

A. INTRODUCTION

The reasonable worst-case development scenario (RWCDs) under the proposed actions would generate new demands on solid waste and sanitation services. This chapter assesses the proposed actions' effects on these services, and considers the net incremental impact between the RWCDs for the future without the proposed actions and the RWCDs for the future with the proposed actions.

B. METHODOLOGY

This chapter describes the existing solid waste management services in the rezoning area (using solid waste generation rates for typical land uses and activities provided in the *CEQR Technical Manual*), determines future solid waste demands with the proposed actions for the 2019 analysis year, and assesses the effects of this incremental demand on municipal and private sanitation services.

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

In New York City, the New York City Department of Sanitation (DSNY) is the agency responsible for the collection and disposal of solid waste and recyclable materials generated by residences, some nonprofit institutions, tax-exempt properties, and City agencies. DSNY also collects waste from street litter baskets, parks, street-sweeping operations, and lot cleaning activities. Commercial operations handle solid waste from other uses, e.g., commercial retail, office, and industrial operations. Fresh Kills Landfill, which was New York City's last operating landfill, was officially closed in March 2001. However, DSNY continues to collect residential and institutional solid waste and recyclables (the municipal waste stream). Currently, 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. Private carters also consolidate solid waste from commercial and industrial operations and haul it to waste transfer facilities both inside and outside New York City, from where it is transported to out-of-city disposal facilities. It is estimated that DSNY collects over 12,000 tons of residential and institutional refuse and recyclables (solid waste) per day.¹ It is also estimated that the non-residential waste stream is about 13,000 tons per day (tpd).¹ The total solid waste generated in the City therefore averages approximately 25,000 tpd.

The City's solid waste management services are undertaken in accordance with a 20-year Solid Waste Management Plan (SWMP). DSNY developed a new comprehensive SWMP that was approved by the New York State Department of Environmental Conservation (DEC) on October 27,

¹ DSNY website: <http://www.nyc.gov/html/dsny/html/about/about.shtml> (October, 2 2008).

2006. The new SWMP addresses and recognizes the interdependency of the systems for managing recycling, residential waste, and commercial waste, and introduces a shift from the current mode of truck-based export to export by barge and/or rail. The new SWMP includes a Long-Term Export Program for residential waste, which will be implemented through: (1) the redevelopment of four new 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. Solid waste will be consolidated, containerized, and barged or railed out of the City from the converted MTS facilities or the five existing private transfer stations. The barges currently used at MTS facilities will be replaced or retrofitted with new sealed containers or "intermodal containers" capable of being transported on barge or rail. The four converted MTS facilities will be designed to each process up to 4,290 tpd and accommodate 30 collection vehicles per hour. In the interim, all municipal solid waste will be trucked out of the City.¹

The new SWMP also includes three broad categories of action to address traffic issues associated with commercial waste handling: (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.

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 and industrial 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 project site is within DSNY's Brooklyn Community Service District 2 for public solid waste collection services. Commercial and industrial operations are handled by private carters.

SOLID WASTE GENERATION

As stated above, the rezoning area currently has a number of active uses that generate solid waste. It is estimated that there are 15 dwelling units in the rezoning area. Assuming an average of 2.44 persons per household, the average household size for Community District 13, based on 2000 Census data, it is estimated that the existing dwelling units house approximately 36 individuals. Based on the waste generation rates presented in Table 3M-1 of the *CEQR Technical Manual*, each individual is estimated to generate an average of 17 pounds of solid waste per week, for a total of approximately 612 pounds per week. The solid waste generated by the residential units in the rezoning area is collected by DSNY.

Based on field surveys of the number of employees, the 171,117 square feet of retail uses, 4,756 square feet of eating and drinking establishments, and 94,907 square feet of amusements are expected to generate 34,597 pounds of solid waste per week, as shown in **Table 14-1**. This solid waste would be collected by private carters. The total amount of solid waste currently generated by the rezoning area is 35,209 pounds (or 17.6 tons) per week, most of which is collected by private carters.

¹ DSNY, Comprehensive Solid Waste Management Plan, September 2006.

Table 14-1

Existing Solid Waste Generation on the Projected Development Sites

	Size (sf)	Residents /Employees ¹	Pounds per employee per week ²	Total Pounds per week
Residential	14,529 (15 DUs)	36	17	612
Retail	171,117	34	79	2,686
Eating/Drinking	4,756	57	251 ³	14,307
Amusements	94,907	216	79 ⁴	17,604 ⁴
Total	517,644	307	---	35,209

Notes:

¹ Employment assumptions are based on AKRF field visits conducted in 2007 as described in Chapter 3, "Socioeconomic Conditions."

² Solid waste generation rates are based on *CEQR Technical Manual* Table 3M-1.

³ The solid waste generation rate of 251 pounds per employee (restaurant) was used as a conservative estimate for all eating/drinking establishments.

⁴ The general retail rate of 79 pounds per employee was used for amusement uses.

D. THE FUTURE WITHOUT THE PROPOSED ACTIONS

In the future without the proposed actions, there would be some new development that would require solid waste collection services. It is anticipated that there would be an increment of 612 residential units, 92,351 square feet of retail space, and 71,946 square feet of community facility space.

Based on 2.44 persons per dwelling unit, there would be 1,493 new rezoning area residents in the future without the proposed actions. Based on the assumption of 17 pounds per resident per week, the new residential development in the future without the proposed actions would result in 25,381 pounds (or 12.6 tons) of solid waste per week.

The RWCDs would also add an increment of approximately 373 employees to the rezoning area in the future without the proposed actions.¹ Each employee is expected to generate approximately 79 pounds of solid waste per week. Therefore, the retail and community facilities anticipated to be built in the future without the proposed actions would generate approximately 29,467 pounds (or 14.7 tons) of solid waste per week. Combined with the incremental residential development, there would be a total of 54,848 pounds (or 27.3 tons) of new solid waste generated per week in the future without the proposed actions. Combined with the amusement and eating and drinking uses in the existing conditions that would remain in the future without the proposed actions, there would be a total of 86,759 pounds (or 43.3 tons) of solid waste generated per week by the RWCDs.

For the solid waste system as a whole, there are proposed improvements in this DSNY service district, one of which is to the existing Southwest Brooklyn MTS, which serves DSNY's Brooklyn Community District 13. This MTS is located on Shore Parkway at Bay 41st Street, less than 2 miles from the rezoning area. Under the City's new SWMP, the existing Southwest Brooklyn MTS will be demolished and a new MTS will be constructed on the same site that will receive and allow for containerization of solid waste. Containerized solid waste will then be exported from the new MTS by barge. As part of these improvements, the new MTS is expected to have

¹ It is assumed that the ratio of employees to floor area is 3 employees per 1,000 square feet of retail space, 1 employee per 1,000 square feet of community facility space, and 1 employee per 26 housing units.

the capacity to handle up to 4,290 tpd of solid waste. However, based on DSNY projections, the daily average demand is expected to be only 950 tpd. The new Southwest Brooklyn MTS is expected to be fully operational by 2010.

E. PROBABLE IMPACTS OF THE PROPOSED ACTIONS

As discussed in Chapter 1, "Project Description," it is anticipated that, compared to conditions in the future without the proposed actions, there would be a net increase on the projected development sites of 2,408 residential units, 320,951 square feet of retail space, 606 hotel rooms, 251,411 square feet of amusements, 333,253 square feet of enhancing uses, and 261,300 square feet of active mapped amusement park.

The same assumptions for calculating solid waste generation were used for conditions in both the future without and with the proposed actions. As shown in **Table 14-2**, it is estimated that the incremental development on the projected development sites and the active portion of the mapped amusement park would generate 479,243 pounds (or 240 tons) of solid waste per week in the future with the proposed actions.

Table 14-2
Incremental Solid Waste Generation with the Proposed Actions

Use	No. Residents/Employees ¹	Solid Waste Rates (lbs per week) ²	Total (lbs per week)
Residential	5,900 Residents (2,408 dwelling units)	Individual Residents (17 lbs per week)	100,300
Hotel	156 Employees (606 rooms)	Hotel (75 lbs per employee)	11,700
Retail	1614 Employees ³ (320,951 sf)	General Retail (79 lbs per employee)	127,506
Enhancing Uses	1,000 Employees (333,253 sf)	Fast Food (200 lbs per employee)	200,000
Amusements and Active Amusement Park	503 Employees (512,711 sf)	General Retail (79 lbs per employee)	39,737
Total			479,243
Notes:			
¹ Number of residents or employees is derived from analyses described in Chapter 3, "Socioeconomic Conditions."			
² Solid waste generation rates are based on Table 3M-1 of the <i>CEQR Technical Manual</i> .			
³ Number of retail employees refers to the net number of new retail employees and displaced employees.			

Whereas most of the solid waste generated on the projected development sites in the existing conditions and in the future without the proposed actions would be associated with non-residential uses, and hence collected by private carting companies, residential uses on these sites would generate an estimated 100,300 pounds (or 50 tons) of solid waste per week in the future with the proposed actions. Solid waste generated by new residential development 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 uses in the future with the proposed actions would be equivalent to approximately 50 tons per week (or 8.3 tons per day). 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 developed under the proposed actions on the projected development sites would be expected to generate solid waste equivalent to less than one truck load per day. Therefore, 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.

The non-residential solid waste (generated by the retail uses, hotel use, enhancing uses, and amusements) would be collected by private contractors. The total amount of this waste would be 378,943 pounds (189 tons) per week in 2019. Given that the typical collection truck averages a 12.5-ton capacity, the RWCDS under the proposed actions would require up to 2.5 private contractor truckloads per day, assuming a six-day work week. This is not a significant increase in demand and would be met by private-sector response to the increase in service needs.

F. CONCLUSIONS

The proposed actions would not cause any significant adverse impacts on solid waste and sanitation services. DSNY, which collects solid waste and recyclables, currently provides municipal solid waste and sanitation services to the rezoning area. Private carters also provide these services to non-residential users. The proposed actions would increase the volumes of solid waste and recyclables, but would not affect the delivery of these services or place a significant burden on the City's solid waste management services (both public and private). *