

4.8.1 INTRODUCTION

This chapter describes the potential for the proposed Project to affect utilities and infrastructure, including water supply, sanitary sewage, stormwater runoff, and solid waste. The chapter concludes that the proposed Project would not result in any significant adverse impacts in these areas.

4.8.2 EXISTING CONDITIONS

WATER SUPPLY

The New York City water supply system, managed by the New York City Department of Environmental Protection (DEP), is composed of three watersheds north and northwest of the City—the Delaware, Catskill, and Croton watersheds. From these watersheds, water is conveyed as far as 125 miles to New York City via a system of reservoirs, aqueducts, and tunnels. Within New York City, a grid of pipes distributes water to consumers. Manhattan is served largely by the Catskill/Delaware System.

New York City has a comprehensive water conservation program to reduce water use through water metering and requirements that plumbing fixtures meet low-flow criteria in existing and new buildings (Local Law No. 29, 1989). On average, the City currently consumes approximately 1.1 billion gallons of water each day. Daily consumption peaked at 1.512 billion gallons per day in 1979, when the City's population was 7.1 million. Despite an increase to the current population of 8.2 million, as well as substantial levels of new construction and redevelopment citywide, average daily consumption has been slowly declining each year so that current consumption is approximately 28 percent less than the 1979 peak. These reductions in water consumption are attributed to several factors, including installation of water-saving plumbing fixtures in renovations and new construction as mandated by Local Law 29 of 1989, improved system repair and maintenance to reduce pipe leakage and other system losses, and metering of usage.

Based on recommended CEQR rates for water demand, at an average of 25 gallons per day (gpd) per employee, the 1.3 million-square-foot Farley Complex currently consumes an estimated 12,500 gpd. An additional 140,000 gpd of water is currently used for air conditioning at the Farley Complex for a total of 152,500 gpd. Based on water demand CEQR rates for retail uses, at an average 0.17 gpd per square-foot of space, the existing uses on the Development Transfer Site currently consume an estimated 2,405 gpd with an additional 2,405 gpd for air conditioning for a total of 4,810 gpd.

SANITARY SEWAGE

DEP provides wastewater treatment for all of Manhattan and most of the other areas of New York City through its 14 water pollution control plants (WPCPs). Most sanitary sewage in the City is collected and conveyed through a combined sewer system operated and maintained by DEP. This system receives sanitary sewage from residences, businesses, and municipal buildings, as well as stormwater accumulated in catch basins along the streets, and the combined flow is sent for treatment at one of the City's WPCPs. The Farley Complex and Development Transfer Site are located in the service area of the North River WPCP. This plant began operation with primary treatment in March 1986. Secondary treatment began in April 1991. Before the plant began operating, sewage from the West Side of Manhattan was discharged untreated into the Hudson and Harlem Rivers.

The North River WPCP is regulated by the New York State Department of Environmental Conservation (NYSDEC), which issues a permit regulating its discharge of treated effluent. This State Pollutant Discharge Elimination System (SPDES) permit restricts the daily flow at the plant to 170 million gallons per day (mgd), based on a 12-month rolling average. The daily flow averaged 126 mgd, in 2008, well below the 170 mgd permitted limit. The North River WPCP has a total capacity of 340 mgd, or twice its average daily permitted discharge rate, allowing for the treatment of peak dry weather flows and some wet weather flows.

The sewer system within the study area consists of combined sewers, regulators, and interceptors. Each trunk sewer feeds into the interceptor sewer through a regulator chamber that controls the flow from the trunk sewer to the interceptor. Generally, the wastewater within the study area flows westerly in collector and trunk sewers toward the intercepting sewer under Twelfth Avenue. The purpose of a regulator is to divert sanitary flow from the existing combined sewers to the intercepting sewer during normal flow periods (dry weather), and limit the flow to the intercepting sewer to twice dry weather flow during storm periods (wet weather). The existing tide gates placed on the combined sewer outfalls (CSO) downstream of the regulators are designed to keep tide water from entering the existing combined sewers and the intercepting sewer.

The intercepting sewer (under Twelfth Avenue) serving the study area is an 8-foot-by-8-foot sewer between West 26th Street and West 40th Street, an 8-foot-6-inch-by-8-foot-6-inch sewer between West 40th Street and West 49th Street, and a 10-foot-6-inch-by-10-foot-6-inch sewer between West 49th Street and West 52nd Street. The Twelfth Avenue interceptor sewer conveys the study area's sanitary sewage by gravity to the North River WPCP. Most of the sewers serving the area were installed between the 1840s and 1940s. The sewer is constructed of brick or concrete in various sizes and shapes, ranging from elliptical to circular, and is generally located between 8 and 16 feet below the surface.

Consistent with *CEQR Technical Manual* guidance, the amount of sanitary sewage from the Project site to be treated at the North River WPCP is assumed to be equal to the volume of potable water demand for the Project site. The current amount of sewage generated by the Farley Complex is estimated to be 12,500 gpd and 2,405 gpd at the Development Transfer Site, for a total of 14,905 gpd. This volume is included in the total average estimated daily combined flow of 126 mgd treated at the North River WPCP.

STORMWATER RUNOFF

The tributary area of the North River WPCP is a highly urbanized land surface comprised primarily of impervious surfaces (e.g., building roofs, street pavement), which generate runoff. At the Project site almost all of the runoff is from impervious cover. Stormwater runoff is collected in catch basins along the streets and channeled to the combined sewer system. A typical outfall has regulators that divert the wastewater flow to interceptor sewers, which deliver wastewater to the North River WPCP. The regulators are designed to allow two times the mean dry weather flow into the interceptor.

SOLID WASTE

The New York City Department of Sanitation (DSNY) manages the disposal of municipal solid waste and recyclable materials it collects from residences, public areas, nonprofit institutions, and government offices. DSNY also collects wastes from street litter baskets, street sweeping operations, and lot cleaning activities. The City does not operate any incinerators or waste-to-energy facilities, and individual apartment house incinerators are prohibited under Local Law 39 of 1989. Waste incineration is permitted at hospitals within the City. Commercial solid waste from offices, restaurants, retail stores, and other businesses is collected and disposed by private carters.

Throughout the 1990s, almost all of the municipal waste generated in the City was disposed of at the Fresh Kills landfill on Staten Island. The Fresh Kills landfill was permanently closed in spring 2001 pursuant to a statute enacted by the New York State legislature. Under the current interim export activities, most of the City's municipal solid waste is collected and delivered to transfer stations, where it is loaded onto larger transfer trailers and transported out of the City for disposal, and some waste is transported by rail to out-of-City disposal sites. Waste is also moved to out-of-City transfer stations or disposal facilities in DSNY collection vehicles. Municipal solid waste from the study area is collected and trucked directly to out-of-State waste-to-energy facilities or out-of-City disposal sites. Private carters consolidate solid waste at waste transfer facilities both inside and outside the City, and it is then transported to out-of-City disposal facilities.

Solid waste and recyclable material from the Farley Complex and Development Transfer Site are handled by private carters. Based on the solid waste generation rates recommended in the *CEQR Technical Manual* of 13 pound per week per employee, the Farley Complex is estimated to generate about 6,500 pounds per week, for a total of 3.25 tons per week (tpw). Based on the typical capacities of 13.5 tons for a private collection truck, the current volume of commercial solid waste generated at the Farley Complex requires less than one private hauler truck trips per week. Based on retail solid waste generation rates, the existing uses on the Development Transfer Site are estimated to generate 2,794 pounds per week, for a total of approximately 1.4 tpw.

4.8.3 NO ACTION ALTERNATIVE

WATER SUPPLY

In general, the effects of water conservation measures being implemented citywide, such as low-flow fixtures and metering, are expected to keep any growth in water demand throughout the city to a minimum. In addition, DEP is currently constructing a third water tunnel within New York

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City to provide redundancy and dependability in the City's drinking water supply system. Water demand in the vicinity of the proposed Project may increase because of growth in the area's population, but this increase is not expected to adversely affect the local water supply system.

The water usage at the Farley Complex would be approximately 168,300 gpd, with an additional 182,300 gpd for air conditioning, for a total of 350,600 gpd in the No Action Alternative (see Table 4.8-1). This would result in an increase in demand of approximately 198,100 gpd of potable water usage, compared with existing conditions. On the Development Transfer Site, it is assumed that the existing uses and its total water usage of 4,810 gpd would remain in the No Action Alternative.

Table 4.8-1
Farley Complex Water Usage and Sewage Generation
No Action Alternative (in gallons per day)

Use	Water/Sewage	Air Conditioning
USPS	12,500	26,500
Retail ¹	101,700	101,700
Office	55,100	55,100
TOTAL	168,300	182,300

Notes:
1. Commercial retail square footage includes common areas and docks/service square footage. Water and sewage volumes based on rates provided in the *CEQR Technical Manual*. For office employees, an estimated rate of 1 employee/250 sf was used.

SANITARY SEWAGE

New York City regulations require all new construction and substantial renovation projects to incorporate low-flow fixtures for water conservation purposes. In addition, the City has undertaken an active program to meter the water usage of all buildings, a measure that will ultimately reduce flow to all WPCPs.

The Farley Complex and Development Transfer Site would continue to be served by the North River WPCP and the sanitary sewage treatment system and local storm and combined sewers in the vicinity of the Farley Complex and Development Transfer Site would not be affected in the No Action Alternative, similar to the conditions described above for water supply.

Estimated sewage flows for the Farley Complex in the No Action Alternative would be approximately 168,300 gpd. This represents an insignificant increase in demand when compared to the overall flow to the North River WPCP, and no impacts to overall plant capacity are expected. Certain of DEP's water conservation measures, which are not reflected in the *CEQR Technical Manual* sewage generation rates, would further reduce the potential sewage generated in the future throughout the City. It is expected that the additional sanitary volumes from the Farley Complex would still allow the North River WPCP to operate within the permitted limit of 170 mgd. On the Development Transfer Site, it is assumed that the existing uses and its total water sewage generation of 2,405 gpd would remain in the No Action Alternative.

STORMWATER RUNOFF

The Farley Complex and Development Transfer Site contain no pervious surfaces. The impervious coverage is not expected to change in the No Action Alternative; therefore stormwater runoff volumes would not change in the No Action Alternative.

SOLID WASTE

The redevelopment of the Farley Complex for commercial and USPS uses in the No Action Alternative would result in an estimated 76 tpw of commercial solid waste (see Table 4.8-2). This would result in five private hauler truck trips per week. On the Development Transfer Site, it is assumed that the existing uses and its solid waste generation of 1.4 tpw would remain in the No Action Alternative.

**Table 4.8-2
Farley Complex Solid Waste Generation
No Action Alternative (in pounds per week)**

Use	Municipal Solid Waste	Commercial Solid Waste
USPS	–	6,500
Retail ¹	–	117,000
Office	–	28,650
Total	0	152,150 (76 tons)
Notes:		
1. Commercial retail square footage includes common areas and docks/service square footage. Solid waste based generation calculations based on the <i>CEQR Technical Manual</i> . For office employees, an estimated rate of 1 employee/250 sf was used.		

4.8.4 POTENTIAL IMPACTS OF THE PREFERRED ALTERNATIVE

WATER SUPPLY

MOYNIHAN STATION

For the Preferred Alternative, water usage at the proposed Moynihan Station and transit-related retail would be approximately 14,600 gpd, with an additional 65,600 gpd for air conditioning (see Table 4.8-3), for a total of 80,200 gpd.

NON-STATION DEVELOPMENT

The non-station development at the Farley Complex would require water usage of approximately 138,850 gpd, with an additional 140,500 gpd for air conditioning (see Table 4.8-3), for a total of 279,350 gpd. Overall, the water demand at the Farley Complex, including Moynihan Station, would be approximately 359,550 gpd for the Preferred Alternative. This would result in an approximately 3 percent increase in water consumption at the Farley Complex as compared to the No Action Alternative. This demand is not expected to significantly affect the local water pressures and the demand would represent an insignificant increase in the average amount of water consumed in Manhattan.

The Development Transfer Site would require water usage of approximately 188,400 gpd, with an additional 20,400 gpd for air conditioning, for a total of 208,800 gpd, a substantial increase over the water usage of 4,810 gpd for the site in the No Action Alternative. This demand is not expected to significantly affect the local water pressures. In addition, the Project’s demand would represent an insignificant increase in the average amount of water consumed in Manhattan. As a result, this added demand is not expected to overburden the City’s water supply or the local conveyance system. The proposed Project would also comply with the City’s water conservation measures under Local Law 19.

**Table 4.8-3
Preferred and No Action Alternatives:
Water Usage and Sewage Generation (gpd)**

Use	Preferred Alternative Units/ Size/FA/ Employees/	Generation Rates Domestic/ Air Conditioning (AC)	Preferred Alternative		No Action Alternative	
			Water/ Sewage	AC	Water/ Sewage	AC
MOYNIHAN STATION						
Train station	300,000 sf	25/employee 0.17/sf (AC)	0 ¹	51,000		
Transit retail	86,000 sf	0.17/sf, 0.17/sf (AC)	14,600	14,600		
Subtotal Moynihan Station			14,600	65,600		
NON-STATION DEVELOPMENT						
Farley Complex						
USPS	265,000 sf 500 employees	25/employee, 0.1/sf	12,500	26,500	12,500	26,500
Hotel	125,000 sf (125 ² rooms)	150/hotel room 0.17/sf banquet	18,800			
Banquet	35,000 sf	0.1/sf (AC)	6,000	12,500		
Retail ³	597,350 sf	0.17/sf, 0.17/sf (AC)	101,550	101,500	100,700	100,700
Office		25/employee, 0.1/sf (AC)	–	–	55,100	55,100
Subtotal Non-Station Development Farley Complex			138,850	140,500	168,300	182,300
Development Transfer Site						
Residential	940 units 1,500 residents	112/resident	168,000		–	
Retail	120,000 sf	0.17/sf, 0.17/sf (AC)	20,400	20,400	2,405	2,405
Subtotal Development Transfer Site			188,400	20,400	2,405	2,405
Total Non-Station Development			327,250	160,900	170,705	184,705
TOTAL			341,850	226,500	170,705	184,705
Notes:						
¹ No new employees or patrons; expected same number of existing Penn Station employees; demand from this population not included in this analysis.						
² Hotel total square footage was divided by 1,000 to estimate approximate number of hotel rooms.						
³ Commercial retail square footage includes common areas, docks/service, and office core/lobby square footage. Water and sewage volumes based on rates provided in the <i>CEQR Technical Manual</i> . For office employees, an estimated rate of 1 employee/250 sf was used;						

SANITARY SEWAGE

The study area would continue to be served by the North River WPCP under the Preferred Alternative.

MOYNIHAN STATION

Under peak conditions, sewage generated at the proposed Moynihan Station and transit-related retail would be approximately 14,600 gpd, as shown in Table 4.8-3.

NON-STATION DEVELOPMENT

The non-station development at the Farley Complex would generate approximately 138,850 gpd of sewage. Overall, the sewage generation at the Farley Complex, including Moynihan Station, would be approximately 153,450 gpd for the Preferred Alternative, which is less than the total sewage generation at the Farley Complex for the No Action Alternative. The Preferred Alternative would generate less sewage than the No Action Alternative because it would have less total commercial space and Moynihan Station would only be expected to generate a minimal amount of sewage.

The Development Transfer Site would result in a sewage generation of approximately 188,400 gpd for the Preferred Alternative, a substantial increase over the sewage generation of 2,405 gpd for the site in the No Action Alternative. This would represent a relatively small increase in demand compared with the overall flow to the North River WPCP (approximately 126 mgd on an average day). DEP's water conservation measures, which are not reflected in the *CEQR Technical Manual* sewage generation rates, would further reduce the potential sewage generated in the future across the City. The additional sanitary volumes from the Preferred Alternative would still allow the North River WPCP to operate well within the permitted limit of 170 mgd. The proposed Project is not expected to overburden the local conveyance system. No significant adverse impacts related to sanitary sewage are expected.

STORMWATER RUNOFF

The impervious coverage on the Farley Complex and Development Transfer Site is not expected to change in the Preferred Alternative, as under the No Action Alternative, and therefore stormwater volumes from the Farley Complex site and the Development Transfer Site would not increase and no significant adverse stormwater impacts are expected.

SOLID WASTE

The proposed Project would participate in the City's recycling program and be designed to accommodate source separation of recyclables in conformance with City recycling regulations. This would include recycling paper, glass, metals, and certain plastics.

MOYNIHAN STATION

Based on *CEQR Technical Manual* solid waste generation rates, it is estimated that the proposed Moynihan Station and transit-related retail would generate an estimated peak demand of 14 tpw of commercial solid waste, as shown in Table 4.8-4.

NON-STATION DEVELOPMENT

The non-station development at the Farley Complex would generate approximately 74 tpw of commercial solid waste. Overall, the commercial solid waste generated at the Farley Complex, including Moynihan Station, would be approximately 88 tpw for the Preferred Alternative, which is 12 tpw greater than the commercial solid waste generated at the Farley Complex for the No Action Alternative.

The building proposed for the Development Transfer Site would result in an estimated peak demand of 19 and 78 tpw of municipal and commercial solid waste, respectively, a substantial increase over the commercial solid waste generation of 1.4 tpw for the site in the No Action Alternative. However, these volumes would represent a small increase over the City's daily solid

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waste generation of 12,000 tons per day of municipal waste collected by the DSNY and 10,000 tons per day of commercial waste collected by private carters. This estimated increase in solid waste in total for the Preferred Alternative would require less than two DSNY truck trips per week (typical capacities of 12.5 tons for a DSNY collection truck) and six additional truck trips per week by private carters (based on the typical capacity pf 1.5 tons for a private collection truck). As a result, the Preferred Alternative is not expected to adversely affect solid waste streams or recycling in the City.

**Table 4.8-4
Preferred and No Action Alternatives:
Solid Waste Generation (pounds per week)**

Use	Units/ Size/FA	Solid Waste Generation Rate	Preferred Alternative		No Action Alternative Commercial Solid Waste
			Municipal Solid Waste	Commercial Solid Waste	
MOYNIHAN STATION					
Train station	300,000 sf	25/employee		0 ¹	
Transit retail	86,000 sf 347 employees	79/employee		27,400	
Subtotal Moynihan Station				27,400 (14 tpw)	
NON-STATION DEVELOPMET					
Farley Complex					
USPS	265,000 sf 500 employees	13/employee		6,500	6,500
Hotel	125,000 sf 79 employees	75/employee		5,900	
Retail ²	597,350 sf 1,493 employees	79/employee		118,000	117,000
Banquet	35,000 sf 70 employees	251/employee		17,600	
Office	0	13/employee		0	28,650
Subtotal Non-Station Development Farley Complex				148,000 (74 tpw)	152,150 (76 tpw)
Development Transfer Site					
Residential	940 units	41/residential unit	38,500		
Retail	120,000 sf 300 employees	79/employee		23,700	2,765
Subtotal Development Transfer Site			38,500	23,700	2,765
Total Non-Station Development			38,500	171,700	140,240
TOTAL			38,500	199,100	140,240
Notes:					
¹ No new employees or patrons; expected same number of existing Penn Station employees; demand from this population not included in this analysis.					
² Commercial retail square footage includes common areas, docks/service, and office core/lobby square footage. Solid waste generation calculations are based on the <i>CEQR Technical Manual</i> . For office employees, an estimated rate of 1 employee/250 sf was used; for retail employees, 1 employee/400 sf was used.					

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