East New York Rezoning Proposal
Chapter 11: Solid Waste and Sanitation Services

A. INTRODUCTION

This chapter examines the Proposed Actions' effects on solid waste and sanitation services. According to the 2014 *City Environmental Quality Review (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 the city's Solid Waste Management Plan or with state policy related to the city's integrated solid waste management system.

As described in Chapter 1, "Project Description," the Proposed Actions comprise zoning map and text amendments that would affect a total of approximately 190 blocks in two areas, in East New York and Ocean Hill, as well as an amendment to the Dinsmore-Chestnut Urban Renewal Plan. Within the proposed rezoning area, the Proposed Actions are anticipated to facilitate new residential, commercial, community facility, and manufacturing development. In total, the Proposed Actions are expected to result in a net increase of 6,312 dwelling units; 557,290 square feet (sf) of commercial space; and 457,870 sf of community facility space; and a net reduction of 27,035 sf of manufacturing space, as compared to the No-Action condition.

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 reasonable worst case development scenario (RWCDS), and provides a comparison of estimates under No-Action and With-Action conditions.

B. PRINCIPAL CONCLUSIONS

The Proposed Actions would not result in a significant adverse impact on solid waste and sanitation services. The Proposed Actions would generate an increment above the No-Action condition of approximately 241.3 tons per week of solid waste, but would not directly affect a solid waste management facility. Approximately 47 percent of the additional solid waste generated by the Proposed Actions would be handled by the New York City Department of Sanitation (DSNY), and 53 percent would be handled by private carters. Overall, the uses facilitated by the Proposed Actions would be expected to generate solid waste equivalent to approximately 11 DSNY truck loads per week and up to nine commercial carter truck loads per week. Although this would be an increase compared with conditions in the future without the Proposed Actions, the additional solid waste resulting from the Proposed Actions would be a negligible increase relative to the approximately 13,000 tons of waste handled by commercial carters every day or the 12,260 tons per day handled by DSNY, and it would also represent approximately 0.13 percent of the City's anticipated future weekly commercial and DSNY-managed waste generation in 2025, as projected in the Solid Waste Management Plan (SWMP). As such, the Proposed Actions would not result in an increase in solid waste that would overburden available waste management capacity. The Proposed Actions would also not conflict with, or require any amendments to, the city's solid waste management objectives as stated in the SWMP. Therefore, the Proposed Actions would not result in a significant adverse impact on solid waste and sanitation services.

C. 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 Actions would result in a net increase of more than 50 tons of solid waste per week, an assessment of solid waste and sanitation services is warranted.

As solid waste/sanitation services is a density-based technical analysis, only those developments on identified projected development sites form the basis for the assessment of solid waste and sanitation services. To assess the Proposed Actions' potential impacts on solid waste and sanitation services, this chapter describes existing and future New York City solid waste disposal practices, including the collection system and disposal methods; estimates solid waste generation by the projected development sites under existing conditions and in the No-Action condition (for the 2030 analysis year); forecasts solid waste generation by the projected developments induced by the Proposed Actions, using solid waste generation rates for typical land uses and activities provided in the *CEQR Technical Manual*; and assesses the effects of the Proposed Actions' incremental solid waste generation on municipal and private sanitation services.

D. EXISTING CONDITIONS

Description of Current Solid Waste Sanitation Services

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 is comprised 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 10,500 tons per day of residential and institutional refuse and approximately 1,760 tons per day of recyclables.[1]

Commercial establishments (e.g., restaurants, retail facilities, offices, and industries) in the 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. The City's Business Integrity Commission licenses over 4,000 private carting trucks to collect the City's commercial municipal solid waste and recyclables, and registers over 4,000 more trucks to haul private sector construction and demolition debris in the City (2013 figures), with more than 2,000 private carting businesses authorized to serve New York City. 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.[1]

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.

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 transportation to out-of-City disposal facilities. DSNY delivers the refuse it collects to waste transfer facilities where it is unloaded and, after sorting and compaction, is transported to landfills or waste-to-energy facilities. Similarly, commercial refuse and other solid

[1] *Inside DSNY*: http://www1.nyc.gov/site/dsny/about/inside-dsny.page, accessed February 2015.

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 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 not taken to a MRF but 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 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.[2] The amount of DSNY-managed waste is projected to increase to approximately 115,830 tons per week.[3]

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, 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 (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.

Solid Waste Generation on Projected Development Sites

The 80 projected development sites are currently occupied by 98 dwelling units, 24,160 sf of office uses, 109,837 sf of retail uses, approximately 167,955 sf of auto-related and storage uses, 12,500 sf of hotel uses, 54,276 sf of industrial uses, and 67,995 sf of community facility uses. 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 28.2 tons of solid waste per week. As shown in Table 11-1, approximately 92.9 percent, or 26.2 tons (non-residential) per week of the existing solid waste generated, is handled by private carters, and approximately seven percent (or 2.0 tons) per week is handled by DSNY.

[2] Comprehensive Solid Waste Management Plan, September 2006; Attachment IV, Table IV 2-2.
[3] Comprehensive Solid Waste Management Plan, September 2006; Attachment II, Table II 2-6.

TABLE 11-1
Existing Solid Waste Generation on Projected Development Sites

Use	Floor Area (sf)	Population	Solid Waste Generation Rate (lbs/wk)	Solid Waste Generation (lbs/wk)	Solid Waste Generation (tons/wk)
Residential	98 units	98 households	41 per household	4,018	2.0
Office	24,160	97 employees	13 per employee	1,261	0.6
Retail	109,837	330 employees	79 per employee	26,070	13.0
Auto-Related and Storage	167,955	168 employees	72.5 per employee	12,180	6.1
Hotel	12,500	12 employees	75 per employee	900	0.5
Industrial	54,276	54 employees	182.5 per employee	9,855	4.9
Community Facility	67,995	- -	0.03 per sf	2,040	1.0
			Total Solid Waste Generation	**56,324**	**28.2**
			Solid Waste Handled by DSNY (residential uses)	***4,018***	***2.0***
			Solid Waste Handled by Private Carters	***52,306***	***26.2***

Notes:

Solid waste generation is based on citywide average waste generation rates presented in Table 14-1 of the *CEQR Technical Manual*, and estimates of workers by use, as follows:
Residential use: 41 lbs/wk per dwelling unit.
Office: 13 lbs/wk per employee; assume 1 employee per 250 sf.
General retail: 79 lbs/wk per employee; assume 3 employees per 1,000 sf.
Auto-related/storage use: use average of retail and wholesale rate - 72.5 lbs per worker; assume 1 employee per 1,000 sf.
Hotel: 75 lbs/wk per employee, assume 2.67 employees per 400 sf.
Industrial use: use average of apparel/textile and printing/publishing rate - 182.5 lbs/wk per employee; assume 1 employee per 1,000 sf.
All community facility uses: 0.03 lbs/wk. per sf.

E. THE FUTURE WITHOUT THE PROPOSED ACTIONS (NO-ACTION CONDITION)

As described in Chapter 1, "Project Description," the total No-Action development on the 80 projected development sites under the RWCDS would comprise 550 market-rate residential units, 653,099 sf of commercial uses (including retail, restaurant, supermarket, auto-related, hotel, office, and storage/garage uses), 125,886 sf of industrial uses, and 156,972 sf of community facility uses. Overall, as discussed below, solid waste generated by the projected development sites will increase under the No-Action condition.

Under the No-Action condition, approximately 78.5 tons of solid waste per week would be generated, compared to 28.2 tons per week under existing conditions. As shown in Table 11-2, the amount of solid waste handled by DSNY weekly would increase to 13.6 tons from 2.0 tons under existing conditions. The amount of solid waste handled by private carters per week is expected to increase to 64.8 tons from 26.2 tons 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/wk)	Solid Waste Generation (lbs/wk)	Solid Waste Generation (tons/wk)
Residential	550 units	550 households	41 per household	22,550	11.3
Retail	239,316	718 employees	79 per employee	56,722	28.4
Restaurant	5,650	17 employees	251 per employee	4,267	2.1
Supermarket	30,000	90 employees	284 per employee	25,560	12.8
Auto-Related	128,365	128 employees	72.5 per employee	9,280	4.6
Hotel	97,551	91 employees	75 per employee	6,825	3.4
Office	75,992	304 employees	13 per employee	3,952	2.0
Storage	76,225	5 employees	9 per employee	45	0.0
Industrial	125,886	126 employees	182.5 per employee	22,995	11.5
Community Facility	156,972	- -	0.03 per sf	4,709	2.4
			Total Solid Waste Generation	**156,905**	**78.5**
			Solid Waste Handled by DSNY (includes residential and all CF uses)	***27,259***	***13.6***
			Solid Waste Handled by Private Carters	***129,646***	***64.8***

Notes:
Solid waste generation is based on citywide average waste generation rates presented in Table 14-1 of the *CEQR Technical Manual* , and estimates of workers by use, as follows:
Residential use: 41 lbs/wk per dwelling unit.
General retail: 79 lbs/wk per employee; assume 3 employees per 1,000 sf.
Restaurant: 251 lbs/wk per employee; assume 3 employees per 1,000 sf.
Supermarket: 284 lbs/wk per employee; assume 3 employees per 1,000 sf.
Auto-related: use average of retail and wholesale rate - 72.5 lbs per worker; assume 1 employee per 1,000 sf.
Hotel: 75 lbs/wk per employee, assume 2.67 employees per 400 sf.
Office: 13 lbs/wk per employee; assume 1 employee per 250 sf.
Storage: 9 lbs/wk per employee; assume 1 employee per 15,000 sf.
Industrial use: use average of apparel/textile and printing/publishing rate - 182.5 lbs/wk per employee; assume 1 employee per 1,000 sf.
All community facility uses: 0.03 lbs/wk. per sf.

F. THE FUTURE WITH THE PROPOSED ACTIONS (WITH-ACTION CONDITION)

Under the With-Action condition, the 80 projected development sites are expected to accommodate 6,862 residential units, 1,210,389 sf of commercial uses, 98,851 sf of industrial uses, and 614,842 sf of community facility uses. The Proposed Actions 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 Actions would be approximately 319.8 tons per week, which represents a 241.3 ton increment in weekly waste generation relative to the No-Action condition. Given that approximately 151,560 tons of public and private sector solid waste is generated in the City per week under existing conditions, the incremental increase of 241.3 tons per week would represent 0.16 percent of the City's current solid waste generation. It would also represent approximately 0.13 percent of the City's anticipated future weekly commercial and DSNY-managed waste generation in 2025 (estimated at 189,830 tons per week), as projected in the SWMP.

As shown below in Table 11-3, commercial and industrial uses under the Proposed Actions would generate approximately 169.9 tons of solid waste per week. Solid waste generated by commercial and industrial 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, and metal, glass and plastic containers.

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

Use	Floor Area (sf)	Population	Solid Waste Generation Rate (lbs/wk)	Solid Waste Generation (lbs/wk)	Solid Waste Generation (tons/wk)
Residential	6,862 units	6,862 households	41 per household	281,342	140.7
Retail	893,952	2682 employees	79 per employee	211,878	105.9
Restaurant	64,550	194 employees	251 per employee	48,694	24.3
Supermarket	60,000	180 employees	284 per employee	51,120	25.6
Office	191,887	768 employees	13 per employee	9,984	5.0
Industrial	98,851	99 employees	182.5 per employee	18,068	9.0
Community Facility	614,842	- -	0.03 per sf	18,445	9.2
			Total Solid Waste Generation	**639,531**	**319.8**
			Solid Waste Handled by DSNY (includes residential and all CF uses)	***299,787***	***149.9***
			Solid Waste Handled by Private Carters	***339,744***	***169.9***

Notes:

Solid waste generation is based on citywide average waste generation rates presented in Table 14-1 of the *CEQR Technical Manual* , and estimates of workers by use, as follows:
Residential use: 41 lbs/wk per dwelling unit.
General retail: 79 lbs/wk per employee; assume 3 employees per 1,000 sf.
Restaurant: 251 lbs/wk per employee; assume 3 employees per 1,000 sf.
Supermarket: 284 lbs/wk per employee; assume 3 employees per 1,000 sf.
Office: 13 lbs/wk per employee; assume 1 employee per 250 sf.
Industrial use: use average of apparel/textile and printing/publishing rate - 182.5 lbs/wk per employee; assume 1 employee per 1,000 sf.
All community facility uses: 0.03 lbs/wk. per sf.

Residential and community facility uses would generate 149.9 tons of solid waste per week under the With-Action condition (refer to Table 11-3). Solid waste generated by residential and community facility uses would be collected by DSNY trucks and would be served by existing DSNY collection routes. As a general practice, DSNY adjusts its operations to service the community. 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 11-4, compared to the No-Action condition, the Proposed Actions would result in an approximately 136.3 ton increase in weekly solid waste handled by DSNY. This would represent approximately 0.12 percent of the City's anticipated future waste generation handled by DSNY (estimated at 115,830 tons per week), as projected in the 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 would be expected to generate solid waste equivalent to approximately 11 truck loads per week. This increase is not expected to overburden the DSNY's solid waste handling services.

As also shown in Table 11-4, compared to the No-Action condition, the Proposed Actions would result in an approximately 105 ton increase in weekly solid waste handled by private carters. This would represent approximately 0.14 percent of the City's anticipated future commercial waste generation (estimated at 74,000 tons per week), as projected in the SWMP. Based on the typical commercial carter capacity of between 12 and 15 tons of waste material per truck, the Proposed Actions would require between seven and nine additional collection trucks per week compared to the No-Action condition. There are more than 2,000 private carting businesses authorized to serve New York City, and it is expected that their collection fleets would be sufficiently flexible to accommodate this increased demand for solid waste collection. Therefore, the net increment in commercial solid waste handled by private carters would not overburden the City's waste management system.

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

	Existing Condition	No-Action Condition	With-Action Condition	Increment (No- Action to With-Action)
Total Solid-Waste Generation (tons/wk)	28.2	78.5	319.8	241.3
Solid Waste Handled by DSNY (tons/wk)	2.0	13.6	149.9	136.3
Solid Waste Handled by Private Carters (tons/wk)	26.2	64.8	169.9	105.0

Overall, the uses facilitated by the Proposed Actions would be expected to generate solid waste equivalent to approximately 11 DSNY truck loads per week and up to nine commercial carter truck loads per week. This increase would not overburden existing DSNY or commercial solid waste handling services. Therefore, the Proposed Actions would not overburden the city's solid waste management capacity and would not have significant adverse impacts on solid waste and sanitation services. Furthermore, the Proposed Actions would 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.