

**A. INTRODUCTION**

This chapter considers the proposed projects' potential effects on solid waste and sanitation services. Using the methodologies of the 2014 *City Environmental Quality Review (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 would 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 described in Chapter 1, "Project Description," the three project sites—Sites 4 (4A/4B), 5, and 6A—are located in the Lower East Side neighborhood of Manhattan in Community District (CD) 3, within the boundaries of the Two Bridges Large Scale Residential Development (LSRD). The proposed projects each require a minor modification to the previously approved Two Bridges LSRD to enable the development of three new mixed-use buildings within the Two Bridges LSRD. In total, the proposed projects would result in approximately 2,527,727 gross square feet (gsf) of residential use (approximately 2,775 dwelling units [DUs]), 10,858 gsf of retail use, 17,028 gsf of community facility use, and new and altered publicly accessible and private open space.

To assess the potential effects of the proposed projects on solid waste and sanitation services, the detailed analysis in this chapter estimates the amount of solid waste generated on the project sites in existing conditions, and provides a comparison to solid waste generation estimates for the project sites under No Action and With Action Conditions.

**PRINCIPAL CONCLUSIONS**

The analysis finds that the proposed projects would not result in a significant adverse impact on solid waste and sanitation services. The proposed projects would not directly affect a solid waste management facility. The proposed projects would collectively generate approximately 58 tons per week of solid waste over the No Action condition, of which approximately 98 percent (57.00 tons) would be handled by the New York City Department of Sanitation (DSNY), and approximately two percent (1.30 tons) would be handled by private carters. This correlates to approximately five additional truckloads per week of solid waste handled by DSNY. The amount of commercial waste estimated to be produced in the With Action condition represents a decrease compared to the existing and No Action conditions, therefore the number of truckloads per week handled by private carters would be reduced. The additional solid waste resulting from the proposed projects, to be handled by DSNY, would be a negligible increase relative to the approximately 12,260 tons of solid waste handled by DSNY every day, or the 9,000 tons

handled by private carters.<sup>1</sup> As such, the proposed projects would not result in an increase in solid waste that would overburden available waste management capacity. Furthermore, the proposed projects would not conflict with, or require any amendment to, the City's solid waste management objectives as stated in SWMP.

## **B. 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 projects 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.

An assessment of solid waste and sanitation services is a density-based technical 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 project sites under existing conditions and in the 2021 No Action condition. The analysis also estimates the proposed projects' solid waste generation based on rates for typical land uses and activities as provided in Table 14-1 of the *CEQR Technical Manual*, and assesses the effects of the proposed projects' solid waste generation, in comparison to the No Action condition, on municipal and private sanitation services.

## **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 comprises 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.<sup>2</sup>

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 generate approximately 9,000 tons of MSW and recyclables daily.

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<sup>1</sup> About DSNY: <https://www1.nyc.gov/assets/dsny/site/about>, accessed November 2018  
<http://www1.nyc.gov/assets/dsny/about/inside-dsny.shtml>, accessed February 2018

<sup>2</sup> About DSNY: <https://www1.nyc.gov/assets/dsny/site/about>, accessed November 2018  
<http://www1.nyc.gov/assets/dsny/about/inside-dsny.shtml>, accessed February 2018

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 (including aluminum foil), glass, and plastic containers, in addition to meeting the commercial recycling requirements.

The Mayor has announced that DSNY will expand voluntary residential food waste collection to the entire City by October 2018. Such organic waste is to be converted in the region to compost, biogas, and/or other beneficial use. DSNY's voluntary organics program enables it to increase the diversion of food and other organic waste from landfills and waste-to-energy plants, in accordance with the SWMP and the Mayor's *One NYC: The Plan for a Strong and Just City*. The City also mandates composting or biogas production for the food waste from certain large food waste generators such as food wholesalers, larger hotels, and arenas. The food waste is taken to composting facilities and anaerobic digestion facilities in the region.

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. 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 SWMP, the City's commercial solid waste generation is projected to increase to approximately 74,000 tons per week by the year 2025.<sup>3</sup> The amount of DSNY-managed waste is projected to increase to approximately 115,830 tons per week by the year 2026.<sup>4</sup>

The City's solid waste management services are undertaken by DSNY in accordance with SWMP. 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. 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. 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. SWMP also mandates 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 wastes that are not recycled, reused, or converted to a useful product locally must be exported from the City for disposal because New

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<sup>3</sup> Comprehensive Solid Waste Management Plan, September 2006; Attachment IV, Table IV 2-2.

<sup>4</sup> Comprehensive Solid Waste Management Plan, September 2006; Attachment II, Table II 2-6.

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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 resources 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 typically is 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, 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. 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 in Staten Island, which processes them for use in the production of liner board and similar products.

**SOLID WASTE GENERATION ON PROJECTED DEVELOPMENT SITES**

In total, the project sites are currently occupied by 1,053 dwelling units (DUs), 13,660 gsf of retail space (a portion of which is currently untenanted), 27,552 gsf of community facility space, 80,020 sf of private open space, and 153 accessory parking 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 project sites generate approximately 24 tons of solid waste per week. As shown in **Table 12-1**, approximately 3 tons (11 percent) per week of the existing solid waste generated at the project sites is handled by private carters, and approximately 89 percent (or 22 tons) per week is handled by DSNY.

**Table 12-1**  
**Existing/No Action Solid Waste Generation on Project Sites**

Use	Floor Area (sf)	Population	Solid Waste Generation Rate (lbs/wk)	Solid Waste Generation	
				(lbs/wk)	(tons/wk)
Residential	1,053 units	2,256 residents	41 per household	43,173	21.59
Retail	13,599 <sup>†</sup>	41 employees	79 per employee	3,239	1.62
Community Facility	27,552	28 employees	13 per employee	364	0.18
<b>Total Solid Waste Generation</b>				<b>46,776</b>	<b>23.39</b>
<b>Solid Waste Handled by DSNY (includes residential and all CF uses)</b>				<b>43,537</b>	<b>21.77</b>
<b>Solid Waste Handled by Private Carters</b>				<b>3,239</b>	<b>1.62</b>
<p><b>Notes:</b> 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/wk per dwelling unit.            General retail: 79 lbs/wk per employee; assume 3 employees per 1,000 sf.            Community facility uses: 13 lbs/wk per employee (same generation rate as office).  <sup>†</sup> In existing conditions, a portion of this retail space is currently untenanted.</p>					
<b>Source:</b> <i>CEQR Technical Manual</i> Table 14-1.					

## D. FUTURE WITHOUT THE PROPOSED PROJECTS

For the future without the proposed projects (the No Action condition), it is assumed that the project sites would continue in their existing conditions, including the Rutgers Slip Open Space on Site 5 remaining private open space. The existing retail space in the 235 Cherry Street building (Lot 76) on Site 4 (4A/4B) would be re-tenanted and minor changes would be made to the existing 80 Rutgers/Lot 70 building. No new development would occur. **Table 12-1** summarizes the No Action conditions for the three project sites.

SWMP encompasses the known plans to manage the City’s future solid waste management practices closest to the 2021 build year. As described above, the amount of DSNY-managed waste is projected to increase to approximately 115,830 tons per week by the year 2026, and the City’s commercial solid waste generation is projected to increase to approximately 74,000 tons per week.<sup>5</sup>

## E. FUTURE WITH THE PROPOSED PROJECTS

As detailed in Chapter 1, “Project Description,” it is anticipated that in the With Action condition, the proposed projects would introduce approximately 2,775 new residential units, 10,858 gsf of additional retail space, and 17,028 gsf of additional community facility space to the project sites in comparison to the No Action condition.

As shown in **Table 12-2**, the incremental solid waste generation in the future with the proposed projects would be approximately 116,603 pounds per week, which represents an additional 58 tons (approximately) in weekly solid waste generation as compared with the No Action condition.

**Table 12-2  
With Action Solid Waste Generation on Project Sites**

Use	Floor Area (sf)	Population	Solid Waste Generation Rate (lbs/wk)	Solid Waste Generation	
				(lbs/wk)	(tons/wk)
Residential ( <i>New</i> )	2,775 units	5,836 residents	41 per household	113,775	56.89
Residential ( <i>Remaining</i> )	1,053 units	2,256 residents		43,173	21.59
Retail ( <i>New</i> )	10,858	33 employees	79 per employee	2,607	1.30
Retail ( <i>Remaining</i> )	13,599	41 employees		3,239	1.62
Community Facility ( <i>New</i> )	17,028	17 employees	13 per employee	221	0.11
Community Facility ( <i>Remaining</i> )	27,552	28 employees		364	0.18
<b>Total With Action Incremental Solid Waste Generation</b>				<b>163,379</b>	<b>81.69</b>
<b>With Action Incremental Solid Waste Generation</b>				<b>116,603</b>	<b>58.30</b>
<b>Incremental Solid Waste to be Handled by DSNY (includes residential and all CF uses)</b>				<b>113,996</b>	<b>57.00</b>
<b>Incremental Solid Waste to be Handled by Private Carters</b>				<b>2,607</b>	<b>1.30</b>
<b>Notes:</b> 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/wk per household. General retail: 79 lbs/wk per employee; assume 3 employees per 1,000 sf. Community facility uses: 13 lbs/wk per employee (same generation rate as office). <b>Source:</b> <i>CEQR Technical Manual</i> Table 14-1.					

<sup>5</sup> SWMP, September 2006. Attachment IV, Table IV 2-2 and Attachment II, Table II 202.

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As shown in **Table 12-2**, the proposed projects would generate approximately 1.30 tons of commercial waste per week, over the No Action condition. Solid waste generated by the proposed retail uses would be collected by private commercial carters. The proposed residential and community facility uses would generate approximately 57 tons of solid waste per week. Solid waste generated by the proposed 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. The proposed projects would be subject to mandatory recycling requirements for paper, metals, construction waste, aluminum foil, and metal, glass, and plastic containers.

**Table 12-3**  
**Comparison of Solid Waste Generation on Project Sites**  
**(Existing/No Action, With Action Conditions)**

	<b>Existing/No Action Condition</b>	<b>With Action Condition</b>	<b>Increment (No Action to With Action)</b>
Total Solid Waste Generation (tons/wk)	23.39	81.69	58.28
Solid Waste Handled by DSNY (tons/wk)	21.77	78.77	57.0
Solid Waste Handled by Private Carters (tons/wk)	1.62	2.92	1.30

As shown in **Table 12-3**, compared with the No Action condition, the proposed projects would result in an approximately 58-ton increase in weekly solid waste handled by DSNY. This would represent approximately 0.03 percent of the City’s future waste generation handled by DSNY. Based on the typical DSNY collection truck capacity of approximately 12.5 tons, the new residential and community facility uses introduced by the proposed projects would be expected to generate solid waste equivalent to approximately five truckloads per week. This increase is not expected to overburden DSNY’s solid waste handling services.

Overall, the proposed actions would not conflict with SWMP, or have a direct effect on a solid waste management facility. The proposed projects would generate approximately five DSNY truckloads and less than one commercial carter truckloads of refuse per week. The incremental solid waste generated by the proposed projects would not overburden the City’s solid waste handling systems, and therefore the proposed projects would not have a significant adverse impact on the City’s solid waste and sanitation services. \*