

Draft Scope of Work to Prepare a Draft Environmental Impact Statement for the Gowanus Canal Combined Sewer Overflow (CSO) Facilities Project

A. INTRODUCTION

This Draft Scope of Work (Draft Scope) is for the purpose of providing the methodology and framework for analysis of a draft EIS. The New York City (City) Department of Environmental Protection (DEP) is producing the design and construction of two additional combined sewer overflow (CSO)¹ facilities to further reduce the volume of combined sewer overflows entering the Gowanus Canal (the Canal). This Project is mandated by the USEPA to satisfy remediation objectives under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA or Superfund). The siting of two CSO storage tank facilities will be reviewed for their potential impacts on the surrounding environment, in accordance with the New York State Environmental Quality Review Act (SEQRA), City Environmental Quality Review (CEQR), and the Uniform Land Use Review Procedure (ULURP). Following the designation of the Canal as a Superfund site by the United States Environmental Protection Agency (USEPA) in 2010, USEPA issued a Record of Decision (ROD) in September 2013 that described the USEPA-selected remedy to meet preliminary remediation goals (PRGs) for the Canal.

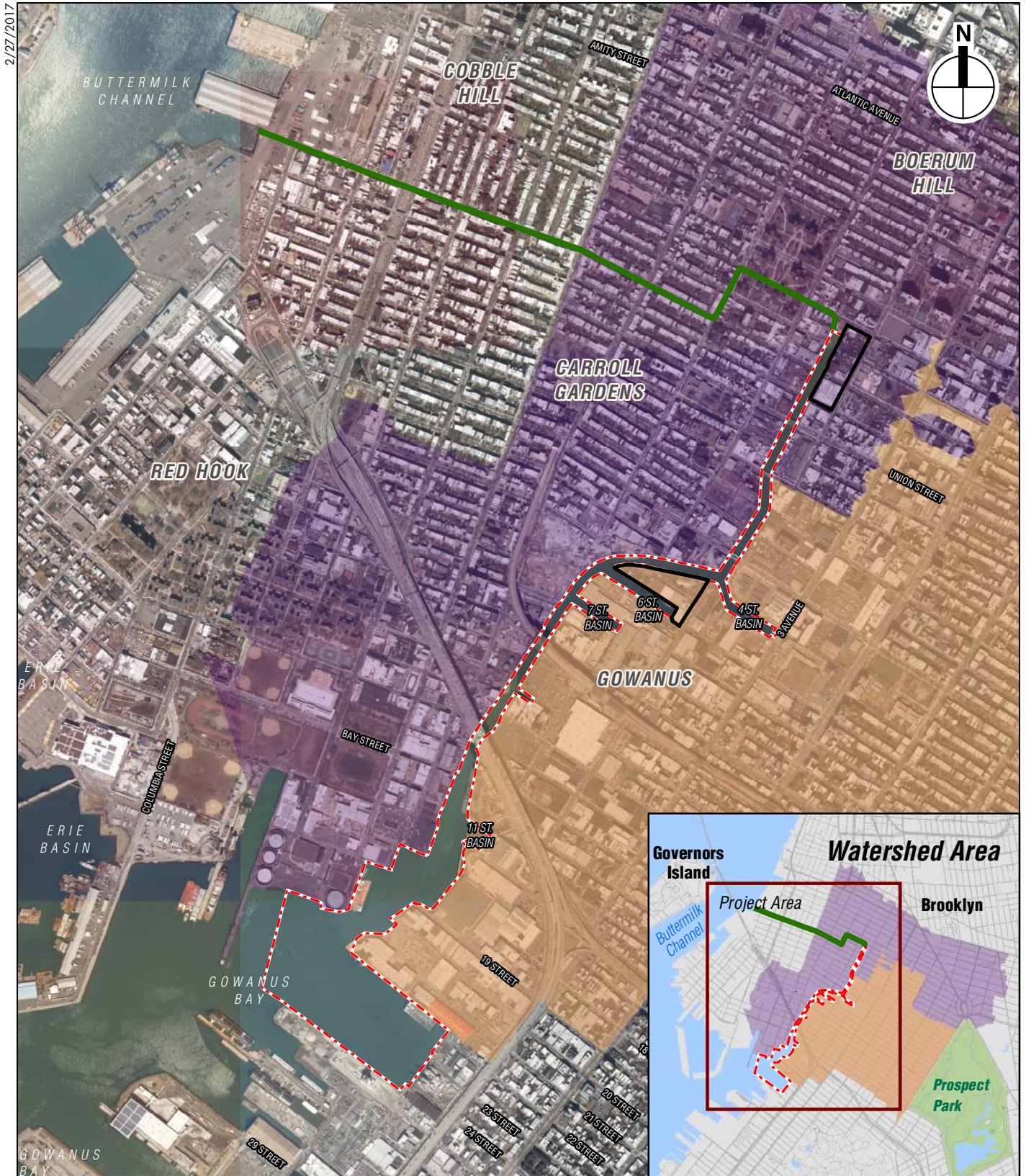
The Canal is an approximately 1.8-mile-long, manmade waterway located in Brooklyn, Kings County, New York (see **Figure 1**). The first of the two CSO facilities, “the Head End Facility,” would include an 8-million-gallon (MG) tank that would intercept overflow of CSO solids from the “head end,” or northernmost portion of the Canal. The second facility, or “the Owls Head Facility,” would include a 4-MG tank that would intercept overflow of CSO solids from the middle of the Canal near the northern terminus of 2nd Avenue and the 4th Street turning basin.² Construction of the Head End Facility would require the lease or acquisition of three privately owned parcels adjacent to the Canal.³ Construction of the Owls Head Facility would require the lease or acquisition of up to four privately owned parcels adjacent to the Canal.⁴ Collectively, the Project includes the acquisition of up to seven properties to support the facilities and construction staging areas.

¹ CSO is the result of rainfall runoff entering the combined sewer system during wet weather when precipitation is intense enough to trigger overflows. In order to protect drainage areas and private property, and prevent street flooding, excess flow depending on rainfall intensity is directed to outfalls through regulators that act as relief valves.

² The Canal has four short turning basins that branch to the east of the main channel at 4th Street, 6th Street, 7th Street, and 11th Street; a fifth turning basin located at 1st Street, has been filled in and would be restored independent of this Project as part of the mandated Superfund remediation of the Canal. Turning basins allow vessels in the Canal to turn and/or reverse direction.

³ DEP is also considering the demapping of the mapped portion of Douglas Street to correct the title and record for this portion of the Head End Facility.

⁴ Construction of the Owls Head Facility may also require Site Selection and demapping approvals.



- Project Sites
- Gowanus Canal
- Gowanus Canal Flushing Tunnel
- Red Hook Sewershed*
- Owls Head Sewershed*

* Sewershed areas indicate the portions of the Gowanus Canal Watershed served by each WWTP

Gowanus Canal CSO Facilities

Project Location:
Gowanus Canal
Figure 1

The Head End Facility is proposed to be located at 242 Nevins Street (Block 418, Lot 1) and 234 Butler Street (Block 411, Lot 24), with an area for construction staging located at 270 Nevins Street (Block 425, Lot 1) and would intercept CSO solids primarily from CSO outfall RH-034. The Owls Head Facility would be located at the five parcels consisting of 2 2nd Avenue (Block 977, Lot 3), 110 5th Street (Block 990, Lot 21), 122 5th Street (Block 990, Lot 16), 22 2nd Avenue (Block 990, Lot 1), and 5th Street (Block 977, Lot 1), with portions of this area used for construction staging. The Owls Head Facility would intercept CSO solids from CSO outfall OH-007 (see **Figure 2**).

As lead agency for the Project, DEP is preparing a Draft Environmental Impact Statement (DEIS) for the construction of both the Head End Facility and the Owls Head Facility (the Gowanus Canal CSO Facilities) and has determined that the Project may result in one or more significant adverse environmental impacts. Accordingly, DEP will prepare the DEIS for public review and comment, and for consideration by other involved and interested agencies.

A public meeting is scheduled to receive public comments on this Draft Scope of Work on May 4th, 2017 at 7 PM and will be held at P.S. 32, 317 Hoyt Street in Brooklyn, NY. Written comments on the Draft Scope of Work will also be accepted until May 14th, 2017.

B. BACKGROUND INFORMATION

HISTORY OF THE GOWANUS CANAL

In the early 19th century, the site where the Canal is now located was occupied by Gowanus Creek, local tributaries, and lowland marshes. In 1848, the State of New York authorized construction of the Canal in order to open the area to barge traffic, increase circulation and flushing, receive stormwater, and fill the adjacent lowlands for development. Construction of the Canal began in the 1860s by bulkheading and dredging the creek.

Following its construction, the Canal quickly became one of the nation's busiest industrial waterways, serving heavy industries in the area that included coal yards, cement manufacturing, tanneries, paint and ink factories, machine shops, chemical plants, oil refineries, and three manufactured gas plants (MGPs).

In 1911, the City began operating the Gowanus Canal Flushing Tunnel—a pumping system and mile-long tunnel—with the goal of improving the Canal's overall water quality. The Flushing Tunnel improved circulation and flushed stagnant water from the Canal by pumping from the head of Gowanus Canal to Buttermilk Channel, a small tidal strait that separates Governors Island from Brooklyn. The Flushing Tunnel operated until the mid-1960s; it was rehabilitated and reactivated in 1999. At this time, the direction of flow was reversed to bring more highly oxygenated water from Buttermilk Channel to the head of the Canal.

Currently, the Canal is surrounded by a mix of residential, commercial, and industrial uses. The residential areas include the neighborhoods of Gowanus, Park Slope, Cobble Hill, Carroll Gardens, and Red Hook, with an increasing residential presence currently near the waterway. Properties along the waterfront have historically been primarily commercial and industrial in nature; in recent years, new high-density residential developments have been constructed.

In October of 2016, the Department of City Planning along with other city agencies launched the Gowanus PLACES Neighborhood Planning Study, which seeks to create a stronger neighborhood by reinforcing and encouraging the local economy anchored by a mix of uses and businesses, while creating



Project Sites

Gowanus Canal

Construction Staging Areas

New Force Main

0 1,000 FEET

Gowanus Canal CSO Facilities

Project Location
Figure 2

opportunities for new housing with affordable housing in appropriate locations. In early 2017, the Study began community outreach.

COMBINED SEWER SYSTEM

The Gowanus Canal water/sewershed encompasses approximately 1,760 acres, of which approximately 1,600 acres are served by combined sewers that convey dry weather flow and wet weather flow to two wastewater treatment plants (WWTPs): Red Hook (RH) and Owls Head (OH). In periods of dry weather, the combined sewers convey only sanitary sewage. During and immediately after certain wet weather events, combined sewers can experience a much larger flow due to stormwater runoff collection. To control flooding at the WWTPs, regulators built into the combined sewer system allow two times the amount of design dry weather flow into the interceptors (the large sewers that bring the wastewater collected from the various smaller mains to the WWTPs for treatment); when there is excess flow, it runs by gravity through an outfall, which constitutes a CSO. There are 12 combined sewer system outfalls that discharge to the Gowanus Canal (see **Figure 3**); these outfalls have permits from the New York State Department of Environmental Conservation (DEC).

RED HOOK

The RH WWTP's service area is located in the northwest section of Brooklyn. As shown on **Figure 1**, the portion of the Canal's water/sewershed within the RH WWTP's service area is generally located to the north and west of the Canal; along the northern end of the Canal, the service area also extends to the east. Flow from this area is directed to the RH WWTP for treatment.

During certain wet weather events, up to seven CSO outfalls discharge to the Canal from the RH area, with RH-034 being the largest, as measured by activation frequency and overflow volume. RH-034 is located adjacent to the Gowanus Wastewater Pumping Station at the head of the Canal.

The neighborhoods north of the Canal are served by three major sewers that flow by gravity and converge at the pumping station and RH-034. All dry weather and wet weather flow of up to 30 mgd is directed to the RH WWTP through the pumping station. Flow from the pumping station is discharged directly to the RH WWTP interceptor sewer via a force main. Peak wet weather flows that exceed the capacity of the pumping station discharge over a weir to the Canal through outfall RH-034. Tide gates on the RH-034 outfall prevent water from the Canal from backing up into the sewer system.

OWLS HEAD

The OH WWTP's service area is located in the western section of Brooklyn. As shown on **Figure 1**, the portion of the Canal's water/sewershed within the OH WWTP's service area is located to the east of the Canal. Flow from this area is directed to the OH WWTP for treatment.

During certain storm events, up to five CSO outfalls discharge to the Canal from the OH service area, with OH-007 being the largest, as measured by typical year activation frequency and overflow volume. OH-007 is located at the end of 2nd Avenue and discharges near the 4th Street Turning Basin.

The OH-007 outfall receives flow from two major sewers, which run parallel to each other along 4th Avenue, between 7th Street and Carroll Street. The two sewer lines flow by gravity and combine at 7th Street into a combined sewer that extends southward to the North Interceptor. Two weirs are associated with OH-007. The first weir is located at the upstream (north) end of the combined sewer at 7th Street and 3rd Avenue. This weir diverts excess flow to a relief pipe and the OH-007 outfall. The second weir is located at the downstream end of the relief pipe at the OH-007 outfall. The 2nd Avenue Pumping Station is also on the relief pipe. The pumping station pumps a small amount of flow back to the combined sewer,



Gowanus Canal CSO Facilities

**CSO and Stormwater Outfall Locations
Along the Gowanus Canal
Figure 3**

and excess flow discharges to the Canal via the second weir. A tide gate on the OH-007 outfall prevents water from the Canal from backing up into the sewer system.

RECENT DEP UPGRADES IN GOWANUS CANAL WATERSHED

Pursuant to a DEC CWA Consent Order (CSO Order), the City has upgraded the Gowanus Wastewater Pumping Station, which pumps wastewater to the RH WWTP, and has constructed a new mile-long force main from the pumping station to the Columbia Street/Red Hook Interceptor Sewer. Following these upgrades, the two largest CSO outfalls, by volume, are RH-034 and OH-007 in the RH and OH service areas, respectively. In addition, the City designed and completed additional improvements to the Flushing Tunnel in 2014 including installing new pumps that deliver an average flow of 215 million gallons per day (mgd) and new screens, and improving the hydraulic grade line which results in more continuous pumping of fresh water to the Canal during low tide.

DEP has commenced construction and installation of High Level Storm Sewers (HLSS) in the Gowanus watershed area, generally located between Carroll Street and Bergen Street near the northern end of the Canal, extending to 4th Avenue to the east (see **Figure 4**); once completed, the project will create a separate stormwater discharge to the Canal through a stormwater outfall at Carroll Street. HLSS is a form of partial separation that separates stormwater from streets or other public rights-of-way from combined sewers. Separation of sewers will reduce the amount of CSO solids that may be discharged to the Canal, and would alleviate street flooding. As part of the project, 87 new catch basins will be installed to allow stormwater to drain from the streets into 14,000 linear feet of new high-level storm sewers. In addition, all existing catch basin drainage connections will be switched from the existing combined sewer to the new high-level storm sewers. This will ensure that more wastewater gets routed to a wastewater treatment plant and reduces the frequency and volume of CSO into the Canal.

DEP has also invested in Green Infrastructure (GI) that has been constructed, is in construction, or is planned in the Gowanus watershed area, including bioswales in the right-of-way (ROWB) and stormwater greenstreets (SGSs) in the area north and east of the Canal (see **Figure 5**). GI uses vegetation, soils, and other elements and practices to capture, absorb, and filter stormwater. GI would also reduce the amount of CSO that may reach the Canal. DEP anticipates that the GI Program will meet New York City requirements to manage the equivalent of one inch of rain on 10 percent of impervious surfaces in the combined sewer area throughout the City, and will continue to monitor and model GI penetration rates and make adjustments as needed for better efficiency.

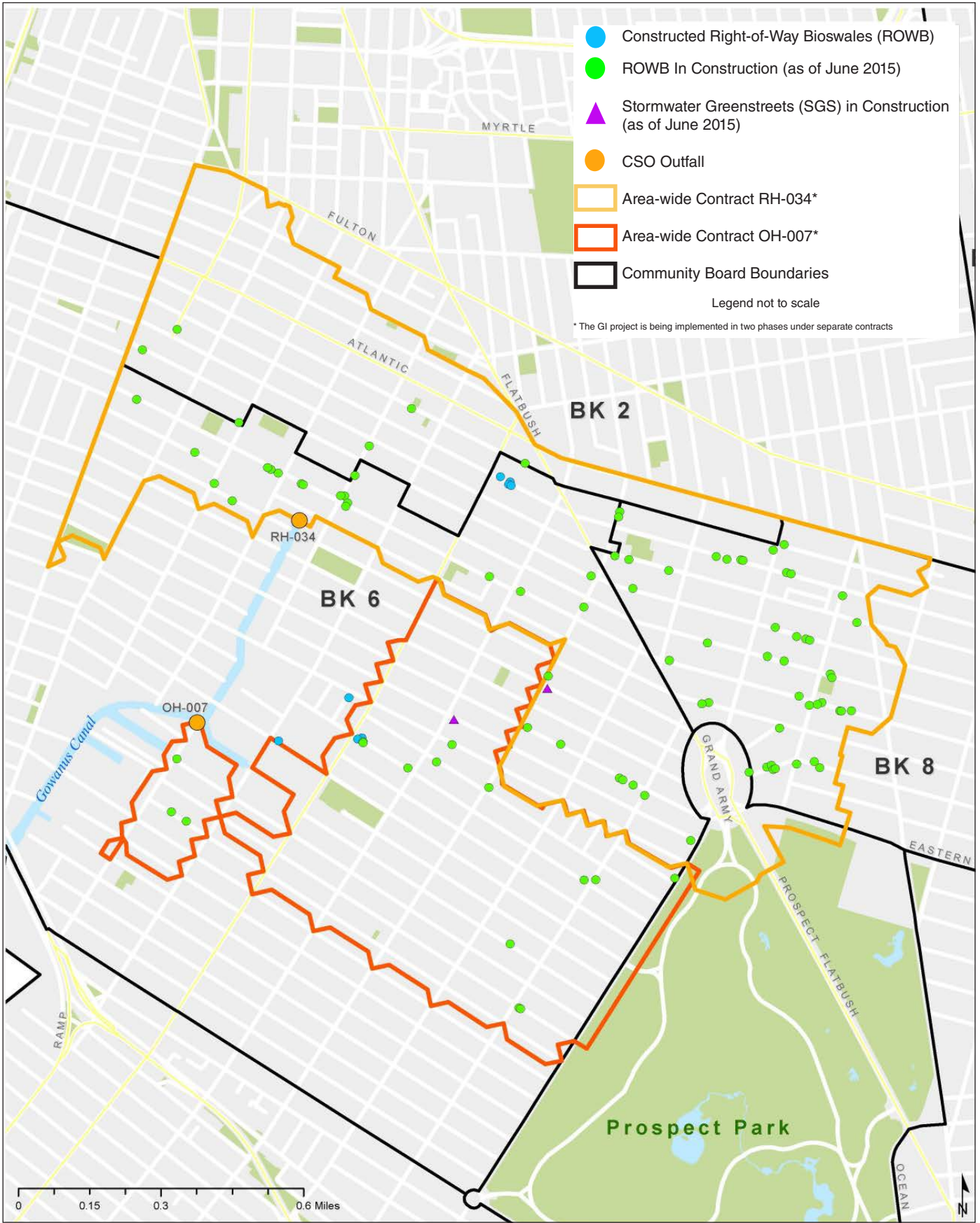
GOWANUS CANAL WATERBODY/WATERSHED FACILITY PLAN AND LONG TERM CONTROL PLAN

In 2008, DEP prepared the Gowanus Canal Waterbody/Watershed Facility Plan (WWFP) Report to document baseline conditions and identify early action items for CSO abatement in advance of the development of a Long Term Control Plan (LTCP) to control CSO solids being discharged into the waterbody. The WWFP assessed the compliance with existing water quality standards, and evaluated alternatives for meeting those standards. As a result of the WWFP, DEP committed to over \$250 million of capital upgrades: as noted above, improvements included upgrading the Gowanus Wastewater Pumping Station and modernizing the Flushing Tunnel. Concurrently with these upgrades, a Post Construction Compliance Monitoring (PCM) program was implemented to regularly collect samples from monitoring stations along the Canal and measure water quality. The PCM measures several markers of water quality, including levels of fecal coliform and enterococci (indicators of human waste and pathogenic bacteria), dissolved oxygen (DO; the oxygen in a waterbody available for aquatic life forms) and secchi disk transparency (the measure of clarity of surface waters, which affects the nutrient cycle by allowing in sunlight). For the period following the reactivation of the Flushing Tunnel (July 2014 to



Source: Gowanus Canal LTCP

Gowanus Canal High Level Storm Sewers (HLSS)
Figure 4



Green Infrastructure (GI) Projects in
Gowanus Canal Watershed
Figure 5

February 2015), the PCM data shows that these investments have resulted in substantial improvements in water quality in the Canal, with a reduction of fecal coliform and enterococci levels and improved DO concentrations.

In 2015, DEP prepared the LTCP for the Canal to identify the need for additional controls to achieve waterbody-specific water quality standards (WQS), consistent with Federal CSO Policy and the water quality goals of the Clean Water Act. The LTCP includes alternatives that consider a wide range of reductions in CSO—up to 100 percent CSO control—including investments that would be made by DEP through green and grey infrastructure. Intermediate levels of CSO volume control—approximately 50 percent and 75 percent—were also evaluated. The intermediate levels of CSO control analyzed in the LTCP were selected based on the CSO controls evaluated as part of the Superfund framework. The controls that were evaluated included construction of CSO storage tank facilities, a CSO control tunnel, and construction/installation of a fully separated stormwater sewer system in the Canal watershed/sewershed area.

The LTCP determined that the existing WQS are being met as a result of the significant improvements achieved by the WWFP recommended plan (i.e., operation of the reactivated Flushing Tunnel and upgraded Gowanus Wastewater Pumping Station). In particular, the LTCP determined that water quality in the Canal met the standards for its DEC classification⁵ and that fecal bacteria levels in the Canal met the WQS for primary recreational contact (recreational activities where the human body may come in direct contact with water, e.g., swimming or diving). In consideration of the current attainment of WQS goals, the LTCP did not recommend the measures that feature higher costs and complexities of siting, construction, and operation (in particular, a CSO control tunnel or a fully separated stormwater sewer system) and therefore these measures were not considered viable on a cost-performance basis. The LTCP also concluded that with the build-out of planned GI and HLSS in the area, water quality would further be improved.

Although existing WQS are being met, the USEPA ROD for the Gowanus Canal Superfund Site instructs the City to construct CSO controls that would serve to further improve water quality by reducing CSO solids from being discharged to the Canal.

USEPA ROD

On March 2, 2010, the Canal was designated a federal Superfund site under CERCLA and placed on the CERCLA National Priorities List (NPL). The main goal of the CERCLA process is to remediate constituents of concern in the Canal sediments that were deposited over the Canal's long industrial history. On September 27, 2013, the USEPA issued a ROD identifying actions to be undertaken by various parties to remediate contamination in the Canal. Unlike the CWA, which focuses on bacteria contamination, DO, and other parameters that affect human enjoyment and ecosystem well-being, the ROD focuses on industrial pollutants, largely from the massive discharge of tarry wastes consisting of Non-Aqueous Phase Liquid ("NAPL") and associated polycyclic aromatic hydrocarbons ("PAHs") from National Grid's three former MGPs, which operated for over a century along the bank of or near the Gowanus Canal. As part of the ROD, USEPA also mandated the construction of the Gowanus Canal CSO

⁵ DEC has designated the Gowanus Canal Class SD above Hamilton Avenue, and Class I below Hamilton Avenue. The best usage of Class SD waters is fishing; the best usage of Class I waters is secondary contact recreation (recreational activities where contact with the water is minimal and where ingestion of the water is not probable, e.g., boating) and fishing.

Facilities and certain stormwater controls such as engineering controls at separated stormwater outfalls in order to manage solids to protect the remedy from urban stormwater runoff.

In February 2014, DEP released a siting and planning study for the two CSO facilities. This effort included: (1) identification and evaluation of CSO facility components and development of facility footprints to be used in the identification of viable sites on which to locate the facilities, including the CSO tanks, conveyance, and associated infrastructure; and (2) identification of potential sites suitable for locating the CSO facilities, development and evaluation of a shortlist of potential sites, and preparation of conceptual designs associated with those sites.

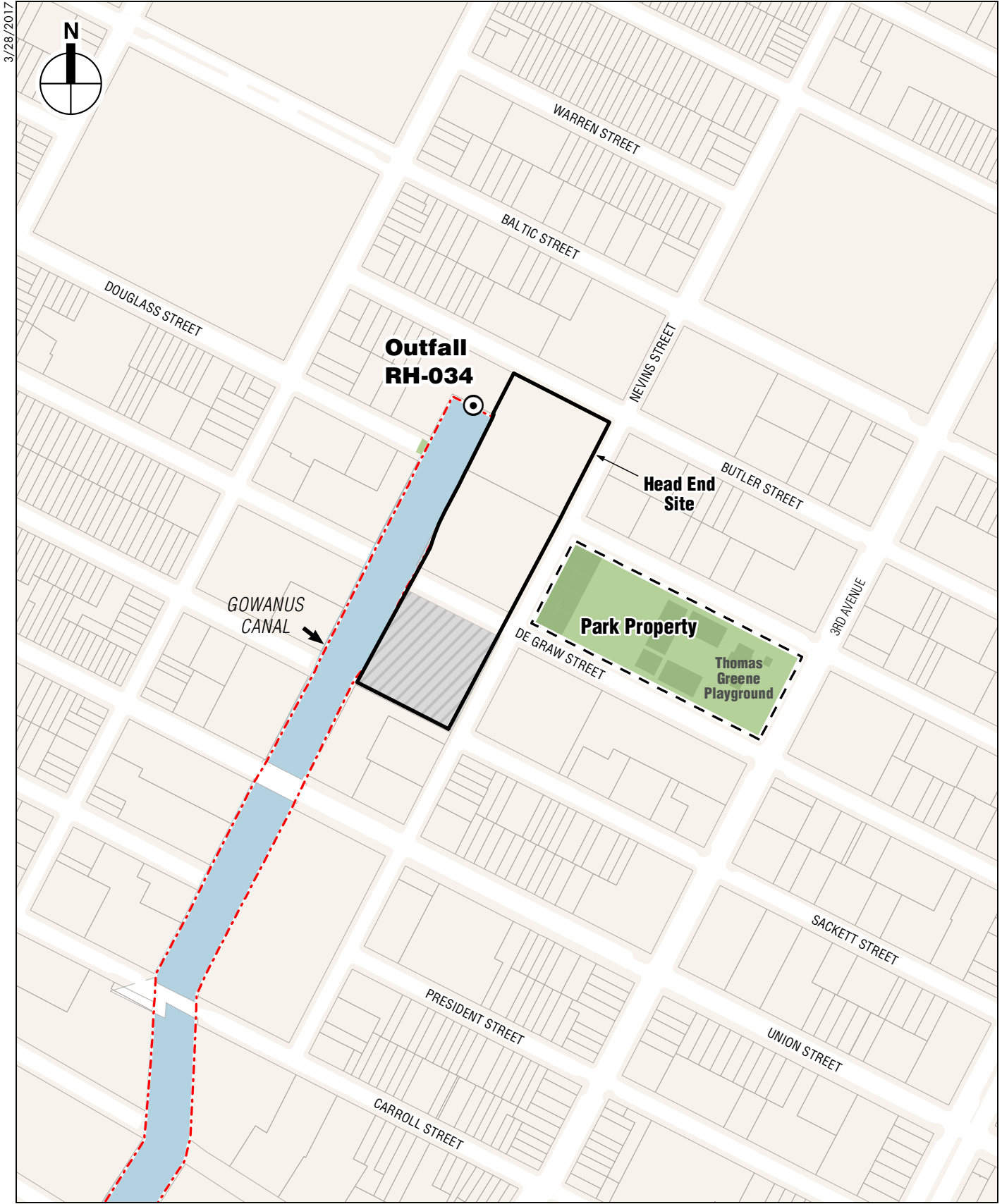
In May 2014, USEPA issued a unilateral Administrative Order for Remedial Design (RD Order) which established milestones for the City to design the two CSO facilities. DEP evaluated a range of tank sizes and alternatives and assessed their performance against the ROD goal of 58 to 74 percent solids load reduction. DEP submitted Site Recommendation Reports for the Head End and Owls Head Facilities to USEPA in June 2015. The Site Recommendation Report for the Head End Facility recommended a location, referred to as the Head End Canal-side Property, comprised of two privately owned parcels located at 242 Nevins Street and 234 Butler Street. This recommendation also included use of the privately owned parcel at 270 Nevins Street for construction staging, referred to as the RH-034 Staging Area Property. The Site Recommendation Report for the Owls Head Facility recommended the use of a City-owned parcel of land located at 5th Street and 2nd Avenue, together with adjoining privately owned parcels along 5th Street, collectively referred to as the Owls Head Site.

On June 9, 2016, USEPA issued a memorandum to file that states that the size of the two storage tanks should be 8 MG at RH-034 and 4 MG at OH-007. Also on June 9, 2016, USEPA issued an Administrative Settlement Agreement and Order for Remedial Design, Removal Action and Cost Recovery (Settlement Agreement) directing DEP to construct the Head End Facility at the recommended locations and requiring that DEP issue a DEIS for the Head End Facility by October 1, 2017. However, under the Settlement Agreement, under certain specified circumstances, USEPA retains the discretion to direct the City to construct the Head End Facility at an alternate site—the City-owned Thomas Greene Playground property, referred to as the Park Property (see **Figure 6**). In the Settlement Agreement, USEPA also agreed with DEP's recommended site for the Owls Head Facility.

INVESTIGATION AND REMEDIATION OF UPLAND SOURCES OF CONTAMINATION

Contaminants from upland sources along the Canal—including the Fulton Municipal Works MGP site, Carroll Gardens/Public Place (formerly known as the Citizens Gas Works MGP site), and the Metropolitan MGP site (see **Figure 7**)—are transported into the Canal primarily by the migration of nonaqueous phase liquid (NAPL) through subsurface soils and groundwater discharge of dissolved-phase contaminants. The investigation and remediation of these upland sources of contamination, including properties within National Grid's Remedial Investigation Parcel Boundaries, are currently being addressed pursuant to administrative orders under the jurisdiction of DEC in coordination with the remediation required under CERCLA. DEC has issued a ROD that selected near- and long-term actions intended to prevent the migration of contamination from the former Fulton MGP site into the Canal, protect human health and the environment, and comply with New York State standards, criteria, and guidance.

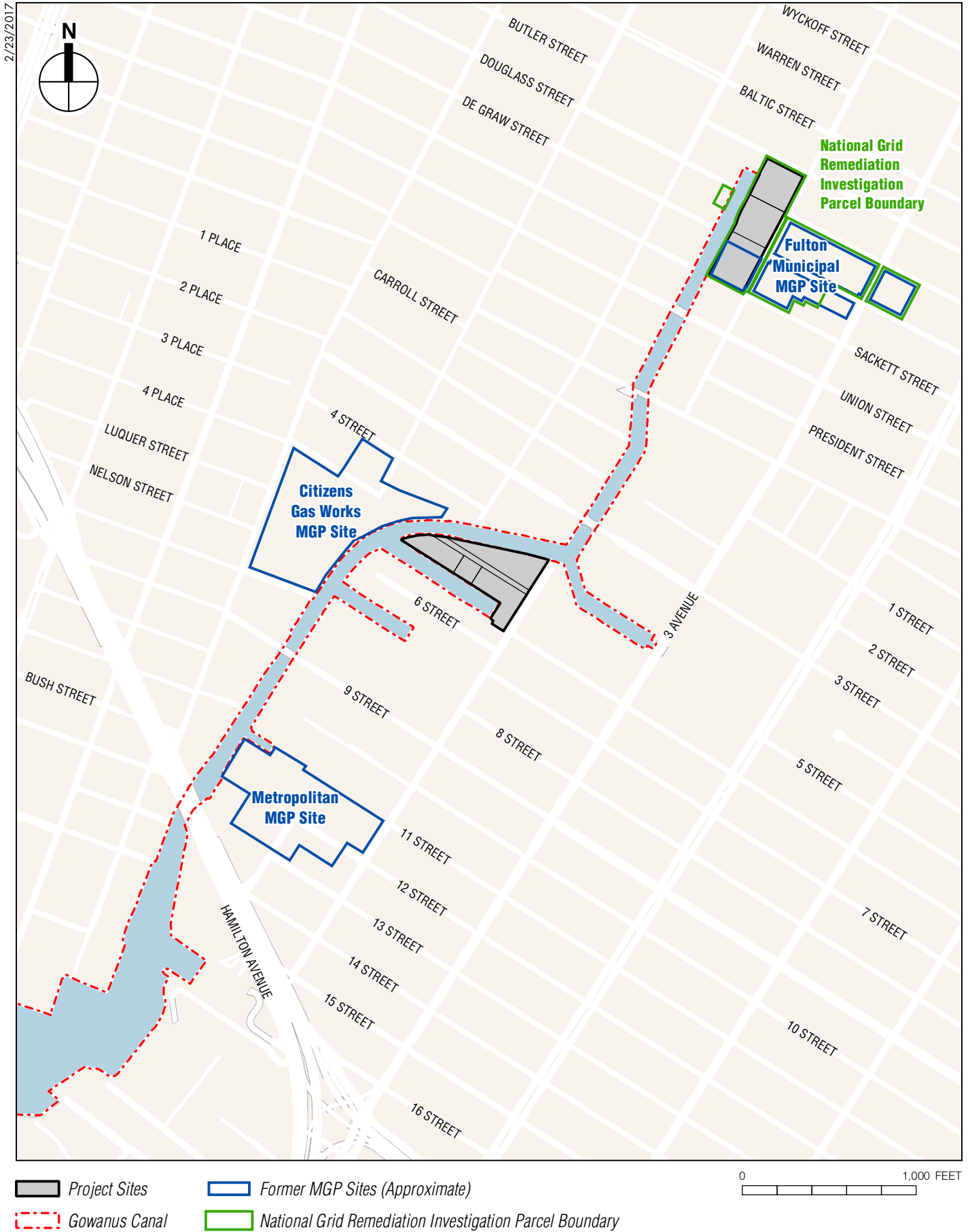
The properties where the Head End Facility would be sited are located within National Grid's DEC-directed Remedial Investigation study area. National Grid is responsible for the remediation of NAPL at the Head End Facility properties independent of remediation required under CERCLA and the Project. Given that these investigation and remediation efforts are ongoing, any relevant information that becomes available will be used, as appropriate, to inform the Project.



- Project Site
- Gowanus Canal
- RH-034 Construction Staging Area

Gowanus Canal CSO Facilities

Head End Facility Alternative Site
Figure 6



C. DESCRIPTION OF THE PROJECT

HEAD END SITE AT RH-034

The Project would include construction of the Head End Facility at 242 Nevins Street and 234 Butler Street with a construction staging area at 270 Nevins Street (collectively, the Head End Site), bounded by the Gowanus Canal, Butler Street, Nevins Street, and Sackett Street. The design for the Facility is currently under way, and is expected to consist of an approximately 52,000-square-foot (sf) below-grade structure containing the 8-MG tank and tank system to capture 82 percent of solids, and an approximately 25,700 sf, two-story above-grade structure housing the screening equipment, electrical equipment, odor control system, emergency generator, and crew areas. The above-grade structure would be located at the northern end of the site, with the remainder of the surface area on the site expected to be paved and accessible for maintenance and operations with landscaping and public space provided where appropriate. The design would include a 50-foot setback from the bulkhead wall, and may provide some form of waterfront public access. Construction of the Head End Facility is expected to take approximately five years. Note this timeframe represents the cumulative total of DEP work at the Head End Site; there will be a period between the initial DEP site work and when the tank is constructed when National Grid is responsible for remediation of the site, so the overall work at the site would be of longer duration.

Routing of sewer system flows to the Head End Facility would be determined during design, but may, in addition to flows from RH-034, include the elimination and diversion of flow from an outfall that runs through the Head End Site (RH-033) as well as potential diversion of flows from two other nearby outfalls (RH-038 and RH-037). The Nevins Street Pumping Station may also be rehabilitated or relocated to the Head End Site. During wet weather events, flow would be conveyed to the Head End Site by gravity, collected and retained in the storage tank, then pumped to the Gowanus Wastewater Pumping Station for delivery to the Red Hook WWTP once there is sufficient downstream capacity in the sewer system. As the tank is emptied, accumulated solids would be flushed out and removed. Excess flow (i.e., exceeding the capacity of the tank) would pass through the facility and receive limited primary treatment via screening and settling before being discharged through one of the nearby outfalls (RH-034 or RH-038) to the Canal. The Head End Facility would reduce the CSO volume discharged from outfall RH-034 during a typical year by approximately 76 percent, from 137 MG to 33 MG and solids by 82 percent.

OWLS HEAD SITE AT OH-007

The Project would include construction of the Owls Head Facility on five parcels: 2 2nd Avenue (Block 977, Lot 3), 110 5th Street (Block 990, Lot 21), 122 5th Street (Block 990, Lot 16), 22 2nd Avenue (Block 990, Lot 1), and 5th Street (Block 977, Lot 1), with portions of this area used for construction staging (collectively, the Owls Head Site). The site is bounded by the Gowanus Canal and 2nd Avenue near the 6th Street turning basin. As with the Head End Site, the Owls Head Site is currently in design, but is expected to consist of an approximately 31,000 sf below-grade structure containing the 4-MG tank and tank system, and an approximately 17,600 sf, two-story above-grade structure housing the screening equipment, electrical equipment, odor control system, emergency generator, and crew areas. A portion of the site (Block 977, Lot 3) contains a New York City Department of Sanitation (DSNY) facility that would be incorporated at the Owls Head Facility. The five parcels where the Project would be located would accommodate both the existing DSNY facility and the Owls Head Facility. The remainder of the

site is expected to be paved and accessible for maintenance and operations with landscaping where appropriate.

Construction at the Owls Head Site would include upgrades to existing sewer infrastructure in the area. In particular, an existing regulator (the 2nd Avenue Regulator, located just north of the 2nd Avenue and 5th Street intersection) and the existing outfall (OH-007, located at the end of 2nd Avenue) would be demolished, and a new regulator and outfall would be constructed to handle the design flow rates of the Owls Head Facility. In addition, the 2nd Avenue Pumping Station adjacent to the site would be demolished and a new, similar pumping station would be constructed adjacent to or within the Owls Head Site. Construction of the Owls Head Facility is expected to take approximately five years.

Operation of the Owls Head Facility would be similar to that of the Head End Facility, with flow conveyed to the facility by gravity, collected and retained in the storage tank, and then pumped to the Owls Head Interceptor through a regulator located at the intersection of 3rd Avenue and 7th Street. A new force main would be constructed to connect the facility to the Owls Head Interceptor for delivery of flow to the Owls Head WWTP once there is sufficient downstream capacity in the sewer system. As the tank is emptied, accumulated solids would be removed on-site. Excess flow (i.e., exceeding the capacity of the tank) would pass through the facility and receive limited primary treatment via screening and settling before being discharged through a new OH-007 outfall to the Canal. The existing outfall would remain in service during construction and would be closed off once the Owls Head Facility is operational. A tide-gate system would be installed to prevent the Canal from backing up into the tank or the new 2nd Avenue Pumping Station. The Owls Head Facility would reduce the CSO volume discharged from outfall OH-007 during a typical year by approximately 85 percent, from 58 MG to 9 MG and solids by 87 percent.

Finally, both the Head End and Owls Head Facilities would be largely automated and would not require permanent staffing, although workers would access the facilities to perform regular maintenance. Both facilities are expected to be in operation approximately 40 to 50 times per year, and overflow events (where excess flows would pass through the facilities and receive some primary treatment before being discharged into the Canal) are expected to occur infrequently (approximately six times per year at RH-034 and five times per year at OH-007).

D. PURPOSE AND NEED

The purpose and need of the Project is to conform to the USEPA ROD requirement to prevent recontamination of the Canal following the implementation of remedial actions. Upland sources of hazardous substances, including discharges from three former MGPs, CSO solids from discharges, and other contaminated upland areas and unpermitted pipes along the Canal, must be addressed prior to the commencement of, or in phased coordination with, the implementation of the selected remedy. In accordance with the USEPA ROD, as stated above, DEP will design and construct two CSO facilities.

To support the construction of the Head End Facility, DEP must acquire two parcels located at 242 Nevins Street and 234 Butler Street (the Head End Canal-side Property) to accommodate the Head End Facility, and lease or acquire one parcel located at 270 Nevins Street to use as a construction staging area (RH-034 Staging Area Property). To support the construction of the Owls Head Facility, DEP must acquire up to four parcels located at 110 Fifth Street, 122 Fifth Street, 22 2nd Avenue, and 5th Street (Owls Head Staging Area Property) adjacent to the Canal.

Both of the sites require NYC ULURP approval, but will undergo ULURP at different times due to having different design and construction schedules. For the Head End Facility, the ULURP would include

an amendment to the City Map involving the elimination of Douglass Street between the Canal and Nevins Street. This Demapping is not necessary for the project, but is a component of due diligence for the City of New York.

While the Head End Facility is not subject to Fair Share due to there being no Site Selection approval, there will be a discussion in the DEIS of the consideration of Fair Share criteria for acquisition of the site.

E. PROJECT APPROVALS AND COORDINATION

Implementation of the Project would require federal, state and local permits/approvals, or their equivalents under CERCLA. DEP would closely coordinate with USEPA, DEC, New York State Department of State (NYSDOS), New York State Parks, Recreation and Historic Preservation (OPRHP), and New York City agencies as necessary for the Project.

The Project would also require property acquisition.

Table 1 includes the major permits, approvals, or their equivalents under CERCLA that may be required for the Project.

Table 1
Potential Major Permits, Approvals or Equivalent, Consultation, and Coordination¹—
Gowanus Canal CSO Facilities

Agency/Entity	Permit/Approval/Consultation/Coordination
FEDERAL	
U.S. Environmental Protection Agency (USEPA)	CERCLA coordination and consultation
Coastal Zone Management Act	Projects affecting New York's coastal zone must be consistent with the Coastal Zone Management Act, through the New York State Department of State's Coastal Management Program and approved Local Waterfront Revitalization Plans
U.S. Army Corps of Engineers (USACE)	Permits under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act
United States Fish and Wildlife Service (USFWS)	Consultation under Section 7 of the Endangered Species Act; Biological Assessment; Federal Fish and Wildlife Permit
Advisory Council on Historic Preservation	Consultation under Section 106 of the National Historic Preservation Act of 1966
STATE	
New York State Department of State (NYSDOS)	Coastal Zone Management Consistency
New York State Department of Environmental Conservation (DEC)	State Pollutant Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activity - GP-0-10-001: erosion and sediment control and post-construction stormwater management in accordance with the stormwater pollution prevention plan (SWPPP)
	Individual SPDES Permit or Application Form NY-2C for Industrial Facilities (Dewatering activities requiring discharge to surface water)
	Modification to a SPDES Permit (Individual Permit) for Discharge of Wastewater from Publicly Owned Treatment Works (NY-2A) to remove inactive outfalls
	Tidal Wetlands Permit
	Long Island Well Permit and Approval of Completed Works
	Protection of Waters Permit Navigable Waters (Excavation or Fill)
	Section 401 Water Quality Certification
New York State Office of Parks, Recreation and Historic Preservation (NYSOPRHP)	Natural Heritage Program Consultation—consultation to determine potential presence of threatened or endangered species listed in New York State
	Consultation to determine potential presence of archaeological and/or historic resources and determine project's potential effects
NEW YORK CITY	
New York City Department of City Planning (DCP)	ULURP for property acquisition, amendment to the City Map (street demapping), and potential site selection and zoning approvals. ²
	New York City Waterfront Revitalization Program—Consistency Assessment

Table 1 (cont'd)

**Potential Major Permits, Approvals or Equivalent, Consultation, and Coordination¹—
Gowanus Canal CSO Facilities**

Note:

¹ Includes documentation of regulatory compliance under CERCLA through equivalent review by responsible agencies.

² ULURP for property acquisition and street demapping (Douglass Street) would be required for the Head End Facility. The Owls Head Facility would have a separate ULURP for property acquisition at a later time, and may potentially also require site selection and street demapping actions.

F. SCOPE OF THE ENVIRONMENTAL IMPACT STATEMENT

METHODOLOGY

The purpose of the DEIS is to provide a discussion of the potential significant adverse environmental impacts associated with implementation of the Project and to the maximum extent ²practicable, avoid or mitigate such impacts, consistent with social, economic, and other essential considerations. The 2014 *City Environmental Quality Review (CEQR) Technical Manual* will be used to evaluate the Project's impacts.

Each impact analysis will include an inventory of existing conditions establishing a baseline against which future conditions can be projected (Existing Condition). In addition, each impact analysis will include a determination of future conditions known to occur or expected to occur in the future regardless of the Project (Future Conditions in the Analysis Year or the Future without the Project). Clean-up activities required by USEPA or DEC of other parties, such as the installation of the containment/cutoff wall, the excavation or stabilization of MGP-related contamination on shared parcels, the dredging of the Canal, the restoration of the 1st Street and 4th Street turning basins, and the installation of coal tar extraction wells, would be presented as part of the Future Conditions in the Analysis Year. Finally, each impact analysis will include an analysis of the Project's likely effects on its environmental setting (Probable Impacts of the Project) in the expected year of completion (Analysis year). The Project's expected year of completion is 2026.

The DEIS will contain:

- A description of the Project and the environmental setting;
- A description of the methodologies utilized for each technical area;
- A statement of the potential significant adverse environmental impacts of the Project;
- An identification of any potential significant adverse impacts that cannot be avoided if the Project is implemented;
- An identification of irreversible and irretrievable commitments of resources that would be involved if the Project is built; and
- A description of measures proposed to minimize or fully mitigate any potential significant adverse environmental impacts.

The first step in preparing the DEIS document is the public scoping process. Scoping, or creating the scope of work, is the process of focusing the environmental impact analysis on the key issues relevant to the Project. The DEIS will be based on the scope of work and will be subject to public review, including a public hearing and a period for public comment. After the public comment period on the DEIS closes, a Final EIS (FEIS) will be prepared, including a summary of the comments and responses on the DEIS and

any revisions to the DEIS. DEP, as lead agency, will then prepare a Statement of Findings that describes the environmental impacts of the Project and any required mitigation.

The proposed scope of work for each of the technical areas to be analyzed in the DEIS is described below. Where applicable, a comparative analysis of feasible alternatives will be performed and presented in an Alternatives chapter of the DEIS. The methodologies utilized for each analysis will be presented in each respective chapter in the DEIS.

PROJECT DESCRIPTION

The first chapter of the DEIS introduces the reader to the Project and sets the context in which to assess impacts. The chapter will contain a detailed description of the proposed CSO facilities; the background and history of the Project, including a summary of the legal framework; previous investigations and actions; and a statement of purpose and need and anticipated benefits of the Project. The chapter will also include a discussion of the approvals required for the Project, including other discretionary actions and equivalent review by responsible agencies under CERCLA, as well as procedures to be followed and the role of the DEIS in the process.

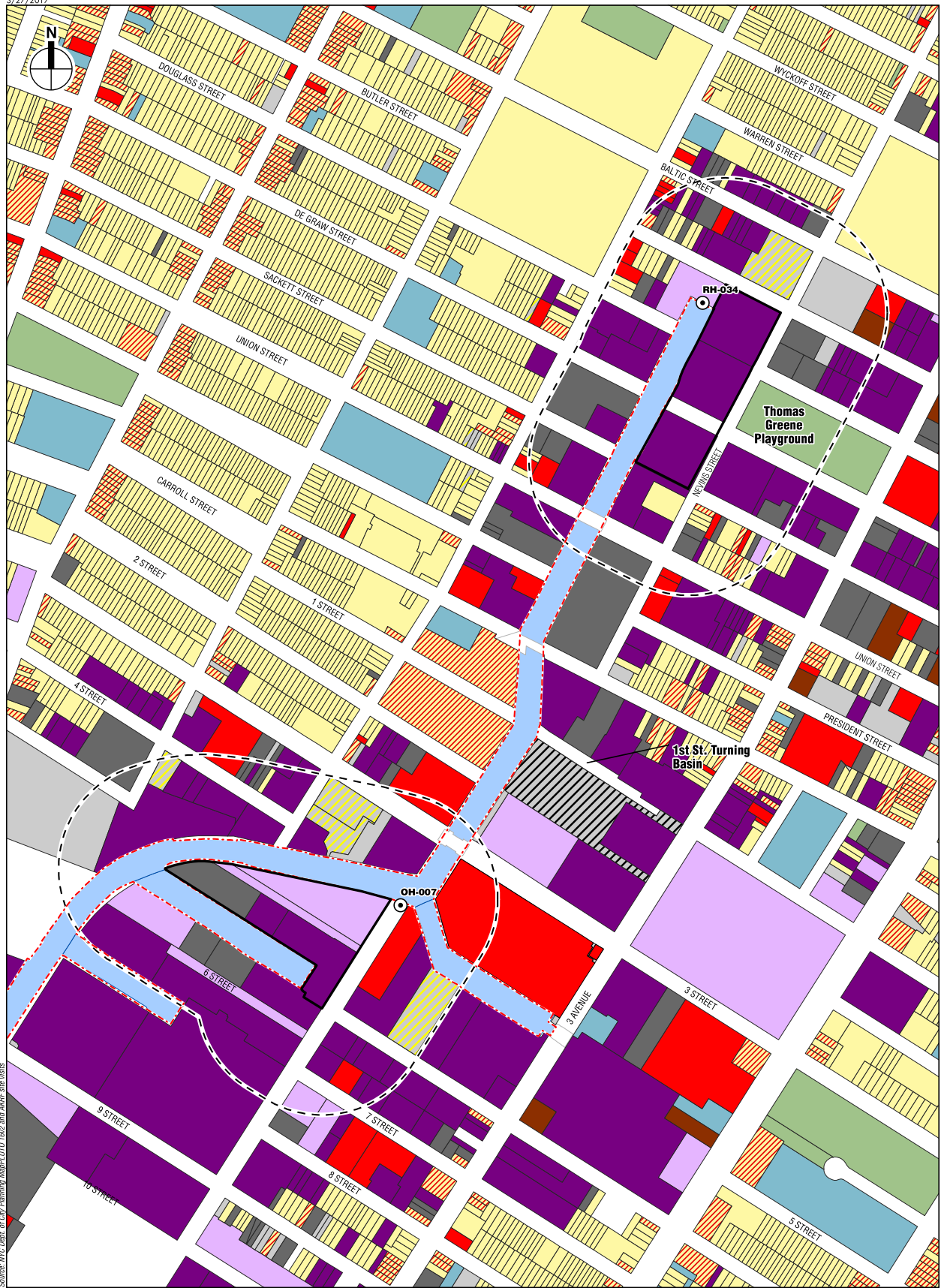
In addition, the Project description will include a discussion of key Project elements at both the Head End and Owls Head Sites, such as site plans and elevations, landscape plans, access and circulation, treatment techniques, and other Project components.

LAND USE, ZONING, AND PUBLIC POLICY

A land use analysis characterizes the uses and development trends in the area that may be affected by a proposed project and determines whether a proposed project is either compatible with those conditions or whether it may affect them. Similarly, the analysis considers the project's compliance with, and effect on, the area's zoning and other applicable public policies. Following *CEQR Technical Manual* guidelines, the land use, zoning, and public policy analysis will be conducted within a study area extending 400 feet from each facility (see **Figure 8**). The boundaries have been chosen to include those communities and uses that could potentially be affected by the Project. Key issues include the compatibility of the proposed use with existing patterns of development, nearby residences and commercial facilities; the Project's consistency with underlying zoning, and officially approved or adopted future plans and programs, such as potential future zoning changes affecting the Project site and the study area; and the Project's potential effects on sensitive uses and neighborhood activity patterns.

The land use analysis will characterize the uses and development trends in the area that may be affected by the Project, describe the public policies that guide development, and determine whether the Project is compatible with those conditions and policies or whether it may affect them. In addition to considering the Project's effects in terms of land use compatibility and trends in zoning and public policy, this chapter will also provide a baseline for other analyses. The land use chapter will provide the following:

- A brief development history of the sites and the study area. The study areas will include the CSO facility sites and staging areas and a radius of approximately 400 feet around these areas;
- Describe conditions in the study areas, including existing uses and the underlying zoning;
- Describe land use patterns in the study areas, including recent development trends;
- Describe existing zoning and recent zoning actions, if any, in the study areas;
- Describe other public policies that may apply to the study areas, including any formal neighborhood or community plans;
- Identify other future projects in the study areas that would be completed by the analysis year. Describe how these projects would affect land use patterns and development trends. Also, describe



Source: NYC Dept. of City Planning, MapInfo LUTO 1002, and AORF site visits

- | | | |
|--------------------------------|------------------------------------|-----------------------------------|
| Project Sites | Commercial and Office Buildings | Residential |
| Study Area (400-foot boundary) | Hotels | Residential with Commercial Below |
| Gowanus Canal | Industrial and Manufacturing | Transportation and Utility |
| Outfall Locations | Open Space and Outdoor Recreation | Vacant Land |
| | Parking Facilities | Vacant Building |
| | Public Facilities and Institutions | Under Construction |

0 400 FEET

any pending zoning actions or other public policy actions that could affect land use patterns and trends in the study areas, including plans for public improvement; and

- Assess the impacts of the Project on land use and land use trends, zoning, and public policy. Project impacts related to issues of compatibility with surrounding land use, consistency with zoning and other public policies, and the effect of the Project on development trends and conditions in the area will be assessed.

The Project sites are located in the Coastal Zone; therefore, an assessment of the Project's consistency with the Waterfront Revitalization Program (WRP) will be prepared.

SOCIOECONOMIC CONDITIONS

The socioeconomic character of an area includes its population, housing, and economic activity. Socioeconomic changes may occur when a project directly or indirectly changes any of these elements. According to the *CEQR Technical Manual*, the six principal issues of concern with respect to socioeconomic conditions are whether a proposed project would result in significant impacts due to: (1) direct residential displacement; (2) direct business displacement; (3) indirect residential displacement; (4) indirect business displacement due to increased rents; (5) indirect business displacement due to retail market saturation; and (6) adverse effects on a specific industry. The DEIS will include a preliminary screening assessment of the Project's potential to affect any of these issues of concern. Based on the preliminary screening assessment, if it is determined that the Project would exceed any of the thresholds warranting a detailed analysis presented in the *CEQR Technical Manual*, a detailed analysis will be prepared. The DEIS will also include an assessment of how the Project could affect water and sewer rates for DEP customers.

COMMUNITY FACILITIES AND SERVICES

The demand for community facilities and services is directly related to the type and size of the new population generated by any proposed development. New workers tend to create limited demands for community facilities and services, while new residents create more substantial and permanent demands. The DEIS will include a preliminary screening assessment of the Project's potential to affect community facilities. As the Project would not introduce a new residential population, a detailed analysis of the Project's potential to affect community facilities—including schools, child care facilities, libraries, police/fire protection services, and health care facilities—is not expected to be warranted.

OPEN SPACE

The *CEQR Technical Manual* recommends performing an open space assessment if a project would have a direct or indirect effect on an area open space. The Project would not introduce a new residential or non-residential population warranting an analysis of indirect effects. An assessment of the Project's direct effects on area open spaces resulting from operation of the facilities will be provided (i.e., if relevant, potential increases in noise, air pollutants, or shadows from the Project on adjacent public open spaces will be assessed).

SHADOWS

The *CEQR Technical Manual* requires a shadows assessment for proposed projects that would result in new structures (or additions to existing structures) greater than 50 feet in height or located adjacent to, or across the street from, a sunlight-sensitive resource. Such resources include publicly accessible open spaces, sunlight-sensitive natural features, or historic resources with sun-sensitive features.

The Project would result in new structures (the above-grade portion of the CSO facilities) adjacent to the Gowanus Canal, which is considered a sunlight-sensitive natural resource, since altering the shadows on the Canal may alter its condition or microclimate. The facility at the Head End Site would also be adjacent to a publicly accessible open space (the Thomas Greene Playground). A shadows assessment is therefore required to determine how the Project-generated shadows might affect these resources.

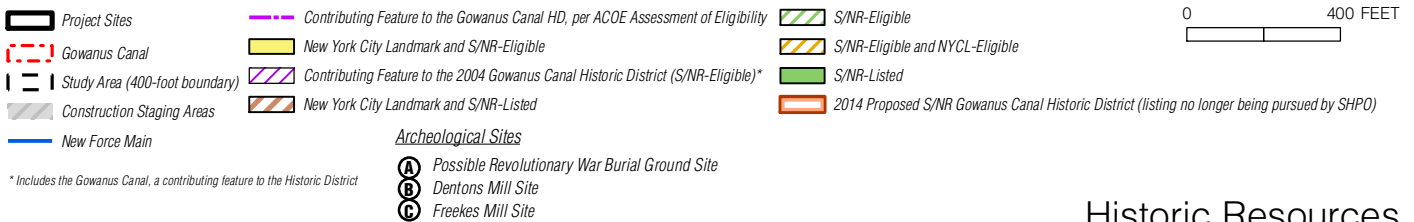
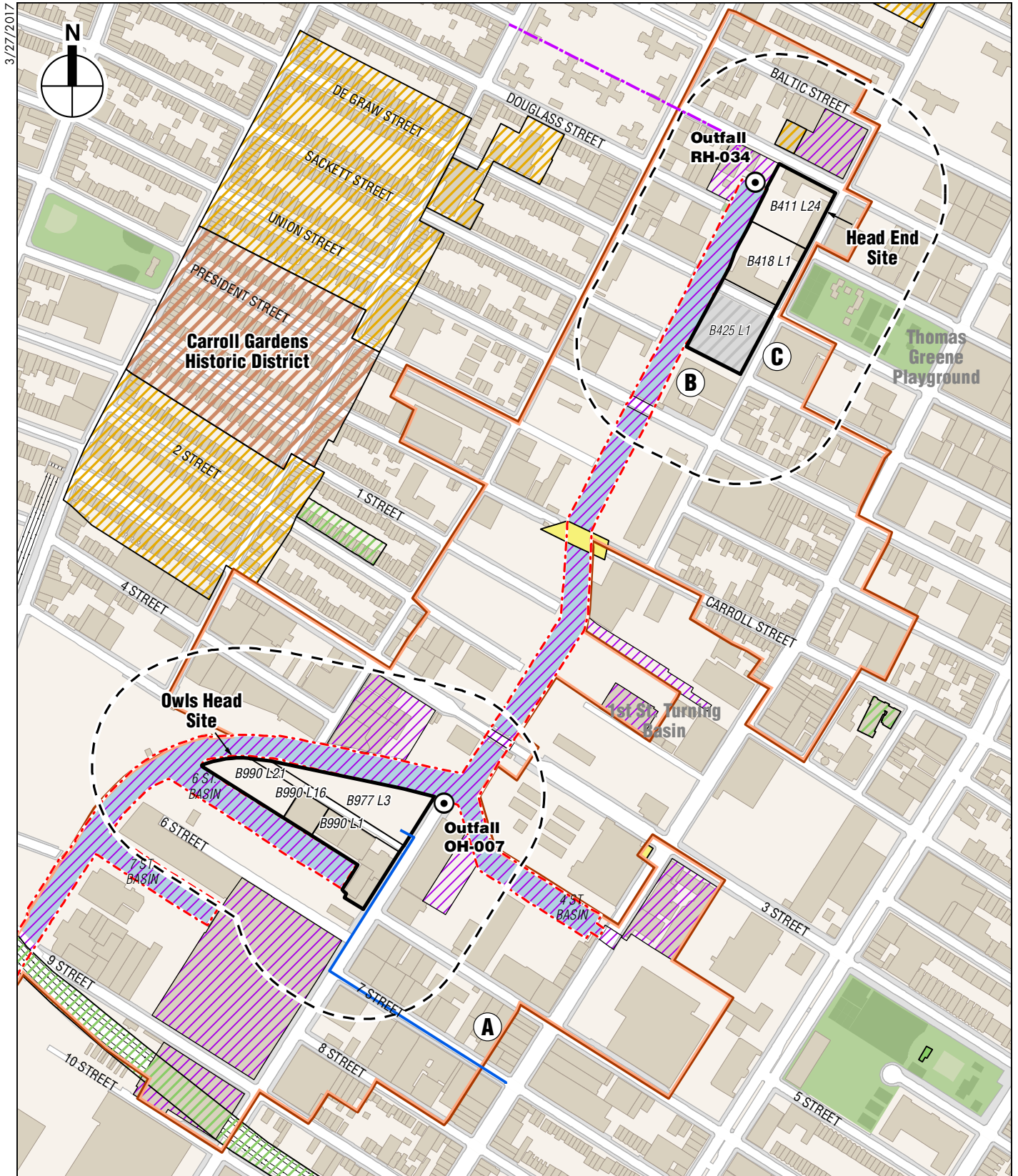
The shadows assessment will follow the methodology described in the *CEQR Technical Manual*, and will include the following tasks:

- Develop base maps illustrating the Project sites in relationship to natural features in the area, and any publicly accessible open spaces or historic resources with sunlight-dependent features;
- Determine the longest possible shadow that could result from the Project to determine whether it could reach any sunlight-sensitive resources at any time of year;;
- Develop a three-dimensional computer model of the elements of the base maps developed in the preliminary assessment;
- Develop three-dimensional representations of the proposed facilities;
- Using three-dimensional computer modeling software, determine the extent and duration of new shadows that would be cast on sunlight-sensitive resources as a result of the Project on four representative days of the year;
- Document the analysis with graphics comparing shadows resulting from the Future Conditions in the Analysis Year with shadows resulting from the proposed facilities, with incremental shadow highlighted in a contrasting color. Include a summary table listing the entry and exit times and total duration of incremental shadow on each applicable representative day for each affected resource; and
- Assess the significance of any shadow impacts on sunlight-sensitive resources. If any significant adverse shadow impacts are identified, identify and assess potential mitigation strategies.

HISTORIC AND CULTURAL RESOURCES

The *CEQR Technical Manual* identifies historic and cultural resources as districts, buildings, structures, sites, and objects of historical, aesthetic, cultural, and archaeological importance. Historic and cultural resources include designated New York City Landmarks (NYCLs) and Historic Districts; properties calendared for consideration as NYCLs by the New York City Landmarks Preservation Commission (LPC) or determined eligible for NYCL designation (NYCL-eligible); properties listed on the State and National Register of Historic Places (S/NR) or formally determined eligible for S/NR listing (S/NR-eligible), or properties contained within a S/NR listed or eligible district; properties recommended by the New York State Board for listing on the S/NR; National Historic Landmarks (NHLs); and potential historic resources (i.e., properties not identified by one of the programs listed above, but that appear to meet their eligibility requirements).

According to the *CEQR Technical Manual*, a historic and cultural resources assessment is required if there is the potential to affect either archaeological or architectural resources. The proposed CSO facility sites are located within the formerly proposed Gowanus Canal Historic District (S/NR-eligible) and are adjacent to contributing architectural resources within the 2004 eligible Historic District (see **Figure 9**). Additional historic resources in the area of the Project sites include the American Society for the Prevention of Cruelty to Animals (ASPCA) building at 233 Butler Street and the Gowanus Canal bulkhead (both S/NR eligible). The CSO facility sites may also be sensitive for archaeological resources, subject to further consultation with LPC and OPRHP. A historic and cultural resources analysis will be prepared consistent with the *CEQR Technical Manual*, which will include the following:



Gowanus Canal CSO Facilities

Historic Resources
Figure 9

- Assess for the potential for archaeological resources on the CSO facility sites in consultation with LPC and OPRHP. If necessary, a Phase 1a Archaeological survey of the sites will be prepared and, based on a review by LPC and OPRHP, conclusions and recommendations will be summarized. If any additional archaeological investigations are required (e.g., Phase 2 testing and Phase 3 Data Recovery) and completed during the environmental review, the conclusions and recommendations of these investigations will be summarized in the DEIS; if work cannot be completed until after environmental review, the commitments to undertake necessary steps with appropriate consultation will be summarized. All archaeological reports and protocols will be submitted to OPRHP and LPC for review and comment and all agency comment letters will be included as an appendix;
- Coordinate as necessary with National Grid regarding existing and planned investigations in the vicinity of the Project sites;
- Based on other planned development projects, qualitatively discuss any impacts on architectural and archaeological resources that are expected in the Future Conditions in the Analysis Year;
- Initiate project consultation with OPRHP via the Agency's Cultural Resource Information System. Information to be provided will include a description of the Project, maps and photographs of the Project sites and surrounding area, and a description of any adjacent properties that are more than 50 years old;
- Map and briefly describe designated architectural resources within the 400-foot study areas surrounding each site;
- Consistent with the CEQR Technical Manual, conduct a field survey of the study areas to identify any potential architectural resources that could be affected by the Project. The field survey will be supplemented with research at relevant repositories, online sources, and current sources prepared by OPRHP and LPC;
- Seek determinations of eligibility from LPC and OPRHP for any potential architectural resources. Map and describe any identified architectural resources.
- Assess the potential for the Project to have direct, physical impacts on architectural and archaeological resources. Assess the Project's potential to result in any visual and contextual impacts on architectural resources. Potential impacts will be evaluated through a comparison of the Future Conditions in the Analysis Year and the Probable Impacts of the Project. The analysis will include a description of the consultation undertaken with OPRHP and LPC; and
- Identify any measures that would be necessary to mitigate and/or reduce any potential significant adverse impacts on historic or cultural resources, in consultation with LPC and OPRHP.

URBAN DESIGN AND VISUAL RESOURCES

According to the methodologies of the *CEQR Technical Manual*, if a project would result in physical changes which could be observed by a pedestrian from street level and could potentially change or restrict significant views of visual resources, a preliminary assessment of urban design and visual resources should be prepared. Only projects that result in physical alterations beyond that allowed by zoning (i.e., projects that include modifications to zoning requirements relating to yard, height and setback, or built floor area) require an assessment. The DEIS will include a preliminary screening assessment of the Project's potential to affect the urban design and visual resources of the study area. A detailed analysis will be prepared if warranted based on the preliminary assessment.

NATURAL RESOURCES

An assessment of natural resources is conducted when a natural resource is present on or near a development site and the project may involve the direct or indirect disturbance of that resource. The *CEQR Technical Manual* defines natural resources as water resources, including surface water bodies and groundwater; wetlands, including freshwater and tidal wetlands; terrestrial resources, such as grasslands and thickets; shoreline resources, such as beaches, dunes, and bluffs; gardens and other ornamental landscaping; and natural resources that may be associated with built resources, such as old piers and other waterfront structures. The Project would result in the demolition of existing structures and clearing of the Head End and Owls Head Sites, which feature limited natural resources. A screening evaluation will be performed to characterize existing natural resources on the sites based on site reconnaissance, review of existing information, and consultation with responsible agencies, including DEC, USFWS, and the National Marine Fisheries Service (NMFS). Potential impacts, including those to ecological communities and wildlife due to removal of existing vegetation, and potential impacts to aquatic resources due to construction and operation of a proposed new DEP outfall, including beneficial effects to water quality of the Gowanus Canal, will be assessed, and any requirements for replacement of resources will be described. If warranted based on further design of the facilities and in consultation with the responsible agencies, a detailed analysis of the Project's impacts on natural resources will be prepared, and measures that would be developed, as necessary, to mitigate and/or reduce any of the Project's potential significant adverse impacts on natural resources will be described.

HAZARDOUS MATERIALS

According to the *CEQR Technical Manual*, a hazardous materials assessment should be conducted when elevated levels of hazardous materials exist on a site, when a Project would increase pathways to their exposures, either human or environmental, or when an action would introduce new activities or processes using hazardous materials, thereby increasing the risk of human or environmental exposure.

The Head End Site is located within National Grid's Remedial Investigation Parcel Boundaries for the former Fulton MGP site; the construction staging area at the Head End Site is also located on the former Fulton MGP site (see **Figure 7**). This plant operated from approximately 1879 until 1929 making town gas, a predecessor to natural gas. The MGP processes frequently lead to extensive contamination of soil and groundwater by coal tar and other contaminants. National Grid is the successor company to the owners/operators of the Fulton MGP and entered into agreements with DEC to investigate and address the contamination. In 2015, DEC issued a ROD requiring National Grid, independent of the Project, to construct containment walls, install coal tar extraction wells, and excavate or stabilize MGP-related contamination when parcels are accessible. National Grid has proposed to DEC its approach related to their proposed remediation at the Head End Site parcels, including the parcels to be acquired for the Project.

The Owls Head Site is not located within a former MGP area, but has an industrial history (as do most of the properties along the Canal). The analysis will use existing data (both historical land uses and results of subsurface testing) on the Owls Head Site from the Superfund process and other readily available sources to determine the contamination that could be encountered during subsurface disturbance for the proposed CSO facility and other Project construction and identify the need for any additional site investigation.

The hazardous materials chapter of the DEIS will summarize the findings of existing historical land use studies and subsurface investigations already undertaken for the study area (i.e. the Head End Site and Owls Head Site, including staging areas) and will describe the procedures by which the soil and groundwater disturbance for the Project would be undertaken. The analysis will identify the need for additional site investigation (e.g., collection and laboratory analysis of soil, groundwater, or soil vapor

samples) and procedures required to reduce the potential for significant adverse impacts due to hazardous materials, including procedures during construction to manage and dispose of excavated material and procedures to protect the health of local residents, Project construction workers, and future users of the Project sites.

WATER AND SEWER INFRASTRUCTURE

A water and sewer infrastructure assessment analyzes whether a project may adversely affect the City's water distribution or sewer system and, if so, assesses the effects of such projects to determine whether their impact is significant and presents potential mitigation strategies and alternatives. According to the *CEQR Technical Manual*, only projects that increase density or change drainage conditions on a large site (generally five acres or larger) require a water and sewer infrastructure analysis. The Project would not result in development exceeding the *CEQR Technical Manual* thresholds requiring a detailed analysis, but would introduce two new CSO facilities that are intended to reduce the frequency of CSOs. Therefore, a description of the facilities and the potential effects to stormwater management, discharges of CSO solids, and treatment capacity at the RH and OH WWTPs will be provided. The chapter will include a description of any infrastructure upgrades or system rerouting that is required as part of the Project, including upgrades to redirect flow to the facilities from nearby CSOs or construction of new regulators, outfalls, and/or pumping stations.

SOLID WASTE AND SANITATION SERVICES

A solid waste assessment determines whether a project has the potential to cause a substantial increase in solid waste production that may overburden available waste management capacity or otherwise be inconsistent with the City's Solid Waste Management Plan or with state policy related to the City's integrated solid waste management system. According to the *CEQR Technical Manual*, a solid waste assessment is appropriate if a project generates 50 tons per week or more. The DEIS will include a preliminary screening assessment of the Project's potential to affect solid waste and sanitation services. If the Project would introduce facilities generating a large amount of solid waste a detailed assessment of solid waste and sanitation services will be provided.

ENERGY

Analysis of energy focuses on a project's consumption of energy and, where relevant, potential effects on the transmission of energy that may result from the Project. According to the *CEQR Technical Manual*, a detailed assessment of energy impacts would be limited to actions that could significantly affect the transmission or generation of energy or that generate substantial indirect consumption of energy (such as a new roadway). Based on a preliminary assessment, the Project is expected to require an estimated 10.5 million British thermal units (BTUs) of energy annually. The DEIS will include a preliminary screening assessment of the Project's potential energy effects, including consultation with Con Edison, the local service provider, to confirm that the additional load and service connections can be accommodated.

TRANSPORTATION

In accordance with criteria established in the *CEQR Technical Manual*, a quantified traffic and parking analysis is warranted if the Project would result in more than 50 vehicle-trips through any one intersection during a given peak hour. A quantified transit and pedestrians analysis is warranted if the Project would result in more than 200 transit or pedestrian trips during a given peak hour. Operation of the Project is not expected to exceed the 50 peak hour vehicle trips or 200 peak hour transit/pedestrian trip thresholds in the *CEQR Technical Manual*; therefore, a quantified assessment is not warranted. However, if permanent street closures are anticipated as part of the Project, an assessment of potential transportation impacts will be provided.

An assessment of potential transportation impacts related to the Project's construction will be provided in the construction analysis, described below.

AIR QUALITY

Under CEQR, an air quality analysis determines whether a Project would result in stationary or mobile sources of pollutant emissions that could have a significant adverse impact on ambient air quality. The Project, once completed, would generate a negligible amount of emissions from mobile sources, such as cars and trucks; therefore, a mobile source analysis is not warranted. The air quality analysis will focus on emissions from stationary sources, including the ventilation of odors from the proposed facilities, exhaust emissions from the emergency generators, and any proposed heating, ventilating, and air conditioning (HVAC) equipment. The primary pollutant of concern for odors is hydrogen sulfide (H_2S). The primary pollutants of concern for air quality from the emergency generators are carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and particulate matter (PM_{10} and $\text{PM}_{2.5}$), and from the HVAC systems are NO_2 , $\text{PM}_{2.5}$ and SO_2 depending on the type of fuel being utilized.

USEPA models and screening procedures outlined in the *CEQR Technical Manual* will be used to evaluate potential impacts associated with each facility's sources.

The analysis will include the following tasks:

- Existing ambient air quality data from representative DEC monitoring stations will be summarized for the study areas;
- A stationary source screening level analysis for the HVAC systems will be performed to determine the potential for significant pollutant concentrations from on-site fossil fuel combustion. The screening analysis will use the procedures outlined in the *CEQR Technical Manual*, which involves determining the distance (from the exhaust point) within which potential significant impacts may occur, on ground level receptors (such as sidewalks) and elevated receptors (such as open windows, air intake vents, etc.) that are of an equal or greater height when compared with the height of each proposed facility's HVAC exhaust. The distance from which a significant impact may occur is dependent on a number of factors, including the height of the discharge type(s), fuel burned, and development size. If potential impacts are predicted by the screening level analysis, further analyses would be conducted using either the USEPA-approved AERSCREEN or AERMOD dispersion models;
- A dispersion modeling analysis of odors from both facilities will be performed. Receptor sites (i.e., places of public access where air quality exposure concentrations will be computed) will be selected based on locations where highest concentrations would be expected, receptors at the property periphery, and at selected receptors in the surrounding neighborhood. Odors will be assessed in terms of H_2S since it is the most prevalent malodorous gas associated with domestic wastewater collection. H_2S emissions will be calculated and determined using data from a representative WWTP. Potential H_2S concentrations from each facility's odor control system will be compared to the City's *CEQR Technical Manual* screening level odor threshold of 1 parts per billion (ppb) for H_2S at sensitive receptors. Modeled H_2S concentrations will also be added to nearby sources and ambient background concentrations and compared to the New York State Ambient Air Quality Standard (NYSAAQS) of 10 ppb H_2S in ambient air (i.e., at all off-site locations);
- Criteria pollutant emissions from the exercise and maintenance testing of each facility's emergency generator will be estimated and dispersion modeling analyses will be performed. Emissions of CO, NO_2 , SO_2 , PM_{10} , and $\text{PM}_{2.5}$ from the emergency generators will be modeled. Maximum pollutant concentrations at off-site receptor locations, including any appropriate ground-level and elevated

receptors, would be estimated and compared with National Ambient Air Quality Standards (NAAQS) and other relevant criteria; and

- As necessary, measures to minimize any predicted significant adverse impacts from each facility's stationary source airborne emissions will be described and modeled.

An assessment of potential air quality impacts related to project construction will be provided in the construction analysis, described below.

CLIMATE CHANGE RESILIENCY AND GHG EMISSIONS

In accordance with the *CEQR Technical Manual*, a greenhouse gas (GHG) emissions analysis discloses the GHG emissions that could result from a large-scale Project, and assesses the consistency of the Project with the City's goals to reduce GHG emissions. Therefore, this chapter of the DEIS will quantify Project-generated GHG emissions and assess the consistency of the Project with the City's established GHG reduction goal. Emissions will be estimated for the analysis year and reported as carbon dioxide equivalent (CO₂e) metric tons per year. GHG emissions other than carbon dioxide (CO₂) will be included if they would account for a substantial portion of overall emissions, adjusted to account for the global warming potential. The construction phase or the extraction or production of materials or fuels needed to construct the Project is not likely to be a significant part of total Project emissions. Therefore, emissions resulting from construction activity and construction materials will be assessed qualitatively. Features of the Project that demonstrate consistency with the City's GHG reduction goal will be described.

As the Project sites are located in a flood hazard zone, the potential impacts of climate change on the Project will be evaluated. The discussion will focus on sea level rise and changes in storm frequency projected to result from global climate change and the potential future impact of those changes on Project infrastructure and uses.

NOISE

The *CEQR Technical Manual* requires that the noise analysis address whether the Project would result in a significant increase in noise levels (particularly at sensitive land uses such as residences and open spaces).

As the Project may potentially include the use of noise-producing equipment located outdoors, the noise analysis will focus on the addition of unenclosed equipment. Specifically, the noise impact assessment for outdoor noise-producing equipment will consist of the following subtasks:

- Select appropriate noise descriptors. Appropriate noise descriptors to describe the existing noise environment will be selected. The Leq and L10 levels will be the primary noise descriptors used for the analysis. Other noise descriptors including the L1, L10, L50, L90, Lmin, and Lmax levels will be examined as appropriate;
- Select noise receptor locations. The receptor locations (i.e., residences, open spaces, churches, schools, etc.) will be adjacent to proposed new equipment associated with the Project sites;
- Determine existing noise levels. Existing noise levels will be measured adjacent to the Project site. These measurements will include both 24-hour continuous noise level measurements and simultaneous 60-minute spot measurements and will be conducted using Type I instrumentation. Recorded metrics will include Leq, L1, L10, and L90;
- Based upon projected outdoor equipment specifications and the future site layouts, noise levels at locations on the Project site boundaries and at other nearby sensitive receptor locations will be determined using computerized models and spreadsheets;

- An analysis will be performed to determine whether the predicted noise levels for outdoor noise-producing equipment would comply with requirements of the New York City Noise Code, New York City Zoning Resolution Performance Standards for Manufacturing zones, DOB Mechanical Code and CEQR noise impact criteria; and
- If predicted noise levels are not in compliance with the above-mentioned criteria, measures that could be implemented to reduce noise levels and achieve compliance—e.g., shielding options (such as the use of sound barriers or berms), use of silencers or mufflers, use of quieter equipment, and placement of equipment—would be examined.

Noise associated with construction of the Project will be provided in the construction analysis below.

PUBLIC HEALTH

According to the guidelines of the *CEQR Technical Manual*, a public health assessment may be warranted if an unmitigated significant adverse impact is identified in other CEQR analysis areas, such as air quality, water quality, hazardous materials, or noise. If unmitigated significant adverse impacts are identified in any one of these technical areas and the lead agency determines that a public health assessment is warranted, an analysis will be provided for that specific technical area.

NEIGHBORHOOD CHARACTER

Neighborhood character is determined by a number of factors, including land use, socioeconomic conditions, open space, historic and cultural resources, urban design, visual resources, shadows, transportation, and noise. According to the guidelines of the *CEQR Technical Manual*, an assessment of neighborhood character is generally needed when a proposed project has the potential to result in significant adverse impacts in one of the technical areas presented above, or when a project may have moderate effects on several of the elements that define a neighborhood's character. Therefore, if warranted based on an evaluation of the Project's impacts, an assessment of neighborhood character would be prepared following the methodologies outlined in the *CEQR Technical Manual*. The analysis would begin with a preliminary assessment, which would involve identifying the defining features of the area that contribute to its character. If the preliminary assessment establishes that the Project would affect a contributing element of neighborhood character, a detailed assessment will be prepared to examine the potential neighborhood character-related effects of the Project through a comparison of future conditions both with and without the Project.

CONSTRUCTION IMPACTS

Construction impacts, though temporary, can have a disruptive and noticeable effect on the adjacent community, as well as people passing through the area. The Project, because of its anticipated construction activities and duration as well as its proximity to sensitive receptor locations such as residences, may have the potential for construction impacts. Therefore, a construction assessment will be performed for potential construction-related impacts. This assessment will describe the construction schedule and logistics, discuss anticipated on-site activities, and provide estimates of construction workers and truck deliveries for the Project. In addition, the potential cumulative effects of project construction with the construction activities associated with other planned projects near the Project area will be discussed.

Technical areas to be assessed include the following:

- Transportation Systems. This assessment will consider construction logistics and construction vehicle trips from workers and deliveries in determining potential transportation-related impacts. A detailed construction traffic analysis will be conducted where potential detouring of existing traffic may be

required. In accordance with the CEQR Technical Manual, a detailed traffic analysis will be performed for intersections expected to incur 50 or more incremental construction trips in passenger car equivalents (PCEs) to identify the potential for significant adverse traffic impacts. Data will be collected to establish the baseline traffic service levels for the early morning and late afternoon hours to capture the peak arrival and departure of construction worker and truck trips. The estimated peak-hour trips associated with the construction of the Project during peak construction will then be overlaid onto the traffic network in the Future Conditions in the Analysis Year and compared to the impact criteria outlined in the CEQR Technical Manual to determine the potential for significant adverse traffic impacts. Where potential impacts are identified, improvements would be explored to mitigate those impacts to the extent practicable.

The construction transportation section will also identify the number of parking spaces that may be needed during peak construction and discuss the potential Maintenance and Protection of Traffic (MPT) strategies that may be employed to reduce the effects of the construction of the Project on nearby transportation systems.

- **Air Quality.** Emissions from on-site construction equipment and on-road construction-related vehicles, as well as dust generating construction activities, have the potential to affect air quality. This assessment will include a quantitative air quality analysis of onsite construction activities using the USEPA NONROAD Emission Model and USEPA/American Meteorological Society (AMS) AERMOD dispersion model to determine the potential for air quality impacts on nearby sensitive receptor locations. Because the level of construction activities would vary from phase to phase, the approach to formulate the reasonable worst-case scenarios for analysis will be based on an estimated monthly construction work schedule, equipment employed, equipment emission rate, and usage factors. The periods of highest emissions nearest to sensitive receptor locations will be identified for modeling since they are expected to be the periods of greatest impacts. Other less intensive construction periods will either be modeled or presented as a qualitative discussion, based on the reasonable worst-case period results. In addition, if required, a mobile source analysis at representative intersection(s) will be conducted using the USEPA mobile source emissions model, MOVES, and dispersion model CAL3QHC/CAL3QHCR.
- **Noise and Vibration.** The construction noise impact section will include a detailed analysis of noise from construction of the Project. As part of the detailed construction noise analysis, noise receptors will be located at sensitive receptors (i.e., residences, open spaces, churches, schools, etc.) near the Project sites, including Project construction work areas and potential staging sites. Existing noise levels at the selected receptors will be determined by noise measurements, including either 24-hour continuous noise level measurements or 60-minute spot measurements. The measurements will be conducted using Type I instrumentation. Recorded metrics will include Leq, L1, L10, and L90. The analysis will select representative worst-case time periods, and for each selected analysis period. Noise levels due to construction will be predicted at each sensitive receptor. If necessary based on the results of the construction noise analysis, the feasibility, practicability, and effectiveness of implementing measures to mitigate any significant construction noise impacts will be examined. Construction activities have the potential to result in vibration levels that may result in structural or architectural damage, and/or annoyance or interference with vibration-sensitive activities. A construction vibration assessment will be performed. This assessment will determine critical distances at which various pieces of equipment may cause damage or annoyance to nearby buildings based on the type of equipment, the building construction, and applicable vibration level criteria. Should it be necessary for certain construction equipment to be located closer to a building than its critical distance, vibration mitigation options will be proposed.

- Open Space. Construction of the Project would have potential temporary effects on open space, particularly on the Canal and on Thomas Greene Playground. An assessment of the Project's temporary effects on or adjacent to any publically accessible open spaces, due to the construction of the Head End and Owls Head Sites will be provided.
- Other Technical Areas. As appropriate, other areas of environmental assessment for potential construction-related impacts will be discussed, including but not limited to historic and cultural resources, hazardous materials, natural resources, open space, socioeconomic conditions, community facilities, and land use and neighborhood character.

MITIGATION

Where significant adverse project impacts have been identified for the Project, measures to mitigate those impacts will be identified and described. The mitigation chapter will address the anticipated impacts requiring mitigation, likely mitigation measures, and the timing of the mitigation measures. Where impacts cannot be practicably mitigated, they will be disclosed as unavoidable adverse impacts.

ALTERNATIVES

The purpose of an alternatives analysis is to examine reasonable and feasible options that avoid or reduce project-related significant adverse impacts while still achieving the stated goals and objectives of the Project.

In most cases, a No Action Alternative (i.e., examining the impacts of not undertaking the action being reviewed) must be included in a DEIS. However, since the ROD requires the City to reduce the volume of CSOs entering the Canal, a No Action Alternative (i.e., any alternative that does not reduce the volume of discharged CSOs) cannot be selected by the City. As such, the No Action Alternative (i.e., not meeting the required CSO reductions) will not be evaluated as part of the DEIS.

The DEIS, though not considering a No Action Alternative, will include other alternatives analyses.

As discussed above, if the land at the Head End Property cannot be acquired within the allotted timeframe (per the Settlement Agreement), USEPA may direct that the Head End Facility be constructed at the Thomas Greene Playground, located to the east of the Head End Site across Nevins Street (Block 419, Lot 1). Therefore, the alternatives analysis for the Head End Site will include locating the facility on a portion of the Thomas Greene Playground. The analysis will include sufficient detail to allow comparison of environmental impacts and attainment of project goals and objectives with those of the Project.

As USEPA has not directed the City to site the Owls Head Facility at a particular location, the analysis will include a discussion of alternatives to the City's preferred location. In particular, this section would consider the alternative location to the east of the Owls Head Site along 6th Street (Block 979, Lots 18 and 23). This site was identified in a Siting and Planning Study performed by the City.

DEIS SUMMARY CHAPTERS

In accordance with *CEQR Technical Manual* guidelines, the DEIS will include the following summary chapters, where appropriate to the Project:

- Executive Summary—will describe the Project and summarize its significant and adverse environmental impacts, measures to mitigate those impacts, and feasible alternatives to the Project;
- Unavoidable Adverse Impacts—will summarize any significant adverse impacts that are unavoidable if the Project is implemented regardless of the mitigation employed (or if mitigation is impossible;

- Growth-Inducing Aspects of the Project—will discuss the “secondary” impacts of a Project that trigger further development; and
- Irreversible and Irretrievable Commitments of Resources—will summarize the Project’s impacts in terms of the loss of environmental resources (i.e., use of fossil fuels and materials for construction, etc.), both in the immediate future and in the long term. *