CHAPTER 12: SOLID WASTE AND SANITATION SERVICES

A. INTRODUCTION

This chapter assesses the Proposed Actions potential effects on New York City's 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 the City's Solid Waste Management Plan (SWMP) or with state policy related to the City's integrated solid waste management system.

To assess the potential effects of the Proposed Actions on solid waste and sanitation services, this assessment estimates the amount of existing solid waste generated on the 30 Projected Development Sites identified in the Reasonable Worst Case Development Scenario (RWCDS) and provides a comparison of estimates under the No-Action and With-Action conditions. In addition, this chapter assesses the Proposed Actions consistency with the City's SWMP.

B. PRINCIPAL CONCLUSIONS

The Proposed Actions would not result in significant adverse impacts on solid waste and sanitation services. A preliminary assessment determined that the Proposed Actions would generate an increment over the No-Action Condition that exceeds the CEQR threshold of 50 tons of solid waste per week; therefore, a detailed analysis of the potential effects of the Proposed Actions on solid waste and sanitation services was conducted.

The Proposed Actions would generate a net increase over the No-Action Condition of approximately 80.28 tons of solid waste per week but would not directly affect a solid waste management facility. Approximately 63 percent (50.40 tons per week) of the additional solid waste generated by the Proposed Actions would be handled by the New York City Department of Sanitation (DSNY), and approximately 37 percent (29.88 tons per week) would be handled by private carters. Overall, the uses facilitated by the Proposed Actions would be expected to generate solid waste equivalent to approximately four additional DSNY truckloads per week and up to two additional private commercial carter truckloads per week (a total of six additional truckloads per week). Although this would be an increase compared to the No-Action Condition, the additional solid waste resulting from the Proposed Actions would represent a negligible 0.04 percent of New York City's anticipated DSNY-managed waste generation per week in 2025 and approximately 0.04 percent of the anticipated solid waste handled by private commercial carters per week in 2025.[1] In addition, the Proposed Actions would be consistent with the goals of the SWMP and would not conflict with the SWMP, and would not have a direct effect on a solid waste management facility. Therefore, the Proposed Actions would not result in significant adverse impacts on solid waste and sanitation services.

[1] This Final Environmental Impact Statement considers an analysis year of 2030, the *DSNY SWMP* (adopted September 2006) established a framework for waste management in New York City through approximately 2025.

C. METHODOLOGY

According to the *CEQR Technical Manual*, projects resulting in a generation rate of less than 50 tons of solid waste per week would not result in a significant adverse impact to the City's waste management capacity and, therefore, do not warrant detailed analysis. Because the Proposed Actions are anticipated to generate a net increase of approximately 80.28 tons of solid waste per week, a detailed analysis of solid waste and sanitation services is warranted.

To assess the Proposed Actions potential impacts on solid waste and sanitation services, this chapter: (i) describes the existing solid waste management services in the Project Area; (ii) estimates solid waste generation by the Projected Development Sites under existing conditions and in the No-Action condition; (iii) forecasts future solid waste demands generated by Proposed Actions for the 2030 analysis year using solid waste generation rates for typical land uses and activities provided in the *CEQR Technical Manual*; and (iv) assesses the effects of this incremental demand on municipal and private sanitation services.

D. EXISTING CONDITIONS

DESCRIPTION OF CURRENT SOLID WASTE AND SANITATION SERVICES

Nearly 50,000 tons of solid waste and recyclables are collected in New York City each day. DSNY is responsible for the collection and disposal of residential and institutional solid waste in the City, which constitutes roughly 20 percent of the City's daily total waste. Each day DSNY collects approximately 10,500 tons of residential and institutional refuse and approximately 1,760 tons of recyclables.[2] Private carters are responsible for the remaining 80 percent and manage solid waste from commercial and manufacturing uses. The system necessary to handle this volume of waste is vast and complex, involving a network of City employees, garages and specialized vehicles, as well as an array of private haulers, transfer stations, and disposal companies.[4]

DSNY, in addition to the collection of 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, also collects waste from City litter baskets, street cleaning operations, and lot cleaning activities. DSNY is one of the world's largest sanitation departments, relying on its fleet of over 2,000 waste collection trucks to collect more than 10,500 tons of residential and institutional garbage and 1,760 tons of recyclables in the City every day.[5] The typical DSNY collection truck for residential refuse (25 cubic yards) carries approximately 12.5 tons of waste material (approximately 8 tons for containerized collections) and recycling trucks carry about 11.5 tons of paper, or approximately 10.0 tons of metal, glass, and plastic containers.[6]

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

[2] *About DSNY: http://www1.nyc.gov/assets/dsny/site/about (accessed March 20, 2019)*
[4] *DSNY Comprehensive Solid Waste Management Plan, 2006.*
[5] Ibid.
[6] Ibid.

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 (MSW) and recyclables, and registers over 4,000 more trucks to haul private sector construction and demolition debris in the City (2013), with more than 2,000 private carting businesses authorized to serve New York City.[8] According to the *CEQR Technical Manual*, private commercial carters typically carry between 12 and 15 tons of waste material per truck.[9][10] The City's businesses, whose waste is collected by private carting companies, generate approximately 9,000 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, including aluminum foil, glass and metal containers, plastic bottles and jugs, other rigid plastics, beverage cartons, newspapers and magazines, cardboard and other paper wastes, and other metal items (including bulk metal such as stoves, refrigerators, file cabinets, etc.). These recycling regulations also require multi-unit dwellings to set aside space for the storage of recyclable materials in designated locations and stipulate that commercial waste in multi-use buildings be separated from residential waste for separate collection.[11]

DSNY's voluntary organics collection and composting program provides curbside collection or convenient neighborhood drop-off locations. The program decreases the City's reliance on landfills, which release methane--a powerful greenhouse gas--from the decomposition of organic waste, reduces air emissions from City refuse sent to waste-to-energy plants and from long-distance waste transport, and reduces related fossil fuel use. In addition, pursuant to Local Law 146 of 2013 DSNY enforces commercial food waste composting rules for larger food waste generators such as food manufacturers or wholesalers, larger hotels with food service establishments, arenas, food service establishments larger than 15,000 square feet (sf); chain food service establishments with at least 100 locations in New York City; and retail food stores larger than 25,000 sf. Covered businesses must keep their organic waste (generally from kitchens, spoilage and surplus food--not post-consumer waste) separate from other waste and arrange to have it converted to useful products such as compost or biogas rather than landfilled or incinerated. This can be done either via collection by private carters or self-transport for offsite conversion, or by managing the conversion on-site using in-vessel composting or aerobic or anaerobic digestion.

Pursuant to the New York State Solid Waste Management Act,[12] the City has adopted a Comprehensive SWMP for the long-term management of solid waste generated within its borders. DSNY developed a new Comprehensive SWMP that was approved by the New York State Department of Environmental Conservation (NYSDEC) in 2006 and established the structure of the City's solid waste management for the next 20 years.[13] In doing so, the Comprehensive SWMP builds on ongoing

[8] *CEQR Technical Manual, 2014.*
[9] Ibid.
[10] For the purposes of this assessment, it is assumed a DSNY truckload handles 12.5 tons per truck, and a private carter truckload handles 13.5 tons per truck.
[11] Ibid.
[12] New York State Environmental Conservation Law (Section 27-0707) and implementing regulations (6 NYCRR Subpart 360-15).
[13] *DSNY Comprehensive Solid Waste Management Plan, 2006.*

programs to prevent, reuse, recycle and compost waste, among other programs, that have their foundation in the City's first SWMP, which was adopted in 1992.[14] The 2006 SWMP estimates that approximately 74,000 tons of commercial solid waste per week will be generated in New York City by 2025;[15] DSNY is projected to process approximately 115,830 tons of waste per week by 2025.[16]

Under the SWMP, residential solid waste generated within the Project Area is currently processed by a truck-to-rail transfer station in Staten Island.[17] This truck-to-rail transfer station is the only transfer station in Staten Island for residential municipal solid waste and is operated by DSNY. Accordingly, the transfer station is anticipated to be operational until at least 2025 and will continue to serve all three community districts on Staten Island.

The Proposed Actions include the disposition of three City-owned properties. DSNY's Staten Island District 1 (S1) garage is located on City Disposition Site 2 at 539 Jersey Street/100 Brook Street (Block 34, Lot 1). The garage is currently a one-story building with approximately 14,535 sf of space that houses equipment and supports operations for Sections 1 and 2 of District 1. In 2010, DSNY relocated equipment and support functions for Sections 3 and 4 from this site to an interim site within the former Fresh Kills Landfill complex, pending construction of a new S1 facility. As funding has been authorized for a new facility, in the No-Action Condition, it is anticipated that DSNY would move all S1 Garage operations to a new building to be built within the DSNY garage complex at 1000 West Service Road, adjacent to the former Fresh Kills Landfill on Staten Island's West Shore. This relocation is independent of the Proposed Actions and is expected to occur by or before 2023.

SOLID WASTE GENERATION ON PROJECTED DEVELOPMENT SITES

As outlined in Chapter 1, "Project Description," the Reasonable Worst Cast Development Scenario (RWCDS) identified 30 Projected Development Sites in the Project Area. The Projected Development Sites currently comprise approximately 7,096 sf of residential use (6 dwelling units), 123,638 sf of office use, 95,274 sf of retail use, 27,728 sf of auto-related use, 24,092 sf of storage use, 35,900 sf of factory use, 73,092 sf of other commercial uses, and 13,090 sf of community facility use. As shown in Table 12-1, based on the Citywide solid waste generation rates in Table 14-1 of the *CEQR Technical Manual,* the existing uses on the Projected Development Sites generate approximately 27.79 tons of solid waste per week. It is estimated DSNY processes 7.77 tons of solid waste per week, and various private carters process the remaining 20.02 tons of solid waste per week.

[14] Ibid.
[15] Table IV 2-2.
[16] Table II 2-6.
[17] Table 3.3-1.

Table 12-1: Existing Solid Waste Generation on Projected Development Sites

Use	Floor Area (square feet)	Population	Solid Waste Generation Rate (pounds/week)[2]	Solid Waste Generation	
				(pounds/week)	(tons/week)
Residential	7,096	6 dwelling units	41 per household	246	0.12
Community Facility	13,090	39 employees	0.03 per square foot	393	0.20
Retail	95,274	286 employees	79 per employee	22,594	11.30
Office	123,638	495 employees	13 per employee	6,435	3.22
Auto-Related	27,728	28 employees	72.5 per employee	2,030	1.02
Storage	24,092	2 employees	9 per employee	18	0.01
Other Commercial	73,092	219 employees	79 per employee	17,301	8.65
Factory/Industrial	35,900	36 employees	182.5 per employee	6,570	3.28
Total Solid Waste Generation				**55,587**	**27.79**
Solid Waste Handled by DSNY [1]				15,539	7.77
Solid Waste Handled by Private Carters				40,048	20.02

***Notes**:*
[1]The three City-owned Disposition Sites and Stapleton Waterfront Phase III Sites A and B1 are neither residential nor community facility uses. However, it is assumed that waste generated on these sites would be handled by DSNY because they are City-owned or City-occupied buildings.
[2]Solid Waste Generation Rate is listed in Table 14-1 of the CEQR Technical Manual, 2014. Estimates of solid waste by use per unit are listed below: Residential: 41 lb./week per dwelling unit; Community Facility: 0.03 lb./week per square foot; Retail: 79 lb./week per employee; assume 3 employees per 1,000 sf of retail space; Office: 13 lb./week per employee; assume 1 employee per 250 sf of office space; Factory/Industrial: Rate is average of apparel/textile manufacturing and printing/publishing – 182.5 lb./week per employee; assume 1 employee per 1,000 sf of industrial space; Auto-Related: Rate is average of retail and wholesale rate – 72.5 lb./week per employee; 1 employee per 1,000 sf of auto-related use; Storage: 9 lb./week per employee; assume 1 employee per 15,000 sf of storage space; Other Commercial: Rate is the same as general retail – 79 lb./week per employee; assume 3 employees per 1,000 sf of other commercial space.

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

As outlined in Chapter 1, "Project Description," the RWCDS identified 30 Projected Development Sites in the Project Area. In the No-Action Condition, the Projected Development Sites would comprise approximately 15,386 sf of residential use (12 dwelling units); 343,235 sf of commercial uses, including 99,179 sf of office use, 194,183 sf of retail use, 14,000 sf of restaurant use, and 35,873 sf of other commercial uses; and 37,879 sf of community facility use.

As shown in Table 12-2, based on the Citywide solid waste generation rates in Table 14-1 of the *CEQR Technical Manual,* solid waste generation is expected to increase in the No-Action Condition, with most of the additional solid waste processed by various private carters. Development on the Projected Development Sites in the No-Action Condition would result in a generation of 35.96 tons of solid waste per week; approximately 3.53 tons of solid waste per week would be processed by DSNY, and the remaining 32.43 tons of solid waste per week would be processed by private carters. The estimated solid waste generated by the development in the No-Action Condition represents an incremental increase of approximately 8.17 tons of solid waste per week over existing conditions; it is anticipated DSNY would process approximately 4.24 fewer tons of solid waste per week and private carters would process an additional 12.41 tons of solid waste per week.

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

Use	Floor Area (square feet)	Population	Solid Waste Generation Rate (pounds/week)[2]	Solid Waste Generation	
				(pounds/week)	(tons/week)
Residential	15,386	12 dwelling units	41 per household	492	0.25
Community Facility	37,879	114 employees	0.03 per square foot	1,136	0.57
Retail	194,183	583 employees	79 per employee	46,057	23.03
Office	99,179	397 employees	13 per employee	5,161	2.58
Restaurant	14,000	42 employees	251 per employee	10,542	5.27
Other Commercial	35,873	108 employees	79 per employee	8,532	4.27
Total Solid Waste Generation				**71,920**	**35.96**
Solid Waste Handled by DSNY [1]				7,067	3.53
Solid Waste Handled by Private Carters				64,853	32.43

Notes:
[1]The City Disposition Sites and Stapleton Waterfront Phase III Sites A and B1 are neither residential nor community facility uses. However, it is assumed that waste generated on these sites would be handled by DSNY because they are City-owned or City-occupied buildings.
[2] Solid Waste Generation Rate is listed in Table 14-1 of the CEQR Technical Manual, 2014. Estimates of solid waste by use per unit are listed below: Residential: 41 lb./week per dwelling unit; Community Facility: 0.03 lb./week per square foot; Retail: 79 lb./week per employee; assume 3 employees per 1,000 sf of retail space; Office: 13 lb./week per employee; assume 1 employee per 250 sf of office space; Restaurant: 251 lb./ week per employee; assume 3 employees per 1,000 sf of restaurant space; Other Commercial: Rate is the same as general retail – 79 lb./week per employee; assume 3 employees per 1,000 sf of other commercial space.

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

Development on the Projected Development Sites in the With-Action Condition would comprise 2,568,971 sf of residential use (approximately 2,569 dwelling units); 618,583 sf of commercial uses, including 316,939 sf of office use, 230,644 sf of retail use, and 71,000 sf of restaurant use; and 84,678 sf of community facility use. This would be a net increase over the No-Action Condition of 2,553,585 sf of residential use (approximately 2,557 dwelling units), 275,348 sf of commercial use, and 46,799 sf of community facility use. Therefore, the Proposed Actions are expected to result in an increase of solid waste generation, as discussed below.

As shown in Table 12-3, based on the Citywide solid waste generation rates in Table 14-1 of the *CEQR Technical Manual,* the Proposed Actions would generate approximately 116.24 tons of solid waste per week; it is anticipated DSNY would process approximately 53.93 tons of solid waste per week, and the remaining 62.31 tons of solid waste per week would be processed by private carters. The solid waste generated by the Proposed Actions represents an incremental increase of approximately 80.28 tons of solid waste per week over the No-Action Condition. Approximately 63 percent (50.40 tons per week) of the additional solid waste generated by the Proposed Actions would be handled by DSNY, and approximately 37 percent (29.88 tons per week) would be handled by private carters.

DSNY is responsible for the collection and processing of solid waste generated by residential and community facility uses. It is anticipated the Proposed Actions would result in a net increase of 2,557 dwelling units and 46,799 sf of community facilities use over the No-Action Condition. Therefore, as shown in Table 12-4, it is anticipated that in the With-Action Condition, DSNY would process a net

increase of approximately 50.40 tons of solid waste per week over the No-Action Condition. This increase in solid waste per week that DSNY is anticipated to process in the With-Action Condition represents approximately 0.04 percent of the anticipated waste handled per week by DSNY by the year 2025, and approximately 0.03 percent of the anticipated waste handled per week by the City of New York by the year 2025. Residents would be required to participate in the City's recycling program for paper, metals, and certain types of plastics and glass.

Based on the average DSNY truck capacity of approximately 12.5 tons, the Proposed Actions would produce approximately four additional DSNY truckloads of solid waste per week. In addition, the SWMP projects an estimated increase in Staten Island's population of 25.76 percent by the year 2025.[18] Based on this information, it is anticipated that DSNY would be able to accommodate the increase in solid waste resulting from the Proposed Actions.

Table 12-3: With-Action Solid Waste Generation on Projected Development Sites

Use	Floor Area (square feet)	Population	Solid Waste Generation Rate (pounds/week)[2]	Solid Waste Generation	
				(pounds/ week)	(tons/ week)
Residential	2,568,971	2,569 dwelling units	41 per household	105,329	52.66
Community Facility	84,678	254 employees	0.03 per square foot	2,540	1.27
Retail	230,644	692 employees	79 per employee	54,668	27.33
Office	316,939	1,268 employees	13 per employee	16,484	8.24
Restaurant	71,000	213 employees	251 per employee	53,463	26.73
Total Solid Waste Generation				**232,484**	**116.24**
Solid Waste Handled by DSNY [1]				*107,869*	*53.93*
Solid Waste Handled by Private Carters				*124,615*	*62.31*

Notes:

[1]Because the City Disposition Sites and Stapleton Waterfront Phase III Sites A and B1 would be disposed to a private developer, waste generated by the development on these sites would be handled by DSNY and private carters according to their proposed land uses under the With-Action Condition. The terms of the disposition may include a long term lease.

[2] *Solid Waste Generation Rate is listed in Table 14-1 of the CEQR Technical Manual, 2014. Estimates of solid waste by use per unit are listed below: Residential: 41 lb./week per dwelling unit; Community Facility: 0.03 lb./week per square foot; Retail: 79 lb./week per employee; assume 3 employees per 1,000 sf of retail space; Office: 13 lb./week per employee; assume 1 employee per 250 sf of office space; Restaurant: 251 lb./ week per employee; assume 3 employees per 1,000 sf of restaurant space.*

Private carters would be responsible for the handling of commercial and industrial uses, which would be subject to mandatory recycling requirements for paper, metals, construction waste, aluminum foil, and metal, glass, and plastic containers. It is anticipated the Proposed Actions would result in a net increase of 275,348 sf of commercial use over the No-Action Condition. As shown in Table 12-4, it is anticipated development in the With-Action Condition would generate approximately 62.31 tons of commercial solid waste per week; this represents an incremental increase of approximately 29.88 tons of solid waste per week over the No-Action Condition. Based on the average private carter truck capacity of approximately 13.5 tons, the Proposed Actions would produce approximately two additional private carter truckloads of solid waste per week. The anticipated increase of 29.88 tons of solid waste per week handled by private carters in the With-Action Condition represents

[18] Table II 2-1, *DSNY Comprehensive Solid Waste Management Plan, 2006.*

approximately 0.04 percent of the anticipated commercial waste handled per week by private carters by the year 2025, and 0.02 percent of the anticipated waste handled by the City of New York by the year 2025.

Table 12-4: 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/week)	27.79	35.96	116.24	80.28
Solid Waste Handled by DSNY (tons/week)	7.77	3.53	53.93	50.40
Solid Waste Handled by Private Carters (tons/week)	20.02	32.43	62.31	29.88

The generation of solid waste in the With-Action Condition would result in an incremental increase of approximately six additional truckloads per week over the No-Action Condition, comprising approximately four additional DSNY truckloads and two additional private carter truckloads. The total incremental increase of solid waste generated by the development in the With-Action Condition would represent approximately 0.04 percent of solid waste generated per week anticipated to be process by the City of New York in 2025. The solid waste generated by the Proposed Actions would not be significant relative to the total Citywide and region-wide system. This is due to the large size of the City's public and private refuse and recyclables collection fleets, as well as the existing capacity of the local and regional transfer stations and related access to materials recovery facilities and disposal facilities.

Based on this information, the Proposed Actions would not adversely impact DSNY or the City's solid waste management capacity. The Proposed Actions would not conflict with the SWMP or have a direct effect on a solid waste management facility. Therefore, no significant adverse impacts on the City's solid waste and sanitation services would occur.