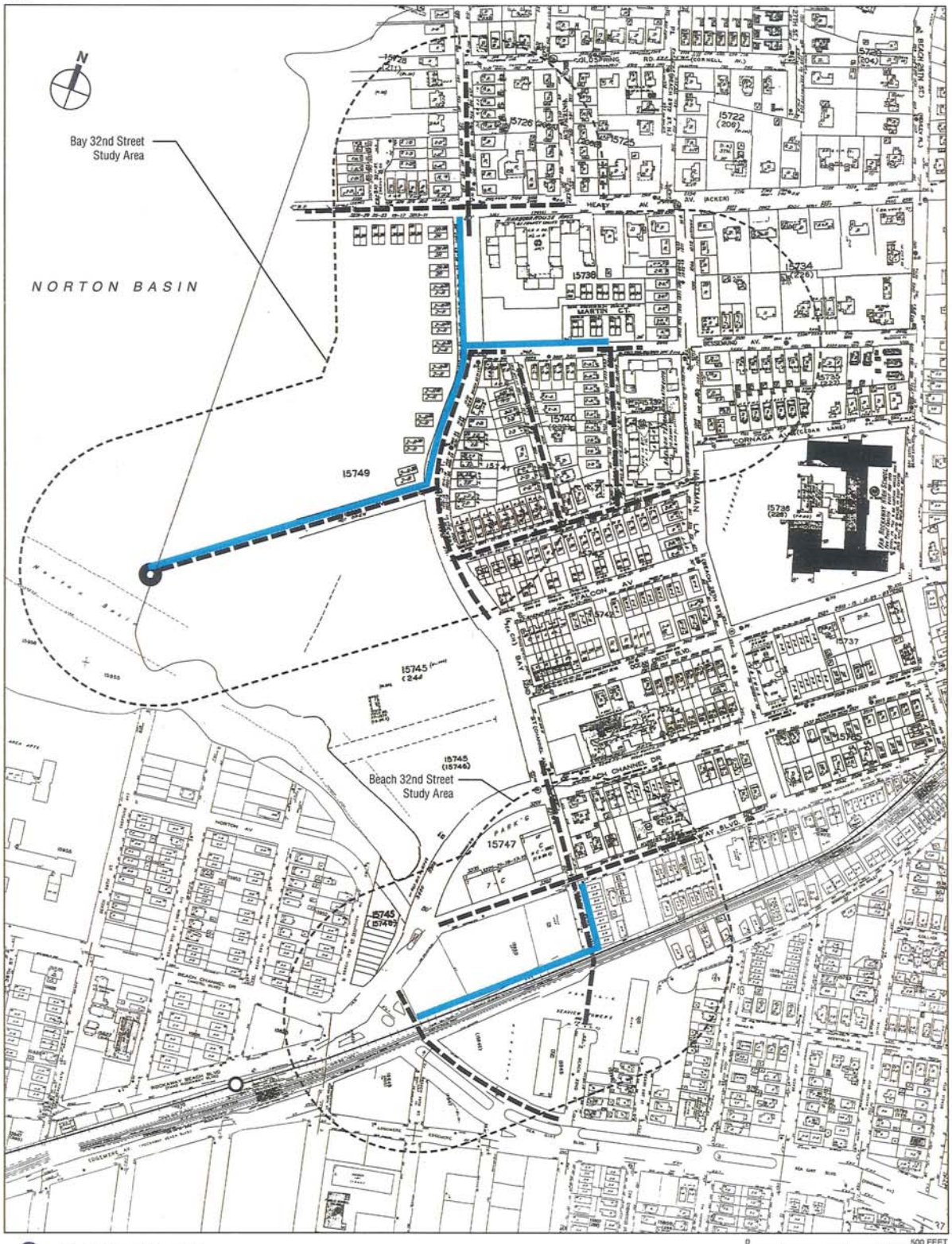
would repair and upgrade water and sewer mains and reconstruct streets, but its principal purpose is to relieve local street flooding through storm drainage improvements.

The *CEQR Technical Manual* identifies the introduction of or expansion of infrastructure as potentially having growth inducing impacts. However, given that this area is largely developed and already contains infrastructure with the exception of stormwater runoff management (which also largely affects street flooding rather than site development), it is concluded that the proposed project would not result in potential significant adverse growth inducing impacts.

*

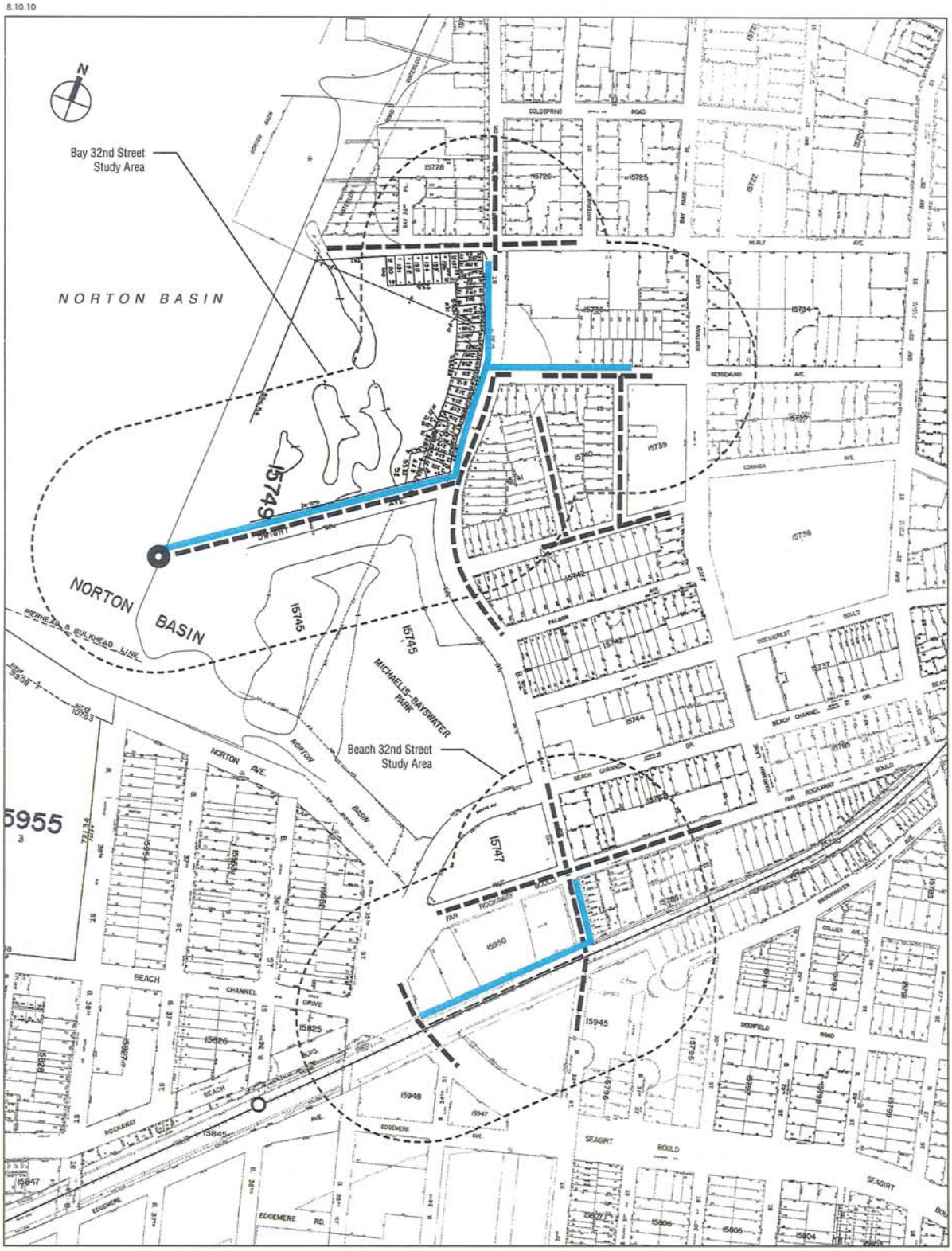
Attachment C
EAS Graphics

12.7.10



Project Area Sanborn Map
Figure C-1

8.10.10



Proposed Storm Water Outfall

Proposed Storm/Sanitary Sewer

Existing Storm/Sanitary Sewer

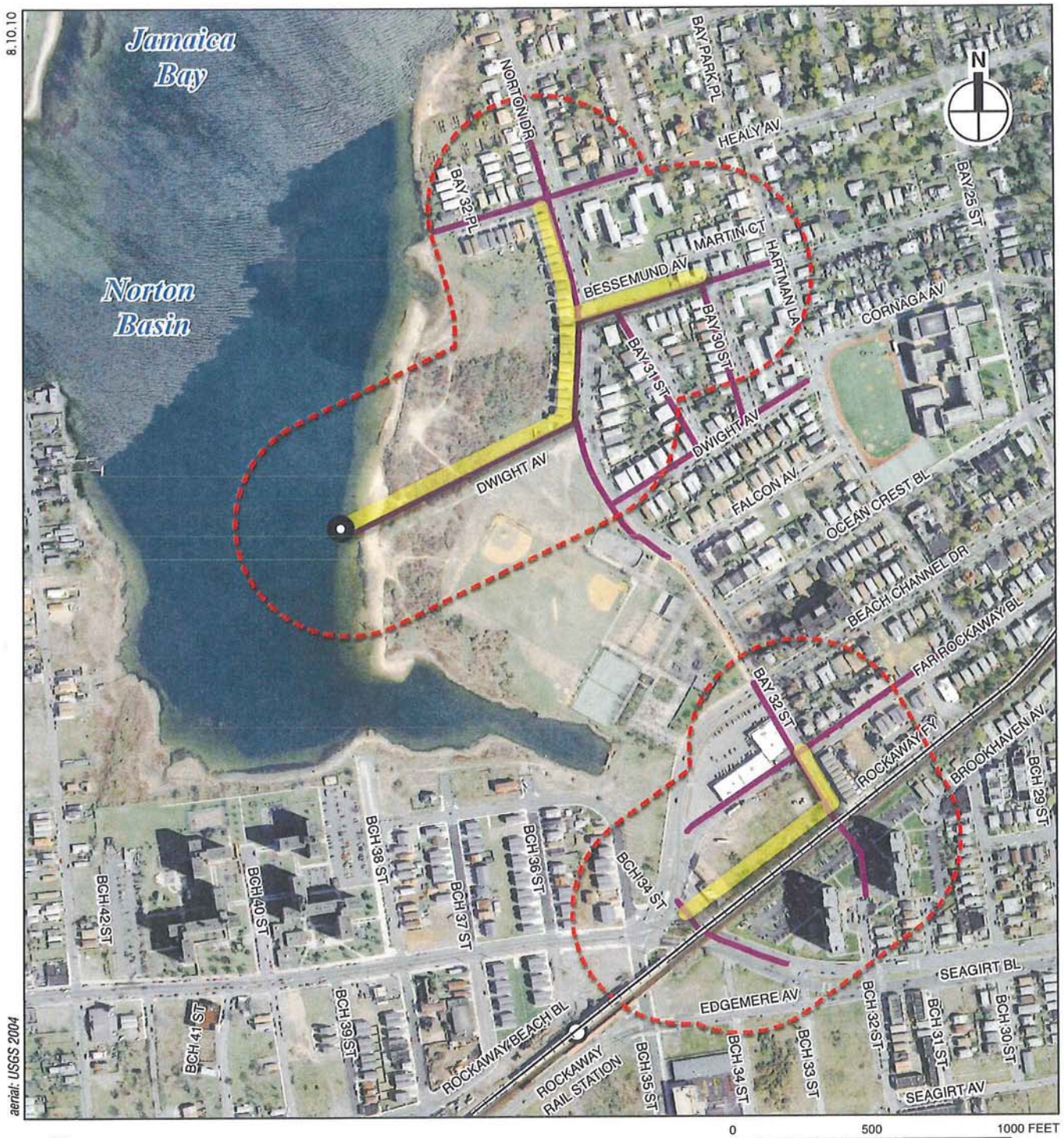
Study Area (400-Foot Perimeter)

Railroad Tracks

Railroad Station

Source: New York City Department of Design and Construction, Storm and Sanitary Sewers in Bay 32nd Street, March 27, 2008; Capital Project Initiation, New York City Department of Environment Protection, September, 2007

Project Area Tax Lots
Figure C-2

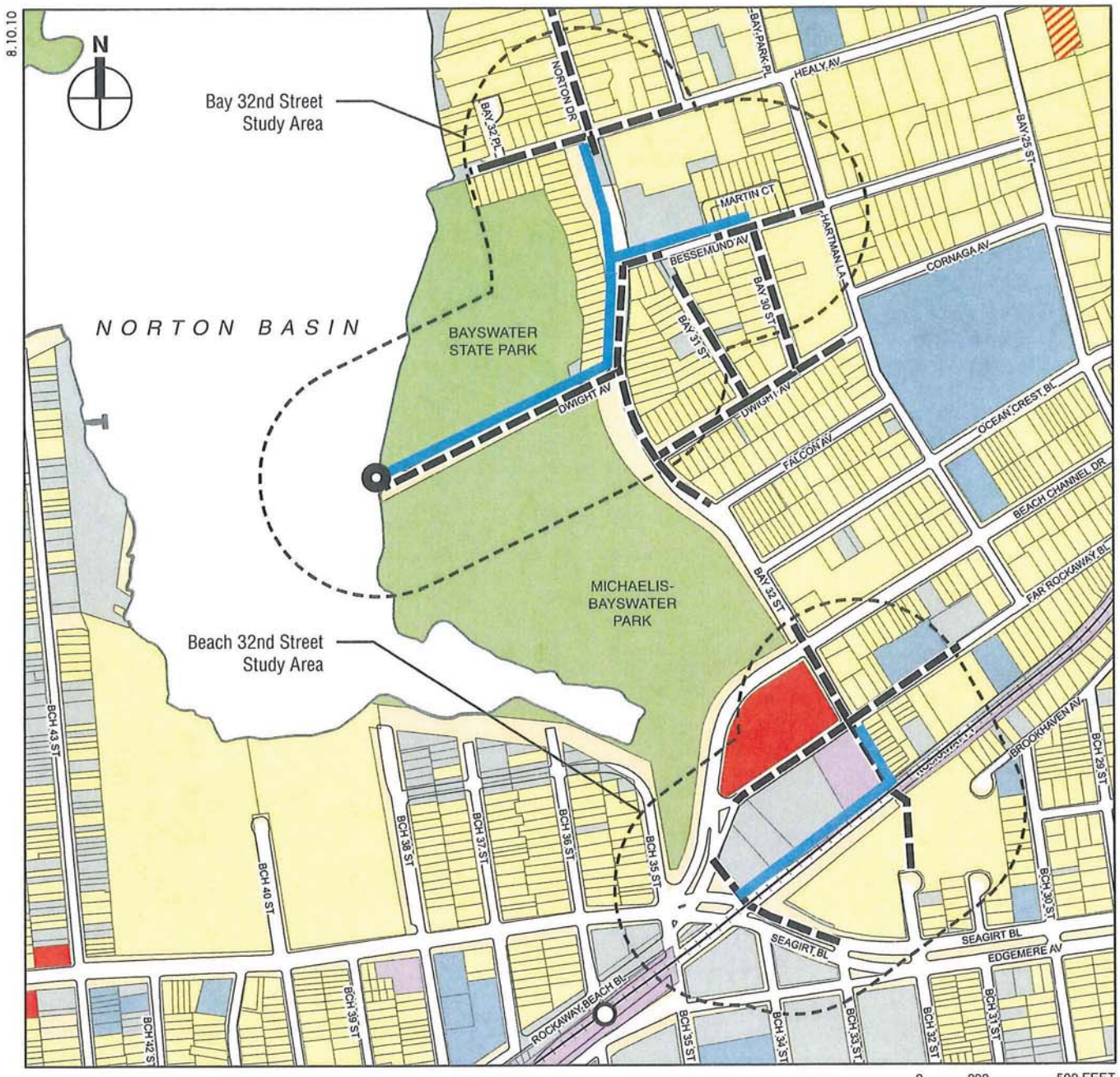


Project Area Aerial Photograph
Figure C-3

6.16.11

H&S File 9781/031/mp-mitigation plan.cdr p2

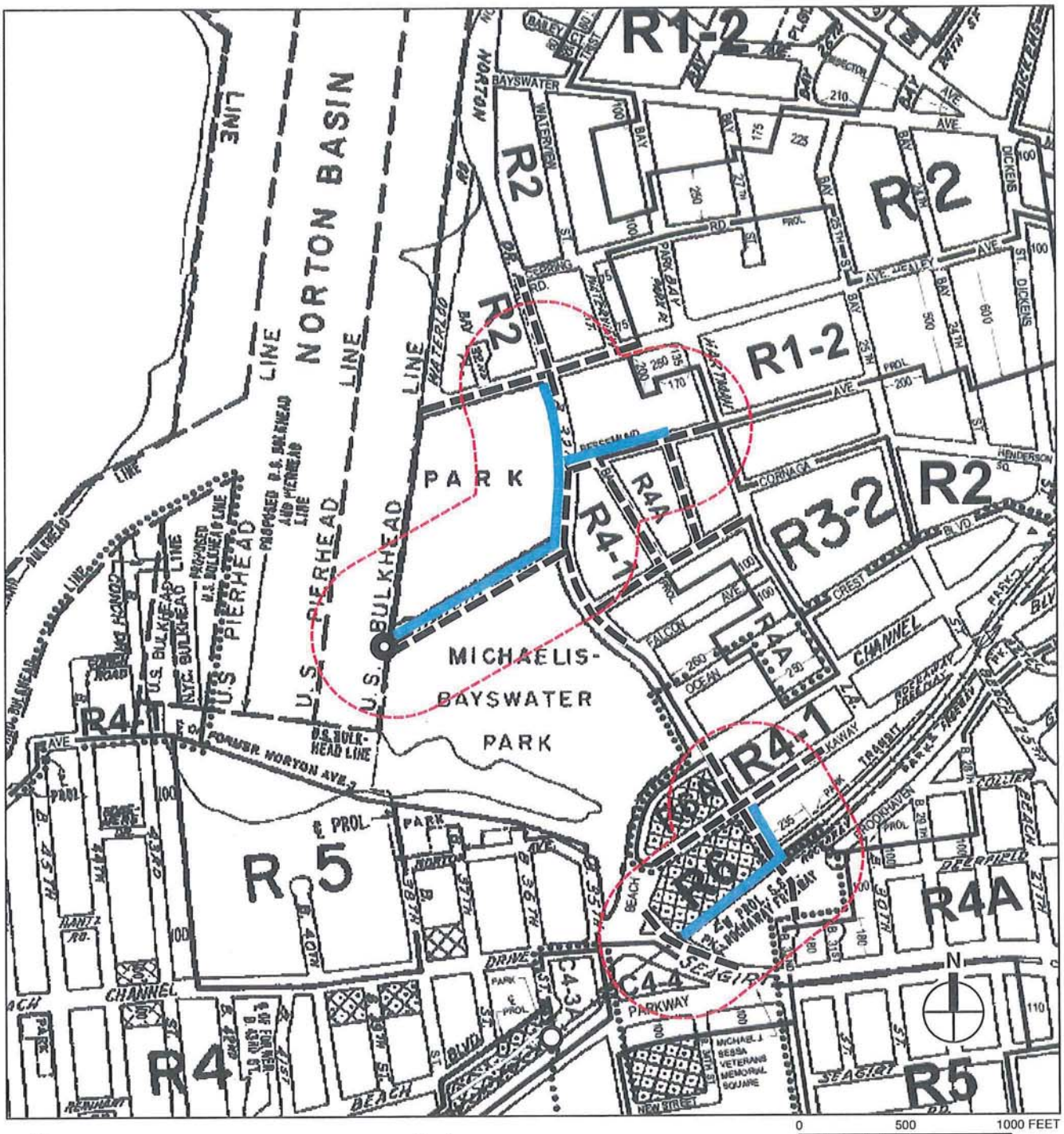
Proposed Mitigation Plan at
Beach 88th Street - Block 16109 Lots 70 and 185
Figure C-4



Land Use

Figure C-5

8.10.10



- Proposed Storm Water Outfall
- Proposed Storm/Sanitary Sewer
- Existing Storm/Sanitary Sewer
- Study Area (400-Foot Perimeter)
- Railroad Tracks
- Railroad Station

Zoning

- Zoning District Boundary
- C1-2 Overlay
- C2-2 Overlay
- Area Recently Rezoned

Zoning
Figure C-6

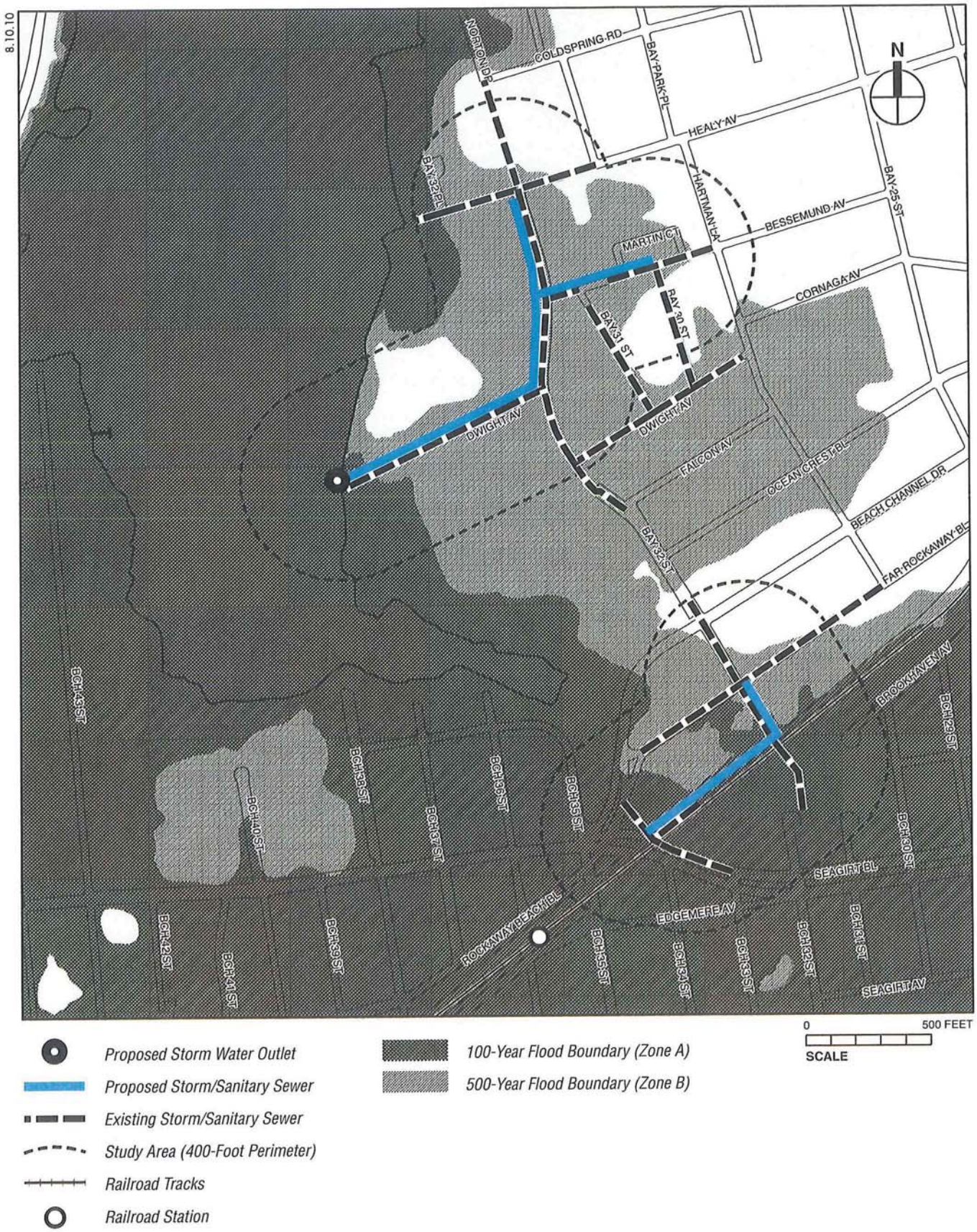
NYSDEC Mapped Wetlands

Figure C-7

NWI Mapped Wetlands

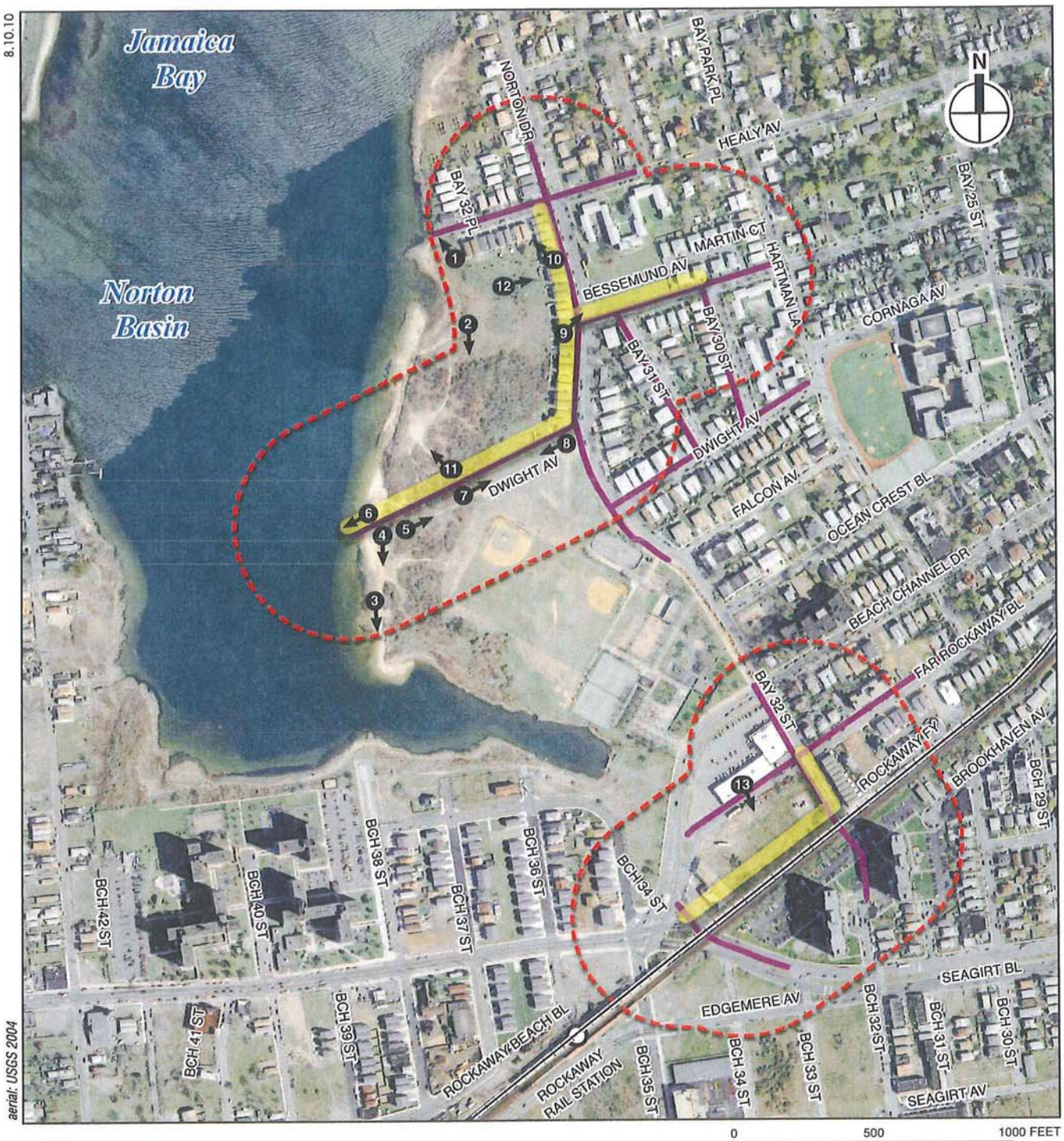
NYC DDC Capital Project SEQ200508 • Bay 32nd Street and Beach 32nd Street

Figure C-8



FEMA Flood Plains

Figure C-9



Natural Resources Study Area and Photograph Key

Figure C-10

NYC DDC Capital Project SEQ200508 • Bay 32nd Street and Beach 32nd Street

8.10.10

View of intertidal marsh from the Norton Basin shore, just south of Healy Avenue--facing northwest **C9a**

View of intertidal marsh from central study area facing south **C9b**

Natural Resources Photographs
Figure C-11

8.10.10

View of Canada geese (Branta Canadensis) and snowy egret (Egretta thula) from southwestern boundary of study area facing south **C9c**

View of beach dune habitat facing south **C9d**

Natural Resources Photographs
Figure C-12

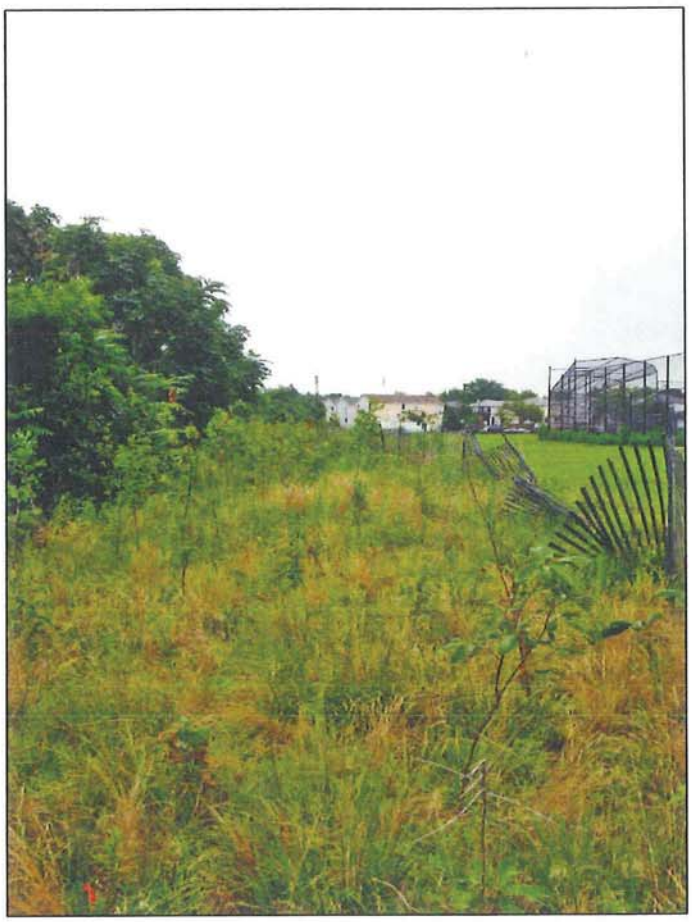
8.10.10

View leading into dense vegetated area near existing/ proposed storm/sanitary sewer facing northeast **C9e**

View of juvenile yellow-crowned night heron (Nycticorax violaceus) near proposed storm/sanitary sewer facing west **C9f**

Natural Resources Photographs
Figure C-13

8.10.10



View of restoration area along existing storm/sanitary sewer, facing northeast **C9g**

View from the intersection of Bay 32nd Street and Dwight Avenue facing west **C9h**

8.10.10

View of vegetated vacant lot at the corner of Bessemund Avenue and Bay 32nd Street **C9i**

View of flooding on Bay 32nd Street between Bessemund Avenue and Healy Avenue facing northwest **C9j**

8.10.10

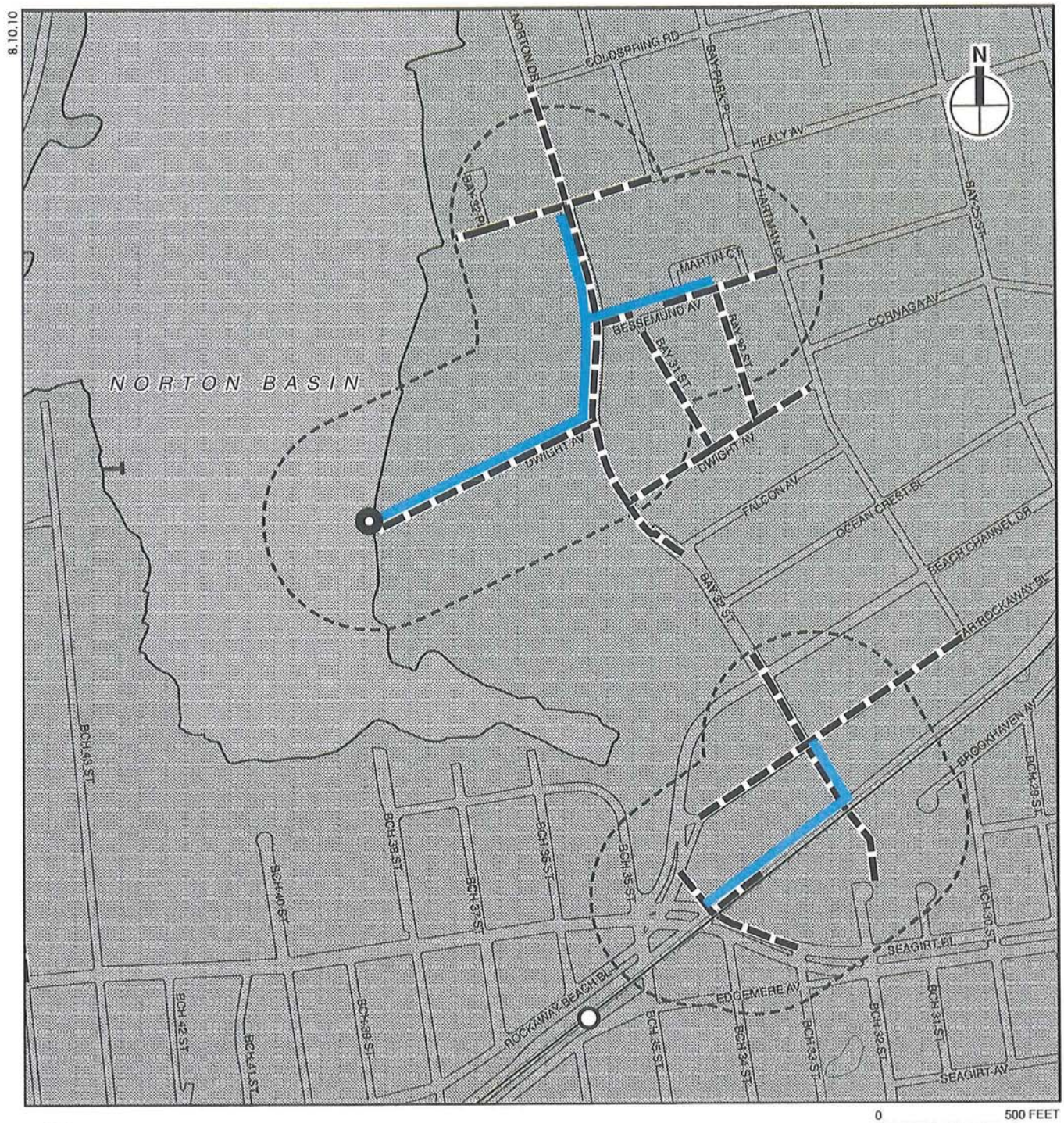
View of dense vegetation near proposed storm/sanitary sewer facing northwest **C9k**

View from open grassy area facing east **C9l**

Natural Resources Photographs
Figure C-16

View from Far Rockaway Blvd facing southeast/vacant lot and proposed storm/sanitary sewer location **C9m**

Natural Resources Photographs
Figure C-17



Coastal Zone Boundary

NYC DDC Capital Project SEQ200508 • Bay 32nd Street and Beach 32nd Street

Figure C-18

APPENDIX A

New York City Waterfront Revitalization Program Consistency Assessment Form

For Internal Use Only:	WRP no.
Date Received:	DOS no.

NEW YORK CITY WATERFRONT REVITALIZATION PROGRAM
Consistency Assessment Form

Proposed action subject to CEQR, ULURP, or other Local, State or Federal Agency Discretionary Actions that are situated within New York City's designated Coastal Zone Boundary must be reviewed and assessed for their consistency with the *New York City Waterfront Revitalization Program (WRP)*. The WRP was adopted as a 197-a Plan by the Council of the City of New York on October 13, 1999, and approved in coordination with local, state and Federal laws and regulations, including the State's Coastal Management Program (Executive Law, Article 42) and the Federal Coastal Zone Management Act of 1972 (P.L. 92-583). As a result of these approvals, state and federal discretionary actions within the city's coastal zone must be consistent to the maximum extent practicable with the WRP policies and the city must be given the opportunity to comment on all state and federal projects within its coastal zone.

This form is intended to assist an applicant in certifying that the proposed activity is consistent with the WRP. It should be completed when the local, state, or federal application is prepared. The completed form and accompanying information will be used by the New York State Department of State, other State Agency or the New York City Department of City Planning in its review of the applicant's certification of consistency.

A. APPLICANT

1. Name: **N. Venugopalan, New York City Department of Design and Construction**

Address: **30-30 Thompson Avenue, Long Island City, NY 11101**

3. Telephone: **(718) 391-2283** Fax: **(718) 391-2276**

E-mail Address: **venugopa@ddc.nyc.gov**

4. Project site owner: **City of New York**

B. PROPOSED ACTIVITY

1. Brief description of activity: **The proposed capital project involves the replacement of an existing stormwater outfall with a new outfall into Norton Basin and Jamaica Bay, installation of new storm sewers, relocation of sanitary sewers and water mains, and wetland restoration in the Bayswater and Edgemere sections of Far Rockaway, Queens.**

2. Purpose of activity: **The proposed storm sewer system and outfall are necessary to improve drainage and to reduce street flooding in the area.**

3. Location of activity: **The proposed outfall would be located along the shores of Jamaica Bay in the Bayswater and Edgemere sections of Queens, terminating at the end of the mapped but unbuilt Dwight Avenue.**
Borough: **Queens**

Street Address or Site Description: **See above.**

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:

   New York State Department of Environmental Conservation (NYSDEC) 401 Water Quality Certification, NYSDEC Tidal Wetlands Permit, NYSDEC State Pollution Discharge Elimination System (SPDES) permit for a new outfall, SPDES General Permit GP-0-10-001 for activities during construction, and Industrial SPDES Discharge permit if necessary.

5. Is federal or state funding being used to finance the project? If so, please identify the funding source(s). **No**

6. Will the proposed project result in any large physical change to a site within the coastal area that will require the preparation of an environmental impact statement?

	Yes	No
If yes, identify Lead Agency:		✓

7. Identify City discretionary actions, such as zoning amendment or adoption of an urban renewal plan, required for the proposed project.
   The proposed capital project is a discretionary action undertaken by the New York City Department of Environmental Protection and the New York City Department of Design and Construction.

C. COASTAL ASSESSMENT

The following questions represent, in a broad sense, the policy of the WRP. The number in the parentheses after each question indicated the policy or policies that are the focus of the question. A detailed explanation of the Waterfront Revitalization Program and its policies are contained in the publication the *New York City Waterfront Revitalization Program.*

Check either "Yes" or "No" for each of the following questions. Once the checklist is completed, assess how the proposed project affects the policy or standards indicated in "( )" after each question with a Yes response. Explain how the action is consistent with the goals of the policy or standard.

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 indicates 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)		✓
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)		✓

Policy Questions cont'd:		Yes	No
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 Habitats? (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)		✓

Policy Questions cont'd:		Yes	No
28.	Would the action cause violations of the National or State air quality standards? (5.2)		✓
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 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 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 the 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 publically 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)		✓

Policy Questions cont'd:		Yes	No
50.	Does the site currently include elements that degrade the area's scenic quality or block views to the water? (9.1)		✓
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 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: **N. Venugopalan**

Address: **30-30 Thomson Avenue, Long Island City, NY 11101**

Telephone **(718) 391-2277**

Applicant/Agent Signature: N. Venugopal Date: 6·30·11

APPENDIX B

Jamaica Bay Waterfront Protection Plan
Project Tracking Form

Appendix B
Jamaica Bay Watershed Protection Plan
Project Tracking Form

The Jamaica Bay Watershed Protection Plan, developed pursuant to Local Law 71 of 2005, mandates that the New York City Department of Environmental Protection (DEP) work with the Mayor's Office of Environmental Coordination (MOEC) to review and track proposed development projects in the Jamaica Bay Watershed (http://www.nyc.gov/html/oec/downloads/pdf/ceqr/Jamaica_Bay_Watershed_Map.jpg) that are subject to CEQR in order to monitor growth and trends. If a project is located in the Jamaica Bay Watershed, (the applicant should complete this form and submit it to DEP and MOEC. This form must be updated with any project modifications and resubmitted to DEP and MOEC.

The information below will be used for tracking purposes only. It is not intended to indicate whether further CEQR analysis is needed to substitute for the guidance offered in the relevant chapters of the CEQR Technical Manual.

A. GENERAL PROJECT INFORMATION

1. CEQR Number: **10DEP022Q** 1a. Modification ☐

2. Project Name: **Bay 32nd Street and Beach 32nd Street Infrastructure Improvements**

3. Project Description

The proposed capital project involves the replacement of an existing stormwater outfall with a new storm sewer outfall that would be located in Norton Basin within the Jamaica Bay Watershed at the western terminus of Dwight Avenue in the Far Rockaway area of Queens. The proposed project also includes the installation of stormwater collection sewers, relocation of water mains, and the upgrade of sanitary sewers in the project area. The streets proposed for new storm sewers, as well as the location of the proposed outfall and project area, are shown in Figure C-1 (see also Attachment A, "Project Description").

4. Project Sponsor: **New York City Department of Environmental Protection**

5. Required approvals:

State Approvals: NYSDEC 401 Water Quality Certification; NYSDEC Tidal Wetlands Permit; NYSDEC SPDES MS4 Permit (Modification); NYSDEC SPDES General Permit for Stormwater Discharges from Construction Activity; and Industrial SPDES Discharge Permit.
Federal Approvals: USACE Section 10, Construction in Navigable Waters; USACE Section 404, Dredging and Filling of Navigable Waters.
See also Attachment A, "Project Description," under "Permits and Approvals."

6. Project Schedule (build year and construction schedule): **2012 with a one-year construction program**

B. PROJECT LOCATION: see Figure C-1 in Attachment C

1. Street address: **N/A**

2. Tax block(s): **N/A** Tax Lot(s): **N/A**

3. Identify existing land use and zoning on the project site: **Built and mapped streets**

4. Identify proposed land use and zoning on the project site: **N/A**

5. Identify land use of adjacent sites (include any open space): **Residential, commercial, and open spaces (Michaelis-Bayswater Park and Norton Basin Natural Resource Area)**

6. Describe existing density on the project site and the proposed density:

Existing Conditions	Proposed Condition
N/A	N/A

7. Is project within 100 or 500 year floodplain (specify)? ■ **100 Year** ■ **500 Year** ☐ **No**

C. GROUND AND GROUNDWATER

1. Total area of in-ground disturbance, if any (in square feet): **±175,250 sq. ft.**
2. Will soil be removed (if so, what is the volume in cubic yards)? **±7,000 cubic yards**
3. Subsurface soil classification:
   (per the New York City Soil and Water Conservation Board): **urban fill and wetland marsh**
4. If project would change site grade, provide land contours (**attach** map showing existing in 1' contours and proposed in 1' contours).
5. Will groundwater be used (list volumes/rates)? ☐ **Yes** ■ **No**

   Volumes: [ ] Rates: [ ]
6. Will project involve dewatering (list volumes/rates)? ■ **Yes** ☐ **No**

   Volumes: [1] Rates: [1]
7. Describe site elevation above seasonal high groundwater:

   ±4 feet (varies throughout the project area)

D. HABITAT

1. Will habitat be removed, particularly native vegetation? ■ **Yes** ☐ **No**

   If YES,
   - **Attach** a detailed list (species, size and location on site) of vegetation to be removed (including trees >2" caliper, shrubs, understory planting and groundcover).
   - **List** species to remain on site.
   - **Provide** a detailed list (species and sizes) of proposed landscape restoration plan (including any wetland restoration plans). **See attachment B, "Impact Analyses," under "Natural Resources."**
2. Is the site used or inhabited by any rare, threatened or endangered species? ☐ **Yes** ■ **No**
3. Will the project affect habitat characteristics? ■ **Yes** ☐ **No**
   If YES, describe existing wildlife use and habitat classification using "Ecological Communities of New York State" at http://www.dec.ny.gov/animals/29392.html.

   There would be limited clearing of maritime shrubland and tidal wetland habitats, as described in greater detail in Attachment B.
4. Will pesticides, rodenticides or herbicides be used during construction? ☐ **Yes** ■ **No**
   If YES, estimate quantity, area and duration of application.
5. Will additional lighting be installed? ☐ Yes ■ No
   If YES and near existing open space or natural areas, what measures would be taken to reduce light penetration into these areas?

---

[1] **Volume of groundwater pumping rates would be determined during final design.**

E. SURFACE COVERAGE AND CHARACTERISTICS

(describe the following for both the existing and proposed condition):

	Existing Condition	Proposed Condition
1. ***Surface area:***		
Roof:	**N/A**	**N/A**
Pavement/walkway:	**±135,250 sq. ft.**	**135,250 sq. ft.**
Grass/softscape	**20,000 sq. ft.**	**40,000 sq. ft.**
Other (describe):	**20,000 maritime shrubland**	**0 sq. ft.**
2. ***Wetland*** (regulated or non-regulated) area and classification:	**3,120 sq. ft. (tidal wetland)**	**1,610 plus tidal wetland restoration**
3. ***Water surface area:***	**275**	**275**

4. ***Stormwater management*** (describe):

Existing – how is the site drained?

Currently there are limited storm sewers in the project area.

Proposed – describe, including any infrastructure improvements necessary off-site:

The proposed project would install new storm sewers and a new stormwater outfall.