Chapter 10: Solid Waste and Sanitation Services

10.1 Introduction

This chapter analyzes the effects of the Proposed Action on solid waste and sanitation services. According to the *2014 CEQR Technical Manual*, a solid waste assessment determines whether a project has the potential to cause a substantial increase in solid waste production that may overburden available waste management capacity, or otherwise be inconsistent with the City's Solid Waste Management Plan (SWMP) or other stated policy related to the City's integrated solid waste management system.

As described in Chapter 1, "Project Description," the New York City Department of City Planning (DCP) is proposing to establish the East Midtown Subdistrict within the Midtown Special District. Under the Reasonable Worst-Case Development Scenario (RWCDS), the Proposed Action would contain an incremental increase of over 6 million gross square feet (gsf) of office floor area, 139,025 gsf of retail floor area, and a decrease of 44 residential units. To assess the potential effects of the Proposed Action on solid waste and sanitation services, the detailed analysis herein estimates the amount of existing solid waste generated on the Projected Development Sites within the proposed rezoning area, as well as a comparison of estimates under the No-Action and With-Action Conditions.

Principal Conclusions

The Proposed Action would not result in a significant adverse impact on solid waste and sanitation services. The net increment of 169.1 tons of solid waste generated per week under the Proposed Action would be a minimal addition to the City's solid waste stream, representing 0.05 percent of current waste generation. The Proposed Action would not directly affect a solid waste management facility. The net increase in commercial solid waste handled by private carters would represent less than 1.0 percent of the SWMPs projected future commercial waste generation for the City, and the decrease in residential uses would result in a decrease in solid waste handled by the City of New York Department of Sanitation (DSNY), compared to the No-Action Condition. The net increase in waste generated due to the Proposed Action would not be significant relative to the total City- and region-wide solid waste management system.

10.2 Methodology

According to the *CEQR Technical Manual*, projects with a generation rate of less than 50 tons (100,000 pounds) of solid waste per week would not result in a significant adverse impact to the City's waste management capacity, and do not warrant detailed analysis. Because the Proposed Action would result in a net increase of more than 50 tons per week, an assessment of solid waste and sanitation services is

warranted. As the analysis of solid waste/sanitation services is a density-based technical analysis, only the anticipated development on the Projected Development Sites form the basis for this assessment.

To assess the Proposed Action's potential impacts on solid waste and sanitation services, this chapter:

- Describes the existing solid waste management services on the Projected Development Sites and estimates solid waste generation under Existing Conditions and in the No-Action Condition (for the 2036 analysis year) using solid waste generation rates for typical land uses and activities provided in the *CEQR Technical Manual*.
- Forecasts solid waste generation by the projected developments induced by the Proposed Action based on CEQR guidelines.
- Assesses the effects of the Proposed Action's incremental solid waste generation on municipal and private sanitation services.

10.3 Assessment

Existing Conditions

Description of Current Solid Waste Sanitation Services

It is estimated that approximately 50,000 tons per day of public and private sector solid waste is generated in the City (or approximately 350,000 tons per week).[1] DSNY is 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 also collects waste from City litter baskets, street-sweeping operations, and lot cleaning activities. In total, the DSNY collection fleet comprises 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 10,500 tons per day of residential and institutional refuse and approximately 1,760 tons per day of recyclables.[2]

DSNY delivers most of the refuse it collects to public or private transfer facilities throughout the City where it is unloaded, and, after sorting and compaction, is transported to landfills or waste-to-energy facilities. 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.

Commercial carters pick up solid waste from businesses, manufacturers, and offices, and transport the waste material to transfer stations where the recyclable material is separated from the solid waste. The solid waste is then consolidated into larger trucks for transport and disposal in landfills outside of the City, while the recyclable material is sold and transported to manufacturing facilities. In total, more

[1] Source: *CEQR Technical Manual*, Chapter 14, Section 200.

[2] Source: http://www.nyc.gov/html/dsny/html/about/about.shtml (accessed on 6/30/2016)

than 100 private carters are licensed to serve New York City, with the typical commercial carter carrying between 12 and 15 tons of waste material per truck.

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 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.

As required by New York State law, DSNY developed the SWMP to address management of expected future demands for the City's solid waste. The first SWMP was approved by the New York City Council in 1992, and the current plan 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 will increase to approximately 74,000 tons per week by the year 2025. The amount of DSNY-managed waste is expected to increase to approximately 139,600 tons per week.

In addition, the SWMP includes a Long Term Export Program for residential waste. The Long Term Export Program will be implemented through (1) the development of four converted marine transfer stations (MTS); (2) the award of up to five contracts with private transfer stations for barge or rail export of DSNY-managed waste for disposal; and (3) an intergovernmental agreement to dispose of a portion of Manhattan's DSNY-managed waste at a Port Authority waste-to-energy facility in New Jersey.

With respect to commercial waste, the SWMP (1) provides the capacity for barge export of certain amounts of commercial refuse from the four converted DSNY MTSs; (2) provides for barge export of construction and demolition waste from the existing DSNY MTS at West 59th Street; and (3) requires rail export of commercial refuse from the three private transfer stations that also contract to take DSNY refuse.

Solid Waste Generation on Projected Development Sites

The 16 Projected Development Sites are currently occupied by 50,813 gsf of residential (68 dwelling units), 6,856,059 gsf of office uses, 467,202 gsf of retail, 810,171 gsf of hotel uses (1,247 hotel rooms), and approximately 158,441 gsf of parking area (564 spaces).[3,4] Based on the citywide average rates for solid waste generation used in the SWMP (and provided in Table 14-1 of the *CEQR Technical Manual*), the existing uses on the Projected Development Sites generate a total of approximately 252.6 tons of solid waste per week. As shown in Table 10.1, approximately 99.4 percent, or 251.2 tons, per week of the existing solid waste generated is handled by private carters and approximately 0.6 percent (1.4 tons) per week is handled by DSNY.

[3] Assumes 650 gsf per hotel room.

[4] The commercial retail uses occupying the 16 Projected Development Sites comprise a variety of retail and restaurant uses in Existing Conditions. As the future commercial tenants of these sites in both the No-Action and With-Action Conditions are unknown, for analysis purposes, the "general retail" solid waste generation rate is applied to all commercial retail uses.

Table 10.1: Existing Solid Waste Generation on Projected Development Sites

Use	Area (gsf)	Population[1]	Solid Waste Generation Rate (lbs/wk)[2]	Solid Waste Generation (lbs/wk)
Office	6,856,059	27,424 employees	13 per employee	356,512 (178.3 tons/wk)
General Retail[3]	467,202	1,402 employees	79 per employee	110,758 (55.4 tons/wk)
Hotel	810,171 (1,247 rooms)	467 employees	75 per employee	35,025 (17.5 tons/wk)
Residential	50,813 (68 DU)	68 households and 3 employees	41 per household and 13 per employee	2,827 (1.4 tons/wk)
Parking	158,441 (564 spaces)	12 employees	13 per employee	156 (0.1 tons/wk)
			Total Solid Waste Generation	505,278 (252.6 tons/wk)
			Solid Waste Handled by Private Carters	502,295 (251.2 tons/wk)
			Solid Waste Handled by DSNY	2,827 (1.4 tons/wk)

Notes:
[1] Assumes 1 employee per 250 gsf of office, 3 employees per 1,000 gsf of retail, 1 employee per 25 DU, 1 employee per 50 parking spaces, and 1 employee per 2.67 hotel rooms.
[2] Rates based on Table 14-1 of the *CEQR Technical Manual.* Employees associated with residential and parking are assumed to generate solid waste at a rate of 13 lbs. per employee.
[3] For consistency, the general retail solid waste generation rate is used for Existing, No-Action, and With-Action Conditions.

The Future without the Proposed Action (No-Action Condition)

As described in Chapter 1, "Project Description," under the No-Action Condition, there would be an increase of approximately 265,307 gsf of residential uses. The total office square footage would decrease by 43,139 gsf and the total retail square footage is expected to decrease slightly, from 467,202 gsf to 462,874 gsf. Hotel uses are not expected to change from the Existing Conditions outlined above. Overall, as discussed below, solid waste generated by the Projected Development Sites will increase slightly under the No-Action Condition.

Under the No-Action Condition, approximately 253.0 tons of solid waste per week would be generated, an increase of less than one percent compared to Existing Conditions. As shown in Table 10.2, the No-Action Condition would have the potential to affect DSNY's handling capacity due to increased residential development under the No-Action Condition. The amount of solid waste handled by DSNY weekly would increase to 3.4 tons from 1.4 tons under Existing Conditions. The amount of solid waste handled by private carters per week is expected to decrease by 0.7 percent from Existing Conditions to approximately 249.5 tons.

Table 10.2: No-Action Solid Waste Generation on Projected Development Sites

Use	Area (gsf)	Population[1]	Solid Waste Generation Rate (lbs/wk)[2]	Solid Waste Generation (lbs/wk)[1]
Office	6,812,920	27,252 employees	13 per employee	354,276 (177.1 tons/wk)
General Retail[3]	462,874	1,389 employees	79 per employee	109,731 (54.9 tons/wk)
Hotel	810,171 (1,247 rooms)	467 employees	75 per employee	35,025 (17.5 tons/wk)
Residential	316,120 (163 DU)	163 households and 7 employees	41 per household and 13 per employee	6,774 (3.4 tons/wk)
Parking	158,441 (564 spaces)	12 employees	13 per employee	156 (0.1 tons/wk)
			Total Solid Waste Generation	505,962 (253.0 tons/wk)
			Solid Waste Handled by Private Carters	499,032 (249.5 tons/wk)
			Solid Waste Handled by DSNY	6,774 (3.4 tons/wk)

Notes:
[1] Assumes 1 employee per 250 gsf of office, 3 employees per 1,000 gsf of retail, 1 employee per 25 DU, 1 employee per 50 parking spaces, and 1 employee per 2.67 hotel rooms.
[2] Rates based on Table 14-1 of the *CEQR Technical Manual.* Employees associated with residential and parking are assumed to generate solid waste at a rate of 13 lbs. per employee.
[3] For consistency, the general retail solid waste generation rate is used for Existing, No-Action, and With-Action Conditions.

The Future with the Proposed Action (With-Action Condition)

Under the With-Action Condition, the total office and retail square footage would increase by 6,581,857 gsf and 139,025 gsf, respectively, from the No-Action Condition. The hotel square footage would decrease by 810,171 gsf, resulting in zero hotel rooms. The total number of residential units would decrease to 119, compared to 163 under the No-Action Condition, and the total number of parking spaces would decrease to zero The Proposed Action would result in an overall increase in solid waste generation, as discussed below.

Based on the citywide average rates for solid waste generation, the total solid waste generation due to the Proposed Action would be approximately 422.1 tons per week, which represents a 169.1-ton increase in weekly waste generation relative to the No-Action Condition. Given that approximately 350,000 tons of public and private sector solid waste is generated in the City per week under Existing Conditions, the incremental increase of 169.1 tons per week would represent 0.05 percent of the City's current solid waste generation.

As shown below in Table 10.3, commercial uses under the Proposed Action would generate approximately 419.6 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 Action would be subject to mandatory recycling requirements for paper, metals, construction waste, aluminum foil, and metal, glass and plastic containers.

Residential uses would generate 2.5 tons of solid waste per week under the With-Action Condition (refer to Table 10.3). Solid waste generated by residential uses would be collected by DSNY trucks and

would be served by existing DSNY collection routes. Residents will be required to participate in the City's recycling program for paper, metals, and certain types of plastics and glass.

As shown in Table 10.4, compared to the No-Action Condition, the Proposed Action would result in an approximately 170.1-ton increase in weekly solid waste handled by private carters. This would represent less than one percent of the City's anticipated future commercial waste generation, as projected in the SWMP. Based on the typical commercial carter capacity of between 12 and 15 tons of waste material per truck, this increase in solid waste would be equivalent to between 12 and 15 additional collection trucks per week (or approximately 2 per day). Therefore, the net increment in commercial solid waste handled by private carters would not overburden the City's waste management system.

Table 10.3: With-Action Solid Waste Generation on Projected Development Sites

Use	Area (gsf)	Population[1]	Solid Waste Generation Rate (lbs/wk)[2]	Solid Waste Generation (lbs/wk)[1]
Office	13,394,777	53,580 employees	13 per employee	696,540 (348.2 tons/wk)
General Retail[3]	601,899	1,806 employees	79 per employee	142,674 (71.3 tons/wk)
Hotel	0 (0 rooms)	0 employees	75 per employee	0 (0 tons/wk)
Residential	237,841 (119 rooms)	119 households and 5 employees	41 per household and 13 per employee	4,944 (2.5 tons/wk)
Parking	0	N/A	N/A	0
			Total Solid Waste Generation	844,158 (422.1 tons/wk)
			Solid Waste Handled by Private Carters	839,214 (419.6 tons/wk)
			Solid Waste Handled by DSNY	4,944 (2.5 tons/wk)

Notes:
[1] Assumes 1 employee per 250 gsf of office, 3 employees per 1,000 gsf of retail, 1 employee per 25 DU, 1 employee per 50 parking spaces, and 1 employee per 2.67 hotel rooms.
[2] Rates based on Table 14-1 of the *CEQR Technical Manual.* Employees associated with residential and parking are assumed to generate solid waste at a rate of 13 lbs. per employee.
[3] For consistency, the general retail solid waste generation rate is used for Existing, No-Action, and With-Action Conditions.

Table 10.4: 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 (No-Action to With-Action)
Total Solid-Waste Generation (tons/wk)	252.6	253.0	422.1	169.1
Solid Waste Handled by Private Carters (tons/wk)	251.2	249.5	419.6	170.1
Solid Waste Handled by DSNY (tons/wk)	1.4	3.4	2.5	-0.9

Due to the decrease in residential square footage under the With-Action Condition, the amount of weekly solid waste handled by DSNY's fleet would decrease by approximately 0.9 tons compared to the No-Action Condition (refer to Table 10.4). With an average DSNY collection truck capacity of 12.5 tons, this incremental decrease in solid waste would be equivalent to approximately 14 percent of one truck load per day. Given the anticipated net reduction in residential solid waste, the Proposed Action would not have a significant adverse impact on DSNY's waste management capacity.

The Proposed Action would also not conflict with the SWMP or have a direct effect on a solid waste management facility. As a result, no significant adverse impact on the City's solid waste and sanitation services would occur.