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## NOTICE OF FINAL SCOPE OF WORK FOR THE MID-ISLAND BLUEBELT DRAINAGE PLANS ENVIRONMENTAL IMPACT STATEMENT

**CEQR No. 07DEP063R**  
**September 30, 2010**

In accordance with the State Environmental Quality Review Act (SEQRA) (Section 8-0113, Article 8 of the Environmental Conservation Law) as set forth in 6NYCRR Part 617, and the City Environmental Quality Review (CEQR) process, as set forth in Executive Order 91 of 1977 and its amendments, the New York City Department of Environmental Protection (NYCDEP), is hereby issuing a Final Scope of Work for the Environmental Impact Statement (EIS) for the Mid-Island Bluebelt Drainage Plans.

In conjunction with the issuance of a Positive Declaration, a Draft Scope of Work was issued on April 12, 2010. A public scoping meeting on the Draft Scope of Work was held on May 16, 2010 at the offices of Staten Island Community Board #2. Following the scoping meeting, written comments were accepted by NYCDEP through May 31, 2010. NYCDEP reviewed all relevant comments on the Draft Scope of Work which was adjusted where appropriate and incorporated into the Final Scope of Work. These changes are shown in the Final Scope of Work as double underlined text and the Response to Comments is attached. The Draft EIS based on the Final Scope of Work will evaluate the environmental impacts associated with the proposed project and will present alternatives to the proposed project.

### **Project Description**

The New York City Department of Environmental Protection (NYCDEP), on behalf of the City of New York, is proposing new drainage plans for three watersheds within the Mid-Island (South Shore) area of Staten Island. The proposed action would cover the following watersheds or drainage areas: Oakwood Beach, New Creek, and South Beach. Each of these watersheds has surface water features, such as streams, ponds, and other wetlands, which would be used for stormwater management. Those features are contained within the Bluebelt system for each watershed, described in greater detail below. For the purposes of this proposed action, Mid-Island is defined as the portion of Staten Island's South Shore between Great Kills Park on the west and the Staten Island Expressway on the east. The northern boundary runs along the higher elevations of central Staten Island and includes portions of the mapped, but not constructed Willowbrook Parkway right-of-way. The northern boundary is defined by Staten Island Greenbelt Parks including LaTourette Park, Richmond County Country Club and Reeds Basket Willow Swamp. The southern boundary is defined by the Raritan Bay shoreline.

The proposed action would amend the existing drainage plan for these three watersheds with new designs for the collection, conveyance, and management of stormwater that would take advantage of local topography and natural features. Under the proposed action, stormwater runoff would be collected and conveyed to stormwater management features, or Best Management Practices (BMPs). In total, the proposed action includes and anticipates 27 BMPs, which would be contained within the Bluebelt system for each watershed on land that NYCDEP has acquired or

is in the process of acquiring. Although most of the area is already serviced by sanitary sewers, the proposed action also includes new designs for additional and upgraded sanitary sewers, which will be a completely piped system, conveying sanitary waste to the Oakwood Beach Waste Water Treatment Plant (WWTP).

An Environmental Impact Statement (EIS) will be prepared in order to support this action. The EIS will present an analysis of potential impacts from the proposed action and determinations of significance will be made based on the impact assessments described below. Currently, the proposed action is in the planning and conceptual design phase and the BMP designs may be modified to minimize environmental impacts or to reflect involved agency comments and coordination.

NYCDEP will organize the next meeting of the Mid-Island Bluebelt Citizens Advisory Committee in the Spring of 2011 at which time an update on the preparation of this EIS will be provided.

A copy of the Final Scope of Work will be posted on the NYCDEP website at <http://www.nyc.gov/dep>.

**Contact Person**

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Attached: Final Scope of Work  
Attachment A: Response to Comments

Cc: Michael McSweeney, NYC City Clerk and Clerk of the Council  
Honorable James S. Oddo, New York City Council (District 50)  
Honorable Vincent Ignizio, New York City Council (District 51)  
James Molinaro, Staten Island Borough President's Office  
Nick Dmytryszyn, Staten Island Borough President's Office  
Frank Morano, Staten Island Community Board 3 Chairperson  
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Dahlia Thompson, Hazen & Sawyer  
Robert White, AKRF

**New York City Department of Environmental Protection**  
**Final Scope of Work to Prepare a Draft Environmental Impact Statement**  
**for the Mid-Island Bluebelt Drainage Plans**

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**A. INTRODUCTION**

The New York City Department of Environmental Protection (NYCDEP), on behalf of the City of New York, is proposing new drainage plans for three watersheds within the Mid-Island (South Shore) area of Staten Island (see Figure 1). The proposed action would cover the following watersheds or drainage areas: Oakwood Beach (see Figure 2), New Creek (see Figure 3), and South Beach (see Figure 4). Each of these watersheds has surface water features, such as streams, ponds, and other wetlands, which would be used for stormwater management. Those features are contained within the Bluebelt system for each watershed, described in greater detail below. For the purposes of this proposed action, Mid-Island is defined as the portion of Staten Island's South Shore between Great Kills Park on the west and the Staten Island Expressway on the east. The northern boundary runs along the higher elevations of central Staten Island and includes portions of the mapped, but not constructed Willowbrook Parkway right-of-way. The northern boundary is defined by Staten Island Greenbelt Parks including LaTourette Park, Richmond County Country Club and Reeds Basket Willow Swamp. The southern boundary is defined by the Raritan Bay shoreline.

The proposed action would amend the existing drainage plan for these three watersheds with new designs for the collection, conveyance, and management of stormwater that would take advantage of local topography and natural features. Under the proposed action, stormwater runoff would be collected and conveyed to stormwater management features, or Best Management Practices (BMPs). In total, the proposed action includes and anticipates 27 BMPs, which would be contained within the Bluebelt system for each watershed on land that NYCDEP has acquired or is in the process of acquiring. Although most of the area is already serviced by sanitary sewers, the proposed action also includes new designs for additional and upgraded sanitary sewers, which will be a completely piped system, conveying sanitary waste to the Oakwood Beach Wastewater Treatment Plant (WWTP).

An Environmental Impact Statement (EIS) will be prepared in order to support this action. The EIS will present an analysis of potential impacts from the proposed action and determinations of significance will be made based on the impact assessments described below. Currently, the proposed action is in the planning and conceptual design phase. As this environmental review process proceeds, the BMP designs may be modified to minimize environmental impacts or to reflect involved agency comments and coordination.

## B. PROJECT DESCRIPTION

### OVERVIEW

NYCDEP is the City agency responsible for the management and treatment of sanitary wastewater and stormwater in New York City, in accordance with adopted drainage plans. With respect to stormwater management, hard infrastructure, such as catch basins and collection pipes, has historically been used to collect, convey and discharge stormwater. The existing drainage plan for the area was developed approximately 40 years ago. It is called the Potter Plan (named for the Alexander Potter consulting firm which developed it) and it proposed a network of hard infrastructure throughout the project area, with sanitary and storm sewers and a completed street system. Implementing such a plan would have filled and significantly impacted the remaining wetlands in the project area. Stormwater management and environmental design strategies have evolved substantially since the Potter Plan was developed. Current strategies are more oriented toward the protection and restoration of remaining wetlands and natural features particularly in urban watersheds. These strategies are being implemented in the South Richmond area of Staten Island and at other locations in the City.

The objective for these three Mid-Island watersheds is to update and amend the drainage plans to work with local topography and natural features. This action proposes to create drainage plans that not only protect, but enhance existing natural resources through the preservation and improvement of existing streams and wetlands. Key to this plan is the use of special man-made drainage facilities, or BMPs, which are located at every storm sewer outfall in a Bluebelt wetland. These facilities, such as an outlet stilling basin or a constructed wetland, would minimize the impacts of urban stormwater discharges into natural areas. These BMPs would be sited on publicly-owned land including NYCDEP Bluebelt property, as well as City parkland and State-owned property. A number of segments of mapped, but not constructed streets are proposed for demapping to accommodate the construction of the proposed BMPs. Those street segments will be presented in the EIS. Future Uniform Land Use Review Procedure (ULURP) actions would be required to formally demap these streets.

In addition to providing environmental benefits including natural resource enhancement and protection, the proposed action is generally more cost effective than conventional, piped stormwater infrastructure. The proposed action would also preserve and restore wetlands without the wholesale filling required for subsurface storm sewers, and therefore would comply with State and Federal permitting requirements.

If approved, implementation of the proposed action (installation of sewers and BMPs) would commence in fiscal year 2013 (between July 1, 2012 and June 30, 2013). Installation of storm and sanitary sewers would be complete, throughout the three watersheds, in approximately 30 years. Thus, construction of the proposed action is expected to continue through 2043.

### WATERSHED DESCRIPTIONS

**Oakwood Beach.** This watershed is approximately 1,329 acres in size (see Figure 2). Boundaries of the watershed are Great Kills Park in the Gateway National Recreation Area and Tanglewood Drive to the west, Oceanview Cemetery to the north, Peter Avenue to the east, and Raritan Bay to the south. Most of this watershed is zoned for low-density residential with some commercial uses on major roads. There are about 60.9 acres of NYCDEP Bluebelt property in this watershed (acquired or to be acquired), located mostly in low-elevation areas north and east

of the Oakwood Beach WWTP. The site of the Oakwood Beach WWTP is zoned M3-1. There is also New York City Department of Parks and Recreation (NYCDPR) parkland in the watershed including a large wetland parcel between Kissam Avenue and Tysens Lane along the Raritan Bay shoreline and the mapped, but not constructed, Willowbrook Parkway. The Parkway is still mapped indicating that the New York State Department of Transportation (NYSDOT) still has some interest in the right-of way. The Staten Island Railway runs east to west across the northern portion of the watershed.

The northern and western portions of the watershed are also within the Staten Island Special Natural Area District (NA-1) and the Special South Richmond Development District (SSRDD), which are two City zoning designations that regulate development for the primary purpose of protecting natural resources. Portions of this watershed have been the subject of brush fires due to the extensive stands of phragmites.

Runoff within the watershed flows south into two tributaries to Raritan Bay. One is the West Branch, which generally runs within the Willowbrook Parkway right-of-way and continues south into Great Kills Park. That channel connects with another stream which begins at Hylan Boulevard and the mapped, but not constructed Adelaide Avenue. The other main tributary is a stream that flows south and west to a tide gate into Raritan Bay that is located immediately south of the Oakwood Beach WWTP. That tide gate controls the inflow of tidal waters from the bay, thereby preventing flooding. The second main tributary begins in the large park property between Kissam Avenue and Tysens Lane.

**New Creek.** This watershed covers approximately 2,249 acres and is northeast of the Oakwood Beach watershed (see Figure 3). The watershed is generally bounded by Miller Field and New Dorp Lane to the west. The northern boundary extends east to west through and incorporating portions of Richmond County Country Club and the Reeds Basket Willow Swamp Park. Seaview Avenue, the Staten Island University Hospital and Burgher Avenue form the boundary to the east and Raritan Bay is the southern boundary. The upper watershed is comprised primarily of rolling terrain with some very steep slopes. There are also other City park properties in the lower watershed (e.g., Last Chance Pond and Boundary Avenue), and furthermore the beaches fronting Raritan Bay are under NYCDPR jurisdiction. The balance of the land use in the watershed is comprised of residential and commercial uses along Hylan Boulevard and Richmond Avenue. The watershed is predominantly zoned R3-1, R3-X and R-5. The Staten Island Railway runs east to west through the center of the watershed. There are also 94.4 acres of Bluebelt properties, acquired or to be acquired, in the New Creek watershed. Portions of this watershed have been the subject of brush fires due to the extensive stands of phragmites.

The northern portion is also within the Staten Island Special Natural Area District (NA-1). The New Creek watershed has a number of stream reaches, three of which are preserved in the New Creek Bluebelt. The main channel starts at Last Chance Pond, the West Branch at Midland Avenue, and the East Branch at Dongon Hills Avenue. Other watercourses begin in the upper elevation parklands of the watershed (above Richmond Hill Road) and certain segments are piped (i.e., where the streams pass through the more developed central areas of the watershed.) These other streams pass through Reeds Basket Willow Swamp and the Richmond County Country Club. This watershed also includes a tide-gate controlled outlet to Raritan Bay at Naughton Avenue.

**South Beach.** The easternmost of the three watersheds is the South Beach Watershed (see Figure 4). This watershed, which is adjacent to and east of the New Creek Watershed, occupies about 1,267 acres. This watershed is generally bounded by Hillcrest and Fingerboard Streets to

## **Mid-Island Bluebelt Drainage Plans**

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the north, Narrows Road and the Staten Island Expressway to the east, the Staten Island University Hospital property and Burgher Avenue to the west and Raritan Bay to the south. Most of this watershed is developed with low-density residential uses and is predominantly zoned R3-1, R3-X, and R3-2A. The Staten Island Railway runs east to west through the northern portion of the watershed.

Surface water features in this watershed include Brady's Pond and Cameron's Lake in the upper reaches of the watershed just south of the Staten Island Expressway. Brady's Pond is privately owned while Cameron's Lake is owned by NYCDEP as part of the Bluebelt. Whitney Woods is a small wooded site, west of Cameron's Lake, where stormwater collects and is in the process of being acquired for inclusion in the Bluebelt. The main assemblage of Bluebelt properties is in the lower watershed where 40.1 acres of wetlands are vested or in the process of being vested. These properties are generally bounded by Quintard Street on the west, Father Capodanno Boulevard on the South, Sand Lane on the east, and various streets on the north (see Figure 4). Some of the wetland properties are under the jurisdiction of NYCDPR. There is a tide-gate controlled outlet to Raritan Bay from Sand Lane. Portions of this watershed have been the subject of brush fires due to the extensive stands of phragmites.

### **STORMWATER COLLECTION SEWERS AND BEST MANAGEMENT PRACTICES (BMPS)**

Preliminary BMP locations and design objectives for each watershed are presented in Table 1 and will be described in greater detail in the EIS. As stated above, the objective of these drainage plans is to provide a storm sewer design that takes into account runoff from both existing land cover, and projected future runoff under the current zoning regulations. In addition, the plans make every effort to avoid negative wetland impacts due to storm sewer construction, while providing appropriate stormwater drainage for all city streets.

Under the proposed drainage plans, stormwater collection lines outlet to BMPs. Storm sewer lines are typically proposed in mapped and built city streets. Any easements or other acquisitions necessary for storm sewer construction as part of the proposed action will be described in the EIS. BMPs are stormwater management features that are designed to provide a number of functions, which may include improved stormwater conveyance; attenuation of stormwater velocities; management and control of stormwater volumes; and pollutant removal. In this way, BMPs reduce adverse runoff impacts on receiving waters by controlling runoff velocity and reducing pollutant loads due to sediment, nitrogen, phosphorous, organics, and coliform bacteria. A principal objective of these drainage plans is to provide BMP designs that will address current and projected runoff volume and rates for the purposes of protecting private property and public streets from local flooding, as well as to reduce pollutant loadings. These design objectives will also protect natural resources including wetlands and aquatic habitats. BMP site selection and design are important considerations in meeting these objectives and in minimizing potential adverse development impacts on existing natural systems (i.e., avoiding disturbance of existing high quality wetlands and restoration and enhancement of lower quality habitats).

Final BMP site selection and design may, in certain cases, be influenced by this environmental review process and as a result may be modified during the course of this review, particularly if significant environmental impacts are identified that could be avoided through alternative BMP site locations or designs.

**Table 1**  
**Mid-Island Bluebelt Watershed—Preliminary BMP List**

BMP Number	BMP Name/Location	Approximate BMP Footprint (acres)	BMP Conceptual Design (Preliminary)	Ownership/Jurisdiction
<b>New Creek</b>				
NC-1	Merrick Ave	0.1	Velocity attenuator <u>and drop pipe</u>	NYCDPR Parkland (Reeds Basket Willow Swamp Park)
NC-2	Ocean Terrace	0.1	Velocity attenuator <u>and drop pipe</u>	NYCDPR Parkland (Reeds Basket Willow Swamp Park)
NC-3	Annfield Court	0.2	Extended detention wetland	NYCDPR Parkland (Reeds Basket Willow Swamp Park)
NC-4	Whitlock Avenue	0.3	<u>Bioretention swale with extended detention and detention chamber</u>	NYSDEC (Richmond County Country Club Golf Course)
NC-5	Todt Hill Road	0.9	<u>Bioretention swale with extended detention</u>	NYSDEC (Richmond County Country Club Golf Course)
NC-6	Boundary Avenue	3.0	Extended detention	NYCDPR Parkland
NC-7	Grimsby Street	4.7	Extended detention <u>wetland</u> , flood plain creation and stream <u>realignment</u>	NYCDEP Bluebelt
NC-8	Freeborn Street	0.7	Extended detention <u>wetland</u> , flood plain creation and stream <u>realignment</u>	NYCDEP Bluebelt
NC-9	Graham Boulevard	4.4	Extended detention <u>wetland</u> , flood plain creation and stream <u>realignment</u>	NYCDEP Bluebelt
NC-10	Jefferson Ave	4.5	Extended detention wetland and ocean outfall	NYCDEP Bluebelt
NC-11	Last Chance Pond	8.8	Extended <u>detention</u> wetland	NYCDPR Parkland/NYCDEP Bluebelt
NC-12	Joyce Street	0.1	Outlet stilling basin	NYCDEP Bluebelt
NC-13	Hylan Boulevard	2.9	<u>Extended detention wetland</u>	NYCDEP Bluebelt
NC-14	Meadow Place	0.2	Outlet stilling basins	NYCDEP Bluebelt
NC-15	Laconia Avenue	0.1	Outlet stilling basin	NYCDEP Bluebelt
NC-16	Olympia Boulevard	12.0	Extended detention <u>wetland</u>	NYCDEP Bluebelt
NC-17	Slater Boulevard	9.7	Extended detention wetland <u>flood plain</u> creation and stream <u>realignment</u>	NYCDEP Bluebelt
NC-18	Patterson Avenue	7.4	Extended detention wetland	NYCDEP Bluebelt
NC-19	Buel Avenue	0.1	Outlet Stilling Basin	NYCDEP Bluebelt
<b>South Beach</b>				
SBE-1A, 1B & 1C	South Beach	42.2	Extended detention wetland	NYCDEP Bluebelt/NYCDPR Parkland
SBE-2A and 2B	Cameron's Lake	0.4	<u>Outlet forebays</u>	NYCDEP Bluebelt
SBE-2C	Cameron's Lake	0.2	<u>Micropool outlet and riser box</u>	<u>NYCDEP Bluebelt</u>
SBE-3	Whitney Woods	1.2	<u>Extended detention wetland</u>	NYCDEP Bluebelt
<b>Oakwood Beach</b>				
OB-1	Kissam Avenue	29.1	Extended detention wetland	NYCDPR Parkland/Bluebelt
OB-2	Tysens Lane	27.9	Extended detention wetland	NYCDPR Parkland
OB-3	<u>Riga Street</u>	28.3	Extended detention wetland	NYCDEP Bluebelt
OB-4	<u>Ithaca Street</u>	1.4	Outlet stilling basins <u>and stream stabilization</u>	NYCDEP Bluebelt
OB-5	N. Railroad Avenue	3.0	Retrofit of <u>existing stormwater basin and existing channel</u>	NYSDOT/NYCDPR Parkland
<b>Note:</b> NYCDEP Bluebelt refers to lands owned by NYCDEP or pending acquisition.				
<b>Source:</b> NYCDEP, Hazen and Sawyer, August 2010.				

In addition to the proposed BMPs, this action would include three new outfalls to Raritan Bay. These outfalls are proposed to convey stormwater runoff out to the bay for the purposes of reducing local flooding in the lower elevations of the watersheds. The proposed outfalls include:

- A new outfall and tide gate connection downstream of BMP OB-1 between Kissam Avenue and Fox Lane in the Oakwood Beach Watershed;

## Mid-Island Bluebelt Drainage Plans

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- An outfall downstream of BMP NC-10 between Jefferson and Hunter Avenues in the New Creek Watershed; and
- An outfall from McLaughlin Street associated with BMP SBE-1C in the South Beach Watershed.

BMPs require periodic maintenance to ensure proper operation. The EIS will describe the general BMP maintenance program, including the need for regular monitoring and inspections, removal of debris and sediment, and general maintenance needs. The following routine maintenance operations are anticipated:

### *Forebays and Micropools*

- Remove trash and debris at least four times per year from the forebays and micropools and as often as needed.
- Remove sediment at least once every five years, or when the sediment depth exceeds 50 percent of the capacity of the micropool or forebay. A backhoe may be required to clean out the sediment; however, in most cases, hand tools would be adequate.

### *Constructed Wetlands and Extended Detention Basins*

- Annually remove and dispose of accumulated trash and visually inspect outlet structure. The removal of trash may require hand tools.
- Annually replenish vegetation as required within the land adjacent to the basin and in the vicinity of the stabilized outlet. In addition, where possible, control the proliferation of invasive exotic vegetation.
- Every 20 years, or when the sediment depth exceeds 50 percent of the basin depth, clean out the detention basin. A backhoe is likely to be required to remove sediment.

### *Outlet Stilling Basins*

- Remove trash and debris from the basin approximately four times a year.
- Remove sediment from the basin once every three years, or when the sediment depth exceeds 50 percent of the basin depth. Removal of sediments may require the use of hand tools.

### *Stream Channels*

- Replace dead or dying vegetation using hand tools. On average, this would occur approximately once a year.
- Remove accumulated debris as necessary.

### *Fire Protection*

- Elements of the drainage plan and the BMP design would provide maintenance accessways which would also allow better access for fire protection. The BMP designs are going to remove vast expanses of phragmites and replace them with permanent open water features to store stormwater, which would also reduce the risk of fire caused by burning phragmites.

A number of segments of mapped, but unbuilt streets are proposed for demapping to accommodate the construction of the proposed BMPs. Those street segments will be presented

in the EIS. Future Uniform Land Use Review Procedure (ULURP) actions would be required to formally demap these unbuilt streets.

### **SANITARY COLLECTION SEWERS**

The three watersheds are predominantly serviced by sanitary sewers. However, any additional sanitary collection necessary to complete the sanitary sewer network will be described in the EIS. Once installed, lateral connections would then be made by lot owners, eliminating septic systems and package treatment plants in the watersheds. Finally, the location of any pump stations, easements and other acquisitions related to proposed sanitary collection system improvements will also be described. Easements may also be required for the stormwater management system.

### **REQUIRED PERMITS AND APPROVALS**

Implementation of the proposed drainage plans requires discretionary actions and approvals and agreements from the following State, Federal, and City agencies:

- U.S. Army Corps of Engineers (USACE) for actions within navigable waters (e.g., construction of structures or activities within freshwater or tidal wetlands) as per Title 33 Code of the Federal Register, Parts 320-330;
- New York State Department of Environmental Conservation (NYSDEC) permits for activities in tidal and freshwater wetlands and adjacent areas as per Article 24 6NYCRR Part 663 Freshwater Wetlands Permits and Article 25 6NYCRR Part 661 Tidal Wetlands;
- NYSDEC permits for activities within coastal erosion hazard area that is designated along the Raritan Bay shoreline as per Article 34 6NYCRR Part 505 (variance under subsection 505.13);
- NYSDEC State Pollution Discharge Elimination System (SPDES) permits for surface water outlets and discharges (including new outlets to Raritan Bay) under the MS4 program and in accordance with Article 17 6NYCRR Part 750-757 and DEC approval under the SPDES General Permit for Stormwater Discharges from Construction Activity;
- NYSDEC permits for use of herbicides in and around wetlands (to control invasive plant species, such as Japanese knotweed);
- Construction of any BMPs on NYSDEC property (e.g., Richmond County Country Club) requires DEC approval in accordance with all applicable regulations including a concurrent use and occupancy agreement;
- Licenses and agreements between DEP and the New York State Department of Transportation (NYSDOT) for activities within the Willowbrook Parkway right-of-way (e.g., BMPs OB-5);
- New York State Department of State (NYSDOS) coastal zone consistency review under the permit review process (all of the watersheds in their entirety are in the coastal zone).
- Licenses and agreements between DEP and the Metropolitan Transportation Authority (MTA) for activities under the Staten Island Rapid Transit (SIRT) tracks (potentially for BMP OB-5 only);
- Agreements between DEP and the New York City Department of Parks and Recreation (NYCDPR) for activities in City parkland (e.g., Reeds Basket Willow Swamp Park, Last Chance Pond Park);

## **Mid-Island Bluebelt Drainage Plans**

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- New York City Planning Commission (CPC) authorizations for work in the Special South Richmond Development District (SSRDD) and the Staten Island Natural Area District as well as coastal zone consistency review (all watersheds are in this district and the coastal zone);
- CPC and New York City Department of Health approval of the proposed drainage plans; and
- Review by Staten Island Community Boards 2 and 3, the Staten Island Borough President, CPC, and the City Council for future street de-mappings as per the requirements of the City's Uniform Land Use Review Procedure (ULURP), which would include a precertification review by multiple City agencies to ensure that all resulting street designs conform to City code and regulations.
- NYCDOT approval for any in-street work.
- License agreements or approvals for any work or temporary use of private lands.

### **C. SCOPE OF WORK**

#### **METHODOLOGY**

Each watershed will be examined according to the methodologies of the 2010 *CEQR Technical Manual* (CEQR). Each impact analysis, performed according to CEQR, will follow a three-step approach that includes 1) an inventory of the existing conditions; 2) a determination of future conditions without the proposed action (No Action condition); and 3) an impact determination of the proposed action. No Action conditions are projected for each technical analysis through the proposed build year, or the year when the proposed action, if approved, are assumed to be fully carried out. For this action, the proposed build year is 2043. By examining the potential environmental impacts for each CEQR technical chapter, these potential impacts of the proposed action are examined cumulatively and comprehensively. The proposed sewer and BMP installation is expected to take many years to complete. Based on NYCDEP's experience conducting environmental reviews for other Bluebelt plans in South Richmond, a screening level is proposed for the following technical areas, since no significant environmental impacts are expected:

- Socioeconomic Conditions;
- Community Facilities;
- Shadows;
- Solid Waste and Sanitation Services;
- Energy;
- Transit and Pedestrians;
- Air Quality;
- Noise; and
- Public Health.

## **TASK 1: PROJECT DESCRIPTION**

The project description chapter is important for understanding both the proposed actions and project impacts and provides the public and decision-makers background information to understand the potential environmental impacts of the proposal. The EIS, as a full disclosure document, will aid decision-making and support the discretionary permits and approvals that may be issued by both the Lead Agency (NYCDEP) and the involved agencies.

In general, this chapter provides the following:

- Project identification;
- Description of the watershed locations and boundaries;
- Statement of purpose and need for the proposed action;
- Description of the required actions and approvals necessary for project implementation;
- The roles of the involved and interested public agencies; and
- Relevant CEQR and SEQRA processes.

The major project elements to be described in this chapter include:

- A. Location map showing regional context for the three watersheds;
- B. Watershed and sewer service area descriptions;
- C. Purpose and need for the proposed project and actions, and summary of existing studies that establish the purpose and need for the proposed project;
- D. Conceptual designs for proposed BMPs (see Table 1 and Attachment A) including area of disturbance and description of proposed BMP functions (e.g. extended detention, flow attenuation, conveyance, stream restoration);
- E. Justification for proposed use of open spaces, including NYCDPR and NYSDEC lands for BMP development;
- F. Description of BMP maintenance operations;
- G. Description of typical construction activities including excavation and fill operations;
- H. Description of typical stormwater and erosion and sediment controls; and
- I. Project timing and phasing.

The chapter will also include a Framework for Analysis section. The purpose is to establish the structure of the EIS impact analyses. This framework will include a description of the basis for the three analysis conditions. The framework will also include a description of other proposed projects and plans expected to be completed through the project analysis year in the three watersheds.

## **TASK 2: LAND USE, ZONING, AND PUBLIC POLICY**

This analysis will assess the proposed drainage plans and their potential to conflict with land use, zoning, and public policies in each of the watersheds. For this analysis, general land use, zoning patterns and neighborhoods in each watershed will be described. Any potential significant changes that may result from the proposed action, particularly at locations

## **Mid-Island Bluebelt Drainage Plans**

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immediately adjacent to the individual BMPs, will also be described. The entire watershed would serve as the study area for this analysis.

Land uses will be verified by field surveys and subsequently mapped. The mapping will be based on field-verified City Geographic Information System (GIS) data. The location and acreages of open space will also be documented and described. Zoning, including the underlying zoning and the Special South Richmond Development District (SSRDD) zoning, will also be described and mapped.

Existing land use and zoning data are important for understanding not only the land use patterns of the watersheds, but also to support other technical analyses, such as natural resources and hydrology. For example, runoff rates vary between different types of land cover: runoff from open space or parkland is significantly less than that from developed residential or commercial land cover. In addition, zoning is used to assess projected runoff rates for underdeveloped or undeveloped vacant lands; parklands are assumed to remain as open space. Any pending zoning modifications by the Department of City Planning (NYCDCP) will therefore be considered for their potential effect on these analyses and the drainage plans.

In conjunction with the collection of this field data, information will be gathered from the NYCDCP, the local Community Board(s), and other City and State agencies that may have active or proposed projects in the study area. Using this information, future development scenarios would be developed and described for the No Action condition.

Determining potential land use, zoning, and public policy impacts with the proposed action will be based on the following:

- A. Compatibility of the action elements with adjacent land uses, and
- B. Any potential direct or indirect impacts on land uses, such as indirect impacts on residential or commercial uses.

### **TASK 3: SOCIOECONOMIC CONDITIONS**

Based on the conclusions of prior environmental reviews for the South Richmond watersheds, no significant adverse impacts are expected from the proposed action with respect to socioeconomic conditions. This task will, therefore, provide a CEQR screening level of analysis for assessing any potential for direct or indirect impacts on population, housing, employment, business or industries as a result of the proposed action.

### **TASK 4: COMMUNITY FACILITIES AND SERVICES**

Based on the conclusions of prior environmental reviews for the South Richmond watersheds, no significant adverse impacts are expected from the proposed action with respect to community facilities or services. This task will, therefore, provide a CEQR screening level of analysis for assessing any potential for direct or indirect impacts on community facilities and services, including hospital and health services, schools, libraries, public day care services, and police and fire services. Community facility land uses will be mapped as part of the land use task, as previously noted. The EIS will also identify the beneficial impacts of the proposed project with respect to BMP designs that would provide maintenance accessways which would also allow better access for fire protection. The BMP designs are going to remove vast expanses of phragmites and replace them with permanent open water features to store stormwater, which would also reduce the risk of fire caused by burning phragmites.

### **TASK 5: OPEN SPACE**

The proposed action would not generate any additional population or employees that would place demands on open space in the action area. However, certain BMPs are proposed to be sited in parkland. This task, therefore, will focus on any direct impacts related to the use of open space (either NYCDPR or NYSDEC open space). For the purposes of installation of the proposed sewers, BMPs or outfalls, the following subtasks will be included:

- A. In conjunction with the land use task above, identify all open spaces in the study area including their current programming, facilities and uses in accordance with the guidance of the *CEQR Technical Manual*. The baseline conditions will also identify natural resource conditions (see discussion below under Task 12: Natural Resources) and the current status of vegetative and wildlife conditions in local parklands.
- B. Identify any No Build projects that may apply to inventoried open space, including any parkland improvements or habitat restoration projects proposed by NYCDPR or NYSDEC.
- C. Review the proposed drainage plans for any impacts on open space uses and activities. The impact analysis will consider, for example, if a BMP or drainage facility would potentially displace a NYCDPR recreational facility, inhibit or reduce public access, or conflict with the overall function and purpose of the open space. This analysis will include an assessment of any potential impacts on beach access within parklands due to the proposed outfalls. If significant impacts are identified, mitigation will be provided. The assessment of construction-period impacts will be examined under Task 22: Construction Impacts.

### **TASK 6: SHADOWS**

Based on the conclusions of prior environmental reviews for the South Richmond watersheds, no significant adverse impacts are expected from the proposed action with respect to shadows since no above-grade structures are proposed. This task will therefore, provide a CEQR screening level of analysis for assessing potential direct or indirect shadow impacts.

### **TASK 7: HISTORIC RESOURCES**

Potential impacts on historic resources, including archaeological and architectural resources, could result from in-ground construction. This impact assessment will concentrate on the areas of disturbance that would occur under the proposed action. Maps showing where in-ground disturbances would occur under the proposed action with consideration for depth of disturbance (including at BMP locations), will be reviewed. These sites will be plotted on a topographic map showing the existing topography and the locations of existing underground utilities. This analysis will then identify areas that have been previously disturbed, and areas that could be disturbed under the proposed action. As a result of this analysis, areas with previous disturbance are expected to be screened out from further analysis. Those areas without previous disturbance are more likely to be subject to further examination for archaeological sensitivity.

As the first step in this process, a determination will be sought from the City's Landmarks Preservation Commission (LPC) as to the potential for archaeological sensitivity in the areas of disturbance. If LPC determines that a particular watershed or area requires a Phase 1 investigation, a Phase 1 report will be prepared. A Phase 1 report contains documentary research used to assess the potential for archaeological sensitivity of a site or in an area. It includes records of previous subsurface disturbance, which will be investigated, including data from New York City Department of Buildings (NYCDOB), NYCDEP, and other utility providers, such as

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Con Edison. Documentary research will also be conducted to assess the potential presence of archaeologically sensitive areas in accordance with LPC guidelines and procedures. This research typically includes such sources as the Staten Island Institute of Arts and Sciences, the Map Division of the New York Public Library, the U.S. Army Corps of Engineers, and designation files of LPC. Local and regional histories (e.g., *Leng's Staten Island and its People: A History 1609-1929* and the Morris Memorial History of Staten Island, New York) and accepted source material for data on prehistoric settlements (e.g., R. Grumet, Kraft, Skinner, and Parker), census and City directory data, and land transfer records are also to be researched, as appropriate. In addition, a file search is to be conducted at the New York State Museum, the New York State Office of Parks, Recreation and Historic Preservation, and LPC (including the sensitivity model for Staten Island). Soil borings previously taken in the area would be reviewed, as available.

Potential action impacts would then be assessed based on the potential for a site to possess archaeological sensitivity. If the analysis discloses the potential for significant impacts on archaeological resources (potential disturbances at project locations of medium or high sensitivity), mitigation will be described.

With respect to historic architectural resources, the proposed action would not result in any direct impacts on resources (e.g., demolition or alteration of a historic building or structure). Therefore, this analysis will focus on the potential for any potential indirect impacts to historic and architectural resources that could potentially occur from construction activities. Therefore, this analysis will be provided under Task 22: Construction Impacts. Construction activities in the vicinity of any historic resources would also be examined to determine if the potential exists for any indirect impacts (e.g., vibration) to these resources. A task outline for this analysis follows.

### ARCHAEOLOGICAL RESOURCES

- A. Based on LPC determinations, prepare a watershed level Phase 1A Archaeological Assessment for areas that would be physically disturbed by the proposed action in a direct way. The report will identify the locations where archaeological resources may be present in accordance with the methods described above.
- B. Assess the effects of other projects that are expected to be built by the project build year in the absence of the proposed action. This analysis will be based on projects identified in Task 2: Land Use, Zoning, and Public Policy.
- C. Assess any potential impacts related to the proposed action. Areas determined to be low sensitivity will be those where significant impacts are not expected.. Areas of medium sensitivity may be further evaluated to determine if potential significant impacts may occur, and areas of high sensitivity will be those where potentially significant archaeological impacts are expected to occur under the proposed action. For project elements where significant archaeological impacts are identified, mitigation will be presented (mitigation measures will also be summarized under Task 25: Mitigation Measures).

### ARCHITECTURAL RESOURCES

- A. Identify and describe any designated historic architectural resources, including historic districts in the study area. The study area for analysis will be defined as within 400 feet of the proposed BMP locations. Historic resources include any New York City Landmarks; properties pending New York City Landmark designation; sites listed on or determined

- eligible for inclusion on the State and/or National Register of Historic Places; and National Historic Landmarks.
- B. Assess the effects of projects that are expected to be built under the No Build Condition. These projects will be identified in Task 2: Land Use, Zoning, and Public Policy described above.
  - C. Determine if the proposed action would have any direct (e.g., demolition) or indirect (e.g., vibration) impacts on architectural resources in the study area. To the extent of potentiality for impacts, these will be described under Task 22: Construction Impacts.

### **TASK 8: URBAN DESIGN AND VISUAL RESOURCES**

Based on analyses developed for the prior South Richmond EIS, a more detailed analysis of potential urban design and visual resources is performed for larger or more visually prominent BMPs. Typically, impacts do not occur with smaller BMPs or the installation of sanitary or stormwater collection lines, since these would be below grade. For more detailed analyses, views of the larger BMP sites will be photographed and described. Although no significant adverse impacts are expected since all disturbed areas would be restored and landscaped as part of the proposed action, this impact analysis would be based on the following task outline:

- A. Describe the elements of the proposed action that include more extensive or significant changes in the physical or natural conditions, such as topography and natural habitats (e.g., woodlands and tree canopy), particularly at locations that possess significant public views or are within significant public viewsheds.
- B. Describe the potential changes in views of natural features, such as vegetation, particularly from or within public parkland, and determine if any significant impacts on public views, viewsheds, or corridors would occur under the proposed action. This analysis will take into consideration pre- and post-action conditions and the landscaping and restoration plans that are also proposed. If necessary, any significant adverse impacts and the need for mitigation will be identified.

### **TASK 9: NEIGHBORHOOD CHARACTER**

Based on the conclusions of prior environmental reviews for the South Richmond watersheds, no significant adverse impacts on neighborhood character are expected from the proposed action. Neighborhood character impacts typically stem from impacts on socioeconomic conditions, historic resources, urban design, community facilities and traffic and noise, for example. Since no significant impacts are anticipated in these technical areas, no adverse impacts on neighborhood character are expected. This task will, therefore, provide a CEQR screening level of analysis for assessing potential direct or indirect impacts on neighborhood character.

### **TASK 10: SURFACE WATER AND GROUNDWATER HYDROLOGY**

#### *SURFACE WATER*

##### *Introduction*

A key component for developing effective stormwater management plans is an in-depth understanding of the hydrology and hydraulics of the project watersheds. The proposed drainage

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plans are intended to reduce flooding in the Mid-Island region of Staten Island and bring the type of stormwater management techniques used with success in the South Richmond region of Staten Island to the communities of Oakwood Beach, New Dorp, Midland Beach, Todt Hill, South Beach and Arrochar. The hydraulic analysis for the proposed drainage plans would begin with an overview of the surface water regimes that characterize the New Creek, Oakwood Beach, and South Beach watersheds. The EIS will examine, in detail, the effects of the proposed drainage and sanitary sewer plans on surface waters, including the issues of stormwater flooding and erosion potential. The methodology includes use of modeling and standard engineering analyses to determine impacts.

An unsteady-flow hydraulic model that can account for the stormwater detention, of some BMPs (a key component of the proposed flood protection), was selected in order to correctly simulate the behavior of the watersheds, including their sensitivity to the tidal cycle. In addition, a combination model that includes a hydrologic component (HEC-HMS) and a hydraulic component (HEC-RAS) will be used to examine existing and proposed conditions in the watershed. This model series was developed by the United States Army Corps of Engineers' Hydrologic Engineering Center, is robust and widely used, and is capable of modeling unsteady flow over a wide range of runoff models. It possesses an additional benefit of having modest data requirements. For example, it requires channel and floodplain cross sections and catchment characteristics such as the curve number. The HEC-HMS model simulates the surface water runoff response of the watershed to a storm event accounting for topography, land use coverage, infiltration, and storage in surface depressions. The HEC-RAS package model simulates the hydraulic reactions of the channels and culverts that convey stormwater runoff by accounting for flow into the channels, elevation changes along the channels, and the effects of surface roughness and channel geometry.

### *Modeling Methodology Overview*

The output from the HEC-HMS model provides runoff flow rates at any point along the stream. Runoff flow rate is a function of the watershed area's rainfall intensity and duration, amount of infiltration and storage, and slopes. The output of the HEC-RAS model provides water surface elevations and flow rates along the stream at any point in time during the storm event. Therefore, conveyance capacity and flood levels can be evaluated at any point and time along the channel length to maximize the system's storage and conveyance capacity using stormwater BMPs. The HEC-HMS and HEC-RAS models will be integrated, so that the runoff generated by HEC-HMS is fed into HEC-RAS and used to simulate the hydrologic and hydraulic reaction of the project watersheds. The models will be run for the 5-, 10-, and 100-year storm events under existing conditions, future without the proposed action and future with the proposed action. The proposed stormwater management system will be designed to handle at least the NYCDEP design storm.

### *Rainfall*

The return periods (i.e., frequency) of various storm events was calculated from 23 years of rainfall data (1970 to 1993) as recorded at John F. Kennedy airport (see Table 2). This is considered to be the most appropriate and complete data set for the Mid-Island area. Using this information, design storms of record will be used in the model, in conjunction with observed

**Table 2**  
**Return Periods of Storm Events**

Rainfall (in inches)	Return Period	Probability of Occurring in a Given Year
1.5	3 months	~100
2.1	6 months	~100
3.0	1 year	~100
3.5	2 year	50
4.5	5 year	20
5.1	10 year	10
6.1	25 year	4
7.0	50 year	2
8.1	100 year	1

**Source:** Hazen and Sawyer, February 2010.

tailwater tides, where available. The design storms chosen for modeling of future conditions both with and without the proposed action were a 10 year, 24-hour storm on April 16, 2007 (5.06 inches); a 5-year, 24-hour storm on September 21, 1966 (4.71 inches) and a synthetic SCS Type III storm 100-year, 24-hour event. Type III storm events are representative of a severe long-term weather event.

#### *Existing Conditions*

Sub-drainage areas, or catchments, for each watershed will be defined for the models using existing grades and sewers, topographic maps, street elevations and discharge locations for overland runoff. The most hydraulically constrained conditions will be identified by the modeling. Extensive field data collected by NYCDEP, which includes several dozen channel and floodplain surveys, culvert surveys, flow and water surface elevation measurements, tidal water surface elevations at outfalls and 5-minute rainfall series data, will be used to calibrate the models. In addition, a GIS database will be compiled that includes available data, such as edge-of-pavement and structures layers, aerial topographical surveys and photos of various aspects of the watersheds. HEC-RAS modeling in the channels will use the collected information to create channel cross-sections and areas of flow for all hydraulic structures. In addition, roughness of channel banks and beds, conveyance structures, and channel slopes are to be determined. Runoff generated from the HEC-HMS model will be input into the HEC-RAS model, where appropriate.

#### *Future Conditions*

The future without the proposed drainage plans will assume that current conditions hold. Any existing impacts to land, waterways and the harbor will be reiterated and expected to continue in the absence of the proposed action. The project watersheds are close to full build-out and constraints on current zoning exist, so major worsening of the conditions due to increased development is not anticipated. However, this section of the analysis will state that additional build-out or deterioration of existing conveyance systems may exacerbate existing flooding events.

#### *Impacts of the Proposed Action*

For determining impacts, runoff coefficients are to be adjusted to reflect the changes in time and volume of runoff as a result of pipe flows. Potential impacts from the proposed action on local

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flooding and stream bank erosion, as well as impacts on wetland hydrology, will be addressed. Impacts on the stream hydrology from changes in stream velocity and the quantity of flows will be assessed for the 5-, 10-, and 100-year storm events. In addition, a check will be made to ensure that the water surface elevations under the proposed action during the 100-year event will not exceed the 100-year floodplain elevation.

With the proposed action, changes in surface water hydrology are expected to be generally beneficial, with a reduction in local flooding. Potential impact analyses are to be based on:

- A. Stormwater projections for 5-, 10-, and 100-year storms.
- B. Determination of effects of potential changes in stream hydraulics, such as changes in extent and duration of stormwater inundation (or floodplain); changes in stream flow velocities (especially those resulting from slope changes that could lead to scouring and/or changes in sedimentation patterns); and changes in erosive strength. Streams of particular concern that will be assessed include the one in Richmond County Country Club and downstream of Reeds Basket Willow Swamp, both in the New Creek Bluebelt. In addition, the analysis will determine whether the proposed project could result in any impacts on the hydrology of Priory Pond which is located within a DEC preserve in the New Creek Watershed. Also, the analysis will assess whether the proposed berms would alter local hydrology and runoff characteristics such that it would impact local properties and/or street flooding.

### *GROUNDWATER*

If necessary, based on the proposed sewer plans, groundwater data will be gathered from the U.S. Geological Survey, soil boring data (as available), literature searches, and field reconnaissance to understand general groundwater conditions and the water table elevations in the Mid-Island region of Staten Island. Monitoring wells will be installed to determine the water table elevation at the sites of the proposed BMPs; this information will be used to ensure that the BMPs will provide sufficient stormwater detention. The monitoring will be done during different seasons of the year and during different times in the tidal cycle. As necessary, the influence of groundwater on surface water bodies, such as BMPs and ponds, will be determined. Potential changes in groundwater that could occur through implementation of the proposed action will be described. The potential changes in groundwater flow to streams and ponds, associated wetlands, and isolated wetlands will be estimated based on the information collected. One pond of particular concern is Brady's Pond in the South Beach Watershed. The proposed action calls for directing stormwater away from the pond. An assessment of that plan will be completed with a discussion of groundwater inputs into the pond.

## **TASK 11: WATER QUALITY**

### *INTRODUCTION*

The study areas for water quality will be the three drainage plan watersheds. To assess any potential impacts of the proposed action with respect to hydrology, a hydrologic/hydraulic analysis has been developed (as described above). A literature review will be conducted to assess the impacts of the proposed action on water quality.

### *EXISTING CONDITIONS*

The primary water quality parameters of concern include dissolved oxygen, coliform bacteria, carbonaceous BOD, and nutrients (i.e., phosphorus and nitrogen.) The EIS will describe existing watershed conditions in order to provide a general baseline for identifying potential changes to water quality that may occur as a result of the proposed action. An integral part of the Bluebelt program is to make every effort to maintain or enhance surface water quality. Accordingly, every storm sewer discharge point will be equipped with a BMP to improve water quality.

### *FUTURE CONDITIONS*

No Action conditions will be based on the changes expected in water quality in the absence of the proposed action. These changes could include additional development within the watershed, or continued degradation due to uncontrolled pollutant sources.

### *IMPACTS OF THE PROPOSED ACTION*

This portion of the analysis will describe the potential impacts of the proposed action on relevant water quality parameters. Impacts from the proposed action will be estimated based on a literature review of pollutant removal efficiencies associated with the BMPs included in the proposed drainage plans. Data from monitoring studies, completed for existing Bluebelt BMPs in South Richmond, will also be utilized. In addition, impacts from installation of sanitary sewer lines will be disclosed where applicable. This analysis will include an assessment of any potential for impacts on the water quality of Cameron's Lake and Brady's Pond in the South Beach watershed.

## **TASK 12: NATURAL RESOURCES**

### *OVERVIEW*

The proposed action could have both potential beneficial and adverse impacts on natural resources. These natural resources include a variety of freshwater and tidal wetlands vegetative habitats, aquatic wildlife (e.g., fish and macroinvertebrates), upland vegetation communities, terrestrial fauna (e.g., mammals, reptiles and amphibians), and avian wildlife. In examining these effects, this analysis will consider both potential direct and indirect impacts on these resources. Direct impacts are defined as those impacts that directly affect habitats or environmental conditions during the construction of the BMPs or sewer lines. This could include, for example, wetland disturbance or the removal of vegetation to construct the BMPs. Indirect impacts are longer term, or secondary effects, that may result from altering the pollutant load or inundation periods that in turn could affect a vegetative community and its associated wildlife habitat over time. The potential for significant adverse impacts on wetlands, wetland-adjacent areas, and uplands, and their subsequent effects on habitat values and functions, as well as species populations and individual species will be assessed under this task. A more detailed description of the methodology follows.

### *METHODOLOGIES*

#### *Existing Conditions*

Baseline data will be gathered for the watersheds for the purposes of identifying the key habitats within the watershed study areas, particularly with respect to the freshwater and tidal wetland

habitats. This will include a text description and maps depicting the wetland habitats of the watersheds. It is assumed that the focus of this investigation will be the BMP sites, since the areas of the proposed sewers are predominantly constructed streets. Wetland data and mapping will be based on aerial photography, NYSDEC wetland sketch maps and descriptions, and U.S. Fish and Wildlife Service, National Wetland Inventory (NWI), freshwater wetlands maps, and field reconnaissance. As part of the acquisition process, actual wetland delineations have been done for many of the BMP sites. This information will be used. Watershed data are to be assembled through a review of published literature sources, including those developed by Federal, State, and local agencies and institutions, such as the NYCDPR Natural Resources Group and the Staten Island Institute of Arts and Sciences. This data will be supplemented by BMP site-specific data gathered through field reconnaissance conducted in 2009 and 2010 in the spring and fall seasons. Compiling information for wetlands will include gathering information on previously mapped wetlands from a number of sources, including NYSDEC sketch map wetland delineations, aerial photographs, and field data.

Upland vegetation data and information on woodlands will also be presented based on existing sources of information, field surveys, and aerial photographs. Data will be presented for trees, shrubs, and herbaceous cover habitats. This data will be used to characterize the types of habitats within each area of disturbance. The habitat characterization will use the following as a guide: "Ecological Communities of New York State" by Edinger et al (2002). In addition, for wooded areas in parkland that would require more extensive grading and clearing (i.e., greater than one acre), an assessment of total tree populations will be determined for the BMP area of impact.

Wildlife data will be based on literature searches and field observations. During each BMP site visit, all observed avifauna (i.e., birds), herptofauna (i.e., amphibians and reptiles), and mammalian observations and evidence will be noted. Data on terrestrial and avian wildlife will also be presented from a literature search for the Staten Island South Shore coastal area and from field surveys. Lastly, data on rare, endangered and threatened species that may be present in the watershed study areas will be based on information from the New York State Natural Heritage Program and the National Marine Fisheries Services Protected Resources program.

The specific task list for the baseline conditions assessment is as follows:

- A. Baseline vegetation and wildlife data will be described and mapped for the three watersheds of Staten Island.
- B. Vegetative habitats and associated ecological characteristics and functions will be described at specific BMP locations wherever vegetation would be removed or otherwise impacted. At BMP locations, the general composition of the habitats (i.e., predominant species) will be described. For large areas that may experience woodland clearings, estimates of tree density will be made using a transect method. This methodology will be used for two BMP sites (NC-6 Boundary Avenue and NC-11 Last Chance Pond).
- C. Wetland acreage and vegetation of each watershed and at specific BMP locations will be presented for the tree canopy species, understory, and herbaceous layers.
- D. Upland and wetland, terrestrial, and wildlife habitats within each watershed and at specific BMP locations will be described with habitat value indicators.
- E. Data and literature research of aquatic and terrestrial flora and fauna (including fish, macroinvertebrates, reptiles, and amphibians) will be provided, including wetland and in-

- stream aquatic wildlife that may be expected along the stream corridors and at specific BMP locations.
- F. NYSDEC's Natural Heritage Program and the U.S. Fish and Wildlife Service will be contacted for information on the presence or absence of sensitive habitats or rare, threatened, or endangered species within the three watersheds.
  - G. An assessment of shoreline conditions along the reaches of the Raritan Bay where the outfalls are proposed.
  - H. Current issues with respect to *phragmites* fires and their impacts on local natural resources and habitats.

#### *Future Conditions*

A future No Action condition will be developed to identify any expected future changes in the natural resources communities in the absence of the proposed action. These changes could include proposed private development or projects sponsored at the City, state or federal levels (e.g., Army Corps of Engineers flood and storm damage control projects), continuing trends and conditions with respect to stormwater runoff and pollutant loadings—including frequency of inundation and pollutant loadings—with the resulting consequences for natural resources.

#### *Impacts of the Proposed Action*

Impacts of the proposed action will be determined for both the installation of the sewers and the BMPs with a focus of the areas of disturbance for each of the BMPs. Impacts will be assessed cumulatively, i.e., the comprehensive changes in the watershed habitats with the proposed action.

The impact analysis will examine the areas where physical disturbance would occur, including areas that might experience changes in hydrology or frequency of flooding. Assessment of impacts will be based on areas of physical disturbance which will delineate the extent of the potentially impacted area.

In addition, the potential for indirect impacts on wetlands will be assessed based on the projected changes in hydrology and water quality. For example, hydrologic changes would be examined to determine how future water quality and runoff conditions could either positively or adversely impact wetland species known to occur at the sites. Indirect impacts would also be examined based on how changes in loadings of nitrogen, phosphorous, and sediments would positively or adversely affect established wetland communities.

The analysis will also examine the potential for direct and indirect hydrological impacts from the proposed storm sewers on existing wetlands. Indirect impacts of storm sewers could occur when the hydrologic regimes of the wetlands, currently fed by surface runoff, are modified as a result of storm sewers that redirect flows. That change is the consequence of surface runoff being intercepted by storm sewers in the wetland tributary areas, thus reducing the hydrologic support. Areas where storm sewers would have a direct impact on wetlands (i.e., sewer lines proposed across mapped wetlands) will also be identified. The first step in this analysis will be to review maps showing the existing wetlands in relation to the proposed storm sewers. The potential for indirect impacts will then be determined based on the anticipated changes within the tributary areas for the identified wetlands. For purposes of this analysis, it is conservatively assumed that the subject wetlands are sustained only by surface water.

If the proposed storm sewers divert source flows from existing wetlands, the amount of surface water intercepted by the proposed storm sewers will be determined and the loss of wetland acreage will be estimated in proportion to the reduction in surface water inflow. Anticipated runoff changes within each wetland basin will be determined based on topography and land use. Inflow under existing and proposed conditions will be calculated based on the changes in impervious surfaces (e.g., road/streets, roofs and driveways) and porous surfaces (e.g., undeveloped land, grassed areas and lawns) within the wetland tributary areas. The analysis will be conducted utilizing the 1-year storm event, which is assumed to be the frequent storm event necessary to routinely support wetland vegetation and soils. This storm event contributes the equivalent of about 60 percent of the total stormwater volume that is absorbed by the wetlands. Any impacts on vegetation will be presented.

Impacts on wet woods and upland woods will be assessed based on the proposed sewer routes and the proposed clearing and grading plans for the proposed BMPs. For sewer routes, the potential loss of upland vegetation will be determined based on the length of affected (cleared) area and assumes an approximately 20-foot-wide construction corridor. In BMP areas, impacts will be determined based on tree characterizations and density analyses using the transect method, prepared as part of the site inventory and the area affected by the proposed BMPs. The acreage to be cleared for stormwater management (e.g., BMPs) will also be assessed for impacts. Likewise, changes in hydrology (see Task 10: Surface Water and Groundwater Hydrology) will be used to determine the indirect impacts (i.e., areas that may experience changes in inundation.)

The wildlife impact assessment will be based on the projected changes in vegetative cover and habitats. In wetlands and adjacent areas, potential impacts to wildlife habitats or individual species could occur due to changes in hydrology, water quality (due to pollutant loadings), or vegetation coverage or composition. In upland areas, potential impacts could occur due to changes in the vegetation complex, such as the loss of tree canopy or understory. Wildlife impacts could consider direct habitat loss, as well as potential for indirect impacts over time as a result of more gradual changes in habitat. As with the vegetation impact assessment, wildlife impacts will be examined for each element of the proposed action as well as a cumulative assessment for the projected changes throughout the three watersheds. Potential impacts on natural resources will be determined based on the following:

- A. The nature and extent of the physical alteration of the affected areas, including the acreage of affected vegetation, or changes in wetland boundaries.
- B. Impacts on any natural resources habitats. This will include the site-specific effects resulting from the loss of habitat and wildlife, as well as any cumulative effects of the proposed action. This will include direct loss or addition of wetland acreage and the direct loss of terrestrial habitat. Direct impacts include the potential impacts on both vegetation and on wildlife habitat.
- C. The potential impacts from changes in the frequency and duration of inundation and soil saturation, changes in water quality and pollutant loadings (see Task 11: Surface Water and Groundwater Hydrology) and the potential for impacts from sediments. This would include an assessment of the potential impacts on resident species resulting from the habitat changes described above. An analysis of groundwater contribution to wetlands and potential impacts from any changes to groundwater is also proposed. Secondary benefits of the proposed project with respect to expanding open water habitat and supporting the control and containment of local brush fires will also be described (see also Task 4: Community Facilities).

- D. Evaluate the potential impacts of the proposed outfalls (three outfalls to Raritan Bay are proposed) on maritime habitats including tidal wetlands, as well as any impacts on beach nourishment, access, and sand transport.

### **TASK 13: HAZARDOUS MATERIALS**

Areas of potential subsurface disturbance (e.g., BMP locations) will be assessed for potential hazardous material impacts. A preliminary survey of land use maps and of Federal and State database listings will be conducted for each watershed to determine areas of concern regarding hazardous materials contamination, including existing or past industrial and/or commercial uses in the area, or vacant lots on which illegal dumping may have occurred. A visual survey near any proposed in-ground disturbance will also be conducted. Available historical land use maps dating back 50 years will be reviewed to determine historic land uses. The Phase I, and in some cases Phase 2 Environmental Site Assessments, done in connection with the property acquisition process, will also be summarized in this task. Specifically, this task will include the following at a watershed level:

- A. Perform a land use and documentary search to determine previous uses in the watershed with the potential to have caused contamination. This will include gathering data from a database search; historical maps; buried or leaking tanks; and historical aerials and maps.
- B. Inspect and examine BMP sites for evidence of potential site contamination. The site inspection would target items such as visible spills and stains, stressed vegetation, the presence of drums or other containers containing hazardous materials, dumped materials on vacant lots, areas of landfill, the presence of suspected asbestos-containing material, and underground tanks.
- C. Information on subsurface conditions and previous soil borings from the area will be obtained from the U.S. Geological Survey.
- D. Records maintained by the U.S. Environmental Protection Agency (EPA) and NYSDEC on properties of environmental concern will be reviewed, including records of known suspected hazardous waste disposal sites, hazardous waste generators or treatment facilities, hazardous substance releases, and chemical and petroleum storage facilities.
- E. Compile the baseline information into a watershed level report and summarize the data into the Existing Conditions section of the EIS.
- F. Assess the potential for contamination in each watershed based on the baseline condition data and the areas of disturbance under the proposed action. If necessary, identify locations where further additional investigations, including Phase II testing, may be necessary as mitigation, or to avoid impacts. As appropriate, determine and describe appropriate remediation measures that will avoid significant adverse impacts to human health and the environment.

### **TASK 14: WATERFRONT REVITALIZATION PROGRAM**

All three watersheds are within the City's coastal zone. Therefore, a Coastal Zone Consistency determination will be conducted for the proposed action with respect to the policies of the City's Waterfront Revitalization Program (WRP). The City's 10 policy WRP will be used as the basis for this evaluation.

**TASK 15: INFRASTRUCTURE**

No significant adverse impacts are expected from the proposed action with respect to water supply and sanitary sewer service since there is no additional water supply or sanitary sewer service demands with the proposed action. This task will, therefore, provide a CEQR screening level of analysis for assessing potential direct or indirect impacts on these infrastructure elements. Any added demands on the Oakwood Beach WWTP from expanded sanitary collection lines will be presented in this screening level of analysis. The focus of this analysis will therefore be the added effects of the proposed stormwater collection system and the BMPs and how these project elements would affect local stormwater management. This section will address the following:

- A. Describe the current conditions in the three watersheds with respect to current runoff and drainage patterns and existing infrastructure.
- B. Describe the projected runoff conditions in the three watersheds in the future without the proposed project through the No Build year.
- C. Analyze the potential impacts of the proposed project on local drainage patterns. This will include an assessment of the various elements of the proposed drainage plan (e.g., the collection pipes, BMPs, berms) and their affects on local drainage patterns and the Oakwood Beach Wastewater Treatment Plant. For example, this chapter will address how the operation of the Oakwood Beach plant will improve with the storm water management system in place. With the storm system, less rain water will enter the sanitary system, allowing for better treatment at the plant. Technical data will also be used in this chapter based on the findings of the hydrology analyses to be prepared for the three watersheds (see Task 10 above “Surface and Groundwater Hydrology”) for the purposes of determining any impacts from the proposed drainage plans.

**TASK 16: SOLID WASTE AND SANITATION SERVICES**

No significant adverse impacts are expected under the proposed action with respect to solid waste and sanitation services since there are no added demands on these services. This task will, therefore, provide a CEQR screening level of analysis for assessing potential direct or indirect solid waste and sanitation services impacts.

**TASK 17: ENERGY**

No significant adverse impacts are expected under the proposed action with respect to energy since there are no added demands for energy with the proposed action. This task will, therefore, provide a CEQR screening level of analysis for assessing potential direct or indirect impacts on energy usage.

**TASK 18: TRAFFIC AND PARKING**

Neither the proposed BMPs nor the proposed sewers would generate new vehicular traffic since those facilities would largely serve existing development. The proposed action does call for the demapping of many segments of mapped but not built streets in order to site BMPs and maintain the connectivity of the Bluebelt land systems. This traffic analysis will characterize the traffic patterns in the area, and examine the potential for any significant traffic impacts that may result from these changes. Since traffic in much of the area is light to moderate, it is expected that this analysis will be largely qualitative.

Likewise, it is not expected that the proposed action would result in any impacts with respect to local on-street parking. In the event that any parking analysis is necessary, this, too, is expected to be largely qualitative.

#### **TASK 19: TRANSIT AND PEDESTRIANS**

The proposed action would also not generate any additional transit or pedestrian trips. Therefore, no significant adverse impacts on transit and pedestrian services and facilities are expected. In the event that any bus or rail service is affected permanently by the siting of a BMP, any modifications to these services will be described. This task will also address any need for potential coordination with the MTA with respect to the Staten Island Railway property and operations.

#### **TASK 20: AIR QUALITY**

Based on the conclusions of prior environmental reviews for the South Richmond watersheds, no significant adverse impacts on air quality are expected from the proposed action since there are no added vehicles or stationary sources of air emissions. This task will, therefore, provide a CEQR screening level of analysis for assessing potential direct or indirect impacts on air quality.

#### **TASK 21: NOISE**

Based on the conclusions of prior environmental reviews for the South Richmond watersheds, no significant adverse noise impacts are expected from the proposed action since there would be no added vehicles or stationary sources of noise emissions. This task will, therefore, provide a CEQR screening level of analysis for assessing potential direct or indirect noise impacts.

#### **TASK 22: CONSTRUCTION IMPACTS**

This task will examine the potential for impacts during the construction period. It will provide a description of the construction program for the proposed sewers and BMP construction programs including:

- A. Phasing, scheduling and anticipated duration of activities;
- B. Directly impacted areas, including staging areas;
- C. Traffic management during construction;
- D. Construction activities, with a focus on those activities in areas of natural resource significance, such as wetlands and in-stream locations; and
- E. Measures required by the City's code to reduce impacts during construction, or techniques to be implemented by NYCDEP (e.g., soil erosion and sediment control, dust suppression, air emission and noise controls). These environmental protection measures will be described under this task along with any additional measures that may be necessary in order to mitigate construction period impacts.

Potential impacts during construction will then be assessed based on analyses presented in prior environmental reviews prepared for South Richmond Bluebelt projects. Based on prior reviews, the analysis of construction period impacts is expected to focus on construction generated traffic, sedimentation and erosion control, water quality and natural resource protection, dust suppression, archaeological resource protection, and noise and vibration minimization. This

## **Mid-Island Bluebelt Drainage Plans**

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assessment will include a determination of whether the proposed project would require a detailed construction period traffic impact assessment due to either trucks or worker vehicles or potential impacts due to road closures during construction. In addition, since the Staten Island Rapid Transit (SIRT) lines extend across the three watersheds the construction analysis will include an examination of whether the proposed project could adversely impact any SIRT facilities.

### **TASK 23: PUBLIC HEALTH**

Based on the conclusions of prior environmental reviews for the South Richmond watersheds, no significant adverse impacts on public health are expected from the proposed action. As needed, any measures necessary to avoid impacts due to hazardous materials (e.g., site testing) will be

### **TASK 24: GROWTH-INDUCING IMPACTS**

This task will present and analyze the potential for the proposed action to induce new development within the watersheds that would otherwise not occur. Induced growth can potentially result from new or expanded sewer service, which may lead to the development of properties, or increased developmental density. To determine if growth could be induced from the proposed action and, if so, the extent to which it might occur, this analysis will:

- A. Briefly summarize the baseline land use and zoning conditions in the watershed to determine if there are large tracts of vacant property and the potential for growth-inducing impacts.
- B. Describe existing demographic characteristics of the watersheds using U.S. Census data from 1980, 1990, and 2000. Characteristics will include trends in total population, households and household sizes, age cohorts, and housing units, as well as any potential or projected changes in local socioeconomic characteristics. This would also be based on the data developed for the land use section.
- C. If necessary, undertake a thorough evaluation of the environmental features on the vacant properties. Data would be gathered on wetlands, steep slopes, or protected open spaces that may limit potential development, or require additional discretionary actions.
- D. Identify future development that is expected to occur in the No Action condition (i.e., absence of the proposed action) and additional development that may result from the proposed action.
- E. If necessary, analyze the potential impacts of growth that may be induced as a result of the proposed action, such as increased demand on community facilities, or increased traffic and transportation demands.

### **TASK 25: MITIGATION MEASURES**

If it is determined that significant adverse impacts could result from the proposed action, such impacts would be disclosed and mitigation measures that would successfully eliminate or reduce impacts will be presented.

### **TASK 26 UNAVOIDABLE ADVERSE IMPACTS**

To the extent that significant adverse environmental impacts would occur for which there is no mitigation, and where impacts could not be avoided while meeting project objectives, these unavoidable adverse impacts will be summarized in this chapter.

**TASK 27: ALTERNATIVES**

Alternatives to be evaluated and compared with the proposed action include:

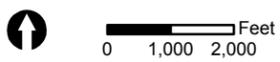
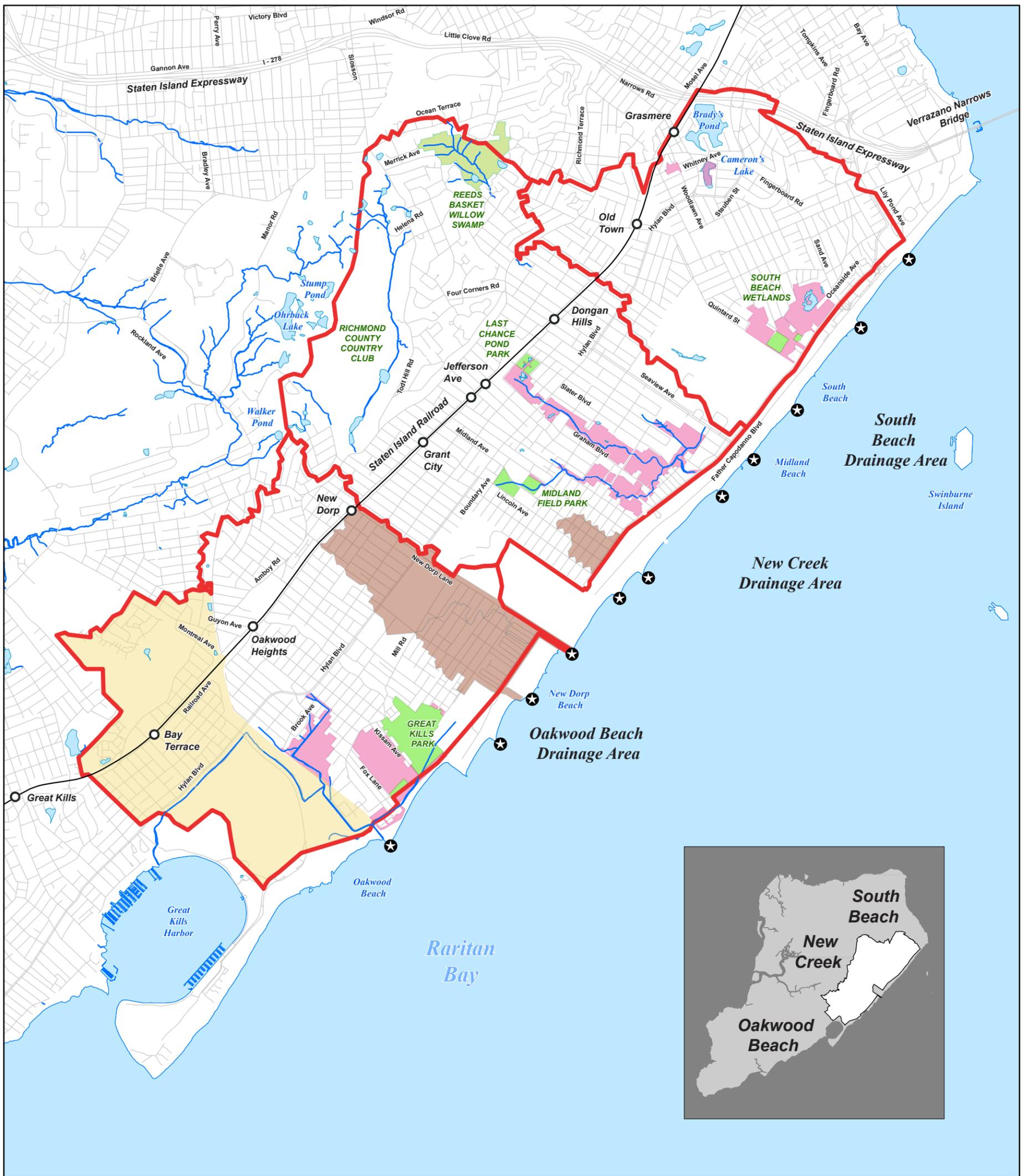
- A. A No Action Alternative.
- B. Implementation of the existing drainage plan (i.e., the Potter Plan).
- C. Alternatives that may reduce or eliminate impacts.
- D. Alternative BMP designs that meet the overall goals and objectives of the proposed action and drainage plans.

**TASK 28: IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES**

Implementation of the proposed action will require the expenditure of both human and material resources that will irreversibly and irretrievably be committed to the action. These resources will be summarized in this section of the EIS.

**APPENDICES**

EIS appendices will be included as necessary, containing the background to technical analyses provided for public review. \*



- Proposed Drainage Areas Tributary to South Beach, New Creek & Oakwood Beach Bluebelts
- Drainage Plan Area Tributary to Existing Ocean Outfalls
- Area Tributary to Oakwood Beach Bluebelt but Outside of Proposed Drainage Plan
- DEP Bluebelt Property (Acquired or in the Process of Being Acquired)
- NYC Parks Property to be Utilized for Bluebelt
- Existing Ocean Outfall
- Existing Stream





- Proposed BMP Site
- ★ Existing Outfall
- Proposed Drainage Areas Tributary to Oakwood Beach Bluebelt
- Area Tributary to Oakwood Beach Bluebelt but Outside of Proposed Drainage Plan
- Existing Stream
- Parks & Open Space (City, State & Federal)
- NYC Parks Property to be Utilized for Bluebelt
- DEP Bluebelt Property (Acquired or in the Process of Being Acquired)

Figure 2 - Oakwood Beach Watershed - Proposed BMP Sites



- Proposed BMP Site
- Existing Outfall
- Proposed Drainage Areas Tributary to New Creek Bluebelt
- Proposed Drainage Plan Area Tributary to Existing Ocean Outfalls
- Existing Stream
- Parks & Open Space (City, State & Federal)
- NYC Parks Property to be Utilized for Bluebelt
- DEP Bluebelt Property (Acquired or in the Process of Being Acquired)

Fig 3 - New Creek Watershed - Proposed BMP Sites



- Proposed BMP Site
- Proposed Drainage Areas Tributary to South Beach Bluebelt
- Existing Stream
- Parks & Open Space (City, State & Federal)
- NYC Parks Property to be Utilized for Bluebelt
- DEP Bluebelt Property (Acquired or in the Process of Being Acquired)
- Existing Outfall

## **Attachment A: Response to Comments on the Draft Scope of Work**

### **A. INTRODUCTION**

This Attachment A to the “Final Scope of Work to Prepare a DEIS for the Mid-Island Bluebelt Drainage Plans” summarizes and responds to comments received during the public comment period on the Draft Scope of Work dated April 2010. Public review of the Draft Scope of Work commenced on April 12, 2010 with the distribution of the draft scope. A public scoping meeting was also held on May 12, 2010 at the offices of Staten Island Community Board #2. The public scoping was held in the Seaview Hospital complex, 460 Brielle Avenue, Staten Island for the purposes of accepting oral comments on the Draft Scope of Work. The period for submitting written comments on the Draft Scope then remained open through May 31, 2010.

Section B, below, lists the agencies, organizations, and individuals who commented on the Draft Scope of Work. Section C then summarizes and responds to each of the comments on the scope. Where these comments resulted in changes to the scope of work, this is noted in the response and these changes are identified in the Final Scope of Work by double-underlining.

### **B. AGENCIES, ORGANIZATIONS, AND INDIVIDUALS WHO COMMENTED ON THE SCOPE**

#### **COMMENTORS AT THE PUBLIC HEARING**

1. Dee Vandenburg, President, Staten Island Taxpayers Association (Vandenburg)
2. Nick Matranga, Friends of New Creek (Matranga)
3. Paul Vonseckendorff, resident (Vonseckendorff)
4. Tina Downer, resident (Downer)
5. Randi Caropreso, resident (Caropreso)
6. Michael Latona, Office of the Staten Island Borough President (Latona)
7. Kathy Meaghan, Richmondtown and Clarke Avenue Civic Association (Meaghan)
8. Steven Elias, President, Ocean Breeze Civic Association (Elias)
9. Dr. Alan I. Benimoff, College of Staten Island (Benimoff)
10. Otilio Rivera, Midland Beach Civic Association (Rivera)
11. James Scarella, Natural Resources Protection Association (Scarella)
12. Anthony Reinhart, Office of New York State Senator Lanza (Reinhart)
13. Eva Adatille, resident (Adatille)

**WRITTEN COMMENTS**

14. Gina Santucci, New York City Landmarks Preservation Commission, April 14, 2010 (Santucci)
15. Ruth Pierpont, Director, New York State Office of State Parks, Recreation and Historic Preservation, Historic Preservation Field Services Bureau, April 29, 2010 (Pierpont)
16. Carol Donovan, Richmondtown and Clarke Avenue Civic Association, May 26, 2010 with attached July 15, 2004 letter (Richmondtown and Clarke Avenue Civic Association)
17. John Rooney, email correspondence, May 31, 2010 (Rooney)
18. Diane and Jimmy Langan [no date] (Langan)
19. Oakwood Beach Residents, May 25, 2010 [multiple signatures] (Oakwood Beach Residents)
20. Naim Rasheed, New York City Department of Transportation, June 3, 2010 (Rasheed)
21. Pawel Rokoszak, May 23, 2010 (Rokoszak)
22. New York State Department of Environmental Conservation, June 23, 2010 (NYSDEC)
23. Erin and Vincent Cajano, May 28, 2010

**C. RESPONSE TO COMMENTS**

**PROJECT DESCRIPTION**

**Comment 1:** Will the proposed project handle the runoff from the new development? There is an immediate need for infrastructure and the project should move forward as fast as possible. The DEP has been to the areas and knows we need this infrastructure to address our street flooding. Some areas east of the West Branch pond for days and our basements flood. We support the project and could use immediate relief. (VanDenberg, Vonseckendorff, Downer, Elias, Caropreso, Cajano)

**Response:** NYCDEP's stormwater strategy calls for construction of storm sewers and catch basins to NYCDEP standards in all existing streets in the Mid-Island Watersheds. The storm sewers will prevent ponding and drain the streets during storms up to the design event. Estimations of stormwater runoff for design storm event also takes into account future development on undeveloped lots in accordance with the current zoning. In order to provide a place for the stormwater to drain to, NYCDEP will construct stormwater BMPs in the wetlands corridors. These sites will be excavated below existing grades in order to provide the necessary elevation drop for the storm sewers to drain effectively.

**Comment 2:** How are mosquitoes controlled in the BMP's? (Downer)

**Response:** Most mosquito species lay their eggs in stagnant water. Aside from periods of drought, Bluebelt stormwater wetlands have a constant "base flow" of water that

flows through the system. During periods without significant rain, the NYC Department of Health and Mental Hygiene monitors the BMP sites for mosquitoes and mosquito larvae and applies adulticide or larvicide, if needed. Consistent stormwater flow deters mosquito species from breeding in the ponds. The wetlands are also designed with natural design features that attract wildlife that eat mosquitoes. For example, thousands of native plants installed at each site attract birds, bats, and dragonflies that consume mosquitoes. Mosquito larvae sampling at several completed BMP have yielded a small number of mosquito larvae.

**Comment 3:** I have a question concerning the land around BMP NC-7. Currently my property floods and I get a pond every time it rains. We get runoff from the elevated streets of Nugent and Stobe Avenue. What will happen with the proposed berms when there is no way for the water to drain? The proposed project calls for containment ponds with a berm to collect and hold runoff. However, the containment ponds are at a higher elevation than the streets not allowing the local runoff to find its way into the wetland naturally. Digging down won't work because of the high water table. Will the berms affect the natural drainage? How will the berms keep the Bluebelt from flooding my property? Will the berm prevent my property from draining into the adjoining BMP? (Downer, Oakwood Beach residents, Langan)

**Response:** The proposed low berms would serve to prevent the stormwater BMPs from inundating property during extreme storm events. The water surface elevation in the BMPs would be lower than the surrounding street grades during the NYCDEP design storm event, so the berms are not necessary to hold water back in the BMPs. Instead, they will serve as an added level of protection from inundation during larger storm events. The berms will also be designed with careful attention to how they could affect existing drainage patterns for adjacent homeowners. In some cases, yard drainage, especially for the rear yards, may now flow into the Bluebelt wetlands unimpeded. The proposed berms have the potential to block that drainage coming from adjacent private properties. Possible techniques for taking care of any water accumulating alongside the berm on the private property side of the berm would be drain tiles, French drains, swales, and yard inlets as appropriate to convey runoff parallel to the berm to the closest storm sewer inlet. A description of the proposed berms and an assessment of their impact, if any, on local hydrology will also be presented in the EIS.

**Comment 4:** Phragmites needs to be eradicated or controlled. It is an invasive species. How does DEP keep *phragmites* under control in the Bluebelt? (Downer, Reinhardt)

**Response:** The common reed (*Phragmites australis*) is a very tenacious wetland grass that is difficult to completely eradicate from areas where it is well established. In

## Mid-Island Bluebelt DEIS Final Scope of Work

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areas of new BMP construction such as New Creek, the most effective way to discourage common reed is to excavate enough soil so that the water in the new wetland is at least three feet deep. As with typical Bluebelt construction, deep areas will be excavated within portions of each proposed BMP site in the Mid-Island Bluebelts. Following construction, common reed will be controlled within each BMP site with the use of herbicide and by manual removal. Perimeters and frontages of the BMP sites will be mowed regularly as part of the Bluebelt's field management plan. It is important to note that although all efforts will be made to eradicate this plant from the BMP sites, it spreads quickly and is widespread in the area. Complete eradication is not possible and continual maintenance is necessary.

**Comment 5:** We support the Bluebelt project. The New Creek project is scheduled to commence in 2013. Will others follow? When will they be completed? (Downer, Latona)

**Response:** As stated in the draft scope of work, the three watershed drainage plans analyzed in the DEIS will be built out over some 30 years, through the year 2043. The first of the proposed projects is expected in the New Creek Bluebelt. This will be followed by about three decades of multiple capital projects throughout the three watersheds. The DEIS will also include a discussion of the proposed project schedule.

**Comment 6:** Cameron's Lake has significant wildlife (double crested cormorant, merganser, snapping turtles, black duck, mallard duck, blue heron) and should be protected. How does the Bluebelt protect wildlife? What are some examples of successful wildlife habitat creation in the Bluebelt areas? (Caropreso)

**Response:** Virtually all of the constructed Bluebelt wetlands provide habitat enhancement for wildlife. For example, extended detention wetlands create important habitat for fish, reptiles and mammals, by providing basic ecological components such as dissolved oxygen, plants, food sources and cover; all of which occur in natural wetlands. Shallow wetlands provide breeding and feeding areas for fish while also attracting breeding birds and migrant waterfowl. Mammals are attracted to wetlands for the multitude of food sources and cover. Nationally it is generally recognized that 200 kinds of fish and 150 kinds of birds are wetland-dependent. The created wetlands and wet-woods of the Bluebelt play an important role in providing habitat for some of these species in an urban environment.

**Comment 7:** What about the additional area in Oakwood Beach? Unfortunately, the project excludes about a third of the Oakwood Beach watershed from the drainage plan EIS for some reason that is not explained although the proposed water management structure labeled OB-5 is in that excluded section. The current site

of the future BMP OB-5 accepts water from a much larger area - the entire area north and east: up to Amber St., south and west across Clarke Ave., includes the Frederick Douglas Cemetery, areas off Amboy Road. The community believes the excluded area should be part of the Oakwood Beach drainage plan (this is also stated in our July 15, 2004 letter to DEP); however, it is presently outside the drainage plan. We have in this area arterial streets and local streets without sewers and as a result stormwater causes flooding some minor property damage and rips up the streets. There is a culvert system on Amboy Road at the Amundsen Circle area that dates to the WPA era, does not function adequately, does not meet regulatory requirements, and needs to be replaced. It should be added to the plan. This area is important to a successful Oakwood Beach Watershed Bluebelt system and will provide a cost effective means of stormwater management for the community. DEP must include this area under its legal obligation to develop a drainage plan that will recognize, protect and maintain all the State and Federal mapped wetlands in the area and the obligation to pretreat all stormwater using vegetative measures, if possible, prior to discharge to the Lower Bay. These wetlands are in need of functional, environmental, and aesthetic restoration stabilization and maintenance. This includes wetlands and watercourse features along the Amundsen Trailway as well as a stormwater pipe and appurtenances on Clarke Avenue between Wilder Avenue and Amboy Road and other piping in existing streets. Almost all of the needed land is in public ownership. Besides the wetlands/environmental/water quality issue, drainage plan storm sewers in the Richmond/Oakwood Heights portion of the upper Oakwood Beach watershed will never be built. Given the high cost and relatively small amount of water involved, it would be a waste of rate-payer dollars to build it. In contrast, the enhancement of the existing public land now detaining and conveying the storm water is the cost-effective plan. (Matranga, Scarella, Reinhardt, Donovan, Downer, Rooney)

**Response:** The section of the Oakwood Beach drainage area west of the Willowbrook Parkway right-of-way that includes the portion of Great Kills Park is tributary to the Oakwood Beach Bluebelt. The stormwater runoff from this area currently makes its way to the Oakwood Beach Bluebelt streams. However, the existing drainage plans which show a full storm sewer system will not be altered by this drainage planning effort and no Bluebelt features are proposed for this area. A number of storm sewers have already been built in this area, including a lengthy one that runs in the Willowbrook Parkway right-of-way from the Staten Island Rapid Transit viaduct to Hylan Boulevard. This sewer daylights in Great Kills Park and drains into the creek that flows into the Oakwood Beach Bluebelt, as do other storm sewers in streets to the west which are perpendicular to Hylan Boulevard. Although this section of the Oakwood Beach drainage area will not be analyzed in the EIS because its drainage plan will not be changed by the proposed action, the stormwater flows into the Bluebelt will be accounted for in

## Mid-Island Bluebelt DEIS Final Scope of Work

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all Oakwood Beach Bluebelt drainage planning efforts. The map attached to the EIS Scope of Work has been slightly modified since the public scoping session in response to this and other comments on the watershed boundary.

**Comment 8:** Can the Bluebelt use the “spider creeks” near the Indian Streets and the ponds in the Willowbrook Parkway to relieve street flooding? Would they disappear when the storm sewers are in place? For example, a pond (a mapped Federal wetland, also shown on the Borough topographical maps, circa 1910) between Thomas Street and Cedarview Avenue, next to Riedel Avenue, when it overflows floods a swamp parallel to Riedel Avenue, then overflows onto Amboy Road when the WPA-era pipe under the Amundsen Circle is over capacity, and the discharge from that pipe is into a watercourse in the NYCDPR's Amundsen Trailway woods/wetlands at the south side of the Circle on Clarke Avenue near Riedel Avenue—a discharge point recently rehabbed by NYCDEP with new catch basins and streambank stabilization. The water flows through the proposed OB-5 area, down to Hylan Boulevard, eventually, and into the Oakwood Beach wetlands. Also to be considered is the current course of the water that comes through a channel that surfaces at Montreal/Amboy, whose sources may include the watershed/wetlands in upland cemeteries - which all ends up in the Amundsen Trailway (OB-5) watercourses, and then flowing to Oakwood Beach. The waterway, ponds, and wetlands in the Amundsen Trailway corridor are mapped Federal (NWI) wetlands. Removal of water flow, or addition of water flow, to these wetlands will require a permit. The permit/EIS process should also include the three small rogue projects done in the area. Two projects added water to the existing watercourses (at Windemere/Clarke/Riedel—a couple of catch basins with small sections of pipe dumping directly into the woods, ditto at Riedel Avenue and North Railroad Avenue), and the third, beginning at Clarke Avenue/Rene Drive, and up to Wilder Avenue and then down Montreal Avenue, removed water (at least it removed it from the upper watercourse, and re-injected it downstream). (Rooney)

**Response:** The proposed drainage plans would incorporate the West Branch of New Creek. In New Creek, the channel near Sioux Street would be enhanced and regraded in order so that it can serve as a conduit to carry stormwater away from the streets and into the proposed BMPs. The plans would also incorporate the stream in the Willowbrook Parkway right-of-way between the Staten Island Rapid Transit viaduct to Hylan Boulevard. The swale between Amundsen Circle and the viaduct is being considered for inclusion. As for the ponds in the Willowbrook Parkway right-of-way between Amundsen Circle and Richmond Road, those appear to be isolated systems fed by local drainage; thus, these streams could not be connected into the overall drainage system. During the course of the EIS analyses, NYCDEP will investigate how the drainage plan will affect these ponds and whether some flow can be maintained to these wetlands.

## **Attachment A: Response to Comments on the Final Scope of Work**

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**Comment 9:** Look at the watercourse on Figures 1 and 2 that parallels Hylan Boulevard. The figure shows it connected to both the Oakwood Beach and Great Kills Harbor. There are also culverts under Buffalo Street (east side of Hylan Boulevard), but I do not believe it is an actual connection between these watercourses and the easterly channel that flows to the tidal inlet at Oakwood Beach. This needs to be field-verified with dye testing or similar techniques. Also, as shown on the figures, the flow is crossing watershed boundaries (or is it flowing both ways?). (Rooney)

**Response:** As shown on the revised figures provided with this Final Scope of Work, the watershed boundaries have been modified to reflect current topography/hydrology and the two directions of flow within this stream.

**Comment 10:** What happens in storm surges? How will these be addressed? DEP's proposal is to bring in freshwater (rain, runoff) to the Oakwood neighborhood without any mention of how to deal with the tidal flood conditions. Has there been a study to look at tidal flooding occurrence, where is the flood/rainwater coming from, who on Staten Island is flooding in a higher elevation, and the water that would find its way to Oakwood? I am also worried about the flood gates. (Benimoll, Oakwood Beach residents, Cajano)

**Response:** The Bluebelt project provides stormwater conveyance up to NYCDEP's design storm event, which addresses a rain event coupled with the Raritan Bay tidal cycles up to a mean high tide. This standard is based on storm rainfall total and peak rainfall intensity. The Bluebelt is not a strategy against extreme tidal surges and additional shoreline protection measures may still be necessary to address these storm events. The Army Corps of Engineers (ACOE) is studying the potential need for additional shoreline protection measures. Any active proposals by the ACOE for the study area will be discussed in the EIS as part of the "future without the proposed project."

**Comment 11:** Please clarify the acquisition of Whitney Woods by "others." (Scarella)

**Response:** The acquisition of the Whitney Woods property is being funded through the support of the Staten Island Borough President and the City Council. No NYCDEP capital project funds will be used for the acquisition of this property.

**Comment 12:** Please clarify the ownership of Brady's Pond. Is the north part owned by DPR? (Scarella)

**Response:** This pond is largely privately owned; however, a small portion in the northeast part of the pond is owned by the City and under the jurisdiction of NYCDPR.

**Comment 13:** What about dredging the East Branch? There is a lot of sediment to be removed. (Scarella)

## **Mid-Island Bluebelt DEIS Final Scope of Work**

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**Response:** As the conceptual design for the East Branch has evolved, BMPs NC-18 and NC-19 have been enlarged in order to provide additional flood storage as an alternative to dredging. A description of these BMP's and the associated hydrology will be presented in the EIS.

**Comment 14:** There are a lot of illegal discharges in the watershed that affect water quality. People pump their sumps into local sewers which causes backups. Do the DEP drainage plans address illegal connections between sanitary and storm sewers? (Scarella, Adatille)

**Response:** Comment noted. Addressing illegal connections is outside the scope of the amended drainage plan design and the EIS process. However, no stormwater connections to the sanitary sewers are allowed in these watersheds. In addition, NYCDEP's enforcement group addresses illegal connections and discharges within the system.

**Comment 15:** What are the streets that are proposed for demapping? When will the City move on the unbuilt streets proposed for demapping? (Rasheed, Reinhardt)

**Response:** There a number of BMPs in the proposed plan as well as Bluebelt properties that are within mapped but unbuilt City Streets. The streets proposed for future demapping will be identified in the EIS. NYCDEP does not have a schedule for these demapping actions which are subject to the City's Uniform Land Use Review Procedure (ULURP). At some time in the future, NYCDEP will prepare a schedule for demapping of the mapped but unbuilt streets, thereby updating the official City map. However, in the meantime, BMP design and implementation can proceed as long as no private properties are denied access to a public street, either built or unbuilt but mapped. Additional details on these demappings and the associated ULURP process will be provided in the DEIS.

**Comment 16:** The proposed elevation of NC-7 is -3.5. I think the water table is very close to that elevation and that is a concern. (Langan, Downer, Oakwood Beach Civic Association)

**Response:** NYCDEP is conducting an extensive groundwater monitoring program as part of the design process for the New Creek watershed. The results of this monitoring will be used to inform the design details of the BMPS and will be available in the DEIS.

**Comment 17:** Properties located at addresses 95, 97 and 99 Lansing Street are incorrectly mapped as DEP Bluebelt property. Currently those blocks (3404/33, 2404/32, 3404/35) have single family dwellings that are occupied and the street is built and occupied. I assumed these properties are not going to be acquired by eminent domain. (Rokoszak)

## **Attachment A: Response to Comments on the Final Scope of Work**

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**Response:** The above referenced properties are not proposed for acquisition as part of the Bluebelt project.

**Comment 18:** The three mid-island drainage basins have a long history of significant and elaborate stormwater control activities. These actions were initiated by various entities to address specific storm-related problems and events. The environmental impact statement (EIS) will need to address and assess the functioning of the drainage plan within this historical framework. (NYSDEC)

**Response:** The project history section of Chapter 1 “Project Description” in the DEIS will include a description of the historical framework for the proposed NYCDEP drainage plans with the Bluebelt project.

**Comment 19:** Current features of the drainage basin such as topography and tidal influence which directly influence the drainage plan will need to be evaluated in the EIS. Construction activities in other Bluebelt systems has identified the need for basin-specific information in the selection of a preferred alternative. Use of models provide an areawide assessment of impacts, but often of not address the site-specific irregularities. Site-specific data is critical to the selection of a preferred alternative. (NYSDEC)

**Response:** Chapter 1 ‘Project Description’ in the DEIS will include a description of the BMP site selection process as well as the basis for the proposed BMPS designs.

**Comment 20:** On Page 7, please include in “Required Permits and Approvals” that “SPDES General Permit(s) for Stormwater Discharges from Construction Activity” will be required in connection with this project wherever applicable. (NYSDEC)

**Response:** This modification has been to the Final Scope of Work and will be included in the DEIS Chapter 1 “Project Description.”

**Comment 21:** The three mid-island drainage basins have an extensive network of sanitary sewer lines. The age of many of these lines is critical to their functioning and long-term stability. Currently, there are significant gaps in the service network. The EIS should evaluate the need to replace lines which are beyond their projected life span. (NYSDEC)

**Response:** NYCDEP typically determines the need for the upgrade of existing sanitary sewer lines as each capital project proceeds. As stated in the scope of work, there are approximately three decades of capital project are that are addressed in this EIS. The EIS will describe the process by which the need to improve or upgrade sanitary sewer lines it will be determined for the three watersheds.

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**Comment 22:** New York State owns and manages a variety of lands within the three drainage basins. Management goals and objective for each property should be discussed within the EIS. (NYSDEC)

**Response:** NYCDEP coordinated with NYSDEC during the preparation of the Draft Scope of Work. This coordination will continue through the preparation and review of the DEIS as NYSDEC is an involved agency in the DEIS. Therefore, NYSDEC will be contacted relative to the management programs it has in place for State-owned lands within the three watersheds (e.g., Richmond County Country Club).

**Comment 23:** The location of BMP NC-4 and NC-5 within New York State property will require an approval from the state. The proposed structure will have to comply with current and future state uses of the property. (NYSDEC)

**Response:** It is recognized that these two proposed BMP locations are within State land under the jurisdiction of NYSDEC (part of the Richmond Hill Country Club). NYCDEP will therefore coordinate with NYSDEC on the design and implementation of these proposed BMP's. The proposed designs will also be discussed in further detail in the DEIS.

**Comment 24:** BMP NC-13 has a history of negative alterations by prior owners. Can the pocket wetland be designed to remove or remediate these prior negative issues? These actions should be described in the EIS. (NYSDEC)

**Response:** NYCDEP is exploring design options that my address the negative impacts of prior filling at this site. The current design for this BMP will be presented as part of the DEIS.

**Comment 25:** The area immediately adjacent to BMP NC-18 was the subject of a wetland enhancement project undertaken by a private landowner. Maintenance of hydrology and grades should be examined so that the enhanced wetland area continues to persist and function. These actions should be described in the EIS. (NYSDEC)

**Response:** It is the intention of this landowner to donate their property to the City for the purposes of the Bluebelt project. The design for this proposed BMP (NC-18) will take into account the wetland enhancement project referenced in the comment and the current design for this BMP will be presented as part of the DEIS.

**Comment 26:** The existing topography at BMP SBE-1B may require extensive excavation to obtain desirable flow patterns. This should be discussed in the EIS. (NYSDEC)

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**Response:** The need for grading changes in order to achieve the proper hydrologic function at this BMP will be described in the DEIS Chapter 1 “Project Description.”

**Comment 27:** Cameron’s Lake is a very shallow freshwater lake with an existing fish population. The water quality in the lake would be improved by retention of some storm flows. This action should be evaluated in the EIS. (NYSDEC)

**Response:** The DEIS will includes a description of the proposed project as it relates to Cameron’s Lake along with an assessment of any changes in hydrology and runoff and the potential for any water quality or fisheries impacts on the lake that may result from the proposed project.

**Comment 28:** The existing topography at BMP OB-2 may require extensive excavation to obtain desirable flow patterns. This should be evaluated in the EIS. (NYSDEC)

**Response:** The need for grading changes in order to achieve the proper hydrologic function at this BMP will be described in the DEIS Chapter 1 “Project Description.”

**Comment 29:** Is the Priory Pond included in the basin analysis? Has DEP staff examined the area and determined how the pond is supplied with water? The proposed plan appears to remove surface water, which will cause the pond to dry up. Also, the evaluation of the pond should include the clay pipes currently feeding it, the dam, and the depth sedimentation to ensure a healthy pond can be maintained. (NYSDEC)

**Response:** Priory Pond is located in the upper portion of the New Creek watershed and is part of the hydrology of that watershed. Based on a preliminary review of aerial photography and a site visit, it appears that runoff into the pond is localized and the outlet from the pond drains west, eventually feeding the stream across the Richmond County Country Club. No BMPs are proposed at Priory Pond and it does not appear that the proposed project would adversely impact Priory Pond since it would only sewer the street to the east of Priory Pond (Todt Hill Road). Nonetheless, the DEIS will include an assessment of existing and proposed drainage in this area for the purposes of determining if the proposed project would have any adverse impacts on the hydrology or water quality of Priory Pond.

**Comment 30:** State-owned land within the Oakwood Beach watershed has had issues with perimeter protection, invasive species control, debris removal, and encroachments. The existing tower is on state property and requires special attention if work is to be performed in the area. (NYSDEC)

**Response:** East of Kissam Avenue in the Oakwood Beach Bluebelt, a large wetland property owned by NYCDPR is included in the Bluebelt and is, in fact, the site for BMP OB-2. East of that property, adjacent to developed areas, a number of

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small parcels, which are part of the same phragmites marsh that covers the whole area, are owned by the State of New York. Those properties are Block 4130 Lot 666 and Lot 655. Although they are not part of the BMP OB-2 site, NYCDEP may do work there cleaning up street frontages and installing perimeter security measures at some point in the future. NYCDEP will coordinate with the State of New York on that work. According to NYC Dept. of Finance records and the aerial photo, the tower which may have been a lighthouse at one time is on Block 4130 Lot 500 and is owned by the federal government. Any work there by NYCDEP will not be done until approval is obtained from the proper authorities and NYSDEC will continue its coordination with NYSDEC with respect to these properties.

**Comment 31:** A Concurrent Use and Occupancy Agreement or other formal agreement would be needed for any permanent construction on state lands. A temporary revocable permit (TRP) would also be needed for the survey, research, or other field work on state land. NYCDDC, who usually does some of the work for these projects, has not yet come to the Department for a TRP for any Bluebelt work. NYCDDC should be made aware of this process. (NYSDEC)

**Response:** NYCDEP will pursue with NYSDEC a concurrent use and occupancy agreement prior to undertaking any construction on state lands. NYCDEP will also follow all the required procedures necessary to perform investigations on survey work on State lands. NYCDEP will also inform NYCDDC of these access requirements.

**Comment 32:** With regard to the scoping map: a) the green colored properties labeled City park properties are not all City parks. Richmond County Country Club is owned by NYSDEC. Both the Willowbrook and Richmond County ROWs are owned by NYSDOT; b) what is “proposed drainage areas tributary to New Creek Bluebelt”? Is this to be a construction of some kind? If so, most of it runs through land currently owned by NYSDOT [Richmond Parkway right of way]; c) There are 2 proposed BMPs on the Richmond County Country Club property, which is owned by NYSDEC. Impacts and permits need to be addressed in the DEIS. (NYSDEC)

**Response:** The maps provided in the Final Scope of Work have been modified to identify the parks and open spaces as “City, State and Federal” lands. Table 1 of the Draft Scope of Work recognizes NYSDOT and NYCDPR as the agencies with jurisdiction over the unbuilt Willowbrook Parkway right of way and the site of the proposed OB-5. The “proposed drainage areas tributary to New Creek Bluebelt” is the drainage area of the proposed BMP drainage plan. It is based on topography and direction of flow and does not represent any construction projects. As stated above under “Project Description” and also below under “Surface and Groundwater Hydrology” and “Natural Resources,” the DEIS

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will include an detailed description of the proposed designs, necessary approvals, and the impacts of the BMPs proposed to be located within the State-owned Richmond County Country Club.

**Comment 33:** The following are general comments on the proposed plan: a) Richmond Parkway right of way is separate from the Willowbrook Parkway ROW and should be referred to as such. NYSDEC should have to permit work along with NYSDOT on this property, as the NYSDEC has more of an interest in this ROW.

**Response:** There are no proposed activities in the Richmond Parkway right of way. As described above, BMP OB-5 is proposed in the mapped but unbuilt Willowbrook Parkway right of way. NYCDEP will coordinate with NYSDOT in the design of this BMP and will obtain all the necessary agreement and permits with both NYSDOT and NYSDEC prior to construction.

**Comment 34:** With the proposed Bluebelt Project for the Oakwood Beach Watershed, the Richmond County Country Club should be strongly encouraged to switch to organic fertilizers, pesticides and herbicides on the greens. (NYSDEC)

**Response:** Comment noted; however NYCDEP has no management authority over this State-owned property.

### **HAZARDOUS MATERIALS**

**Comment 35:** The three mid-island drainage basins have been the recipient of unregulated fill when residences and street were installed in the past. Fill material came from a variety of sources and may or may not have been appropriate for the intended use. The EIS should assess the need for soil investigations and establish a mechanism to remove material that is unsuitable. (NYSDEC)

**Response:** As stated in the Draft Scope of Work, the DEIS will include an analysis of the potential impacts of the proposed project as it relates to identifying any potential impacts due to the presence of hazardous materials in soil or groundwater. This analysis will include researching the land use and regulatory history of activities in the watershed and the identification of project areas within the watershed where testing may be necessary in order to avoid any impacts due to the potential presence of hazardous materials.

### **SURFACE AND GROUNDWATER HYDROLOGY**

**Comment 36:** The redirection of surface flows to the Richmond County Country Club is of concern to the NYSDEC. The proposed storage needed to regulate the flow through this property may impact the use of the state land. Please assess the

change of flow through the streams. The possibility exists of erosion, stream bank collapses and continuation of sedimentation in the two ponds. Also, aquatic life must be addressed. Dredging is currently being proposed for these streams due to an excessive accumulation of sedimentation. This sedimentation is choking the pumps used for irrigation of the golf course. (NYSDEC)

**Response:** As stated in the Draft Scope of Work, the DEIS will include a hydrological analysis for each of the project area watersheds including the New Creek watershed and the stream reach that passes through the Richmond County Country Club. That analysis will examine the potential for the proposed project to result in any stream bank erosion, collapses, and sedimentation, In addition, Chapter 12 “Natural Resources” will examine the potential for impacts on natural resources as a result of these modifications in stream flow.

## **WATER QUALITY**

**Comment 37:** What are the potential water quality impacts of the project? Will directing more stormwater to Raritan Bay damage the water quality in the Bay? Community members currently use Brady’s Pond for swimming – will DEP’s plans affect the swimmability of Brady’s Pond? Also chemicals are used to the treat the water in Brady’s Pond – will that cause downstream effects when the Bluebelt is constructed? The project should examine the impact of any discharges into Great Kills Harbor. There is floatables pollution in Great Kills Harbor. A lot of it, I suspect is coming from storm water outfalls that dump into the Harbor, one of which is the watercourse parallel to Hylan Boulevard, a creek that empties near the Great Kills Yacht Club, opposite Mansion/Fairlawn. The watercourse that parallels Hylan receives runoff from a number of existing storm drain outfalls, many of which are observable from the Blue Dot Trail in Gateway. NPDES rules mandate that all storm water in a separate storm system area like the South Shore of Staten Island be pre-treated, using vegetative measures if possible. What is DEP going to do with respect to pretreatment of flows into the Great Kills Harbor and what is the plan to pre-treat storm water in all areas, not just designated Bluebelts? The project should have any impacts on the harbor such as nitrogen or sediments that can cause fish kills. (Scarella, Rooney)

**Response:** The proposed drainage plans would provide water quality benefits by routing stormwater into wetland BMPs prior to discharge into Raritan Bay. Wetland BMPs have been shown to reduce sediment and nutrient loadings in stormwater. NYCDEP’s stormwater strategy at Brady’s Pond calls for minimizing the amount of runoff that would drain to the pond, by routing storm sewers away from the pond. The goal of this strategy is to reduce any negative impacts associated with stormwater discharge on the pond. In terms of chemical treatment of the pond, no negative impacts are anticipated given that this is a NYSDEC permitted activity. The proposed drainage plan maintains the current

outlet route from Brady's Pond. The Bluebelt project proposes no chemical treatment with respect to the pond and it is not anticipated the chemicals currently used in the pond would adversely impact the BMP's downstream. In addition, the DEIS will include an analysis of any water quality impacts of the proposed project on Brady's Pond.

## **NATURAL RESOURCES**

**Comment 38:** The Oakwood Beach drainage plan scope appears to identify new tide gates and outfall structures. The EIS should clearly describe how these items will function in the proposed drainage plan. Detailed on the size and location of the stormwater outfall should be described in the document. What is the minimum size and extension of the stormwater outfall into the bay? What type of marine habitat will be impacted by the structure? Will existing currents be altered in the area of the structure? Will beach nourishment be impacted? (NYSDEC)

**Response:** Chapter 1 of the DEIS "Project Description" will provide a complete description of the proposed outfall and Chapter 12 "Natural Resources" will provide a description of the potential natural resources impacts of the proposed outfall including any impacts on marine habitats, currents and beach nourishment. The Final Scope of Work has been modified to confirm that these analyses will be included in the DEIS.

**Comment 39:** The Last Chance Pond area and the site of BMP NC-11 was acquired due to the presence of a significant fish and wildlife resource of the area. How will the alteration of the pond into a detention basin be managed to preserve and enhance the wildlife resource. (NYSDEC)

**Response:** The DEIS will include a full evaluation of the potential natural resources impacts of the proposed BMP NC-11 on the wetlands and natural open space associated with Last Chance Pond. NYCDEP is also coordinating with NYCDPR on the identification of the resources at this locations and the design of the BMP with the objective of minimizing the impacts of this BMP while meeting the project goals of providing stormwater management and flood control in the watershed.

**Comment 40:** Floodplain creation and stream relocation for BMPs NC-7, -8 and -9 needs to be clearly described in the EIS. The document should discuss the functional feasibility of the new stormwater pathways. The low flat topography coupled with high groundwater may adversely impact stormwater flows and rates of discharge. (NYSDEC)

**Response:** The DEIS will include a discussion of the effects of the proposed project on local floodplains and hydrology. As stated in the Draft Scope of Work, this

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analysis will be provided in Chapter 10 “Surface and Groundwater Hydrology” and also Chapter 12 “Natural Resources.”

**Comment 41:** The size and location of the stormwater outfall at BMP NC-10 should be clearly described in the EIS. What is the minimum size and extension of the stormwater outfall into the bay? What type of marine habitat will be impacted by the structure? Will existing currents be altered in the area of the structure? Will beach nourishment be impacted? (NYSDEC)

**Response:** Chapter 1 of the DEIS “Project Description” will provide a complete description of the proposed outfall and Chapter 12 “Natural Resources” will provide a description of the potential natural resources impacts of the proposed outfall including any impacts on marine habitats, currents and beach nourishment. The Final Scope of Work has been modified to confirm that these analyses will be included in the DEIS. The scope mentions an assessment of the Raritan bay shoreline will be necessary. If there is an assessment of the Raritan Bay shoreline it should identify any remediation that is necessary. (Reinhardt)

A natural resources assessment of the Raritan Bay shoreline will be undertaken in order to understand the potential impacts of the proposed project with respect to the proposed outfalls. This assessment will be provided in Chapter 12 “Natural Resources.” If significant impacts are identified as a result of this assessment, mitigation measures will be proposed.

## TRAFFIC AND PARKING

**Comment 42:** Please show all streets proposed for demapping and their limits on a map. (Rasheed)

**Response:** The EIS will include a listing of the streets proposed for demapping and will examine the long term impacts of this demapping on local traffic pattern.

## ARCHAEOLOGY

**Comment 43:** The draft scope of work is acceptable for historic and cultural resources. (Santucci)

**Response:** Comment noted.

**Comment 44:** Based on reported resources, there is an archaeological site in or adjacent to your project area. Therefore, the Office of Parks, Recreation and Historic preservation recommends that a Phase 1 archaeological survey is warranted for all portions of the project to involve ground disturbance, unless substantial prior ground disturbance can be documented. If you consider the project area to be disturbed, documentation of the disturbance will need to be reviewed by

OPRHP. Examples of disturbance include mining activities and multiple episodes of building construction and demolition. A Phase 1 survey is designed to determine presence or absence of archaeological sites or other cultural resources in the project's area of potential effect. A determination of impact/effect will be provided only after all documentation requirements have been met. In cases where a state agency is involved in this undertaking, it is appropriate for that agency to determine whether consultation should take place with OPRHP under Section 14.09 of the New York State Parks, Recreation and Historic Preservation law. In addition, if there is any federal agency involvement, Advisory Council on Historic Preservation's regulations "Protection of Historic and Cultural Properties" 36 CFR 800 requires that agency to initiate Section 106 consultation with the State Historic Preservation Officer (SHPO). (Pierpont)

**Response:** As stated in the Draft scope of Work, and based on the comment above, the DEIS will include an investigation of potential archaeological impacts of the proposed project. The assessment of impacts will be based on a watershed level Phase 1A archaeological survey.

## **CONSTRUCTION**

**Comment 45:** There are rodents that live in the sewers and catch basins. What is the rodent control plan during construction? (Adatille)

**Response:** Capital construction projects in New York City, including sewer projects, are required to have a rodent control component. Prior to construction, a licensed exterminator will survey each location and set up appropriate rodent control throughout the project area. These controls are inspected and kept in place throughout the project duration. Prior to the start of construction, residents within each project area will be given contact information for a community construction liaison dedicated to the project. Specific questions or concerns regarding rodents can be directed to the community liaison.

**Comment 46:** Provide the daily number of truck and construction worker trips expected at the peak of construction activity and the number of peak hour trips. If a quantified analysis is performed, please submit the data collection program for DOT review. If a quantitative analysis is not going to be performed, please provide the justification. (Rasheed)

**Response:** The proposed project is a long term project that would be built in multiple stages over about 30 years. As stated in the Draft Scope of Work, the DEIS will include in Chapter 22 "Construction Activities" an assessment of the potential impacts of the proposed project during the various anticipated phases of construction (based on other construction experiences in the South Richmond area), and will include an assessment of any potential project construction-period impacts on local traffic. This analysis will be performed in accordance

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with the 2010 CEQR Technical Manual which will include an assessment of trip generation for the purposes of determining if a quantified evaluation of traffic impacts is necessary. Additional text has been added to the Final Scope of Work to confirm this methodology.

**Comment 47:** Indicate whether any road closures are necessary. (Rasheed)

**Response:** As stated above, the proposed project is a long term project that would be built in multiple stages over about 30 years. As stated in the Draft Scope of Work, the DEIS will include in Chapter 22 “Construction Activities” an assessment of the potential impacts of the proposed project during the various anticipated phases of construction (based on other construction experiences in the South Richmond area) and will include an assessment of any potential project related road closures. Additional text has been added to the Final Scope of Work to confirm this methodology.

**Comment 48:** There are activities in the Staten Island Rapid Transit (SIRT) right of way. Will service be affected by construction and if so, for how long? (Reinhardt)

**Response:** Chapter 22 of the DEIS, “Construction Activities” will include an assessment of the potential for the proposed project to impacts any service or facilities of the Staten Island Rapid Transit system, particularly with respect to BMP OB-5 which would be located beneath the SIRT tracks. Additional text has been added to the Final Scope of Work to confirm this methodology.

## ALTERNATIVES

**Comment 49:** For the area East of Mill Road, much of this area is at, near, or below sea level. All alternatives should be considered for their long run benefit to residents, and rate-payers, impact on municipal costs, and environmental performance. Alternatives should include a buyout alternative, such as that which surfaced after the 1992 Nor 'Easter. (Rooney)

**Response:** NYCDEP is proposing the Mid Island Bluebelt for the purpose of stormwater management. While there are benefits of the proposed project as it relates to reduced local street and stream flooding, the proposed project is not a flood hazard mitigation study under which a buyout alternative may be considered. Therefore, this alternative will not be examined in the EIS. However, each alternative will be analyzed for benefits to local residents, costs, and environmental performance.

**Comment 50:** Has the BMP OB-1 area been acquired by the City of New York? If this location or any of the other proposed for acquisition are not successful, how will

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the drainage plan be impacted? The EIS should evaluate this alternative. (NYSDEC)

**Response:** Acquisition of this property is in process. It is assumed for the purposes of the EIS that this acquisition will be finalized and the property will be integrated into the Bluebelt system. Therefore, at this time, an evaluation of other alternative designs is not considered to be necessary. \*