

Chapter 13:

Utilities and Energy

13.1 INTRODUCTION

This chapter presents the analysis FRA conducted to assess the potential effects of the No Action Alternative and the Preferred Alternative on utility infrastructure and services, in particular: water supply, wastewater, and stormwater services; solid waste and sanitation services; and energy. FRA's analysis considered the utility services and infrastructure serving the Project Site and the additional demands on utility infrastructure that would result from operation of the Preferred Alternative. In addition, the analysis considers potential effects to utility services during construction of the Preferred Alternative, including potential disruptions to service and any temporary or permanent relocation(s) of utility services that may be required.

13.2 REGULATORY CONTEXT

The New York Public Service Commission regulates utilities, stormwater, and other related water utilities under the New York Energy Law. In addition, NYCDEP owns and regulates the sanitary sewage and stormwater collection and treatment system within New York City. For additional details on the regulatory context for this resource category, please refer to Chapter 10 of **Appendix B**, "Methodology Report."

13.3 ANALYSIS METHODOLOGY

FRA followed 23 CFR Part 771 and relevant CEQ guidelines, as well as the methodology guidelines set forth in the *CEQR Technical Manual* (see Chapters 13, 14, and 15) to prepare the analyses presented in this chapter.

The Study Area for the analysis of utility infrastructure and services included the approximately 13-acre Project Site (described in Chapter 1, "Introduction," and shown on Figure 1-2), as well as streets immediately adjacent to the Project Site, which may contain affected utility infrastructure.

FRA obtained and compiled information, including as-built drawings and information for proposed infrastructure (as available) for existing and planned utility infrastructure and services for the Study Area from various government entities and private service providers. FRA reviewed the available infrastructure plans to support the impact analysis of the No Action Alternative and the Preferred Alternative for these resources.

FRA's analysis considered the potential for construction to affect existing utilities, including the need for any utility lines (e.g., electric, potable water, and/or sewer) requiring protection, relocation or replacement because of construction of the Preferred Alternative, and any associated service disruptions that could occur, along with identifying measures to minimize potential disruptions. This analysis also considered the additional demands that operation of the Preferred Alternative would place on the utility infrastructure and services in the area of the Project Site. In particular, the analyses focused on estimating the additional demands that the Preferred Alternative would place on utility services from the operation of the new and reconstructed LIRR infrastructure associated with the Platform (e.g., LIRR service buildings, ventilation system, life-safety systems, etc.), as described in more detail in Chapter 3, "Alternatives." In addition, as the Preferred Alternative includes a new permanent power substation for the operation of the rail yard (also described in Chapter 3), the analysis evaluated the need for and potential location(s) of any additional new, temporary, or permanent electric power substations and any other potential impacts to utilities from construction or operation of the Preferred Alternative.

Please see Analysis Methodology in Chapter 10 of **Appendix B**, for a complete detailed description of the analysis methodology FRA followed for this resource category.

13.4 AFFECTED ENVIRONMENT

13.4.1 WATER SUPPLY

The New York City water supply system—comprised of three watersheds: the Croton, Delaware, and Catskill—extends as far north as the Catskill Mountains, and delivers on average approximately 1.1 billion gallons of water per day to customers in the five boroughs and Westchester County. From these watersheds, potable water is conveyed to the City via a system of reservoirs, aqueducts, and tunnels. Two water tunnels serving the City (Water Tunnels No. 1 and 2) were constructed in the early 20th Century; more recently, a third tunnel, Water Tunnel No. 3, originating at Hillview Reservoir in Yonkers, has been constructed. The portion of Water Tunnel No. 3 serving Midtown Manhattan, including the Project Site and the surrounding area, was completed and activated in 2013. In Manhattan, groundwater is not used to supply potable water.

Within the City, a grid of water pipes distributes water to customers. The existing LIRR facilities on the Project Site are served by a private 6-inch water main that runs along the south and west sides of the site, which connects to an NYCDEP water main in Twelfth Avenue. The main feeds an internal water distribution piping network that extends primarily north-south throughout the Western Rail Yard. Existing water consumption at the Project Site is primarily related to LIRR operations within the Caemmerer Rail Yard (e.g., domestic supply, yard hydrants, and other fire protection systems).

13.4.2 WASTEWATER

The Project Site is located within a part of Manhattan that is primarily served by a combined sewer system operated and maintained by NYCDEP that collects both sanitary sewage and stormwater. In periods of dry weather, the combined sewers located in the adjacent streets convey only sanitary sewage. The Project Site contains a sanitary sewer system serving the existing LIRR facilities, which consists of five lateral pipes running by gravity through the site from north to south and connecting to a sanitary sewer at the south side of the site. The on-site sewer runs along the south side of the site and discharges to a pump station near Eleventh Avenue. The pump station discharges to a force main that runs east and south under Eleventh Avenue, and turns south to discharge into the NYCDEP combined sewer in West 30th Street. The West 30th Street sewer runs west to the interceptor sewer in Twelfth Avenue, which conveys flow to the North River Wastewater Treatment Plant (WWTP), one of the City's 14 WWTPs.

The North River WWTP is located in upper Manhattan on a platform over the Hudson River along Twelfth Avenue, between West 135th and West 145th Streets. At the WWTP, wastewater is fully treated by physical and biological process before it is discharged into the Hudson River. The quality of the treated wastewater (effluent) is regulated by a State Pollutant Discharge Elimination System (SPDES) permit issued by NYSDEC, which establishes limits for effluent parameters (i.e., suspended solids, fecal coliform bacteria, and other pollutants). Since the volume of flow to a WWTP affects the level of treatment a plant can provide, the maximum permitted capacity for the North River WWTP is 170 million gallons per day (mgd). The average monthly flow over the last 12-month period for which data is available is 110 mgd,¹ which is well below the maximum permitted capacity.

13.4.3 STORMWATER

As noted above, the Project Site is located in an area that is primarily served by a combined sewer system; during and immediately after wet weather, combined sewers collect stormwater runoff drains from City streets, building roofs, and other site surfaces. Because combined sewers can experience a much larger flow due to stormwater runoff collection, to control flooding at the WWTP, regulators are built into the system which allow only approximately two times the amount of design dry weather flow into the interceptors. The interceptor then takes the allowable flow to the WWTP, while the excess flow is discharged to the nearest waterbody as combined sewer overflow (CSO). In the case of the combined sewer on West 30th Street which conveys sanitary sewage generated on the Project Site, the regulator controlling flow to the interceptor and outfall is located at West 30th Street and Twelfth Avenue (N-45, SPDES Outfall No. 027), which flows into the Hudson River. The southern section of the Project Site, between West 30th Street and the approximate location of West 31st Street, includes land (“terra firma”) that is not occupied by LIRR operations. Stormwater runoff from this area drains by a combination of inlet drains and surface flows into street catch basins into the existing combined sewer system within West 30th Street. Depending on downstream flows within the interceptor sewer, Regulator N-45 either allows this drainage with effluent from other sources entering the regulator to drain into the interceptor sewer for treatment at the North River WWTP, or diverts some or all of the flows as a CSO event to discharge directly into the Hudson River.

Currently, stormwater collected on the LIRR facilities on the Western Rail Yard is not conveyed to the combined sewer. The Western Rail Yard utilizes a stormwater collection system consisting of five pipe runs with catch basins, which run primarily perpendicular to the tracks, conveying flow from north to south. The five runs connect to a 43-inch x 68-inch reinforced concrete storm sewer that runs east-west near the southern boundary of the yard to outfall into the Hudson River (this storm sewer also conveys stormwater flow from the Eastern Rail Yard, east of Eleventh Avenue). The storm sewer exits the Western Rail Yard near the extension of West 31st Street and Twelfth Avenue and runs south under Twelfth Avenue to tie into the outfall at West 30th Street downstream of Regulator N-45. Because the tie-in for the LIRR private storm sewer is downstream of the regulator chamber, the runoff from the Western Rail Yard has no opportunity to discharge into the City combined sewer system, and instead is considered a direct stormwater discharge into the Hudson River. The outfall is regulated under the NYSDEC’s General Permit for Stormwater Discharges from Municipal Separate Storm Sewer Systems (MS4s). LIRR is the permittee for the MS4 stormwater discharge from the Western Rail Yard.

¹ Twelve-month period through March 2017.

As part of prior approvals for the Western Rail Yard project, NYCDEP developed an Amended Drainage Plan (ADP) for a portion of the Hudson Yards area that includes the area generally bounded by Twelfth Avenue (Route 9A) to the west, West 40th Street to the north, West 32nd Street to the south, and Tenth Avenue to the east. The ADP identifies improvements to the existing storm and combined sewer system infrastructure that are necessary to accommodate the full build out of the Hudson Yards area. The ADP identifies replacement of the existing combined sewer in West 33rd Street, on the north side of the Project Site, with a separate storm sewer and sanitary sewer. The new storm sewer along the West 33rd Street would divert existing stormwater runoff from the combined sewer system. NYCDEP has designed the sewers proposed by the ADP of an adequate size to handle the flows that would be discharged from the Project Site as well as the adjacent Hudson Yards area.

13.4.4 SOLID WASTE AND SANITATION SERVICES

DSNY is the agency responsible for the collection and disposal of residential and institutional solid waste in New York City, while private carters collect solid waste from commercial and manufacturing uses. In addition to collecting municipal solid waste, refuse, and designated recyclable materials generated by residential and institutional uses (including schools, some nonprofit institutions, and many city and state agencies), DSNY also collects waste from city litter baskets, street-sweeping operations, and lot cleaning activities. The DSNY collection fleet is composed of over 2,100 waste collection trucks, with the typical collection truck for refuse carrying approximately 12.5 tons of waste material and the typical recycling truck carrying about 11.5 tons of paper or approximately 10.0 tons of metal, glass, and plastic containers. In total, DSNY collects approximately 9,680 tons per day of residential and institutional refuse and approximately 2,120 tons per day of recyclables.²

Commercial establishments (e.g., restaurants, retail facilities, offices, and industries) in New York City contract with private carters for collection and processing and/or disposal of various kinds of solid waste, including municipal solid waste construction and demolition debris, non-hazardous industrial wastes, and recyclables. According to the *CEQR Technical Manual*, commercial carters typically carry between 12 and 15 tons of waste material per truck. Private carting companies collect the approximately 13,000 tons of refuse generated each day by the City's businesses. As the only user currently on the Project Site is LIRR, and there are currently no residential or institutional users on the Project Site, solid waste generated on the Project Site is handled by private carters. Approximately four tons per week of solid waste are generated by LIRR operations at the Project Site.

Under New York City's mandatory Recycling Law (Title 16 of the NYC Administrative Code, Chapter 3), DSNY has established and enforces rules requiring that certain designated recyclable materials be separated from household waste for separate collection. New York City residents are required to separate aluminum foil, glass, plastic, and metal containers, and newspapers and other paper waste from household waste for separate collection. Commercial establishments are also subject to mandatory recycling requirements. Businesses must source-separate certain types of paper waste, cardboard, metal items, and construction wastes. Food and beverage establishments must recycle metal, glass, and plastic containers, and aluminum foil, in addition to meeting the commercial recycling requirements.

² "DSNY Annual Report; New York City Municipal Refuse and Recycling Statistics: Fiscal Year 2018," https://dsny.cityofnewyork.us/wp-content/uploads/2018/10/about_dsnynon-dsny-collections-FY2018.pdf

DSNY delivers most of the refuse it collects to certain public or private solid waste management facilities known as transfer stations in the City or in adjoining communities for processing and transporting to out-of-city disposal facilities. Solid wastes that are not recycled, reused, or converted to a useful product locally must be exported from the City for disposal because New York City does not have public or private local disposal facilities such as sanitary landfills, construction and demolition debris landfills, traditional incinerators, or waste-to-energy resources recovery facilities. Similarly, commercial refuse and other solid waste that is not carted directly to disposal facilities are delivered to transfer stations for transport to disposal facilities. Non-putrescible waste such as construction and demolition debris typically is sorted at transfer stations, which remove clean fill materials, metal, and wood for recycling, and send the residue to landfills for disposal.

As New York City has no public or private local disposal facilities, solid wastes that are not recycled, reused, or converted to a useful product locally must be exported from the City for disposal. Designated recyclable materials are delivered to privately operated materials recovery facilities (MRFs) in the City and surrounding communities. Paper recyclables collected by DSNY in Manhattan, Staten Island, and parts of Brooklyn are transported directly to the Pratt Industries Paper Plant in Staten Island, which processes them for use in the production of liner board and similar products.

As required by New York State Law, the City has adopted a comprehensive Solid Waste Management Plan (SWMP) for the long-term management of solid waste generated within its borders. The current SWMP was adopted in 2006 and covers the period through 2025. It is anticipated that City will amend the current plan after 2025 to build on the ongoing programs to prevent, reuse, recycle, and compost waste, pursuant to the requirements of the New York State Solid Waste Management Act. The SWMP estimates public- and private-sector waste quantities that must be managed over the planning period and identifies processing, transfer, and disposal capacity that will be necessary for such waste. According to the SWMP, the City's commercial solid waste generation is projected to increase to approximately 74,000 tons per week by the year 2025.³ The amount of DSNY-managed waste is projected to increase to approximately 115,830 tons per week.⁴

The SWMP takes into account the objectives of New York State's solid waste management policy with respect to the preferred hierarchy of waste management methods, in order of preference: waste reduction, recycling, composting, resource conservation and energy production, and landfill disposal. The SWMP includes initiatives and programs for waste minimization, reuse, recycling, composting, and siting a new waste conversion facility to derive energy from waste, waste transfer, transport, and out-of-city disposal at waste-to-energy facilities and landfills. With respect to commercial waste, the SWMP provides the capacity for barge export of certain amounts of commercial refuse from four converted DSNY marine transfer stations (MTSs); provides for barge export of construction and demolition waste from the existing DSNY MTSs at West 59th Street; and requires rail export of commercial refuse from the three private transfer stations that also contract to handle DSNY refuse. The SWMP also includes more stringent restrictions on the siting and operation of commercial solid waste transfer stations.

³ Comprehensive Solid Waste Management Plan, September 2006; Attachment IV, Table IV 2-2.

⁴ Comprehensive Solid Waste Management Plan, September 2006; Attachment II, Table II 2-6.

13.4.5 ENERGY

Within New York City, electricity is generated and delivered to most users by Con Edison, as well as a number of independent power companies. Electrical energy in New York City is drawn from a variety of sources that originate both within and outside the City. These include non-renewable sources (such as oil, natural gas, and coal fuel) and renewable sources (such as hydroelectricity and, to a much lesser extent, biomass fuels, solar power, and wind power). Electricity consumed in New York City is generated in various locations, including sites within New York City, locations across the Northeast, and places as far away as Canada.

Con Edison distributes power throughout New York City and Westchester County. Transmission substations receive electricity from the regional high voltage transmission system and reduce the voltage to a level that can be delivered to area substations. Area substations further reduce the voltage to a level that can be delivered to the distribution system, or the street “grid.” Within the grid, voltage is further reduced for delivery to customers. Each substation serves one or more distinct geographic areas, called networks, which are isolated from the rest of the local distribution system. If service is lost at a specific substation or substations, the network functions to isolate any problems from other parts of the city. Substations are also designed to have sufficient capacity for the network to grow.

In 2019 (the latest year for which data are available), approximately 55 billion kilowatt hours (KWH), or 188 trillion BTUs of electricity were delivered in Con Edison’s service area. In addition, Con Edison supplied approximately 179 trillion BTUs of natural gas and approximately 20 billion pounds of steam, which is equivalent to approximately 21 trillion BTUs.⁵ Overall, approximately 388 trillion BTUs of energy are consumed within Con Edison’s New York City and Westchester County service area annually.

On the Project Site, the existing Western Rail Yard consumes electric power for rail traction power, signal and communications systems, electrical requirement for nighttime yard lighting, and operation of buildings and maintenance operations within the yard. Connections to the Con Edison grid system supplies power to the existing yard; the site contains underground alternating current (AC) ducts, which provide power for lighting and other yard systems, and underground direct current (DC) ducts, which feed the traction power system throughout the yard.⁶ As rail yard is currently open, there are no mechanical cooling or ventilation requirements within the rail yard excluding the existing buildings.

13.5 ENVIRONMENTAL CONSEQUENCES

13.5.1 NO ACTION ALTERNATIVE

The existing use of the rail yard and associated LIRR facilities, as well as their maintenance regimen would continue under the No Action Alternative. Therefore, FRA’s analyses considered the demands that existing uses on the Project Site currently place on the utility infrastructure and services in the area. In addition to the LIRR train yard, the Project Site currently contains four buildings which provide space for LIRR support services, including equipment storage, offices, and staff locker rooms. The Emergency Services Building contains emergency electrical equipment. In total, these buildings contain approximately 19,100 sf of space. In the No Action Alternative, the existing LIRR support buildings on the Project Site would remain in their current location, condition and operations. LIRR would continue maintaining these buildings.

⁵ Consolidated Edison Annual Report, 2019.

⁶ The DC feed is routed from the underground ducts to various points in the yard where they then come above ground to terminate to a feeder rail that is then used to supply power to the “third rail.”

13.5.1.1 WATER SUPPLY

As noted above, existing water consumption at the Project Site is primarily related to LIRR operations within the Western Rail Yard, and an internal water distribution piping network connected to an NYCDEP water main in Twelfth Avenue serves the existing LIRR facilities on the Project Site. Water consumption from these existing uses in the No Action Alternative were estimated based on the approximate square footage of the four LIRR buildings currently in operation utilizing the rates presented in the *CEQR Technical Manual*. For purposes of analysis, based on the general use of the buildings for LIRR staff and operations, FRA assumed that the facilities generate water consumption at the rates of commercial office space. 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). The *CEQR Technical Manual* usage rates reflect the effects of Local Law No. 29.

As shown in **Table 13-1**, FRA estimated that the existing uses on the Project Site currently consume approximately 5,157 gallons per day (gpd), including approximately 1,910 gpd for domestic uses and approximately 3,247 gpd for air conditioning.

**Table 13-1
No Action Alternative Water Consumption and Sanitary Sewage**

Use	Size/Population	Rate*	Consumption (gpd)
Domestic	19,100 sf	0.10 gpd/sf	1,910
Air Conditioning	19,100 sf	0.17 gpd/sf	3,247
		Total Water Supply Demand	5,157
		Total Sewage Generation	1,910

Note: * Rates are from the *CEQR Technical Manual* Table 13-2; existing LIRR facilities assumed to generate water demand and sanitary sewage at the rates of commercial office space for purposes of analysis.

13.5.1.2 WASTEWATER

As noted above, an internal sanitary sewer system, which discharges to the NYCDEP sewer system in West 30th Street, serves the Project Site. FRA estimated the volume of sanitary sewage as corresponding to all water demand generated by the existing LIRR facilities (approximately 19,100 sf) except water used by air conditioning, which is typically not discharged to the sewer system. As shown in **Table 13-1**, FRA estimated the volume of daily sanitary sewage generated by the existing facilities in the No Action Alternative as 1,910 gpd.

13.5.1.3 STORMWATER

As in existing conditions, stormwater collected on the Western Rail Yard in the No Action Alternative would be conveyed to the Hudson River as direct discharge through the storm sewer, which runs through the site and ties into the NYCDEP outfall at West 30th Street downstream of Regulator N-45. Therefore, in the No Action Alternative, no stormwater collected on this portion of the Project Site would be discharged to the combined sewer system. However, the terra firma portion of the Project Site would continue to drain into the combined sewer system within West 30th Street in the No Action Alternative.

Independent of the Preferred Alternative, the City is undertaking a project to reconstruct the West 33rd Street viaduct; this reconstruction project is expected to upgrade the utilities in the street, including constructing the new separated sanitary and stormwater sewers proposed by the ADP (discussed above). Therefore, under the No Action Alternative, there is expected to be a storm sewer in West 33rd Street in addition to the LIRR storm sewer on the Project Site.

13.5.1.4 SOLID WASTE AND SANITATION SERVICES

In the No Action Alternative, there would continue to be approximately four tons of solid waste generated by LIRR operations on the Project Site per week, which would continue to be handled by private carters.

13.5.1.5 ENERGY

FRA estimated energy consumption from the existing LIRR facilities in the No Action Alternative based on the approximate square footage of the existing LIRR buildings currently in operation utilizing the rates presented in the *CEQR Technical Manual*. The estimate utilized the energy consumption rate of commercial office space (216,300 BTUs/sf/year) as defined in Table 15-1 of the *CEQR Technical Manual*. This estimate excluded energy consumption for the traction power system serving the LIRR yard on the Project Site, which would not be affected by the Preferred Alternative. Therefore, as detailed in **Table 13-2**, the energy consumption on the Project Site in the No Action Alternative is approximately 4,131 million BTUs per year.

Table 13-2
No Action Alternative Energy Consumption

Use	Size	Average Annual Energy Rate (Thousand BTUs/sf/year)*	Energy Consumption (Thousand BTUs/Year)
LIRR Facilities	19,100 sf	216.3	4,131,330

Note: * Rates are from the *CEQR Technical Manual* Table 15-1; existing LIRR facilities assumed to consume energy at the rates of commercial office space for purposes of analysis, excluding energy consumption for the traction power system.

13.5.2 OPERATIONAL IMPACTS OF THE PREFERRED ALTERNATIVE

FRA's analyses considered the additional demands that operation of the Preferred Alternative would place on the utility infrastructure and services in the area of the Project Site. As discussed in Chapter 3, Platform construction would result in the existing LIRR service buildings being replaced with modernized buildings without change to function or footprint. The new electrical substation building would contain the Con Edison service connection and its associated electrical equipment, the Medium-Voltage Substation (discussed further below), emergency generators for the Eastern and Western Rail Yards, an Electrical Distribution Room, Western Rail Yard Fire Pump, Fire Protection Valves, Communication Rooms, as well as office and storage spaces.

In total, these three LIRR service buildings would contain approximately 39,422 sf of space, approximately 20,300 sf larger than the existing facilities on the Project Site. However, there would be no change to LIRR operations, and minimal to no changes in LIRR staffing with the Preferred Alternative.

13.5.2.1 WATER SUPPLY

The Platform and Tunnel Encasement infrastructure would not result in incremental demand for potable water (there would be water demand from the LIRR service buildings that would be constructed with the Preferred Alternative, discussed below). With the Preferred Alternative, the existing fire suppression system for the railyard, which primarily consists of an underground main supplying fire hydrants throughout the site, would be abandoned and replaced with an overhead fire suppression system incorporated into the Platform; however, this system would only be operational during emergencies and would not result in substantial additional demand for water.

The LIRR service buildings constructed on the Project Site would be supplied by the existing mains. As shown in **Table 13-3**, based on the approximate square footage of the LIRR service buildings (which were assumed to generate water consumption at the rates of commercial office space), it was estimated that the LIRR facilities would consume approximately 10,644 gpd, including approximately 3,942 gpd for domestic uses and approximately 6,702 gpd for air conditioning.

Table 13-3
Preferred Alternative Water Consumption and Sanitary Sewage

Use	Size/Population	Rate*	Consumption (gpd)
Domestic	39,422 sf	0.10 gpd/sf	3,942
Air Conditioning	39,422 sf	0.17 gpd/sf	6,702
Total Water Supply Demand			10,644
Total Sewage Generation			3,942

Note: * Rates are from the *CEQR Technical Manual* Table 13-2; LIRR facilities assumed to generate water demand and sanitary sewage at the rates of commercial office space for purposes of analysis.

As compared to the No Action Alternative, the Preferred Alternative would result in incremental water demand of approximately 5,487 gpd, from the LIRR service buildings. This increment represents a minimal increase in demand on the City's daily water supply of approximately one billion gpd, and the existing mains serving the Project Site would have sufficient capacity to support the LIRR service buildings. Therefore, the Preferred Alternative would not result in adverse impacts on the City's water supply system.

13.5.2.2 WASTEWATER

With the Preferred Alternative, only the LIRR service buildings would result in generation of sanitary sewage, as the Platform and Tunnel Encasement infrastructure would not generate sanitary sewage. As with the existing buildings, the LIRR service buildings would be connected to a sanitary sewer system on the Project Site; in order to accommodate the structural foundations and columns to support the Platform, the existing sanitary pipes on the Project Site would be relocated where necessary, and the existing pump station would be modified. However, the sanitary sewers system on the Project Site would continue to discharge to the NYCDEP combined sewer in West 30th Street and conveyed to the North River WWTP.

As shown in **Table 13-3**, with the Preferred Alternative, FRA estimated the LIRR service buildings to generate 3,942 gpd of daily sanitary sewage. As compared to the No Action Alternative, the incremental sanitary sewage would be 2,032 gpd. This represented a minimal increase in sewage generation to the North River WWTP in comparison to its average monthly flow of 110 mgd, and this increase would not result in an exceedance of the WWTP's permitted capacity of 170 mgd. In addition, in accordance with the New York City Plumbing Code (Local Law 33 of 2007), the LIRR buildings would be required to utilize low-flow plumbing fixtures, which would reduce sanitary flows to the plant. Therefore, the Preferred Alternative would not result in an adverse impact to the City's sanitary sewage conveyance and treatment system.

13.5.2.3 STORMWATER

As discussed above, stormwater currently collected on the Western Rail Yard directly discharges to the Hudson River through on-site drainage structures and piping connected to a private storm sewer on the Project Site. With the Preferred Alternative, as the Platform would largely cover the below-grade track area of the railyard, most stormwater runoff onto the railyard would be largely eliminated (runoff of stormwater collected on the Platform is discussed below). However, stormwater runoff collection from the Rail Yard would still be required during construction and would be managed in accordance with the erosion and sediment control measures identified in the Stormwater Pollution Prevention Plan (SWPPP) prepared in accordance with the NYSDEC SPDES General Permit Number GP-0-20-001 for stormwater discharges from construction activity. Stormwater management for runoff created by the Platform area would be regulated by NYCDEP under New York City's SPDES permit for the discharge of stormwater from the municipal separate storm sewer systems (MS4). In addition, after the Platform is built, portions of the railyard would remain uncovered (a small open area between the Platform and the High Line would remain) and minor runoff would still be expected. The drainage system would also be necessary to capture water from the fire suppression system (when used). In accordance with the New York City Plumbing Code (Section 301.3),⁷ any water emitted from the new fire suppression system would be considered "liquid waste," which must be discharged directly to the sanitary drainage system, per the same plumbing code. Therefore, after the Platform is fully built, the existing storm sewers on the Project Site would be diverted to the sanitary sewer system on the Project Site, and the existing catch basins would act as floor drains. This would result in a minimal increase in stormwater flows to the sanitary sewer discharging to the combined sewer on West 30th Street.⁸

⁷ 2014 New York City Plumbing Code, Chapter 3, "General Regulations," Section 301.3, "Connections to the Sanitary Drainage System." (https://up.codes/viewer/new_york_city/nyc-plumbing-code-2014/chapter/3/general-regulations#3), accessed February 3, 2021.

⁸ FRA estimated the open area between the Platform and the Highline to be 5,500 sf (0.126 acres), and assumed it to be completely paved with a weighted runoff coefficient of 0.85. DEP states that the rate of runoff from the site, is calculated using the rational method for the total site area (A, in acres), rainfall intensity (i), and the site's surface coverage, per DEP's criteria. The rational method uses the following formula: Flow (Q) = Runoff Coefficient (C) x Rainfall Intensity (i) x Area (A) or $Q=CiA$. DEP's standard design practice uses a rainfall intensity of 5.95 in/hr for the event with a five-year return period and a six-minute time of concentration. Based on DEP's criteria, FRA estimated the runoff from the open area to be approximately 0.639 cubic feet per second (cfs).

Additional stormwater infrastructure improvements would be constructed with the Preferred Alternative in order to support the new structures on the Project Site. On the terra firma portion of the Project Site, which would not be covered by the Platform, stormwater would be conveyed to the existing LIRR storm sewer.⁹ As stormwater runoff in this area currently drains into the existing combined sewer system within West 30th Street, this modification would result in a reduction of flows to the combined sewer and an increase in direct stormwater discharge from the Project Site. In addition, stormwater collected on the Platform would be primarily detained on-site for reuse. Any overflow of stormwater collected on the Platform would be conveyed to the sewer infrastructure in West 33rd Street, north of the Project Site. As noted above, in accordance with the ADP, a storm sewer is expected to be constructed by the City independent of the Preferred Alternative. Therefore, as with the No Action Alternative, stormwater would generally continue to be conveyed as direct discharge to the Hudson River, and there would be minimal incremental stormwater flows to the NYCDEP combined sewer system. Under the Preferred Alternative, the LIRR sewer, which would convey discharge from the *terra firma* portion of the Project Site, would continue to meet the requirements of its existing MS4 permit for stormwater discharge. Therefore, in consideration of the stormwater management improvements that would be made, the Preferred Alternative would not result in an adverse impact on the City's stormwater management infrastructure.

13.5.2.4 SOLID WASTE AND SANITATION SERVICES

As the Preferred Alternative would not alter LIRR staffing or operations on the Western Rail Yard, no additional solid waste generation is expected on the Project Site as compared to the No Action Alternative. As with current operations, solid waste from the reconstructed LIRR facilities would be collected by private carters and would not require service from DSNY. Therefore, the Preferred Alternative would not result in an adverse impact to the City's solid waste collection and disposal services.

13.5.2.5 ENERGY

The Preferred Alternative would include construction of a medium-voltage electrical substation, which would supply power to the Western Rail Yard's ventilation system (the ventilation system is a required component of the Platform in order to remove the heat and emissions from train operations in the Western Rail Yard).

As shown in **Table 13-4**, the estimated energy consumption of the LIRR service facilities would be approximately 8,526 million BTUs per year. The total incremental energy use between the No Action Alternative and the Preferred Alternative would be 4,395 million BTUs per year. Compared with the approximately 388 trillion BTUs of energy consumed annually within Con Edison's New York City and Westchester County service area, this incremental increase represents a negligible change. Therefore, the Preferred Alternative would not have any adverse impacts on energy.

⁹ The RD requires the installation of drainage mechanisms on the southern terra firma portion of the Project Site to convey stormwater to the LIRR storm sewer and outfall; the RD allows for, but does not require, other portions of the Project Site to be connected to the LIRR sewer, subject to a separate agreement between LIRR and the Overbuild Developer.

Table 13-4

Preferred Alternative Energy Consumption

Use	Size	Average Annual Energy Rate (Thousand BTUs/sf/year)*	Energy Consumption (Thousand BTUs/Year)
LIRR Service Facilities	39,422 sf	216.3	8,526,979

Notes: * Rates are from the *CEQR Technical Manual* Table 15-1; proposed LIRR facilities assumed to consume energy at the rates of commercial office space for purposes of analysis, excluding energy consumption for the traction power system or Platform ventilation system.

13.5.3 CONSTRUCTION IMPACTS OF THE PREFERRED ALTERNATIVE

During construction of the Preferred Alternative, the only demand for solid waste disposal service would be to dispose of construction debris, which would be accommodated by private solid waste carters; no municipal solid waste disposal would be required. The construction of the Tunnel Encasement and Platform components of the Preferred Alternative would have little to no demand for municipal solid waste and sanitation services associated with them.

As part of the Preferred Alternative’s construction, which includes installation of structural foundations and columns to support the Platform, the Project Sponsor would be required to reroute and/or reconstruct portions of the Western Rail Yard’s existing utility infrastructure on the Project Site. As discussed below, under “Mitigation,” the Project Sponsor would undertake any necessary utility infrastructure rerouting and reconstruction, and make the additional temporary infrastructure improvements to maintain service for rail yard operations.

Construction activities associated with the Preferred Alternative would be limited to the Project Site and would not affect any off-site utility infrastructure. In addition, as described above, rerouting, reconstruction and/or improvements to the on-site infrastructure would be made in order to maintain utility services for rail yard operations as necessary. Therefore, construction of the Preferred Alternative would not result in any utility service disruptions and would not result in any adverse impacts to utility infrastructure.

13.6 MITIGATION/COMMITMENTS

During construction of the Platform, the Project Sponsor would be required to reroute and/or reconstruct portions of the Western Rail Yard’s existing utility infrastructure on the Project Site, and would make temporary infrastructure improvements to maintain utility services at the railyard. This would include temporary and permanent on-site sewer improvements. As noted above, the existing storm sewers on the Project Site would be diverted to the sanitary sewer system to accommodate the Platform support piles, and temporary drainage provision (such as pits and pumps) would be installed as temporary bypasses if needed during construction to maintain stormwater drainage in the rail yard. The existing sanitary sewer system and potable water mains would be relocated in order to avoid conflicts with the Platform support piles; however, sanitary service and water supply to the rail yard would continue to function during and after construction. In addition, the AC duct banks that service the rail yard’s lighting would be removed or abandoned during construction of Platform foundations, and the Project Sponsor would provide temporary power and lighting system provided to maintain lighting on the rail yard during construction. The Project Sponsor would reroute the DC feeders that supply energy to the rail yard’s traction power system around foundations in compliance with LIRR practices and standards as needed to avoid conflicts with the Platform support piles.

The storm sewer currently serving the rail yard would continue to operate following construction of the Platform in order to convey stormwater collected on the terra firma portion of the Project Site; this sewer operates in accordance with an MS4 permit, and would continue to meet the permit requirements (no additional detention and/or onsite treatment measures are required). The drainage system in the railyard and on the Platform would be designed to meet all NYCDEP permit requirements and would discharge to the NYCDEP sewers adjacent to the Project Site. *