

A. INTRODUCTION

As discussed in Chapter 1, “Project Description,” a reasonable worst case development scenario (RWCDS) for the proposed actions has identified residential, commercial, office, retail, hotel, community facility, and industrial development. Under the RWCDS, the residential development is expected to result in the addition of approximately 11,158 new residents to the project area by 2015 and it is anticipated that the commercial development would result in a net increase of approximately 10,333 new employees to the project area.

According to the *CEQR Technical Manual*, actions involving construction of housing or other development generally do not require an evaluation of solid waste impacts unless they are unusually large (a generation rate of less than 10,000 pounds per week, for example, is not considered large). Given the size of the development that could occur under the proposed actions and the potential solid waste generation, this chapter provides a detailed analysis of the impacts under the proposed action on solid waste and sanitation services.

To determine if proposed actions would impact the City’s Comprehensive Solid Waste Management Plan (SWMP) and to determine what, if any, impacts would occur, a quantitative assessment was conducted. This entails the calculation of existing solid waste generation on the projected development sites, as well as a comparison of equivalent calculations in the future both with and without the proposed actions.

This chapter has been updated since the Draft Environmental Impact Statement to reflect changes to the Reasonable Worst-Case Development Scenario as described in Chapter 1, “Project Description.”

B. EXISTING CONDITIONS**DESCRIPTION OF CURRENT SANITATION SERVICES**

In New York City, the Department of Sanitation (DSNY) is the City agency responsible for the collection and disposal of municipal solid waste and recyclable materials generated by residences, some nonprofit institutions, tax exempt properties, and City agencies. DSNY also collects waste from City litter baskets, street-sweeping operations, and lot cleaning activities. Fresh Kills, which was New York City’s only remaining landfill, was officially closed in March 2001. However, DSNY continues to collect residential and institutional solid waste and recyclables (the municipal waste stream). Under the current interim SWMP, most of the City’s municipal solid waste is delivered to transfer stations for sorting and transfer to larger “hopper” trucks and then transported out of the City. Likewise, municipal solid waste from the Jamaica area is collected and trucked directly to out-of-State landfills and waste-to-energy facilities. Private carters also consolidate commercial solid waste at waste transfer facilities both inside and outside the City, where it is then

transported to out-of-City disposal facilities. It is estimated that DSNY collects over 12,000 tons of residential and institutional refuse and recyclables per day.¹

The City's solid waste management services are undertaken in accordance with the SWMP, which is the responsibility of the DSNY. 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-the-City disposal. The 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. 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 area of the proposed actions is located within the DSNY service area covering Queens Community District 7, which includes the wasteshed for Community Districts 8 and 12. Only the residential components of proposed actions would potentially affect municipal solid waste services in this service area. Commercial establishments (restaurants, retail facilities, offices, industries, etc.) in the City contract with private waste carters for waste and recyclables collection and disposal. Private carters charge a fee on a per-cubic-yard basis. Depending on the source, volume, and the collection route, private carters use either manual or containerized collection. Private carters typically deliver waste to solid waste management facilities located both inside and outside of the City. The collected waste is unloaded from trucks, processed, and then loaded onto larger trucks or rail cars for transport to out-of-City disposal facilities. Overall, the City's businesses, the waste of which is collected by private carting companies, generate another 13,000 tons of refuse each day.²

QUANTITATIVE ANALYSIS OF SOLID WASTE GENERATION

As solid waste/sanitation services are a density-based technical analysis, only developments on projected development sites form the basis for this impact assessment. As detailed in Chapter 1, "Project Description," the projected development sites under the RWCDS currently contain the following active uses: 241 dwelling units (DUs), 1,113,645 square feet of commercial uses, 70,000 square feet of community facility use, and 420,728 square feet of industrial/manufacturing space. (There are also vacant structures and vacant land on the projected development sites that have no solid waste generation.)

On average, the number of persons-per-household in the study area is 3.13. Assuming this household size for existing residential uses, it is estimated that the 241 dwelling units currently located on the projected development sites house approximately 754 individuals. Based on average waste generation rates presented in Table 3M-1 of the *CEQR Technical Manual*, each individual is

¹ DSNY website: <http://www.nyc.gov/html/dos/html/dosfact.html>

² Ibid.

estimated to generate an average of 17 pounds per week of solid waste for a total of approximately 12,824 pounds per week. These residential units are served by DSNY collection routes.

It is estimated that there are approximately 3,619 employees in the 1,113,645 square feet of commercial uses estimated to exist on the 186 projected development sites.¹ Therefore current retail/commercial development is estimated to generate approximately 356,369 pounds per week. Based on the rate provided for government offices in the *CEQR Technical Manual*, it was conservatively assumed that 0.03 pounds of solid waste per week per square foot would be generated at community facility uses. Finally, it was assumed that there would be approximately 1 employee per 1,000 square feet of industrial space. For industrial uses, Table 3M-1 of the *CEQR Technical Manual* provides rates for two categories of uses. The average of the two rates, estimated at 183 pounds per week per employee, was utilized for the above uses as representative of general industrial/open storage uses. The projected development sites contain approximately 420,728 square feet of industrial/manufacturing space, which, based on the rates above, was estimated to generate approximately 76,993 pounds of solid waste per week.

These commercial and industrial (non-residential) uses are served by private carters. Table 14-1 below summarizes the current conditions on each of the projected development sites, and provides an estimate of the amount of solid waste currently generated by each projected development site, as well as the total amount of solid waste generated by all of the projected development sites. As shown in the table, the existing uses on the projected development sites currently generate a total of approximately 448,286 pounds of solid waste per week, most of which is collected by private carters.

Table 14-1
Existing Solid Waste Generation on Projected Development Sites

Use	Sq. ft./DUs	Solid Waste Generated (lbs/wk)
Commercial	1,113,645 sf	356,369
Industrial/Manufacturing	420,728 sf	76,993
Community Facilities	70,000 sf	2,100
Residential	241 DU	12,824
Total		448,286

Notes:
 Based on the following assumptions:
 Commercial Use: assume 3 employees per 1,000 sf for retail and 1 per 250 sf for office space, and 79 lbs of solid waste per week per employee. For the purposes of this analysis, higher commercial retail waste generation rate is used.
 Industrial/Manufacturing: assume 1 employee per 1,000 sf, and 183 lbs of solid waste per week per employee (based on average generation rates for two industrial categories listed in Table 3M-1 of the *CEQR Technical Manual*).
 Community Facility: assume 0.03 lbs of solid waste per week per sf (based on generation rate for Government Office listed in Table 3M-1).
 Residential Use: assume 3.13 residents per DU for existing units (based on CD average), and 17 lbs of solid waste per week per individual.

Sources: Solid waste generation rates based on *CEQR Technical Manual (2001)*.

¹ Assumes that half of the commercial space is retail (with 3 employees per 1,000 square feet of space) and half is office (with 1 employee per 250 square feet). It was conservatively assumed that all employees in this commercial space generate the approximately 79 pounds of solid waste per week listed for office employees in Table 3M-1 of the *CEQR Technical Manual*.

C. THE FUTURE WITHOUT THE PROPOSED ACTIONS (NO BUILD)

In the future without the proposed actions, the identified projected development sites are assumed to either remain unchanged from existing conditions, or become occupied by uses that are as-of-right under existing zoning. As discussed in Chapter 1, “Project Description,” the RWCDs under the proposed actions anticipates development on a number of sites under the No Build condition.

Therefore, it is assumed that, in the future without the proposed actions, the projected development sites would contain 1,815 dwelling units, 1,663,485 square feet of commercial/retail space, 214,344 square feet of community facility space, and 500,646 square feet of industrial/manufacturing uses. The solid waste generation from these uses is presented in Table 14-2.

**Table 14-2
Solid Waste Generation on Projected Development Sites Under No Build Conditions, Compared to Existing Conditions**

Use	Existing		No Build	
	Sq. ft./DUs	Solid Waste Generated (lbs/wk)	SF/DUs	Solid Waste Generated (lbs/wk)
Commercial	1,113,645 sf	356,369	<u>1,663,248.5 sf</u>	403,611
Industrial/Manufacturing	420,728 sf	76,993	<u>500,646 sf</u>	130,857
Community Facilities	70,000 sf	2,100	214,344 sf	6,430
Residential	241 DU	12,824	<u>1,815 DU</u>	96,629
Total		448,286		637,527
Notes:				
Based on the following assumptions:				
Commercial Use: assume 3 employees per 1,000 sf for retail and 1 per 250 sf for office space, and 79 lbs of solid waste per week per employee. For the purposes of this analysis, higher commercial retail waste generation rate is used.				
Industrial/Manufacturing: assume 1 employee per 1,000 sf, and 183 lbs of solid waste per week per employee (based on average generation rates for two industrial categories listed in Table 3M-1 of the <i>CEQR Technical Manual</i>).				
Community Facility: assume 0.03 lbs of solid waste per week per sf (based on generation rate for Government Office listed in Table 3M-1).				
Residential Use: assume 3.13 residents per DU for existing units (based on CD average), and 17 lbs of solid waste per week per individual.				
Sources: Solid waste generation rates based on <i>CEQR Technical Manual (2001)</i> .				

As shown in Table 14-2, the same solid waste generation rate assumptions utilized for existing conditions were applied in calculating solid waste generation in the future without the proposed actions.

Based on the above assumptions, it is estimated that the projected development sites would generate approximately 637,527 pounds of solid waste, per week, in the future without the proposed action. As shown in Table 14-2, the No Build condition would result in 23 percent more solid waste compared to existing conditions.

In October 2004, DSNY issued a draft new SWMP that established the anticipated structure of New York City’s solid waste management for the next 20 years, including a Long Term Export program. The City Council approved the plan in July 2006 and approval by the New York State Department of Environmental Conservation (NYSDEC) is pending. The City’s Long Term Export Program is anticipated to 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. DSNY continues to collect residential and institutional solid waste and take it to transfer stations for out-of-City disposal until the long-term plan is fully implemented.

With the closing of Fresh Kills Landfill, the study area is currently served by a number of private waste transfer stations in the area. Under the updated SWMP at the North Shore MTS at 31st Avenue and 122nd Street, DSNY proposed a City-owned Converted MTS as this site for DSNY-managed waste. Under this plan, it is expected that a 20-year service agreement would be signed with one or more waste management companies for transport of containerized waste by barge directly from the site to disposal facilities or to intermodal facilities for disposal at an approximately permitted out-of-City facility. The Converted MTS will also provide capacity that could be available to containerize commercial waste for barge and/or rail export.

The Converted MTS identified in the draft new SWMP is expected to process about 3,540 tons per day (based on an average peak day) including commercial waste. The four Converted MTS facilities proposed in the updated SWMP would be designed to each process at least 4,290 tons per day and accommodate 30 collection vehicles per hour. The annual average day, however, is expected to be 2,200 tons. It is expected that this facility would be operational by 2015.

D. THE FUTURE WITH THE PROPOSED ACTIONS (BUILD)

As discussed in Chapter 1, "Project Description," the proposed actions are expected to result in new residential, commercial, hotel, and community facility development on the projected development sites. As defined by the RWCDs, it is anticipated that a total of approximately 5,380 dwelling units, approximately 4,771,199 square feet of commercial space, and about 459,524 square feet of community facility space would be developed on the projected development sites under the proposed action.

The projected incremental (net) change at the projected development sites between No Build and Build conditions is 3,565 dwelling units, 3,107,714 sf of commercial space, and 245,180 square feet of community facility space, and a reduction of 379,752 sf of industrial/manufacturing space.

The same assumptions utilized for non-residential uses under future No Build conditions were applied in calculating solid waste generation under the proposed action. For new residential units expected to be developed under No Build conditions, a rate of 3.13 persons per unit was utilized. Table 14-3, shows the cumulative solid waste expected to be generated by each of the projected development sites in the future with the proposed actions. Based on the above solid waste generation rate assumptions, it is estimated that the projected development sites would generate approximately 1,521,163 pounds (or 760 tons) of solid waste per week in the Build condition. As shown in Table 14-3, the proposed actions would result in about 883,635 pounds of solid waste generated per week over the No Build condition.

Whereas most of the existing and No Build solid waste generated on the projected development sites would be associated with non-residential uses, and hence collected by private carting companies, approximately 286,270 pounds per week of the total solid waste generated by the projected development sites under the proposed actions would be associated with residential uses. Solid waste generated by new residential development would be collected by DSNY

Table 14-3

Comparison of Solid Waste Generation on Projected Development Sites Under the Proposed Actions, Compared to No Build Conditions

Use	No Build		Build		Solid Waste Increment
	Sq. ft./DUs	Solid Waste Generated (lbs/wk)	Sq. ft./DUs	Solid Waste Generated (lbs/wk)	
Commercial	<u>1,663,485 sf</u>	403,611	<u>4,771,199</u>	<u>1,198,983 sf</u>	<u>795,372</u>
Industrial/Manufacturing	<u>500,646 sf</u>	130,857	120,894	22,124 sf	(108,733)
Community Facilities	214,344 sf	6,430	459,524	13,786 sf	7,356
Residential	<u>1,815 DU</u>	96,629	<u>5,380</u>	<u>286,270 DU</u>	<u>189,640</u>
Total		6337,527		<u>1,521,163</u>	<u>883,635</u>
Notes:					
Based on the following assumptions:					
Commercial Use: assume 3 employees per 1,000 sf for retail and 1 per 250 sf for office space, and 79 lbs of solid waste per week per employee. For the purposes of this analysis, higher commercial retail waste generation rate is used.					
Industrial/Manufacturing: assume 1 employee per 1,000 sf, and 183 lbs of solid waste per week per employee (based on average generation rates for two industrial categories listed in Table 3M-1 of the <i>CEQR Technical Manual</i>).					
Community Facility: assume 0.03 lbs of solid waste per week per sf (based on generation rate for Government Office listed in Table 3M-1).					
Residential Use: assume 3.13 residents per DU for existing units (based on <u>community district</u> average), and 17 lbs of solid waste per week per individual.					
Sources: Solid waste generation rates based on <i>CEQR Technical Manual (2001)</i> .					

collection trucks. New residential development would be served by existing DSNY collection routes with the Department adjusting appropriate collection levels 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 uses would be equivalent to approximately 20.5 tons per day, for a net increase of 13.5 tons per day compared to No Build conditions. 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 uses induced by the proposed actions on the projected development sites would be expected to generate solid waste equivalent to approximately 1 to 2 truck loads per day. Given that the projected development sites are spread out over the 356-block proposed action area, and with currently available collection services in the area, this minimal increase is not expected to overburden the DSNY’s solid waste handling services. Thus the proposed actions would not have a significant adverse impact on the City’s solid waste and sanitation services.

In addition, it is expected that the net increase in the commercial waste stream (795,372 pounds per week) could be handled by the private solid waste management industry. The per week increase is the equivalent of about 57 tons per day. This represents an increase of about 0.5 percent in the City’s commercial waste stream. This is a small increase and it is expected to be met by a slight increase in private solid waste management services that already handle the area.

Two of the potential development sites (site 517-X and 523-X) are currently the site of a waste transfer station (American Recycling). Development of these sites is not expected to adversely impact the collection and transport of solid waste and recyclables in the area. It is noted that

under the proposed project, the zoning of this site does not change from its current M zoning. Thus, this facility could continue to operate at this location. Under the proposed action, the allowable density of manufacturing development is increased (from M1-1 to M1-2). In addition, with the City's recently approved SWMP, a coordinated system of solid waste management for this service district would be in place, thereby reducing reliance upon such individual, privately operated solid waste transfer stations by the year 2015.

E. CONCLUSIONS

Development under the RWCDS would occur in an area that is currently served by DSNY residential trash and recycling pick-ups. The proposed actions 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 solid waste to be collected by DSNY under the proposed actions is about 13.5 tons per day, which when compared to the estimated 12,000 tons per day of residential and institutional refuse and recyclables collected by DSNY is a minimal increase. While the commercial waste would increase due to the proposed action, industrial/manufacturing waste would decrease. This waste would have a net increase of about 795,372 pounds per week (57 tons per day). This would be about a 0.5 percent increase in the commercial waste stream of the city. This is a minimal increase in the commercial waste stream and it is expected that the increase could be handled by the private commercial solid waste management industry.

In sum, given that there is an extensive system of solid waste collection and disposal services available to the study area for both residential solid waste services provided by DSNY and commercial/industrial collection provided by private carters, and that the added net increments of solid waste under the proposed actions would be a minimal addition to the City's solid waste stream, it is concluded that the proposed actions would not adversely impact solid waste and sanitation services and would not conflict with the City's SWMP. *