10.0 Water and Sewer Infrastructure

A. Introduction

This chapter examines the potential effects of the Proposed Actions on the City's water supply, wastewater treatment, and stormwater management infrastructure in accordance with the 2021 *CEQR Technical Manual*.

As described in Chapter 1, "Project Description," the Proposed Actions consist of a series of land use actions, including zoning map amendments and zoning text amendments, including the establishment of a new special district and MIH area.

The Affected Area comprises an approximately 42-block area consisting of four noncontiguous manufacturing-zoned areas roughly bounded by 40th Street to the north, Fifth Avenue to the east, 23rd Street to the south, and Ninth Avenue to the west.

Under the RWCDS, the Proposed Actions are anticipated to facilitate the development of 10,924,194 gsf of floor area, including 9,867,999 gsf of residential floor area (approximately 9,730 DUs), 893,752 gsf of local retail uses, 66,704 gsf of office uses, and 95,739 gsf of community facility uses. Development facilitated by the Proposed Actions is anticipated to be complete and occupied by 2034.

B. Principal Conclusions

Water Supply

The Proposed Actions are not expected to result in significant adverse impacts on the City's water supply system. Development facilitated by the Proposed Actions is anticipated to generate a water supply demand of approximately 2,039,202 gallons per day (gpd) (or approximately 2.03 million gallons per day [mgd]), representing an approximately 1,310,333 gpd (or approximately 1.31 mgd) increase compared to the future without the Proposed Actions. Water supply demand would be dispersed throughout an approximately 42-block area and would represent approximately 0.13 percent of the City's average daily water supply of approximately one billion gallons per day.

Wastewater Treatment

The development facilitated by the Proposed Actions is anticipated to generate approximately 1,859,649 gpd (or approximately 1.85 mgd) of sanitary sewage, representing an increase of approximately 1,540,228 gpd (or approximately 1.54 mgd) compared to the future without the Proposed Actions. Most of sanitary wastewater generated by this development (approximately 82 percent or 1,262,456 gpd) would be conveyed to the North River Wastewater Resource Recovery Facility (WRRF). The remaining 18 percent (277,772 gpd) of total sanitary sewage generated by the Proposed Actions would convey to the Newtown Creek WRRF.

The With-Action condition would introduce 1.26 mgd of sanitary sewage to the North River WRRF. This WRRF has a permitted capacity of 170 mgd and existing average dry weather flow of 112 mgd. Therefore, the With-Action condition would not result in the North River WRRF to exceed

capacity. The With-Action condition would introduce 0.27 mgd of sanitary sewage to the Newtown Creek WRRF. This WRRF has a permitted capacity of 310 mgd and existing average dry weather flow of 212 mgd. Therefore, the With-Action condition would not result in the Newtown Creek WRRF to exceed capacity. Each WRRF would continue to have reserve capacity under the With-Action condition.

Therefore, the Proposed Actions would not result in a significant adverse impact to the City's wastewater treatment facilities.

Stormwater and Drainage Management

The Affected Area is located within a combined sewer area and drains to the North River and Newtown Creek WRRF. Depending on rainfall volume and duration, the total volumes to the combined sewer systems (CSS) would range from 0.05 to 1.90 mgd.

The North River WRRF has available capacity of approximately 58 mgd, while the Newtown Creek WRRF has available capacity of approximately 98 mgd; therefore, the increase in stormwater runoff generated within the Affected Area would not overburden either WRRF, and no significant impacts to water quality are anticipated. In addition, best management practices (BMPs) would be implemented in conjunction with development facilitated by the Proposed Actions, consistent with the City's site connection requirements, and the Unified Stormwater Rule (NYCDEP 2022). Based on this information, the Proposed Actions would not result in a significant adverse impact related to wastewater or stormwater conveyance and treatment infrastructure.

C. Methodology

Pursuant to the 2021 *CEQR Technical Manual*, a preliminary water supply infrastructure analysis is warranted if a project is anticipated to result in a water demand of greater than 1 million gpd or is in an area that experiences low water pressure (e.g., areas at the end of the water supply distribution system). The Affected Area is not within an area that experiences low water pressure; however, the Proposed Actions would result in a net water demand of approximately 1.31 mgd (compared to the future without the Proposed Actions). Therefore, an assessment of water supply is warranted.

Pursuant to the 2021 *CEQR Technical Manual*, an assessment of wastewater and stormwater conveyance and treatment infrastructure is warranted if a project is in a combined sewer area and would exceed the following incremental thresholds: 1,000 residential units or 250,000 sf of commercial or community facility space in Manhattan, or 400 residential units or 150,000 sf of commercial space in the Bronx, Brooklyn, Staten Island, or Queens. The Affected Area is located in Manhattan, and the Proposed Actions would result in a net increase of more than 1,000 residential units and more than 250,000 sf of commercial space; therefore, an assessment of wastewater and stormwater infrastructure is warranted.

To assess the Proposed Actions' potential impacts on water and sewer infrastructure, this chapter:

- Describes the existing water and sewer infrastructure serving the Affected Area.
- Forecasts water demand, sanitary sewage, and stormwater generation associated with the Proposed Actions, consistent with the RWCDS based on 2021 *CEQR Technical Manual* guidance.
- Assesses the effects of the water demand, sanitary sewage, and stormwater generation associated with the Proposed Actions on the City's water and sewer infrastructure based on 2021 *CEQR Technical Manual* guidance.

Regulatory Context

Sanitary wastewater and stormwater within New York City are governed by State Pollutant Discharge Elimination System (SPDES) permits issued by the New York State Department of Environmental Conservation (NYSDEC) in compliance with the Clean Water Act. However, the SPDES program is broader in scope than that required by the Clean Water Act because it controls point source discharges to groundwater as well as surface waters. In addition, New York City is a regulated Municipal Separate Storm Sewer System (MS4), discharging stormwater runoff directly to local waterbodies. The City has prepared a Stormwater Management Program Plan (SWMPP) that identifies approaches for minimizing non-point source (runoff-generated) pollution of waterways from operations of facilities and construction activities.

NYCDEP proposed amendments to Chapters 31 and 19.1 of Title 15 of the RCNY as part of a Unified Stormwater Rule. In August 2020, the New York City Council passed Introduced Resolution No. 1851, enabling NYCDEP to move forward with the Chapter 19.1 amendments necessary to package the Unified Stormwater Rule amendments. The proposed Unified Stormwater Rule amendments were publicly reviewed and published as final on February 15, 2022. The Unified Stormwater Rule introduces new on-site stormwater management volume requirements, which increase the total volume of water that must be managed on new and redeveloped properties and updates the type and performance of on-site stormwater management practices that must be implemented.

D. Preliminary Analysis

Existing Conditions

Water Supply

The New York City water supply system consists of a network of reservoirs, lakes, and aqueducts extending into the Catskill region and a pipe network that distributes water within the City. New York City obtains nearly all of its water from the Delaware, Catskill, and Croton watersheds, which are within 125 miles of the City. Water from the watersheds is stored at 19 reservoirs and 3 controlled lakes with a combined capacity of approximately 550 billion gallons.[1] The water is then carried into the City by a number of aqueducts. The water enters the City via City Tunnel 1 (which runs through the Bronx, Manhattan, and Queens) and City Tunnel 2 (which runs through the Bronx, Queens, and Brooklyn). The partially completed City Tunnel 3 serves the Bronx,

[1] *CEQR Technical Manual* (2021).

Manhattan, and Queens and, when fully complete, will terminate in Brooklyn. Staten Island obtains its water via the Richmond Tunnel, which is an extension of City Tunnel 2.

The three city tunnels distribute water into a network of water mains. Water mains up to 96 inches (8 feet) in diameter feed smaller mains that deliver water to its final destination. Nearly all the water reaches consumers by gravity alone, although approximately 4 percent (generally at the outer limits of the system where in-line pressure is lowest, at high elevations, or at a pressure extremity, such as Far Rockaway) is pumped to its final destination. Pressure regulators throughout the City monitor and control the water pressure.

Table 10-1~~**Table 10-1**~~ shows the existing water use on the projected development sites and conversion area and the associated water consumption and wastewater generation rates. Based on the water consumption rates, the existing water demand on the projected development sites and conversion area is approximately 728,869 gpd, including approximately 319,421 gpd for domestic uses and approximately 409,448 gpd for air conditioning.

Table 10-1: Existing Water Consumption and Wastewater Generation

Land Use	Water Consumption and Wastewater Generation Rates	Unit	Domestic Water/ Wastewater Generation (gpd)	Air Conditioning (gpd)
Residential[1]	Domestic: 100 gpd/person	91 residents	9,100	-
Commercial/Office	Domestic: 0.10 gpd/sf	799,323 gsf	79,932	135,885
	Air Conditioning: 0.17 gpd/sf			
Retail	Domestic: 0.24 gpd/ sf	431,623 gsf	103,590	73,376
	Air Conditioning: 0.17 gpd/sf			
Commercial Conversion Area	Domestic: 0.10 gpd/sf	1,093,808 gsf	109,381	185,947
	Air Conditioning: 0.17 gpd/sf			
Community Facilities[2]	Domestic: 0.10 gpd/sf	13,984 gsf	1,398	2,377
	Air Conditioning: 0.17 gpd/sf			
Industrial/Warehouse	Domestic: 10,000 gpd/acre	69,782 gsf	16,020	11,863
	Air Conditioning: 0.17 gpd/sf			
Total Existing Water Demand (gpd)			**728,869**	
Total Existing Wastewater Generation (gpd)			**319,421**	

Source: 2021 *CEQR Technical Manual*, Chapter 13: Table 13-2 "Water Usage and Sewage Generation Rates for Use in Impact Assessment."

Notes:

1 Residential DUs assume 1.68 residents per DU, based on the average household size for Manhattan Community Districts 4 and 5 (2020 Decennial Census).

2 Assumes same rate as commercial/ office.

Wastewater Treatment

According to the 2021 *CEQR Technical Manual*, wastewater includes sanitary sewage, wastewater generated by industries, and stormwater. Water used for air conditioning generates a negligible amount of wastewater because it recirculates or evaporates in the cooling and heating process.

Much of New York City's wastewater treatment system is composed of the sewer network underneath the streets and the 14 WRRFs throughout the City. Most of the City's sewers are combined sewers that collect both sanitary sewage and stormwater. In periods of dry weather, the combined sewers (sized to convey an amount of sanitary sewage that is based on density levels) convey only sanitary sewage. During and immediately after wet weather, combined sewers can experience increased flow due to stormwater runoff collection. To control flooding at the

WRRFs, sewer regulators are built into the system to serve as relief valves, allowing only approximately two times the amount of designed dry weather flow into the interceptors (larger sewers that convey wastewater to the WRRFs). The interceptors then take the allowable flow to the WRRFs, while the excess flow is discharged untreated to the nearest waterbody as combined sewer overflow (CSO).

During the 1990s, the City instituted a range of water conservation measures in response to flows to the City's WRRFs that exceeded the dry weather flow allowed in accordance with their respective SPDES permits. Measures included equipping fire hydrants with locks to prevent illegal uses and requiring that all new plumbing fixtures in the City (including replacements in existing structures and new fixtures in new structures) be of a low-flow design (Local Law No. 29, 1989). The City also implemented an Automated Meter Reading program, installing water meters at thousands of properties where water fees had previously been based on property frontage rather than usage. This metering provided a new financial incentive to identify and repair leaks in the water distribution system. These programs have reduced water demand and load at the City's WRRFs. At many WRRFs, this reduction has been on the order of magnitude of several million gpd. Overall, water demand is down more than 30 percent since the 1990s, despite population growth. NYCDEP anticipates that savings from the continued implementation of these and other conservation measures would exceed increases in water demand from consumers.

Most of the Affected Area is served by combined sewers that primarily convey flows to the North River WRRF (see **Figure 10-1**); however, four projected development sites would convey sanitary wastewater (and stormwater) to the Newtown Creek WRRF. At WRRFs, wastewater is fully treated by physical and biological processes before it is discharged as effluent. The quality of the effluent is regulated by an NYSDEC-issued SPDES permit that establishes limits for effluent parameters (i.e., suspended solids, fecal coliform bacteria, and other pollutants). Because the volume of flow to a WRRF affects the level of treatment a plant can provide, the SPDES permit also establishes a maximum permitted capacity. For the North River WRRF, the maximum permitted dry weather flow capacity is 170 mgd; the average monthly flow to the North River WRRF is 112 mgd, which is approximately 66 percent of the permitted capacity. The Newtown Creek has a maximum dry weather flow capacity of 310 mgd. The average monthly flow to Newtown Creek WRRF is 212 mgd, which is approximately 68 percent of the permitted capacity. Each WRRF is designed to treat up to twice the maximum dry weather flow capacity during wet weather. **Table 10-2** shows the average monthly flow to each of these WRRF for the last 12 months for the most recently available data.

Table 10-2: Existing North River and Newtown Creek WRRF Average Daily Sewer Flows

Year	Month	North River WRRF (mgd)	Newtown Creek WRRF (mgd)
2023	May	102	188
	June	103	188
	July	112	207
	August	112	223
	September	131	248
	October	111	207
	November	106	195
	December	117	222
2024	January	116	221
	February	105	203
	March	119	230
	April	110	212
12-Month Average:		**112**	**212**

Source: DEP "Monthly Operating Efficiency" tables, 2023 and April 2024.

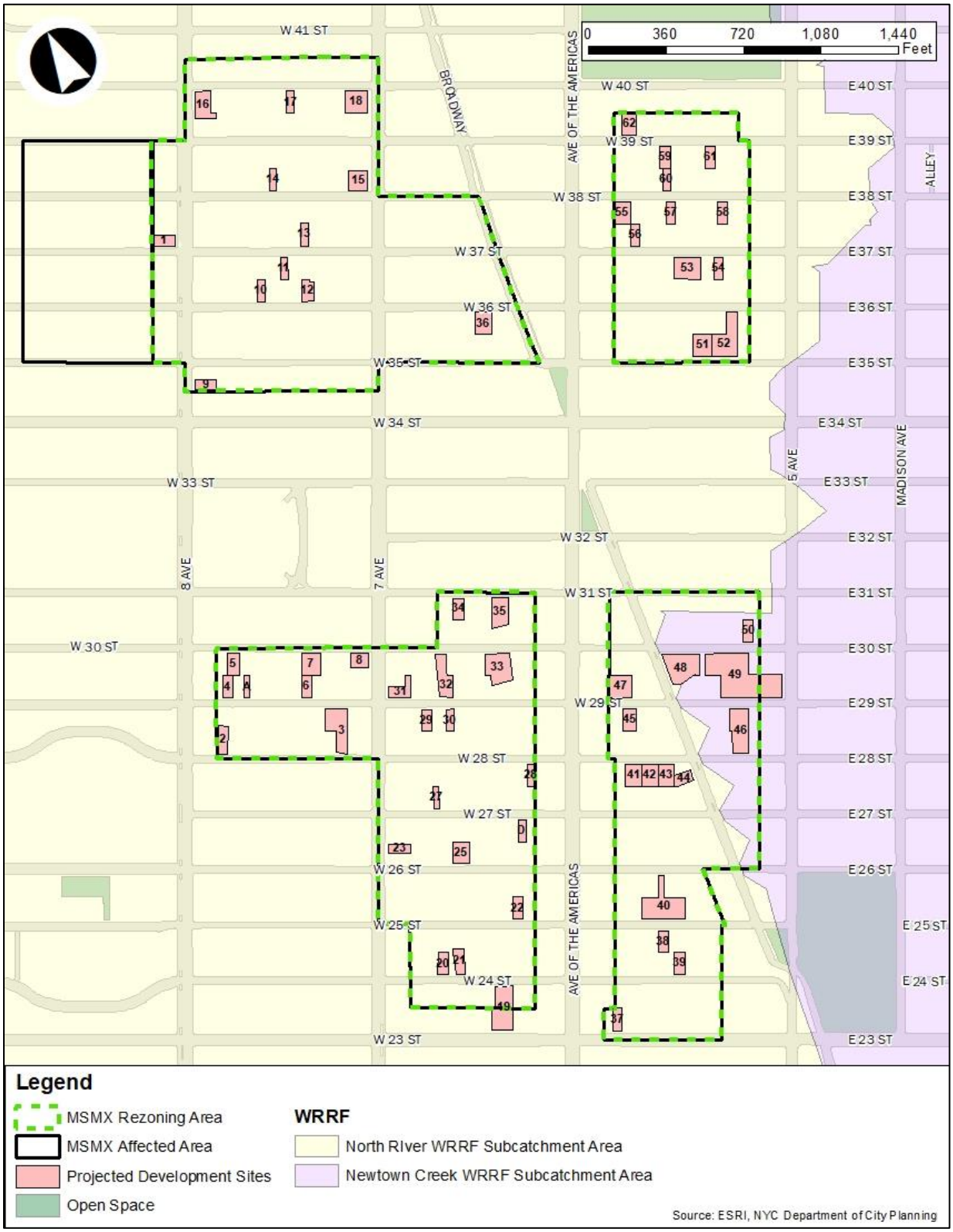
As shown in **Figure 10-1**, the North River WRRF would serve the majority of the projected development sites and conversion area. Four projected development sites would be served by the Newtown Creek WRRF. **Table 10-3** shows the estimated existing wastewater generated on the projected development sites and conversion area within each of the affected WRRF areas.

Table 10-3: Existing Wastewater Generation by Subcatchment Area

Subcatchment Area	Projected Development Sites	Domestic Water/Wastewater Generated on the Projected Development Sites (gpd)
North River WRRF	1-45, 47, 51-62	291,214 gpd
Newtown Creek WRRF	46, 48-50	28,207 gpd

Source: 2021 *CEQR Technical Manual*

Figure 10-1: WRRF Subcatchment Areas



Stormwater and Drainage Management

The volume of stormwater runoff generated at a property varies depending on the type of land cover. NYCDEP defines runoff coefficients associated with the pervious or impervious qualities of the land cover. Pursuant to guidance in the 2021 *CEQR Technical Manual*, grass and softscape have a runoff coefficient of 0.20 because of their relative ability to absorb rainfall, whereas roof and pavement areas have higher runoff coefficients of 1.00 and 0.85, respectively, due to the relative inability of these surfaces to absorb rainfall.

The 61 projected development sites within the Rezoning Area are a mix of buildings, paved areas (such as surface parking lots), and pervious unpaved or vacant land. The combined total area of the projected development sites is approximately 11.4 acres. **Table 10-4** summarizes the surfaces and surface areas within each drainage area, as well as the associated weighted runoff coefficient (the fraction of precipitation that becomes surface runoff for each surface type).

The total lot area of the projected development sites is approximately 498,324 sf, of which approximately 81.9 percent is located within the North River WRRF drainage area and 18.1 percent is located within the Newtown Creek WRRF drainage area.

As shown in **Table 10-4**, the North River and Newtown Creek WRRF drainage areas, have weighted runoff coefficients of approximately 0.98 and 0.93, respectively.

Table 10-4: Existing Surface Coverage by WRRF Drainage Area

Drainage Area	Surface Type	Roof	Pavement, Walks, Other	Grass & Softscape	Total
North River WRRF	Area (%)	86%	14%	0%	100%
	Surface Area (sf)	349,145 sf	59,017 sf	0 sf	408,161 sf
	Runoff Coefficient	1.00	0.85	0.20	0.98
Newtown Creek WRRF	Area (%)	50%	50%	0%	100%
	Surface Area (sf)	45,104 sf	45,058 sf	0 sf	90,162 sf
	Runoff Coefficient	1.00	0.85	0.20	0.93

Source: DCP Building Footprint and MapPLUTO data (2024v1.1); aerial photographs.

Using the sanitary and stormwater flow calculations provided in the 2021 *CEQR Technical Manual*, the Flow Volume Calculation Matrix was completed for the existing conditions for each drainage area. The calculations from the Flow Volume Calculation Matrix assist in determining the wastewater flow volumes to the combined sewer system and include four rainfall volume scenarios with varying durations. The summary tables of the Flow Volume Calculation matrices for existing conditions are included in **Table 10-5**.

Table 10-5: Existing Condition Flow Volume Matrix

Drainage Area	Total Area (Acres)	Rainfall (inches)	Rainfall Duration (hour)	Weighted Runoff Coefficient	Runoff Volume to Direct Drainage (mg)	Runoff Volume to CSS (mg)	Sanitary Volume to CSS (mg)	Total Volume to CSS (mg)
North River WRRF	9.37	0.00	3.80	0.98	0.00	0.00	0.05	0.05
		0.40	3.80		0.00	0.10	0.05	0.15
		1.20	11.30		0.00	0.30	0.14	0.44
		2.50	19.50		0.00	0.62	0.23	0.85
Newtown Creek WRRF	2.07	0.00	3.80	0.93	0.00	0.00	0.00	0.00
		0.40	3.80		0.00	0.02	0.00	0.02
		1.20	11.30		0.00	0.06	0.01	0.07
		2.50	19.50		0.00	0.13	0.02	0.15

Source: 2021 *CEQR Technical Manual*
Note: Totals may not sum due to rounding.
Key: CSS = Combined Sewer System; mg = million gallons

Individual properties are required to manage on-site stormwater runoff in accordance with NYCDEP requirements. Because many of the buildings in the Affected Area likely pre-date NYCDEP stormwater runoff management requirements, little or no existing on-site detention of stormwater on the projected development sites is expected.

No-Action Condition

As discussed in Chapter 1, "Project Description," under the 2034 Future without the Proposed Actions (the No-Action condition), the projected development sites and conversion area would remain the same as under existing conditions. As such, the demand for water, wastewater generation, and stormwater runoff would be the same as under existing conditions (refer to **Tables 10-1** through **10-5**).

With-Action Condition

Under the With-Action condition, the Proposed Actions are anticipated to facilitate the development of approximately 10,924,194 gsf of floor area, including 9,867,999 gsf of residential floor area approximately 9,730 DUs, 893,752 gsf of local retail uses, 66,704 gsf of commercial office uses, 13,984 gsf of house of worship space, and 81,755 gsf for a 238-seat elementary school.

Compared to the No-Action condition, the With-Action conditions would result in an incremental increase of approximately 9,786,389 gsf of residential floor area (9,676 DUs), 462,129 gsf of local retail space, 81,755 gsf of community facility space (elementary school). The With-Action conditions would represent a net reduction of approximately 225 accessory parking spaces, and

a net decrease of approximately 17,386 gsf of industrial, 52,396 gsf of warehouse space, and 732,619 gsf of office space.

Water Supply

The Proposed Actions are not anticipated to result in significant adverse impacts to the City's water supply system. As described in **Table 10-6**, the Proposed Actions are expected to result in a water supply demand of approximately 2,039,202 gpd (or approximately 2.03 mgd), representing an increase of approximately 1,310,333 gpd (or approximately 1.31 mgd) compared to the future without the Proposed Actions. Water supply demand would be dispersed throughout an approximately 42-block area and would represent approximately 0.13 percent of the City's average daily water supply of approximately one billion gallons per day.

Table 10-6: With-Action Condition Water Consumption and Wastewater Generation

Land Use	Water Consumption and Wastewater Generation Rates	Unit	Domestic Water/ Wastewater Generation (gpd)	Air Conditioning (gpd)
Residential[1]	Domestic: 100 gpd/ person	16,347 residents	1,634,700	-
Commercial/ Office	Domestic: 0.10 gpd/ sf	66,704 gsf	6,670	11,340
	Air Conditioning: 0.17 gpd/sf			
Retail	Domestic: 0.24 gpd/sf	431,623 gsf	214,500	151,938
	Air Conditioning: 0.17 gpd/sf			
Community Facilities[2]	Domestic: 0.10 gpd/sf	13,984 gsf	1,398	2,377
	Air Conditioning: 0.17 gpd/sf			
Schools	Domestic: 10 gpd/ seat	238 seats	2,380	13,898
	Air Conditioning: 0.17 gpd/sf	81,755 gsf		
Total With Action Water Demand (gpd)			**2,039,202**	
Total With Action Wastewater Generation (gpd)			**1,859,649**	
Incremental Water Demand (gpd)			***1,310,333***	
Incremental Wastewater Generation (gpd)			***1,540,228***	

Source: *CEQR Technical Manual* (2021), Chapter 13: Table 13-2 "Water Usage and Sewage Generation Rates for Use in Impact Assessment."

Notes:

[1] Residential dwelling units assume 1.68 residents per dwelling unit, based on the average household size for Manhattan Community Districts 4 and 5 (2020 Decennial Census).

[2] Assumes same rate as commercial/ office.

Wastewater Treatment

Under the With-Action conditions, wastewater generated on the projected development sites would continue to be conveyed primarily to the North River WRRF, with a smaller amount conveyed to the Newtown Creek WRRF. The Proposed Actions are not expected to affect the capacity of either WRRF, and each would continue to operate with a design capacity of approximately 170 mgd and 310 mgd, respectively. As shown in **Table 10-7**, the Proposed Actions are expected to generate approximately 1,854,349 gpd (or approximately 1.85 mgd) of sanitary sewage, representing an approximately 1,539,358 gpd (or approximately 1.54 mgd) increase compared to the No-Action condition. With an existing flow of approximately 112 mgd (below the maximum permitted dry weather flow capacity of approximately 170 mgd) and the addition of approximately 1.26 mgd associated with the incremental development from the With-Action conditions, the North River WRRF would continue to operate within its design capacity and maintain reserve capacity. The Newtown Creek WRRF would receive approximately 0.27 mgd associated with incremental development from the With-Action condition. With an existing flow of 212 mgd and a permitted maximum flow of 310 mgd, the Newtown Creek WRRF would continue to operate within its design capacity.

Table 10-7 ~~Error! Reference source not found.~~ shows the anticipated increase in sanitary sewage generated by the development from the With-Action conditions within each of the applicable WRRF area.

Table 10-7: Incremental Wastewater Generation by WRRF Area

Subcatchment Area	Projected Development Sites	Domestic Water/Wastewater Generated on the Projected Development Sites (gpd)
North River WRRF	1-45, 47, 51-61	1,262,456 gpd
Newtown Creek WRRF	46, 48-50	277,772 gpd

Source: 2021 *CEQR Technical Manual*

Pursuant to the 2021 *CEQR Technical Manual* guidance, because the North River and Newtown Creek WRRFs would continue to operate with an available capacity, the Proposed Actions are not anticipated to result in a significant adverse impact to the City's wastewater treatment services, and no further analysis is warranted.

Stormwater and Drainage Management

The With-Action conditions are anticipated to result in an increase in the amount of impervious surface area across the projected development sites compared to the No-Action condition. As shown in **Table 10-8**, roof area is conservatively estimated to make up 100 percent of the surface areas in the two drainage areas. While several of the projected development sites are expected to include landscaped areas with potentially pervious surfaces, the amount and location of landscaped areas are not known at this time; therefore, for the purposes of a conservative analysis, the lot areas on the projected development sites are assumed to be covered in rooftop area. As such, the weighted runoff coefficients for the projected development sites are expected to increase compared to the No-Action condition, though the increases would be relatively minor.

Table 10-8: With-Action Condition Surface Coverage by Subcatchment Area

Drainage Area	Surface Type	Roof	Pavement, Walks, Other	Grass & Softscape	Total
North River WRRF	Area (%)	100%	0%	0%	100%
	Surface Area (sf)	408,161 sf	0 sf	0 sf	408,161 sf
	Runoff Coefficient	1.00	0.85	0.20	1.0
Newtown Creek WRRF	Area (%)	50%	0%	0%	100%
	Surface Area (sf)	90,162 sf	0sf	0 sf	90,162 sf
	Runoff Coefficient	1.00	0.85	0.20	1.0

Using the projected sanitary and stormwater flows provided in the 2021 *CEQR Technical Manual*, a Flow Volume Calculation Matrix was completed for the With-Action condition for each subcatchment area. The summary tables of the Flow Volume Calculation matrices are included in **Table 10-9**.

Table 10-9: With-Action Condition Flow Volume Matrix

Drainage Area	Total Area (Acres)	Rainfall (inch)	Rainfall Duration (hour)	Weighted Runoff Coefficient	Runoff Volume to Direct Drainage (mg)	Runoff Volume to CSS (mg)	Sanitary Volume to CSS (mg)	Total Volume to CSS (mg)
North River WRRF	9.37	0.00	3.80	1.0	0.00	0.00	0.25	0.25
		0.40	3.80		0.00	0.10	0.25	0.35
		1.20	11.30		0.00	0.31	0.73	1.04
		2.50	19.50		0.00	0.64	1.26	1.90
Newtown Creek WRRF	2.07	0.00	3.80	1.0	0.00	0.00	0.05	0.05
		0.40	3.80		0.00	0.02	0.05	0.07
		1.20	11.30		0.00	0.07	0.14	0.21
		2.50	19.50		0.00	0.14	0.25	0.39

Source: 2021 *CEQR Technical Manual*
Notes: Totals may not sum due to rounding.
Key:

As shown in **Table 10-9**, additional stormwater flow volumes would be introduced to the combined sewer system as a result of the Proposed Actions. However, the stormwater flows presented above do no account for the reduction in stormwater flow that would be required through adherence to the City's Unified Stormwater Rule.

In New York City, new development must comply with the Unified Stormwater Rule (consistent Chapters 19.1 and 31 of Title 15 of the RCNY). These regulations require that stormwater be

released from redeveloped sites at a rate lower than that calculated consistent with guidance in the 2021 *CEQR Technical Manual*. As described in Chapter 31 of Title 15 of RCNY, the permissible stormwater release rate is the greater of 0.046 cubic feet per second (cfs), or 0.10 cfs per acre. These mandated release rates were selected to reduce the potential effects of development on the City's sewer system and to reduce the likelihood and severity of CSO events. With the Unified Stormwater Rule establishing maximum stormwater release rates, the Proposed Actions are anticipated to result in a nominal effect on the City sewer system.

The Proposed Actions would increase development and population density that could require a hydraulic analysis of the existing sewer system when site-specific applicants seek sewer connections, and an amended drainage plan for the area(s) when improvements to the system are planned. If applicable, the hydraulic analyses would be required prior to the submittal of a Site Connection Proposal (SCP) application to determine whether the existing sewer system is capable of supporting new development and the related increase in wastewater flow.

As part of the SCP permit approval processes, developments must comply with the required on-site stormwater volume requirements and stormwater release rate as detailed in the Unified Stormwater Rule. Sewer improvements may also be required at the time of the SCP. Each projected development site, regardless of lot size, would be required to implement slow-release stormwater management practices to satisfy the updated release rate and volume requirements on-site. The Unified Stormwater Rule ensures that redeveloped properties manage more total stormwater and manage it more efficiently than prior to redevelopment.

Accordingly, the Proposed Actions would increase sanitary flows to the City's combined sewer system but would decrease the amount that may be discharged as CSOs during rain events because of the Unified Stormwater Rule. In addition, because of the available capacity at the North River and Newtown Creek WRRFs, the projected increased flows to the combined sewer system are not anticipated to result in a significant adverse impact on each WRRF.

Based on this information, the Proposed Actions are not anticipated to result in significant adverse impacts to the City's water supply or wastewater and stormwater conveyance and treatment infrastructure, and no further analysis is warranted.