

A. INTRODUCTION

This chapter considers the Proposed Project's effects on solid waste and sanitation services. According to the 2020 *City Environmental Quality Review (CEQR) Technical Manual*, a solid waste and sanitation services assessment determines whether a project has the potential to cause a substantial increase in solid waste production. Such an increase may overburden available waste management capacity or otherwise be inconsistent with the City's Solid Waste Management Plan (SWMP), or with state policy related to the City's integrated solid waste management system.

As detailed in Chapter 1, "Project Description," the Proposed Project is a comprehensive redevelopment initiative to create a revitalized, modern transit-oriented commercial district centered around Penn Station. The Proposed Project would result in approximately 20 million gross square feet (gsf) of primarily Class A commercial office, retail, and hotel space on eight development sites within the Project Area. The Proposed Project would also support improvements to and expansion of Penn Station and provide public transportation and public realm improvements.

In order to assess the effects of the Proposed Project on solid waste and sanitation services, the analysis estimates the amount of existing solid waste generated and provides a comparison of solid waste generation estimates under conditions without the Proposed Project (the No Action condition) and with the Proposed Project (the With Action condition) for the 2028 Phase 1 analysis year and the 2038 Phase 2 analysis year.

PRINCIPAL CONCLUSIONS

This analysis finds that the Proposed Project would not result in a significant adverse impact on solid waste and sanitation services. In addition, the Proposed Project would not directly affect a solid waste management facility.

In the 2028 Phase 1 analysis year, the Proposed Project would result in a net reduction in solid waste between No Action and With Action conditions of approximately 19 tons. As such, there would be no significant adverse impact to solid waste by 2028.

In the 2038 Phase 2 analysis year, the Proposed Project would result in an incremental increase in solid waste compared to the No Action condition of approximately 291 tons per week of solid waste, comprised of a reduction of approximately 18 tons of waste handled by the New York City Department of Sanitation (DSNY), and an increase of approximately 309 tons of waste when compared to the no Action condition (0.4 percent of the City's anticipated future commercial waste generation) that would be handled by private carters. This correlates to approximately 21 additional truckloads per week handled by private carters. Although this would be an increase compared with the No Action condition, the additional solid waste resulting from the Proposed Project would be a negligible increase relative to the approximately 12,260 tons of solid waste

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handled by the DSNY or the 9,000 tons handled by private carters per day.¹ As such, the Proposed Project would not result in an increase in solid waste that would overburden available waste management capacity and there would be no significant adverse impact to solid waste. The Proposed Project would not conflict with, or require any amendment to, the City's solid waste management objectives as stated in the SWMP.

B. METHODOLOGY

According to the *CEQR Technical Manual*, if a project may lead to substantial new development resulting in at least 50 tons (100,000 pounds) of solid waste generated per week, a detailed solid waste and sanitation services analysis is warranted in order to assess the impacts of the project on the City's waste management capacity. Because the Proposed Project would result in development and activities generating more than 50 tons of solid waste per week, an analysis was conducted.

An assessment of solid waste and sanitation services is density-based technical analysis. The analysis describes existing and future solid waste disposal practices, including the collection system and disposal methods; estimates the solid waste generated by activities within the Project Area under existing conditions and in the No Action condition for the 2028 and 2038 analysis years; forecasts solid waste generation based on rates for typical land uses and activities as provided in the *CEQR Technical Manual*; and assesses the effects of the Proposed Project's incremental solid waste generation on municipal and private sanitation services and on the community.

C. EXISTING CONDITIONS

CURRENT SOLID WASTE SANITATION SERVICES

DSNY is the agency responsible for the collection and disposal of residential and institutional solid waste in the City, while private carters collect solid waste from commercial and manufacturing uses. In addition to collecting municipal solid waste (MSW), 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. In total, the DSNY collection fleet is comprised of over 2,000 waste collection trucks, with the typical waste truck carrying approximately 12.5 tons of waste material and the typical recycling truck carrying approximately 11.5 tons of paper or 10.0 tons of metal, glass, and plastic containers. In total, DSNY collects approximately 10,500 tons of residential and institutional refuse and 1,760 tons of recyclables per day.² Under its curbside composting program, DSNY collects food scraps and yard waste in special compost bins, which are set out at the curb and collected as trash. DSNY temporarily suspended its curbside composting program in May 2020 as result of the COVID-19 pandemic. The program is expected to resume in 2021.

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 MSW, 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. The City's commercial establishments

¹ About DSNY: <https://www1.nyc.gov/assets/dsny/site/about>, accessed July 2020.

² Ibid.

generate approximately 9,000 tons of MSW and recyclables daily. Under Local Law 199 of 2019 (Title 16-B of the New York City Administrative Code), Commercial Waste Zones are being established throughout New York City. The program will divide New York City into 20 zones, with a limited number of carters authorized to operate in each zone. This approach is expected to reduce inefficiencies in waste collection routes and substantially reduce carter truck miles. The program will be implemented over multiple years, with a transition process starting in 2021.

Under New York City's mandatory Recycling Law (Title 16 of the New York City 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 (including aluminum foil), glass, and plastic containers, in addition to meeting the commercial recycling requirements.

As required by New York state law (Section § 27-0107 of the Environmental Conservation Law), the City has adopted a comprehensive 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. 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 by the year 2026.⁴ Currently, there is no plan for the next iteration of the SWMP.

The City's solid waste management services are undertaken by DSNY in accordance with the SWMP. 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: first waste reduction, then recycling, composting, resource conservation and energy production, and, lastly, 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. The SWMP mandates that solid waste be transferred to solid waste management facilities located in each borough, including special (hazardous materials) waste collection sites, composting facilities, and bulk residential waste sites. Local Law 19 of 1989 requires that DSNY and private carters collect recyclable materials and deliver them to material recovery facilities. The SWMP also provides that commercial establishments are subject to the recycling requirements described above.

DSNY delivers most of the refuse it collects to certain public or private solid waste management facilities, known as transfer stations, within the City or adjoining communities, for processing and transporting to out-of-city disposal facilities. Solid waste that is 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

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.

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demolition debris landfills, traditional incinerators, or waste-to-energy resource recovery facilities. Similarly, commercial refuse and other solid waste that is not carted directly to disposal facilities is delivered to transfer stations for transport to disposal facilities. Non-putrescible waste, such as construction and demolition debris, is typically sorted at transfer stations, which remove clean fill materials, metal, and wood for recycling, and send the residue to landfills for disposal. 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 (MTS), provides for barge export of construction and demolition waste from the existing DSNY MTS 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.

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 not taken to an MRF, but are transported directly to the Pratt Industries Paper Plant on Staten Island, which processes them for use in the production of liner board and similar products.

SOLID WASTE GENERATION ON THE DEVELOPMENT SITES

The development sites currently contain a mix of residential, retail, community facility, office, storage, and hotel spaces. Based on Citywide average rates for solid waste generation used in SWMP (and provided in Table 14-1 of the *CEQR Technical Manual*), the existing uses located on the development sites generate approximately 126 tons of solid waste per week. As shown in **Table 12-1**, approximately 5 tons (4 percent) per week of the existing solid waste generated at the development sites is handled by private carters, and approximately 121 tons (96 percent) per week is handled by DSNY.

**Table 12-1
Existing Solid Waste Generation on Development Sites**

Use	Floor Area (sf)	Population/DU	Solid Waste Generation Rate (lbs/wk)	Solid Waste Generation	
				(lbs/wk)	(tons/wk)
Residential	82,518	128 dwelling units	41 per household	5,248	2.62
Office	1,631,843	6,500 employees	13 per employee	84,500	42.25
Retail	557,549	1,200 employees	79 per employee	94,800	47.40
Hotel	1,858,898	2,351 hotel rooms	75 per employee	58,775	29.39
Storage	15,974	16 employees	182.5 per employee	2,915	1.46
Community Facility	190,710	---	.03 per square foot	5,721	2.86
Total Solid Waste Generation				251,960	125.98
Solid Waste Handled by DSNY (includes residential and all CF uses)				10,969	5.48
Solid Waste Handled by Private Carters				240,990	120.50
<p>Notes: Solid waste generation is based on citywide average waste generation rates presented in Table 14-1 of the <i>CEQR Technical Manual</i>, and estimates of workers by use, as follows: Residential use: 41 lbs/week per dwelling unit. General retail: 79 lbs/week per employee; including local (1 employee per 333 sf) and destination retail (1 employee per 875 sf) Hotel: 75 lbs/week per employee; assume 1 employee per 3 hotel rooms Office: 13 lbs/week per employee; assume 1 employee per 250 sf Storage: Average industrial rate of 182.5 lbs/week per employee; assume 1 employee per 1,000 sf Community facility uses: .03 lbs per sf Source: <i>CEQR Technical Manual</i> Table 14-1.</p>					

D. THE FUTURE WITHOUT THE PROPOSED PROJECT—2028

As discussed in Chapter 2, “Analysis Framework,” in the 2028 No Action condition, Site 7 would be redeveloped with a new commercial office building. In the 2028 No Action condition, approximately 142 tons of solid waste are projected to be generated on the development sites. Of that total, approximately 5.5 tons would be handled by DSNY and approximately 136.5 tons would be handled by private carters (see **Table 12-2**). The New York City Commercial Waste Zones program is expected to be in place by the 2028 analysis year independent of the Proposed Project. As noted above, this program is expected to improve the efficiency of commercial waste collection and carter truck miles.

Table 12-2
2028 No Action Solid Waste Generation on Development Sites

Use	Floor Area (gsf)	Population/DU	Solid Waste Generation Rate (lbs/wk)	Solid Waste Generation	
				(lbs/wk)	(tons/wk)
Residential	82,518	128 dwelling units	41 per household	5,248	2.62
Office	2,890,843	11,600 employees	13 per employee	150,800	75.40
Retail	586,549	1,300 employees	79 per employee	102,700	51.35
Hotel	768,898	651 hotel rooms	75 per employee	16,275	8.14
Storage	15,974	16 employees	182.5 per employee	2,915	1.46
Community Facility	190,710	---	.03 per square foot	5,721	2.86
Total Solid Waste Generation				283,660	141.83
Solid Waste Handled by DSNY (includes residential and all CF uses)				10,969	5.48
Solid Waste Handled by Private Carters				272,690	136.35

Source: CEQR Technical Manual Table 14-1.

E. THE FUTURE WITH THE PROPOSED PROJECT—2028

In the 2028 With Action condition, Site 7 would be redeveloped; the proposed below grade expansion of Penn Station on Sites 1, 2, and 3 would be completed; and the reconstruction of the existing Penn Station would be completed. In addition, a new service building for the existing and expanded Penn Station is assumed to be completed on 2 by 2028. Besides the new service building for Penn Station, above-grade buildings would be cleared from Sites 1, 2, and 3 in anticipation of future development. Sites 4 through 6 and 8 would remain unchanged from in their existing conditions. As a result, this analysis projects that there would be a decrease in solid waste generation on the development sites in the With Action condition as compared to the No Action condition, with approximately 123 tons of solid waste generated. Of that total, all solid waste would be handled by private carters.

As shown in **Table 12-3**, all of the solid waste per week generated in the With Action condition would be generated by commercial uses. Solid waste generated by commercial uses would be collected by private commercial carters, and commercial buildings developed on the development sites would be subject to mandatory recycling requirements for paper, metals, construction waste, aluminum foil, glass, and plastic containers.

As shown in **Table 12-4**, compared with the No Action condition, Phase 1 of the Proposed Project would result in an approximately 19-ton decrease in weekly solid waste handled by DSNY and private carters. Of this total, an approximately 6-ton decrease would be handled by DSNY and an approximately 13-ton decrease would be handled by private carters. Therefore, Phase 1 of the Proposed Project would not overburden the City’s waste management system.

Table 12-3

2028 With Action Solid Waste Generation on Development Sites

Use	Floor Area (gsf)	Population/DU	Solid Waste Generation Rate (lbs/wk)	Solid Waste Generation	
				(lbs/week)	(tons/wk)
Residential	0	0	41 per household	0	0.00
Office	2,610,234	10,400 employees	13 per employee	135,200	67.60
Retail	646,402	1,300 employees	79 per employee	102,700	51.35
Hotel	0	0	75 per employee	0	0.00
Storage	0	0	182.5 per employee	0	0.00
Community Facility	0	---	.03 per square foot	0	0.00
Penn Station Expansion ¹	265,000	---	.03 per square foot	7,950	3.98
Total Solid Waste Generation				245,850	122.93
Solid Waste Handled by DSNY (includes residential and all CF uses)				0	0.00
Solid Waste Handled by Private Carters				245,850	122.93

Notes: 1) The solid waste generation rate for community facility uses is used for the proposed Penn Station expansion.

Source: CEQR Technical Manual Table 14-1

Table 12-4

2028 Comparison of Weekly Solid Waste Generation in Tons on Development Sites

	No Action Condition (tons/week)	With Action Condition (tons/week)	With Action Increment (tons/week)
Total solid-waste generation	141.8	122.9	-18.9
Solid waste handled by DSNY	5.5	0.0	-5.5
Solid waste handled by Private Carters	136.3	122.9	-13.4

New development on Site 7 would incorporate on-site trash storage within the proposed buildings to minimize placement of trash on sidewalks. Trash at the development sites would be compacted and containerized prior to collection; recyclables would also be containerized. It is expected that trash would be picked up two or three times per week depending on the use. By containerizing and minimizing the placement of trash on sidewalks, the Proposed Project would minimize rodents, odors, and other related nuisances.

Overall, Phase 1 of the Proposed Project would not conflict with the SWMP, or have a direct effect on a solid waste management facility. The incremental decrease in solid waste generated by Phase 1 of the Proposed Project would not overburden the City’s solid waste handling systems, and therefore the Proposed Project would not have a significant adverse impact on the City’s solid waste and sanitation services.

F. THE FUTURE WITHOUT THE PROPOSED PROJECT—2038

In the 2038 No Action condition, development would occur on Sites 4 and 5, in addition to Site 7 (which would be completed by the 2028 analysis year). Under the 2038 No Action condition, there would be approximately 171 tons of solid waste generated on the development sites. Of that total, approximately 18 tons would be handled by DSNY and approximately 153 tons would be handled by private carters (see Table 12-5).

Table 12-5
2038 No Action Solid Waste Generation on Development Sites

Use	Floor Area (gsf)	Population/DU	Solid Waste Generation Rate (lbs/wk)	Solid Waste Generation	
				(lbs/wk)	(tons/wk)
Residential	712,518	758 dwelling units	41 per household	31,078	15.54
Office	3,063,368	12,300 employees	13 per employee	159,900	79.95
Retail	663,425	1,500 employees	79 per employee	118,500	59.25
Hotel	768,898	961 hotel rooms	75 per employee	24,025	12.01
Storage	15,974	16 employees	182.5 per employee	2,915	1.46
Community Facility	190,710	---	.03 per square foot	5,721	2.86
Total Solid Waste Generation				342,140	171.07
Solid Waste Handled by DSNY (includes residential and all CF uses)				36,799	18.40
Solid Waste Handled by Private Carters				305,340	152.67

Source: CEQR Technical Manual Table 14-1.

G. THE FUTURE WITH THE PROPOSED PROJECT—2038

The Proposed Project is expected to be complete by 2038, including all commercial developments, public transportation and public realm improvements, and the reconstruction and expansion of Penn Station. In addition to the development completed by 2028, development between 2028 and 2038 would include Sites 1, 2, 3, 4, 5, 6, and 8 and their associated public transportation and public realm improvements. The development sites would be redeveloped with high-density commercial buildings containing mainly office and ground floor retail uses, as well as hotel uses on Sites 1 and 4. In the 2038 With Action condition, solid waste generation on the development sites would increase as compared to the No Action condition, with approximately 462 tons of solid waste generated. Of that total, all solid waste would be handled by private carters.

As shown in **Table 12-6**, all of the solid waste per week generated in the With Action condition would be generated primarily by commercial and hotel uses. Solid waste generated by commercial and hotel uses would be collected by private commercial carters, and commercial buildings and hotels developed on the development sites would be subject to mandatory recycling requirements for paper, metals, construction waste, aluminum foil, glass, and plastic containers. In addition, solid waste generated by the expansion of Penn Station would be handled by private carters.

As shown in **Table 12-7**, relative to the No Action condition, the Proposed Project would result in an approximately 18-ton decrease in weekly solid waste handled by DSNY. In addition, the Proposed Project would result in an approximately 309-ton increase in weekly solid waste handled by private carters. This would represent approximately 0.42 percent of the City’s anticipated future commercial waste generation, as it is estimated that private carters will carry 74,000 tons of solid waste per week by 2025, as projected in the SWMP.⁵ Based on the typical commercial truck capacity of between 12 and 15 tons of waste material per truck, development resulting from the Proposed Project would require approximately 21 additional private carter collection trucks per week. It is expected that private carter collection fleets operating within the Commercial Waste Zones regulatory framework would be sufficiently flexible to accommodate this increased demand

⁵ Comprehensive Solid Waste Management Plan, September 2006; Attachment II, Table IV 2-2, p. 4, Accessed July 2020.

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for solid waste collection. Therefore, the incremental commercial solid waste handled by private carters would not overburden the City’s waste management system.

Table 12-6
2038 With Action Solid Waste Generation on Development Sites

Use	Floor Area (gsf)	Population/DU	Solid Waste Generation Rate (lbs/wk)	Solid Waste Generation	
				(lbs/week)	(tons/wk)
Residential	0	0	41 per household	0	0.00
Office	14,250,085	57,000 employees	13 per employee	741,004	370.50
Retail	804,064	1,800 employees	79 per employee	142,200	71.10
Hotel	758,443	1,297 hotel rooms	75 per employee	32,425	16.21
Storage	0	0	182.5 per employee	0	0.00
Community Facility	0	---	.03 per square foot	0	0.00
Penn Station Expansion	265,000	---	.03 per square foot	7,950	3.98
Total Solid Waste Generation				923,579	461.79
Solid Waste Handled by DSNY (includes residential and all CF uses)				0	0.00
Solid Waste Handled by Private Carters				923,579	461.79

Notes: 1) The solid waste generation rate for community facility uses is used for the proposed Penn Station expansion.
Source: CEQR Technical Manual Table 14-1

Table 12-7
2038 Comparison of Weekly Solid Waste Generation in Tons on Development Sites

	No Action Condition (tons/week)	With Action Condition (tons/week)	With Action Increment (tons/week)
Total solid-waste generation	171.1	461.8	290.7
Solid waste handled by DSNY	18.4	0.0	-18.4
Solid waste handled by Private Carters	152.7	461.8	309.1

As in the 2028 With Action condition, the Proposed Project would incorporate on-site trash storage within the proposed buildings to minimize placement of trash on sidewalks. Trash on the development sites would be compacted and containerized prior to collection by private carters; recyclables would also be containerized. It is expected that trash would be picked up two or three times per week depending on the use. By containerizing and minimizing the placement of trash on sidewalks, the Proposed Project would minimize rodents, odors, and other related nuisances.

Overall, Phase 2 of the Proposed Project would not conflict with the SWMP, or have a direct effect on a solid waste management facility. The incremental solid waste generated by the Proposed Project would not overburden the City’s solid waste handling systems, and therefore the Proposed Project would not have a significant adverse impact on the City’s solid waste and sanitation services. *