Chapter 11: Solid Waste and Sanitation Services

A. INTRODUCTION

According to the 2012 *City Environmental Quality Review (CEQR) Technical Manual*, a solid waste and sanitation services assessment should be conducted if a project would generate solid waste or enacts regulatory changes affecting the management of the city's waste, or if the action involves the construction, operation, or closing of any type of solid waste management facility. The manual also states that projects with a generation rate of less than 100,000 pounds per week are not considered large and do not warrant detailed analysis.

To assess the potential effects of the Proposed Action on solid waste and sanitation services, a quantitative assessment was conducted. This entailed the calculation of existing solid waste generation on the projected development sites, as well as a comparison of projected calculations in the future without the Proposed Action (the No-Action condition) and the future with the Proposed Action (the With-Action condition). This chapter also describes existing and future New York City solid waste disposal practices, and assesses the impacts of the Proposed Action's solid waste generation (from the projected developments) on the city's collection needs and disposal capacity. The Proposed Action's consistency with the city's Solid Waste Management Plan is also assessed.

PRINCIPAL CONCLUSIONS

As described below, no significant adverse impacts on solid waste and sanitation services are anticipated as a result of the Proposed Action. Given that there is an extensive system of solid waste collection and disposal services available in the Rezoning Area provided by the New York City Department of Sanitation (DSNY) (for residential and institutional solid waste) and by private carters (for commercial/industrial solid waste), and that the net increments of solid waste under the Proposed Action would be a minimal addition to the city's solid waste stream, the Proposed Action would not result in a significant adverse impact on solid waste and sanitation services.

B. METHODOLOGY

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 2022 future 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; and

- Assesses the effects of the Proposed Action's incremental solid waste generation on municipal and private sanitation services.

ANALYSIS APPROACH

As analyses of solid waste/sanitation services are density-based technical analyses, only the anticipated development on the projected development sites form the basis for this impact assessment. As discussed in Chapter 1, "Project Description," since the Proposed Action would permit a range of different types of development within the Rezoning Area, two reasonable worst-case development scenarios (RWCDS) were developed to represent potential development scenarios that could result from the Proposed Action. Under RWCDS 1, it is assumed that the maximum permitted residential development would occur on each of the development sites. Under RWCDS 2, it is assumed that community facility uses with sleeping accommodations (i.e., dormitories), rather than residential buildings, would be developed on two of the projected development sites. Based on the solid waste generation rates provided in the *CEQR Technical Manual*, it was determined that RWCDS 1 would be expected to generate slightly more solid waste than RWCDS 2. Therefore, for the purposes of the solid waste and sanitation analysis, RWCDS 1 provides the basis for the impact assessment.

C. EXISTING CONDITIONS

DESCRIPTION OF CURRENT SANITATION SERVICES

In the City of New York, residential and institutional refuse is handled by DSNY, while solid waste from commercial and manufacturing uses is collected by private carters. DSNY collects approximately 16,500 tons per day of refuse and recyclables, of which approximately 5,000 tons are recycled.

Commercial carters pick up solid waste from businesses, manufacturers and offices and take the waste materials to transfer stations where the recyclable materials are separated from the solid waste. The solid waste is consolidated into larger trucks for transport and disposal in landfills outside of New York City. The recyclable materials are sold and transported to manufacturing facilities. Private carters handle about 14,830 tons per week of recyclables and solid waste. In addition, private carters handle about 19,070 tons per day of construction debris and excavated materials.[1]

The city's solid waste management services are undertaken in accordance with the existing Solid Waste Management Plan (SWMP) (September 2006), which is the responsibility of DSNY. The existing SWMP, which modified the city's previously approved 1992 plan, as amended in 1996 and 2000, was approved for submission to the New York State Department of Environmental Conservation (NYSDEC) by a resolution of the City Council on July 19, 2006. The city adopted the existing plan on July 27, 2006. The SWMP was approved by NYSDEC in a letter received by DSNY on October 27, 2006. The SWMP establishes a hierarchy of preferred solid waste management methods to reduce and process solid waste generated within the city. The objectives of the SWMP are, in order of importance: waste minimization; reuse, recycling, or composting; and export for out-of-city disposal. The SWMP mandates that solid waste be

[1] The DSNY SWMP anticipates and provides for a projected increase in solid waste generation citywide over the 20-year plan period as a result of population growth and non-specific development. By 2020, the SWMP anticipates a daily increase of 2,145 tons or 12.7 percent.

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. New York City residents are required to separate aluminum foil, glass, plastic, and metal containers, and newspapers and other paper wastes from household waste for separate collection. The SWMP also mandates that commercial establishments are subject to recycling requirements. Businesses must source-separate certain types of paper wastes, 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.

The new SWMP includes a Long Term Export Program for residential waste. The city's Long Term Export Program is anticipated to be implemented through: (1) the development of four converted marine transfer stations; (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. As currently proposed, the new SWMP would mandate the use of up to nine converted marine transfer station (MTS) facilities and private transfer stations within the five boroughs at which solid waste would be consolidated, containerized, and barged or railed out of the city. The barges currently used at MTS facilities would be replaced or retrofitted with new sealed containers or "intermodal containers" capable of being transported on barge or rail. The four converted MTS facilities would be designed to each process at least 4,290 tons per day and accommodate 30 collection vehicles per hour. In the interim, all municipal solid waste would be trucked out of the city.[1]

The new SWMP also proposes three broad categories of action to address traffic issues associated with commercial waste handling as follows: (1) improve conditions at and around transfer stations; (2) facilitate a transition from a network heavily reliant on trucks to one that relies primarily on barge and rail; and (3) redistribute private transfer capacity from a small number of communities that have the largest proportion of the system's impacts.

The SWMP will require all municipal waste generated from the development site to be trucked to the Essex County Resource Recovery Facility in Newark, New Jersey, where waste would be received and processed.

QUANTITATIVE ANALYSIS OF SOLID WASTE GENERATION

The projected development sites are currently occupied by 29 dwelling units and 892,506 gsf of commercial uses including 678,053 gsf of office use, 62,063 gsf of retail, 53,263 of garage space, 95,815 gsf of storage space, and 3,312 gsf of other commercial space. It is estimated that there are currently 2,929 employees on the projected development sites.

Table 11-1 below summarizes the current conditions on the projected development sites, and provides an estimate of the amount of solid waste currently generated. As shown in the table, the existing uses on the projected development sites currently generate a total of approximately 51,451 pounds (or 26 tons) of solid waste per week collected mostly by private carters, with 1,189 lbs/week collected by DSNY.

[1] DSNY, *Comprehensive Solid Waste Management Plan*, September 2006.

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

Use	Area (sf)	Population	Solid Waste Generation (lbs/wk)[1]
Retail[2]	62,063	186 employees	14,694
Office[3]	678,053	2,713 employees	35,269
Hotel	0	0 employees	0
Other Commercial[4]	152,390	23 employees	299
Residential[5]	29 (units)	29 households	1,189
Public Parking[6]	291 (spaces)	6 employees	N/A
Accessory Parking	0 (spaces)	0 employees	N/A
	Total	**N/A**	**51,451**

Notes:
1. Solid waste generation rates based on the *CEQR Technical Manual*.
2. Assumes approximately 3 employees per 1000 sf of retail space and 79 lbs of solid waste per week per employee.
3. Assumes approximately 250 sf per employee and 13 lbs/week per employee.
4. Includes garage, storage, and church uses, based on MapPLUTO data. Assumes an estimated 23 employees and 13 lbs/week per employee.
5. Assumes 41 lbs/week per household.
6. Solid waste generation associated with parking is assumed to be negligible.

D. THE FUTURE WITHOUT THE PROPOSED ACTION

As described in Chapter 1, "Project Description," the No-Action condition consists of currently planned or ongoing development projects within the Rezoning Area, as well as the development that is expected to occur on certain sites controlled by the Applicant by 2022. Absent the Proposed Action, it is expected that the projected development sites will contain 1,783,929 gsf of commercial space. In total, there will be an approximate increase of 891,422 gsf of commercial space (retail, office, hotel, and other) on the projected development sites as compared with existing conditions. In addition, in the No-Action condition the projected development sites would include 29 dwelling units, the same as in the existing condition. Therefore, overall, as discussed below, solid waste generated by the projected development sites will increase in the No-Action condition.

As shown in **Table 11-2**, the solid waste generation rate assumptions utilized for existing conditions were applied in calculating solid waste generation in the No-Action condition. Based on those assumptions, it is estimated that in the No-Action condition the projected development sites will generate approximately 93,171 pounds (or 47 tons) of solid waste per week, the majority of which would be handled by private carters. As in the existing condition, residential uses on these sites would generate an estimated 1,189 pounds (or 0.6 tons) of solid waste per week in the No-Action condition. Solid waste generated by new residential development would be collected by DSNY collection trucks and would be served by existing DSNY collection routes. As shown in **Table 11-2**, uses on the projected development sites in the No-Action condition would generate approximately 81 percent more solid waste when compared with existing conditions.

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

Use	Existing	No-Action Condition		
	Solid Waste Generation (lbs/wk)[1]	Area (sf)	Population	Solid Waste Generation (lbs/wk)[1]
Retail[2]	14,694	125,583	376 employees	29,704
Office[3]	35,269	537,165	2,149 employees	27,937
Hotel[7]	0	739,170	422 employees	31,650
Other Commercial[4]	299	382,010	207 employees	2,691
Residential[5]	1,189	29 (units)	29 households	1,189
Public Parking[6]	N/A	63 (spaces)	1 employee	N/A
Accessory Parking	N/A	180 (spaces)	4 employees	N/A
Total	**51,451**	**N/A**	**N/A**	**93,171**

Notes:
1. Solid waste generation rates based on the *CEQR Technical Manual*.
2. Assumes approximately 3 employees per 1000 sf of retail space and 79 lbs of solid waste per week per employee.
3. Assumes approximately 250 sf per employee and 13 lbs/week per employee.
4. Includes garage, storage, and church uses in existing conditions, based on MapPLUTO data. Assumed to include other commercial uses such as trade schools, banquet halls, or dance studios in No-Action condition. Assumes an estimated 23 employees in the existing condition, 207 employees in the No-Action condition, and 13 lbs/week per employee.
5. Assumes 41 lbs/week per household.
6. Solid waste generation associated with parking is assumed to be negligible.
7. Assumes 1,126 hotel rooms in No-Action condition, approximately 1 worker per 2.67 rooms, and 75 lbs/week per employee.

E. THE FUTURE WITH THE PROPOSED ACTION

Under the With-Action condition, it is anticipated that new development occurring on the projected development sites under RWCDS 1 would consist of 3,352 residential units, including 679 affordable units, and 901,417 gsf of commercial space (retail, office, hotel, and other), in addition to 75,000 gsf of community facility space. As compared with the development anticipated in the No-Action condition, the Proposed Action would result in a net increase of 3,323 residential units (including 679 affordable units) and a net decrease of 882,512 gross square feet (gsf) of commercial space (including a net increase of 99,806 gsf of retail space and 139,583 gsf of office space, and a net decrease of 739,170 gsf of hotel use and 382,010 gsf of other commercial space) on the projected development sites. In addition, the Proposed Action would result in a net increase of 75,000 gsf of community facility space (a 444-seat school on Projected Development Site 1).

The solid waste generation assumptions utilized for the existing and No-Action conditions were also used in calculating solid waste generation in the With-Action condition. **Table 11-3** shows the cumulative solid waste expected by uses on the projected development sites in the With-Action condition. It is estimated that the projected development sites would generate 227,129 pounds (or 114 tons) of solid waste per week in the With-Action condition. As shown in **Table 11-3**, new development on the projected development sites in the With-Action condition would generate an additional 133,958 pounds (or 67 tons) of solid waste per week as compared with the No-Action condition.

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

Use	No-Action Condition	With-Action Condition			Solid Waste Increment (lbs/wk)[1]
	Solid Waste Generation (lbs/wk)[1]	Area (sf)	Population	Solid Waste Generation (lbs/wk)[1]	
Retail[2]	29,704	224,669	674 employees	53,246	23,542
Office[3]	27,937	676,748	2,707 employees	35,191	7,254
Hotel[7]	31,650	0	0 employees	0	-31,650
Other Commercial[4]	2,691	0	0 employees	0	-2,691
Community Facility[8]	0	75,000	40 employees	1,332	1,332
Residential[5]	1,189	3,352 (units)	3,352 units	137,432	136,243
Public Parking[6]	N/A	0	0 employees	N/A	N/A
Accessory Parking	N/A	706	14 employees	N/A	N/A
Total	**93,171**	**N/A**	**N/A**	**227,129**	**133,958**

Notes:
1. Solid waste generation rates based on the *CEQR Technical Manual*.
2. Assumes approximately 3 employees per 1000 sf of retail space and 79 lbs of solid waste per week per employee.
3. Assumes approximately 250 sf per employee and 13 lbs/week per employee.
4. Includes garage, storage, and church uses in existing conditions, based on MapPLUTO data. Assumed to include other commercial uses such as trade schools, banquet halls, or dance studios in No-Action condition. Assumes an estimated 209 employees in the No-Action condition, 2 employees in the With-Action condition, and 13 lbs/week per employee.
5. Assumes 41 lbs/week per household.
6. Solid waste generation associated with parking is included in the solid waste generation estimates for the other existing uses on the projected development sites.
7. Assumes 1,126 hotel rooms in No-Action condition, approximately 1 worker per 2.67 rooms, and 75 lbs/week per employee.
8. Assumes a 444-seat school (3 lbs/week per pupil).

In the With-Action condition, residential uses on these sites would generate an estimated 137,432 pounds (or 69 tons) of solid waste per week, and community facility uses (a new public elementary school) would generate approximately 1,332 pounds per week of solid waste. Solid waste generated by new residential development and the new community facility uses would be collected by DSNY collection trucks and would be served by existing DSNY collection routes. As a practice, DSNY adjusts its operations to service the community. Residents would be required to participate in the city's ongoing recycling program for paper, metals, and certain types of plastics and glass.

The solid waste generated by residential and community facility uses in the With-Action condition would constitute an incremental increase of approximately 68 tons per week (or 10 tons per day) as compared with the No-Action condition. According to the *CEQR Technical Manual*, the typical DSNY collection truck for residential refuse carries approximately 12.5 tons of waste material. Therefore, the new residential and community facility uses introduced by the Proposed Action on the projected development sites would be expected to generate solid waste equivalent to approximately 3/4 of a truck load per day. Given that the projected development sites are spread throughout the Rezoning Area and currently served by collection services, this minimal increase is not expected to overburden the DSNY's solid waste handling services. Thus, the Proposed Action would not have a significant adverse impact on the city's solid waste and sanitation services.

In addition, when compared with the No-Action condition, commercial waste—which would be handled by private carters—would have a net decrease of approximately 3.617 pounds (1.8 tons) per week, or an approximately 4 percent decrease compared with the No-Action condition.

F. CONCLUSION

Development that is anticipated to occur as a result of the Proposed Action would occur in an area that is currently served by DSNY residential trash and recycling pick-ups. The Proposed Action would not adversely affect the delivery of these services, or place a significant burden on the city's solid waste management system. The net increase in residential and institutional solid waste to be collected by DSNY as a result of the Proposed Action is about 10 tons per day, which is a fraction of the 16,500 tons per day that DSNY currently handles, and a minor portion of the total growth in the municipal solid waste stream projected by the SWMP by the year 2022. In addition, when compared with the No-Action condition, commercial waste—which would be handled by private carters—would decrease by about 1.8 tons per week (or approximately 4 percent) compared with the No-Action condition. Thus, the total solid waste generated as a result of the Proposed Action constitutes a minor increase in the city's solid waste stream and would be consistent with the SWMP.

Therefore, given that there is an extensive system of solid waste collection and disposal services available in the Rezoning Area for both residential and institutional solid waste services provided by DSNY and commercial/industrial collection provided by private carters, and that the net increments of solid waste under the Proposed Action would be a minimal addition to the city's solid waste stream, the Proposed Action would not result in a significant adverse impact on solid waste and sanitation services. ✷