11.0 Solid Waste and Sanitation Services

Introduction

This chapter examines the Proposed Actions' potential to result in significant adverse impacts on solid waste and sanitation services. According to the *CEQR Technical Manual*, a solid waste and sanitation services assessment is intended to determine 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 New York City's Solid Waste Management Plan (SWMP) or with state policy related to the City's integrated solid waste management system.

As discussed in **Chapter 1, Project Description**, under the reasonable worst-case development scenario (RWCDS), the Proposed Actions would result in the incremental development of approximately 5,143 dwelling units (DUs), 705,843 square feet (sf) of commercial development (including office, and local and destination retail), and 121,716 sf of community facility space. This development would add a projected population of approximately 12,600 residents to the Project Area compared with the No-Action condition. In addition, the Proposed Actions are anticipated to introduce approximately 2,819 new workers to the Project Area.

To assess the potential effects of the Proposed Actions on solid waste and sanitation services, the detailed analysis in this chapter estimates the amount of existing solid waste generated on the projected development sites identified in the RWCDS and compares these estimates under No-Action and With-Action conditions.

Principal Conclusions

Compared with the No-Action condition, the Proposed Actions would result in an approximately 106.53 ton per week increase in solid waste handled by the New York City Department of Sanitation (DSNY) and an approximately 37.11 ton per week increase in solid waste handled by private carters. The increase in DSNY-handled waste would represent about 0.09 percent of the anticipated future waste generation handled by DSNY, as projected in the 2006 SWMP, while the increase in private carter-handled waste would represent approximately 0.05 percent of the City's anticipated future commercial waste (DSNY 2006a).

Based on the typical DSNY collection truck capacity of approximately 12.5 tons, the new residential and community facility uses introduced by the Proposed Actions are expected to

generate solid waste equivalent to approximately nine truckloads per week. This increase is not expected to overburden DSNY's solid waste handling services.

Based on the typical commercial carter capacity of between 12 and 15 tons of waste material per truck, implementation of the Proposed Actions would require roughly seven additional collection trucks per week compared with the No-Action condition. Commercial collection fleets are expected to be sufficiently flexible to accommodate this increased demand for solid waste collection.

Overall, the Proposed Actions 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 Actions would not overburden the City's solid waste handling systems; therefore, the Proposed Actions would not have a significant adverse impact on the City's solid waste and sanitation services.

Methodology

According to Chapter 14 of the *CEQR Technical Manual*, projects with a generation rate of less than 50 tons (100,000 pounds) per week of solid waste would not result in a significant adverse impact to the City's waste management capacity and do not warrant detailed analysis. Because the Proposed Actions would result in a net increase of more than 50 tons per week of solid waste, an assessment of solid waste and sanitation services is warranted. In addition, the Proposed Actions could result in more than 500 new residential units and, per the guidance contained in the *CEQR Technical Manual*, a discussion of the anticipated waste and recycling plans for collection is therefore provided.

An assessment of solid waste/sanitation services is a density-based technical analysis; as such, only development on identified projected development sites forms the basis of the analysis. The analysis describes existing and future New York City solid waste disposal practices (including the collection system and disposal methods) and estimates the solid waste generated by activities on the projected development sites under existing conditions and under the No-Action condition for the 2034 Build Year. The analysis also forecasts solid waste generation based on rates for typical land uses and activities, as recommended by the *CEQR Technical Manual*, and assesses the effects of the Proposed Actions' incremental solid waste generation on municipal and private sanitation services under the With-Action condition.

Existing Conditions

Description of 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, refuse, and designated recyclable materials generated by residential and institutional uses, including schools, some nonprofit institutions, and many city and state agencies, DSNY collects waste from city litter baskets, street-sweeping operations, and lot cleaning activities. The DSNY collection fleet is composed of over 2,000 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 9,566 tons per day of residential and institutional refuse and approximately 1,880 tons per day of recyclables (DSNY 2023).

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. The City's businesses, whose waste is collected by private carting companies, generate approximately 13,000 tons of refuse each day.

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, newspapers and other paper waste, and organics 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.

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 resource 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 is typically sorted at transfer stations that remove clean fill materials, metal, and wood for recycling, and send the residue to landfills for disposal. Designated recyclable materials are delivered to privately operated materials recovery facilities (MRFs) in the City and surrounding communities.

As required by New York State 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 amount of DSNY-managed waste is projected to increase to approximately 115,830 tons per week (DSNY 2006b), and the City's commercial solid waste generation is projected to increase to approximately 74,000 tons per week by 2025 (DSNY 2006c). It is anticipated that the 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 considers 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.

Solid Waste Generation on Projected Development Sites

The projected development sites are currently occupied with primarily commercial, manufacturing/auto-related, and parking uses with some residential uses. Based on citywide average rates for solid waste generation used in the SWMP (as provided in Table 14-1 of the 2021 *CEQR Technical Manual*), the existing uses on the projected development sites generate approximately 18.2 tons per week of solid waste. As shown in **Table 11-1**, DSNY handles approximately 23 percent or 4.2 tons per week, while private carters handle approximately 77 percent (or almost 14 tons per week of existing non-residential solid waste).

Table 11-1: Existing Solid Waste Generation on Projected Development Sites

Use	Floor Area (sf)	Population	Solid Waste Generation Rate (lbs/week)	Solid Waste Generation	
				(lbs/week)	(tons/week)
Residential	7,299	9 households	41 per household	369	0.18
Office	26,874	108 employees	13 per employee	1,404	0.70
Local Retail	41,381	104 employees	79 per employee	8,216	4.11
Destination Retail	0	0 employees	79 per employee	0	0
Industrial/Auto-Related	237,871	238 employees	72.5 per employee	17,255	8.63
Warehouse	92,583	6 employees	182.5 per employee	1,095	0.55
Medical Office	0	0 employees	13 per employee	0	0
Other Community Facility	267,686	---	0.03 per sf	8,031	4.02
Total Solid Waste Generation				**36,370**	**18.19**
Solid Waste Handled by DSNY (Includes Residential and All Community Facility Uses)				**8,400**	**4.20**
Solid Waste Handled by Private Carters (Includes All Commercial and Industrial Uses)				**27,970**	**13.99**

Notes:
Solid waste is based on citywide average waste generation rates presented in Table 14-1 of the *CEQR Technical Manual*, unless otherwise noted.
Residential use: 41 lbs/week per DU.
Office: 13 lbs/week per employee; assume 1 employee per 250 sf.
Local retail: 79 lbs/week per employee; assume 1 employee per 400 sf.
Destination retail: 79 lbs/week per employee; assume 1 employee per 875 sf.
Industrial/Auto: use average of retail and wholesale rate – 72.5 lbs per worker; assume 1 employee per 1,000 sf.
Warehouse: use average of apparel/textile and printing/publishing rate – 182.5 lbs/week per employee; assume 1 employee per 15,000 sf.
Medical Office: 13 lbs/week per employee; assume 1 employee per 400 sf.
Other community facility uses (government office, CTM 2021 Table 14-1): 0.03 lbs/week per sf.

No-Action Condition

As discussed in **Chapter 1, Project Description**, under the Future without the Proposed Actions (the No-Action condition), the projected development sites would contain approximately 136 DUs, 57,818 sf of local retail space, 22,648 sf of office space or other commercial space, 81,000 sf of auto-related commercial uses, 267,686 sf of community facility uses, and 237,371 sf of industrial and warehouse space. Overall, solid waste generated by the projected development sites would increase under the No-Action condition, as compared to existing conditions.

Under the No-Action condition, approximately 21.86 tons per week of solid waste would be generated, compared with 18.19 tons per week under existing conditions. As shown in **Table 11-2**, the amount of solid waste handled by DSNY weekly would rise from 4.20 tons per week to 6.80 tons per week, and the amount of solid waste handled by private carters is expected to increase to 15.06 tons per week from the almost 14 tons per week generated under existing conditions.

Table 11-2: No-Action Solid Waste Generation on Projected Development Sites

Use	Floor Area (sf)	Population	Solid Waste Generation Rate (lbs/week)	Solid Waste Generation	
				(lbs/week)	(tons/week)
Residential	114,957	136 households	41 per household	5,576	2.79
Office	22,648	90 employees	13 per employee	1,183	0.59
Local Retail	57,818	145 employees	79 per employee	11,455	5.73
Destination Retail	0	--	79 per employee	--	--
Industrial Auto-Related	225,788	226 employees	72.5 per employee	16,385	8.19
Warehouse	92,583	6 employees	182.5 per employee	1,095	0.55
Medical Office	0	--	13 per employee	--	--
Other Community Facility	267,686	---	0.03 per sf	8,031	4.02
Total Solid Waste Generation				**43,712**	**21.86**
Solid Waste Handled by DSNY (Includes Residential and All Community Facility Uses)				**13,607**	**6.80**
Solid Waste Handled by Private Carters (includes all commercial and industrial uses)				**30,105**	**15.06**

Notes:
Solid waste is based on citywide average waste generation rates presented in Table 14-1 of the *CEQR Technical Manual*, unless otherwise noted.
Residential use: 41 lbs/week per DU.
Office: 13 lbs/week per employee; assume 1 employee per 250 sf.
Local retail: 79 lbs/week per employee; assume 1 employee per 400 sf.
Destination retail: 79 lbs/week per employee; assume 1 employee per 875 sf.
Industrial/Auto: use average of retail and wholesale rate – 72.5 lbs per worker; assume 1 employee per 1,000 sf.
Warehouse: use average of apparel/textile and printing/publishing rate – 182.5 lbs/week per employee; assume 1 employee per 15,000 sf.
Medical Office: 13 lbs/week per employee; assume 1 employee per 400 sf.
Other community facility uses (government office, CTM 2021 Table 14-1): 0.03 lbs/week per sf.

With-Action Condition

Under the With-Action condition, the 54 projected development sites are expected to result in the construction of approximately 5,279 DUs, which is a net increase of approximately 5,143 DUs compared with the No-Action condition. The Proposed Actions are also expected to result in net increases of 705,843 sf of commercial space and 121,716 sf of community facility space, and a net decrease of 160,276 sf of industrial/manufacturing space, 81,000 sf of auto-related space, and 92,583 sf of warehouse/storage compared with the No-Action condition.

As shown in **Table 11-3**, the total solid waste generation under the Proposed Actions would be approximately 165.50 tons per week, which represents an additional 143.64 tons in weekly solid waste generation compared with the No-Action condition.

Table 11-3: With-Action Solid Waste Generation on Projected Development Sites

Use	Floor Area (sf)	Population	Solid Waste Generation Rate (lbs/week)	Solid Waste Generation	
				(lbs/week)	(tons/week)
Residential	5,321,642	5,279 households	41 per household	216,439	108.22
Office	472,574	1,890 employees	13 per employee	24,570	12.29
Local Retail	344,325	861 employees	79 per employee	68,019	34.01
Destination Retail	50,410	58 employees	79 per employee	4,582	2.29
Industrial/Auto-Related	77,095	77 employees	72.5 per employee	5,583	2.79
Warehouse	0	0 employees	182.5 per employee	--	--
Medical Office	48,548	121 employees	13 per employee	1,573	0.79
Other Community Facility	340,854	---	0.03 per sf	10,226	5.11
Total Solid Waste Generation				**330,992**	**165.50**
Solid Waste Handled by DSNY (Includes Residential and All Community Facility Uses)				**226,625**	**113.33**
Solid Waste Handled by Private Carters (Includes All Commercial and Industrial Uses)				**104,327**	**52.17**

Notes:
Solid waste is based on citywide average waste generation rates presented in Table 14-1 of the CEQR Technical Manual, unless otherwise noted.
Residential use: 41 lbs/week per DU.
Office: 13 lbs/week per employee; assume 1 employee per 250 sf.
Local retail: 79 lbs/week per employee; assume 1 employee per 400 sf.
Destination retail: 79 lbs/week per employee; assume 1 employee per 875 sf.
Industrial/Auto: use average of retail and wholesale rate – 72.5 lbs per worker; assume 1 employee per 1,000 sf.
Warehouse: use average of apparel/textile and printing/publishing rate – 182.5 lbs/week per employee; assume 1 employee per 15,000 sf.
Medical Office: 13 lbs/week per employee; assume 1 employee per 400 sf.
Other community facility uses (government office, CTM 2021 Table 14-1): 0.03 lbs/week per sf.

As shown in **Table 11-3**, commercial uses under the Proposed Actions would generate approximately 52.17 tons of solid waste per week. Solid waste generated by commercial uses would be collected by private commercial carters, and commercial buildings developed under the

Proposed Actions would be subject to mandatory recycling requirements for paper; metals; construction waste; aluminum foil; metal, glass, and plastic containers; and organics. Residential and community facility uses would generate approximately 113.33 tons of solid waste per week under the With-Action condition (**Table 11-3**). DSNY trucks would collect solid waste generated by residential and community facility uses as part of existing DSNY collection routes. As a general practice, DSNY adjusts its operations to service the community. Residents would be required to participate in the City's recycling program for paper, metals, and certain types of plastics and glass, and would be required to source-separate organics.

As shown in **Table 11-4**, compared with the No-Action condition, the Proposed Actions would result in an approximately 106.53-ton increase in weekly solid waste handled by DSNY, which would represent approximately 0.09 percent of the City's anticipated future waste generation handled by DSNY. DSNY is expected to manage 115,830 tons per week of solid waste for export, recycling, compost, and refuse by 2025, as projected in the 2006 SWMP.

Based on the typical DSNY collection truck capacity of approximately 12.5 tons, the new residential and community facility uses introduced by the Proposed Actions are expected to generate solid waste equivalent to approximately nine truckloads per week. This increase is not expected to overburden DSNY's solid waste handling services.

Table 11-4: Comparison of Weekly Solid Waste Generation on Projected Development Sites (Existing, No-Action and With-Action Conditions)

	Existing Condition	No-Action Condition	With-Action Condition	Increment
Total Solid Waste Generation (tons/week)	18.19	21.86	165.50	143.64
Solid Waste Handled by DSNY (tons/week)	4.20	6.80	113.33	106.53
Solid Waste Handled by Private Carters (tons/week)	13.99	15.06	52.17	37.11

Compared with the No-Action condition, conditions with the Proposed Actions would result in an approximately 37.11 ton increase in weekly solid waste handled by private carters. This would represent approximately 0.05 percent of the City's anticipated future commercial waste generation, as it is estimated that private carters will carry 74,000 tons per week of solid waste by 2025, as projected in the SWMP. Based on the typical commercial carter capacity of between 12 and 15 tons of waste material per truck, implementation of the Proposed Actions would require roughly seven additional collection trucks per week compared with the No-Action condition.

Local Law 199

Currently, any neighborhood in the City may be serviced by dozens of commercial solid waste carters in an inefficient, hazardous, and unsustainable system. Local Law 199 of 2019 was designed to reform this by establishing new safety standards for workers in the commercial carting

industry, improving service for businesses by increasing diversion rates and reducing vehicle miles traveled as well as harmful emissions from waste hauling vehicles.

Among other things, Local Law 199 established the Commercial Waste Zone (CWZ) program, which divides the City into 20 zones and assigns three competitively priced commercial carters to service each zone (with an additional five carters authorized to operate citywide). The Queens Central zone, which includes Jackson Heights, Corona, and Elmhurst, will come online as the pilot district of the program in the fall of 2024. The Study Area is located across three zones: Brooklyn West, Brooklyn East, and Brooklyn North. The commercial carters authorized to service each zone under the CWZ program are expected to accommodate the Proposed Actions' increased demand for solid waste collection.

Overall, the Proposed Actions would not conflict with the SWMP or have a direct effect on a solid waste management facility or the CWZ program. The Proposed Actions would generate a net increase of approximately nine DSNY truckloads and seven commercial carter truckloads of refuse per week. The incremental solid waste generated by the Proposed Actions would not overburden the City's solid waste handling systems; therefore, the Proposed Actions would not have a significant adverse impact on the City's solid waste and sanitation services.