11 WATER AND SEWER INFRASTRUCTURE

11.1 Introduction

New York City's water and sewer network is fundamental to the operation, health, safety, and quality of life of the City and its surrounding environment. Ensuring these systems have adequate capacity to accommodate land use or density changes and new development is critical to avoid environmental and health problems, such as sewer back-ups, street flooding, or pressure reductions.

The purpose of a water, sewer, and stormwater infrastructure analysis is to assess whether, in accordance with the *CEQR Technical Manual*, a proposed project may result in significant impacts on the City's infrastructure related to the conveyance, management, and treatment of water, wastewater, or stormwater. As described in Chapter 1 of this Environmental Impact Statement (EIS), "Project Description" the Proposed Actions would allow construction of the Proposed Facility, an approximately 3,093,880-gross-square-foot (gsf) gaming and recreational facility containing food and beverage space, hotel, event center, retail space, and a 4,660-space parking garage. Additionally, the Proposed Actions would allow the development of an approximately 40,160-gsf replacement golf clubhouse.

The Proposed Development also includes improvements to Ring Road, which would be designed and constructed in coordination with the New York City Department of Transportation (NYCDOT), New York City Department of Environmental Protection (NYCDEP), and the New York City Department of Parks and Recreation (NYC Parks). The Proposed Facility and improvements to Ring Road would meet current NYCDEP standards for stormwater management. Collectively, the Development Site and Ring Road comprise the "Affected Area." The Proposed Facility and improvements to Ring Road comprise the "Proposed Development."

11.2 Principal Conclusions

The Proposed Development would not result in a significant adverse impact on the City's water supply, wastewater conveyance and treatment, or stormwater management infrastructure in the analysis year.

Water Supply

The Proposed Development would not result in a significant adverse impact to the City's water supply. The *CEQR Technical Manual* indicates that a preliminary water supply analysis is warranted if the project is in an area that experiences low water pressure or would result in a demand of more than one million gallons per day (gpd). Per NYCDEP, the Development Site is not within an area that experiences low water pressure and is connected to existing water mains along Ring Road and Emerson Avenue. The With-Action Condition would generate a water demand of approximately 590,779 gpd. Because the project is located outside an area of low water pressure, and the Proposed Development would demand less than one million gpd of water supply, a preliminary water supply analysis is not warranted.

Wastewater Conveyance and Treatment

The Proposed Development would not result in a significant adverse impact on the City's wastewater conveyance and treatment system. A sewer certification from NYCDEP is required to connect to any of the following: a City (NYCDEP) sewer, a private sewer, a private drain, a septic system, or an approved outlet. The Development Site's existing sanitary ("wastewater") system connects to a NYCDEP 168-inch by 96-inch combined sewer – a system that collects both sanitary and stormwater flows in one pipe – along Emerson Avenue (stormwater is discussed in the next section). The existing Development Site sanitary flows are collected via an internal sewer and then discharged to the NYCDEP combined sewer in Emerson Avenue.

Using CEQR methodologies, the Proposed Development is projected to generate up to 388,117 gpd (0.38 million gallons per day [mgd]) of wastewater, an increase of approximately 382,053 gpd over the No-Action Condition.

Wastewater discharged by the Proposed Development to the Emerson Avenue sewer would be conveyed to NYCDEP's Hunts Point Wastewater Resource Recovery Facility (WRRF). The Hunts Point WRRF has a design capacity of 200 mgd with an excess capacity of approximately 66.64 mgd. The Hunts Point WRRF would be able to easily accommodate the project-generated 0.38 mgd, which represents about 0.57 percent of the excess capacity and approximately 0.19 percent of the overall design capacity. Wastewater treated at the NYCDEP Hunts Point WRRF is ultimately discharged to the East River.

Prior to obtaining construction permits from the New York City Department of Buildings (NYCDOB), NYCDEP must certify that the sewer system can accommodate, or "accept", the projected sanitary discharge; this is accomplished through their site connection permit process. As part of the site connection permit process, NYCDEP may also require a detailed hydraulic analysis to assess the Emerson Avenue sewer and downstream sewer capacity. The existing drainage plan may be amended based on the hydraulic analysis calculations and would be reviewed and approved by NYCDEP. Existing and proposed site connections would also be provided to NYCDEP during the permitting process. NYCDEP's site connection process would identify if sewer upgrades are required prior to granting

approval for the Proposed Development's site connection. Without the site connection, NYCDOB would not issue a building permit or certificate of occupancy.

The Proposed Actions would not result in significant adverse impacts on the City's wastewater infrastructure facilities. Further, NYCDEP would review and approve connections from the Proposed Development and confirm whether any upgrades are required to the existing sewer network.

Stormwater Management

The Affected Area consists of the Development Site and Ring Road. Existing and proposed stormwater management for these two project components are separate and are discussed separately below. The Proposed Development would not result in a significant adverse stormwater management impact to either the Development Site or Ring Road. Stormwater management of the remainder of Ferry Point Park would not change or be affected by the Proposed Actions.

The Development Site falls within a Municipal Separate Storm Sewer (MS4) area. As such, the Proposed Development must comply with NYCDEP stormwater regulations for managing stormwater runoff from the site. All design and construction would be in conformance with NYCDEP regulations.

Development Site

The Development Site is within the existing Golf Course and Ferry Point Park. The Golf Course has multiple drainage areas that discharge stormwater to multiple systems. The portion of the Park where the Development Site is located is currently about 37 percent impervious and 63 percent pervious. Stormwater that runs off the Development Site currently collects in detention ponds adjacent to Ring Road and ultimately discharges to the East River via an outfall south of the Development Site. The remainder of the Golf Course collects stormwater within detention ponds throughout the Golf Course and discharges into the NYCDEP combined sewer in Emerson Avenue.

In the With-Action Condition, new impervious surfaces (pavement and buildings) would be introduced on the Development Site. Subsequent to construction of the Proposed Development, about 71 percent of the Development Site's surfaces would be impervious and 29 percent pervious. For the Development Site, the runoff coefficient would increase from 0.45 to 0.73 per CEQR methodologies. Because of this increase, the Development Site would have an increase in stormwater runoff compared to the existing and No-Action conditions. However, the Proposed Development would need to adhere to NYCDEP's Unified Stormwater Rule (effective as of February 2022), which requires the use of stormwater detention; accordingly, the volume of stormwater discharging from the site would be restricted and treated for water quality. Thus, the Proposed Actions would not overburden or exceed the capacity of the existing stormwater infrastructure.

The design of the Proposed Facility would comply with NYCDEP's Unified Stormwater Rule, which regulates how stormwater is managed from new developments. This includes addressing both the quality and the volume of stormwater discharged from the Development Site. The specific stormwater management practices would be refined in coordination with NYCDEP during the detailed design process. Like the No-Action Condition, stormwater from the Development Site would continue to be discharged to the East River.

Stormwater permitting for the Proposed Development would be under NYCDEP's jurisdiction, who would ensure compliance with the Unified Stormwater Rule. Other applicable agencies may also review and approve the connection process to the existing outfalls. As a part of the stormwater permitting process, existing stormwater drains and proposed stormwater connections and detention structures would be provided to NYCDEP for review and approval to ensure the Proposed Development complies with the stormwater release rate. With compliance of the Unified Stormwater Rule and agency approvals of the outfall connection and stormwater permitting process, the Proposed Development allowed by the Proposed Actions would not result in significant adverse water and sewer impacts in the area of stormwater management.

Ring Road

In the existing condition, Ring Road is currently a NYC Parks roadway and is known to flood during heavy rainstorms. Stormwater that falls on Ring Road is discharged directly into Westchester Creek (via two outfalls) or the East River (via one outfall that also services the Development Site, see above).

In the With-Action Condition, Ring Road would be transferred from NYC Parks to NYCDOT and would be designed and constructed in coordination with NYCDOT, NYCDEP, and NYC Parks. As part of NYCDOT requirements, improvements to Ring Road would include upgrades to stormwater management to meet current NYCDEP and NYCDOT regulations and design standards. The specific stormwater management practices to address Ring Road's stormwater quality and quantity, in addition to required infrastructure such as catch basins and pipes, would be coordinated with NYCDOT and NYCDEP during the design process.

11.3 Methodology

The water and sewer infrastructure analysis follows the guidelines set forth in the *CEQR Technical Manual* for water supply, wastewater conveyance and treatment, and stormwater management.

Water Supply

To determine if a project could alter the effectiveness or pressure of New York City's water supply, an assessment of water supply infrastructure is necessary if the proposed project would result in:

1. An exceptionally large demand for water, such as a project that uses one million gallons of water per day; or
2. Is in an area that experiences low water pressure such as the Rockaway Peninsula or Coney Island.

The Development Site is not located within an area that experiences low water pressure. The With-Action Condition would only demand 590,779 gpd of water, which would be 580,420 gpd more than the No-Action Condition of 10,359 gpd. The With-Action water demand would be less than the CEQR screening threshold of an increase of one million gallons per day. Therefore, the Proposed Actions do not have the potential to result in a significant adverse water supply impact, and a preliminary water supply assessment is not warranted.

Wastewater Conveyance and Treatment

New York City's wastewater conveyance and treatment infrastructure was originally designed based on the designated zoning of the area and the population (and therefore wastewater) it would likely generate; changes to land use can impact the wastewater system. The thresholds that warrant a preliminary wastewater conveyance and treatment analysis for projects located within the Bronx (such as this Development Site) are:

1. The project adds 400 residential units or 150,000 square feet (sf) of commercial, public facility, institutional or community facility uses in a combined sewer area (sanitary and stormwater in one pipe); or
2. The project adds 100 residential units, or 100,000 sf of commercial/public and institution/community facility uses in a separate sewer area (sanitary and stormwater in separate pipes); or
3. The project is in an area that is only partially sewered or currently unsewered; or
4. Projects that involve the development of a site of 5 acres or more and would increase the amount of impervious surface on the site; or
5. Projects that involve the development on a site of 1 acre or more and would increase the amount of impervious surface within:
    - The Jamaica Bay watershed; or
    - Specific drainage areas including: Bronx River, Coney Island Creek, Flushing Bay and Creek, Gowanus Canal, Hutchinson River, Newton Creek, and Westchester Creek.

The Development Site is located within the Westchester Creek drainage area and the Proposed Development would introduce 3,134,040-gsf of new commercial area (the Proposed Facility and replacement golf clubhouse) on the Development Site – above the CEQR threshold of 150,000 gsf. Thus, an analysis of the Proposed Actions potential impacts on wastewater conveyance and treatment is warranted.

Stormwater Management

Surface characteristics and the addition of impervious surfaces can impact stormwater management systems. The thresholds that warrant a preliminary analysis of stormwater management systems are identical to the CEQR thresholds listed previously for an assessment of wastewater conveyance and treatment (because most of the Bronx uses combined sewers).

The Development Site is located within the Westchester Creek drainage area and the Proposed Development would introduce 3,134,040-gsf of new commercial area on the Development Site – above the CEQR threshold of 150,000 gsf. Thus, an analysis of the Proposed Actions potential impacts on stormwater management is warranted.

Data Sources

The water and sewer analysis uses data from the Sewer Atlas maintained by NYCDEP, NYCDEP monthly flow data, and information (including use rates) provided in the *CEQR Technical Manual*.

11.4 Existing Conditions

Water Supply

New York City obtains its water from three surface water supply systems that form a network of reservoirs, aqueducts, and tunnels that extend nearly 125 miles north of New York City. From three main tunnels that enter the city limits, a grid of underground distribution mains, as large as 96 inches in diameter, feed into supply mains, as small as eight inches, to service individual lots and buildings.

The Development Site is improved with a one-story, 25,265-gsf golf clubhouse, accessory parking lot, a portion of the practice area, and other landscaped areas. The Development Site also contains several temporary trailers on the existing parking lot. One fire hydrant along Ring Road currently serves the site. The existing clubhouse and fire hydrant on Ring Road are each served by an eight-inch-diameter water service line that connects to a 12-inch-diameter NYCDEP water main along Ring Road.

Wastewater Conveyance and Treatment

Sanitary sewers collect wastewater from buildings and sites and convey the wastewater to treatment plants. The diameter of collection sewers typically ranges between ten inches to two feet but can be larger. Local sewer lines capture flow from individual properties, and in turn connect to larger trunk sewers. Trunk sewers convey the flow to even larger interceptor sewers, which convey the flow to a WRRF for treatment. WRRFs treat wastewater through a variety of physical and biological processes so that the water can be discharged into surface water bodies (such as the East River), without adversely affecting water quality.

When a new development proposes to connect to a City sewer, NYCDEP must certify that the sewer can accept the discharge through the site connection approval process. A sewer certification is required for a new connection to a City sewer, a private sewer, a private drain, a septic system, or an approved outlet.

While the majority of New York City is served by combined sewers and treated by WRRFs, portions of all five boroughs are managed by separate storm sewers or are in unsewered areas (i.e. use on-site septic systems). The Development Site's existing sanitary system discharges to a combined sewer system in Emerson Avenue and is conveyed to the Hunts Point WRRF for treatment and discharge to the East River. The Hunts Point WRRF has operated since 1952 and has a design capacity to treat 200 mgd of wastewater.[1] In 2023-2024, Hunts Point WRRF received an average dry weather flow of 135.08 mgd, as shown in Table 11-1. Based on these average flows, the WRRF has an excess capacity of 66.64 mgd, which is approximately 33 percent of its total capacity.

[1] New York City's Wastewater Treatment System Report.

Table 11-1: 2023-2024 Monthly Average Dry Weather Flows to Hunts Point WRRF

Year	Month	Flows at Hunts Point WRRF (mgd)[1]
2023	June	105
	July	134
	August	132
	September	156
	October	135
	November	118
	December	146
2024	January	152
	February	123
	March	155
	April	143
	May	122
	Average	**135.08**

1. mgd = million gallons per day.
Source: NYC Department of Environmental Protection.

Based on the previously approved NYCDEP Master Plan, the existing building's sanitary sewer discharges to the combined sewer located along Emerson Avenue.

Stormwater Management

The volume of stormwater runoff at a site varies depending on the type of land cover, which can be either pervious (grass, forest, beach, etc.) or impervious (roadways, buildings, etc.). The *CEQR Technical Manual* defines runoff coefficients that correlate with the pervious or impervious qualities of the land cover via the NYCDEP Volume Calculation Matrix (see Appendix H). Per the *CEQR Technical Manual*, grass and softscape have a runoff coefficient of 0.20 because of their ability to absorb some rainfall (i.e. roughly 20 percent of rainfall becomes runoff), whereas roof area and pavement have higher runoff coefficients – 1.00 and 0.85 respectively – because of the inability of these materials to absorb or sequester rainfall (i.e. 100 percent to 85 percent of rainfall becomes runoff). Drainage areas (areas that drain to a common point) can be a mix of different surface cover material and have a runoff coefficient value that is proportional to the cover material amount.

The Development Site is located within Ferry Point Park and is adjacent to Ring Road. Ferry Point Park has several drainage areas within the Park as shown on Figure 11-1. The Development Site falls within Area 3 of the Ferry Point Park drainage map, and Ring Road falls within Areas 3, 5, and 6.

Figure 11-1: Ferry Point Park Drainage Area Breakdown



The Development Site falls within a Municipal Separate Storm Sewer (MS4) area. As such, the Development Site must comply with NYCDEP stormwater regulations for managing stormwater runoff from the site because it discharges to City-owned infrastructure or infrastructure on City-owned land.

The Development Site is part of the Golf Course, which has subdivided drainage areas. The Development Site generally slopes from its high points in the east towards its low points in the west near the Hutchinson River Expressway. The Development Site currently retains on-site stormwater runoff using detention ponds. These detention ponds connect to the stormwater sewer system running south along a park roadway parallel to the elevated Whitestone Bridge, and ultimately connect to an outfall in the East River (see Figure 11-2).

Figure 11-2: Existing Outfalls near the Development Site



Source: NYCDEP Sewer Atlas and record drawings provided by NYC Parks for Ferry Point Park.

The Development Site is within drainage area 3 (Figure 11-1) which discharges to the East River via a stormwater outfall located south of the Development Site (Figure 11-2). Table 11-2 shows the type and amount of cover within the Development Site (which is a smaller portion of drainage area 3). The existing weighted runoff coefficient of the Development Site is 0.45.

Table 11-2: Existing Project Surface Areas and Runoff Coefficients – Development Site

Site Area	Surface Type	Pavement & Walks	Roof	Landscape	Total
Proposed Development	Surface Area (sf)	266,737	30,847[2]	501,006	798,590
	Area (%)	33	4	63	100
	Runoff Coefficient[1]	0.85	1.00	0.20	0.45
				Total Area of Development Site (sf)	**798,590**
				Weighted Runoff Coefficient of Development Site	**0.45**

1. Runoff coefficients for each surface type per NYC Department of Environmental Protection and *CEQR Technical Manual*.
2. Roof surface area includes the golf clubhouse and existing temporary trailers on the Development Site.

Based on CEQR methodologies, stormwater runoff generated during a variety of rainfall events between 3.8 to 19.5 hours in duration was determined. During the largest storm event (2.5 inches of rainfall over 19.5 hours), the Development Site would generate 0.56 million gallons (MG) of stormwater flow per CEQR methodologies. Table 11-3 shows the existing stormwater runoff during representative storm events.

Table 11-3: Existing Runoff Generation for the Development Site

Rainfall (in)	Duration (hrs)	Total Area (acres)	Weighted Runoff Coefficient[1]	Stormwater to East River (MG)
0.00	3.80	18.33	0.45	0.00
0.40	3.80			0.09
1.20	11.30			0.27
2.50	19.50			0.56

1. Refer to Table 11-2.

Ring Road

Ring Road is an NYC Parks roadway within Ferry Point Park and is under jurisdiction of NYC Parks. Certain portions of Ring Road are subject to flooding during heavy rainstorms. Stormwater on Ring Road either sheet flows across the roadway to other portions of the Park or gets collected in existing stormwater drains. Stormwater that does not sheet flow across the roadway or collect in stormwater drains results in flooding on the roadway.

Ring Road contains paved and landscaped areas. Table 11-4 shows that the existing weighted runoff coefficient of Ring Road is 0.53.

Table 11-4: Existing Ring Road Surface Areas and Runoff Coefficients

Site Area	Surface Type	Pavement & Walks	Roof	Landscape	Total
Ring Road	Surface Area (sf)	124,108	0	116,934	241,042
	Area (%)	51	0	49	100
	Runoff Coefficient[1]	0.85	1.00	0.20	0.53
				Total Area of Ring Road Impacted (sf)	**241,042**
				Weighted Runoff Coefficient of Ring Road	**0.53**

1. Runoff coefficients for each surface type per NYC Department of Environmental Protection (DEP)
Source: NYC Department of City Planning (DCP) Footprint and PLUTO data; aerial photographs.

11.5 No-Action Condition

In the No-Action Condition, existing conditions on the Development Site would remain. The one-story 25,265-gsf golf clubhouse, accessory parking lot, a portion of the practice area, and other landscaped areas would remain on the Development Site. The existing temporary trailers would also remain on the Development Site. No new public infrastructure – such as roadway or park improvements – would be developed. Water would continue to be supplied from an 8-inch water service that connects to the 12-inch NYCDEP water main along the Hutchinson River Expressway service road.

Wastewater generated on the Development Site would continue to be discharged to the combined sewer along Emerson Avenue and transported through the City's sewer system to the Hunts Point WRRF. Stormwater runoff from the Development Site would continue to be collected and ultimately discharged to the East River. Stormwater that falls on Ring Road would continue to sheet flow across the roadway, be directed to existing storm drains, or would pool and result in flooding.

11.6 With-Action Condition

In the With-Action Condition, Bally's would demolish the existing golf clubhouse, accessory parking lot, and a portion of the practice area to construct the Proposed Facility and replacement golf clubhouse (a total of 3,134,040-gsf). In addition, Ring Road would be widened to accommodate vehicles, bicycles, and pedestrians accessing the Park and the Proposed Facility. Ring Road would be mapped as a 65-foot-wide[2] street west of the Hutchinson River Expressway, except for where the roadway would only be widened to 45 feet to avoid an existing freshwater wetland near the southwest border of the road. East of the expressway the roadway would be widened to 38 feet.

Water Supply and Wastewater Generation

The With-Action Condition would create water demand that is higher than the No-Action Condition. Water demand was first calculated using CEQR methodologies and then via a combination of CEQR methodologies and data provided by Bally's from their experience with similar projects. Use of Bally's data indicates that there would be greater water demand in the With-Action Condition, resulting in a more conservative analysis. For design and permitting purposes, the method using the combination of information was analyzed as the With-Action Condition, as it yielded larger rates and is therefore more conservative. Table 11-5 shows that the With-Action Condition water demand, based on CEQR methodologies, would be 485,534 gpd and the corresponding wastewater generation would be 283,872 gpd.

[2] The proposed acreage to be mapped as an NYCDOT street is larger than the typical NYCDOT 60-foot road width because Bally's is coordinating with NYC Parks, MTA/TBTA, and NYCDOT to confirm roadway design.

Table 11-5: With-Action Water Consumption and Waste Generation per CEQR Rates

Land Use	Water Consumption and Wastewater Generation Rates	Area/ Rooms	Domestic Water/ Wastewater Generation (gpd)[1]	Air Conditioning (gpd)
Retail	Domestic 0.24 gpd/sf	682,800 sf	163,872	116,076
	A/C 0.17 gpd/sf			
Hotel	Domestic 120 gpd/rm/occupant	500 rooms[2]	120,000[2]	86,586
	A/C 0.17 gpd/sf	509,330 sf		
		Subtotal	**283,872**	**201,662**
Total Water Demand – Domestic + Air Conditioning (gpd)			**485,534**	
Total Wastewater Generation – Domestic only (gpd)			**283,872**	

1. Gallons per day (gpd).
2. Assumed two occupants per room
Source: *CEQR Technical Manual*, Table 13-2.

However, based on Bally's experience operating similar facilities and the preliminary plumbing design, the Proposed Facility would generate additional water demand and generate additional wastewater. An increased water demand of up to 590,779 gpd[3] and an average wastewater generation of up to 388,117 gpd was conservatively determined for this analysis. The projected water demand and wastewater generation for the Proposed Development are provided in Table 11-6 based on the *CEQR Technical Manual* rates in combination with data provided by Bally's based on similar projects and the preliminary plumbing design.

Table 11-6: With-Action Water Consumption and Waste Generation Projections per CEQR Rates & Applicant Data Based On Preliminary Plumbing Design

Description	Units	Multiplier	Usage GPD/ Occ. (sf)	Domestic Water (gpd)	Air Conditioned (sf)
Gaming (positions)	5,064	3	10	151,920[1]	
Hotel (rooms)	500	2	120	120,000	
Retail (sf)	4,360		0.1	436[2]	
Theater (Seats)	2,000		10	20,000	
Clubhouse (sf)	7,100		0.1	710[2]	
Breakout Rooms	4,000		0.1	400[2]	
Golf Clubhouse (sf)	40,160		0.1	4,016[2]	
Food Outlet (seats)	1,655		6	59,580[3]	
Bar (seats)	350		10	3,500[4]	
Entertainment Lounge (sf)	4,550		0.1	455[2]	
Night Club (sf)	11,000		0.1	1,100[2]	
Staff Count (peak)	650	1	20	13,000[5]	
Staff Count (off-peak)	325	2	20	13,000[6]	
Air-Conditioned (sf)	1,192,130		0.17		202,662[2]
			Subtotal	**388,117**	**202,662**
			Total Water Demand (gpd)	**590,779**	
			Total Wastewater Demand (gpd)	**388,117**	

1. Based on 24-hour operation, average 4-hour visit and average 50 percent occupancy.
2. Based on *CEQR Technical Manual* Table 13-2 rates.
3. Based on average 12-hour operation at 50 percent capacity and 6 gal/plate.
4. Based on 10 gal/day/seat.
5. Based on assumed full staffing 8 hours/day for single shift and 20 GPD/employee.
6. Based on assumed 50 percent staffing 8 hours/day for two shifts and 20 GPD/employee.

[3] BRG Consulting Ltd, Apogee Collaborative.

Wastewater Conveyance and Treatment

With the more conservative projection, Table 11-7 shows that the Proposed Actions would generate an average of 388,117 gpd of wastewater, an increase of 382,053 gpd of wastewater over the No-Action Condition. As such, the existing connection to the NYCDEP combined sewer on Emerson Avenue may need to be upgraded and, if required, would be reviewed and approved as part of the NYCDEP permitting process. A hydraulic analysis would be required as a part of the NYCDEP permitting process prior to the submittal of the Site Connection Permit Application. In addition, the existing drainage plan may be amended based on the hydraulic analysis calculations and would be reviewed and approved by NYCDEP. Existing and proposed site connections would also be provided to NYCDEP during the permitting process.

Table 11-7: No-Action and With-Action Wastewater Generation

Condition	Wastewater Generated (gpd)[1]
No-Action Condition	6,064
With-Action Condition	388,117
Increment	**382,053**

1. Gallons per day (gpd).
Source: *CEQR Technical Manual*, Table 13-2.

The Hunts Point WRRF has an operational capacity of approximately 200 mgd and operates with an average dry weather flow of approximately 133.36 mgd (67 percent of capacity), maintaining an average excess capacity of approximately 66.64 mgd (33 percent of capacity). The incremental 382,053 gpd (0.38 mgd) of wastewater generated by the With-Action Condition would represent 0.19 percent of Hunts Point WRRF's total capacity and 0.57 percent of the excess capacity. With the approximately 0.38 mgd of additional wastewater flows, the Hunts Point WRRF would process an average of approximately 133.74 mgd of wastewater in the With-Action Condition and would still have an average excess capacity of approximately 66.26 mgd. Because project-generated wastewater would not cause the Hunts Point WRRF to operate over its permitted capacity, the Proposed Actions would not result in significant adverse water and sewer impacts related to wastewater treatment.

Stormwater Management

Development Site

In the With-Action Condition, impervious surface coverage on the Development Site would increase compared to the No-Action Condition. Table 11-8 shows that the weighted runoff coefficient for the Development Site would likewise increase, from 0.45 to 0.73. As further discussed below, absent compliance with the Unified Stormwater Rule, an increase in the runoff coefficient indicates the Proposed Development would generate more stormwater runoff than in the No-Action Condition.

Table 11-8: With-Action Project Surface Areas and Runoff Coefficients

Site Area	Surface Type	Pavement & Walks	Roof	Landscape	Total
Development Site	Surface Area (sf)	196,179	369,016	233,395	798,590
	Area (%)	25	46	29	100
	Runoff Coefficient[1]	0.85	1.00	0.20	0.73
				Total Area of Development Site (sf)	**798,590**
				Weighted Runoff Coefficient of Projected Development Site	**0.73**

1. Runoff coefficients for each surface type per NYC Department of Environmental Protection (DEP)
Source: NYC Department of City Planning (DCP) Footprint and PLUTO data; aerial photographs.

Table 11-9 shows the estimated stormwater runoff that would ultimately discharge to the East River. Similar to existing conditions, all runoff from the Development Site would discharge to the East River via the existing outfall south of the Development Site; therefore, the Proposed Development would not increase the flow of stormwater to the NYCDEP sewer system. Stormwater flows in the With-Action Condition would not contribute additional flow to the Hunts Point WRRF because this portion of the Golf Course currently discharges to the East River and would continue to do so under the Proposed Actions. The Development Site would discharge between 0.00 and 0.91 MG to the East River. Compared to the No-Action stormwater flow of 0.00 to 0.56 MG, the Proposed Development would result in up to 0.35 MG of additional stormwater flow to the existing outfall, per CEQR methodologies. The Proposed Development would need to adhere to NYCDEP's Unified Stormwater Rule, which requires the use of stormwater detention; accordingly, the volume of stormwater discharging from the site would be restricted and treated for water quality. Thus, the Proposed Actions would not overburden or exceed the capacity of the existing stormwater infrastructure.

Table 11-9: With-Action Development Site's Combined Stormwater Runoff and Wastewater Generation

Rainfall (in)	Duration (hrs)	Total Area (acres)	Weighted Runoff Coefficient[1]	Stormwater to East River (MG)	Sanitary to CSS	Total Volume to CSS (MG)
0.00	3.80	18.33	0.73	0.00	0.06	0.06
0.40	3.80			0.15	0.06	0.06
1.20	11.30			0.44	0.18	0.18
2.50	19.50			0.91	0.31	0.31

1. Refer to Table 11-8.
2. Combined sewer system (CSS).
Source: *CEQR Technical Manual*

In New York City, new development must comply with the Unified Stormwater Rule (per Chapters 19.1 and 31 of Title 15 of the Rules of the City of New York (RCNY)). These regulations were adopted in 2022 and set maximum allowable flow rates from newly developed sites to the City's sewer system. The allowable flow rates are lower than the rates calculated per CEQR methodologies.

The Proposed Development would need to comply with the Unified Stormwater Rule because stormwater would discharge to City-owned infrastructure and/or infrastructure on City-owned land. As noted above, the Unified Stormwater Rule sets requirements to manage stormwater volumes. The rule also requires that a portion of stormwater runoff from a newly developed site be treated. These stormwater management practices are designed to protect, restore, or mimic the natural water cycle within built environments by detaining and treating stormwater runoff before allowing stormwater to be discharged from a site.

Runoff that enters a stormwater management system is typically managed via infiltration, evapotranspiration, reuse, filtration, or detention. The Development Site would use stormwater best management practices such as green roofs, hydrodynamic separators, or other NYCDEP/NYSDEC-approved stormwater management practices to treat the stormwater directed off-site to meet the appropriate stormwater regulations. Detention tanks, detention ponds or other means of detaining stormwater may be used to meet these requirements. Additional coordination with NYCDEP and/or NYSDEC would be required to determine the feasibility and applicability of specific stormwater management practices on the Development Site.

Following treatment and volume control, the project-generated stormwater would be routed to discharge directly to the East River via the existing stormwater outfalls. Ownership and capacity of existing outfalls are currently being investigated. Bally's would connect to these outfalls through the applicable review and approval process.

Stormwater from the existing Golf Course drainage areas that are outside the Development Site would not be affected by the Proposed Actions.

NYCDEP would review and approve the stormwater permitting for the Proposed Development to ensure compliance with the Unified Stormwater Rule, and the applicable agency would review and approve the connection process to the existing outfalls. As a part of the stormwater permitting process existing stormwater drains, and proposed stormwater connections and detention structures would be provided to NYCDEP for review and approval to ensure the Proposed Development complies with the Unified Stormwater Rule. With NYCDEP oversight for compliance with the Unified Stormwater Rule and agency oversight of the outfall connection and stormwater permitting process, the Proposed Development allowed by the Proposed Actions would not result in significant adverse water and sewer impacts in the area of stormwater management.

Ring Road

With the Proposed Actions, jurisdiction of Ring Road would be transferred from NYC Parks to NYCDOT. Improvements to Ring Road would be designed in accordance with NYCDOT, NYCDEP, and NYC Parks regulations. Improvements to Ring Road would increase the amount of impervious pavement and walkways. With the Proposed Actions, the approximately 24-foot-wide park roadway would be widened to approximately 32 feet of roadbed for two lanes of vehicular traffic and on-street parking, with provision for a potential future bus stop in the parking lane. Additional improvements to Ring Road would provide pedestrian sidewalk and a paved, two-way protected bike lane. Table 11-10 shows the projected worst-case runoff coefficient of 0.81 for Ring Road (up from the existing 0.53) based on a preliminary sectional drawing provided by NYCDOT. The weighted runoff coefficient may be reduced as the final design of Ring Road is developed; therefore, the projection represents the most conservative analysis. This increase in the runoff coefficient indicates that Ring Road would generate more stormwater runoff in the With-Action Condition over the No-Action Condition.

Table 11-10: Proposed Ring Road Surface Areas and Runoff Coefficients

Site Area	Surface Type	Pavement & Walks	Roof	Landscape	Total
Ring Road	Surface Area (sf)	227,215	0	13,827	241,042
	Area (%)	94	0	6	100
	Runoff Coefficient[1]	0.85	1.00	0.20	0.81
				Total Area of Ring Road (sf)	**241,042**
				Weighted Runoff Coefficient of Ring Road	**0.81**

1. Runoff coefficients for each surface type per NYC Department of Environmental Protection (DEP)
Source: NYC Department of City Planning (DCP) Footprint and PLUTO data; aerial photographs.

Table 11-101: Proposed Ring Road Combined Stormwater Runoff and Wastewater Generation

Rainfall (in)	Duration (hrs)	Total Area (acres)	Weighted Runoff Coefficient[1]	Stormwater to CSS (MG)	Sanitary to CSS	Total Volume to CSS (MG)
0.00	3.80	5.53	0.81	0.00	0.00	0.00
0.40	3.80			0.05	0.00	0.05
1.20	11.30			0.15	0.00	0.15
2.50	19.50			0.30	0.00	0.30

1. Refer to Table 11-10.
2. Combined sewer system (CSS).
Source: *CEQR Technical Manual*

The improvements to Ring Road are anticipated to meet current standards for stormwater management. Ring Road would be designed to comply with NYCDOT stormwater infrastructure standards for mapped City streets. Additionally, because NYCDEP has jurisdiction over stormwater infrastructure along City streets, improvements to Ring Road would also be designed in accordance with current NYCDEP regulations.

To the extent practicable, stormwater that falls on Ring Road would be collected by new catch basins that would be installed in the street. The stormwater would then be conveyed to existing outfalls that discharge to either Westchester Creek or the East River. In addition, stormwater best management practices such as bioswales, infiltration basins, pervious pavement, precast porous concrete panels, or other green infrastructure may be explored. Additional coordination with NYCDEP and NYCDOT may be required to determine the feasibility and applicability of specific stormwater management practices along Ring Road.

With oversight from NYCDOT, NYCDEP, and NYC Parks during the design and construction of Ring Road, the improvements would manage stormwater to current regulatory standards and would reduce the potential for street flooding and would preclude the potential for significant adverse stormwater infrastructure impacts.