Solid Waste and Sanitation Services

Chapter 14

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 otherwise be inconsistent with the New York City Solid Waste Management Plan (SWMP) or with state policy related to the City's integrated solid waste management system. The City's solid waste system includes waste minimization at the point of generation, collection, recycling, composting, transfer, processing, thermal treatment with energy recovery, and disposal. As discussed below, most projects would not have the potential to generate sufficient waste to warrant a detailed solid waste analysis. By contrast, a project that would directly affect a component of the local integrated solid waste management system may require a detailed analysis to determine if it has the potential to cause a significant impact requiring mitigation.

As with each technical area assessed under CEQR, it is important for an applicant to work closely with the lead agency during the entire environmental review process. Additionally, the lead agency may determine that it is appropriate to consult or coordinate with the City's expert technical agencies for a particular project. Here, the New York City Department of Sanitation (DSNY) should be consulted as early as possible in the environmental review process for information, technical review, and recommendations for mitigation relating to solid waste. Section 700 further outlines appropriate coordination.

100. Definitions

110. COLLECTION, TRANSFER, AND TRANSPORT SYSTEMS

111. Solid Waste Collection/Management

111.1. Publicly Managed Municipal Solid Waste

According to the United States Environmental Protection Agency (USEPA), municipal solid waste (MSW)—otherwise known as trash or garbage—consists of discarded everyday items such as product packaging, yard trimmings, furniture, clothing, bottles, food scraps, newspapers, appliances, electronics, and batteries. MSW components that can be converted to compost—such as yard trimmings and food scraps—are known as "organics". Not included in MSW are materials that also may be disposed in landfills, but are not generally considered MSW, such as construction and demolition materials, municipal wastewater treatment sludges, and non-hazardous industrial wastes (discussed further below). MSW includes items designated by law for separate collection for recycling. DSNY is the agency responsible for collecting and processing or disposing of MSW (including certain designated recyclable materials discussed below) generated by residences, public schools, some not-for-profit institutions, non-residential facilities that are exempt from real estate taxes, and many City and state agencies. For ease of reference, DSNY uses the term "refuse" to refer to MSW from which designated recyclables have already been separated at the point of origin. MSW is generated by residences, the public sector, and the private sector. DSNY also collects refuse from street litter baskets, street-sweeping operations, and lot cleaning activities and arranges for disposal of refuse collected by certain other City and governmental agencies. Some of the refuse that DSNY collects may include construction and demolition debris generated by the entities served by DSNY.

DSNY does not collect commercial MSW or other commercial wastes, including construction and demolition debris, fill material waste (*i.e.*, a subset of construction and demolition debris that is clean material consisting of earth, dirt, concrete, rock, gravel, stone or sand and that does not contain organic matter having the tendency to decompose with the formation of malodorous by-products), regulated medical waste, asbestos, hazardous or industrial wastes, or dredge spoils (*i.e.*, sediment-type materials excavated from waterways). The New York City Department of Environmental Protection (DEP) manages bio-solids (*i.e.*, a solid organic matter recovered from the sewage treatment process). Additional information relating to fill material waste, construction and demolition debris, hazardous waste, and dredge spoils is presented in Chapter 22, "Construction Impacts"; Chapter 12, "Hazardous Materials"; and Chapter 11, "Natural Resources."

111.2. Commercial MSW and Other Solid Wastes

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, notably MSW, construction and demolition debris, non-hazardous industrial wastes, organics, and recyclables. Private carters generally charge a fee on a per-cubic-yard basis. In an effort to improve the efficiency of commercial carting and cut carter truck miles traveled in half, the New York City Council in 2019 passed Local Law 199 authorizing DSNY to oversee the creation and implementation of a Commercial Waste Zone program consisting of 20 zones that will have three authorized commercial carters for MSW, recyclables and organics per zone for customers to choose from, plus a City-wide zone for containerized collection by up to 5 carters. The Commercial Waste Zone program will be implemented in stages via a series of contracts starting in 2021. The program will not include construction and demolition debris or fill material solid waste.

111.3. Regulated Medical Wastes

Medical facilities separate their waste into two categories: regulated medical waste (which includes potentially hazardous or infectious materials) and ordinary waste. The New York State Department of Health (NYSDOH) and the New York State Department of Environmental Conservation (NYSDEC) regulate the generation, treatment, storage, transfer, and disposal of these medical wastes. Regulated medical waste generated in the City must be placed in special sealed containers and disposed of in facilities permitted to process such waste, either by incineration, another form of sterilization, disinfection, or another approved method. Medical facilities are required by law to recycle some of their ordinary waste (that is, non-regulated medical waste). Each medical facility is required to submit a plan to DSNY explaining how it plans to dispose of its waste.

DSNY collects household medical waste (defined as items that are used in the course of home health care, such as intravenous tubing and syringes with needles attached, that is disposed with residential solid waste) if it is placed in puncture resistant containers. Pursuant to Article 28 of the New York State Public Health Law and 10 NYCRR Part 70, NYSDOH regulations require hospitals and nursing homes to accept sharps (defined as needles and other sharp items that may cause punctures or cuts) and other household medical wastes for disposal if they are brought to the facility.

111.4. Designated Recyclable Materials

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, 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 rules also require that multi-unit dwellings set aside space for the storage of recyclable materials in designated locations and that commercial waste in multi-use buildings be separated from residential waste for separate pick-up. The rules also provide

for seasonal collection of leaves and other yard waste for composting in certain community districts of the City on certain days designated by DSNY. In addition, under a program that is voluntary for residents, DSNY may collect residential source-separated organics such as food scraps and yard waste from residents and local drop-off sites such as GrowNYC greenmarkets in certain parts of the City, subject to available funding. Organics collected by DSNY are sent to composting or other processing facilities (see Section 115, below). The Electronic Equipment Recycling and Reuse Act, 27 ECL § 2601 *et seq*., enacted in May 2010, establishes a state-wide reuse and recycling program for certain waste electronic equipment. It requires manufacturers of certain kinds of electronic items (*e.g.*, televisions, computers, and printers) sold in the state to take back for reuse or recycling such items of electronic waste (or "e-waste"). The law prohibits disposal of such e-waste within the state. The law is intended to promote recycling and protect environmental and public health, in part by reducing the risk that contaminants such as heavy metals found in e-waste will escape into the environment via air or groundwater pollution pathways from waste disposal facilities such as incinerators and landfills. Local Law 97 of 2005 (Title 16 NYC Administrative Code, Chapter 4) also bans the disposal of rechargeable batteries as solid waste and requires them to be taken instead to local retailers that sell such batteries so that they may be recycled pursuant to a program arranged by the battery manufacturer.

Commercial establishments are also subject to mandatory recycling requirements enforced by DSNY. Businesses must source-separate certain types of recyclable materials including paper wastes, cardboard, metal items, and construction wastes. Food and beverage establishments must recycle metal, glass, plastic containers, and aluminum foil in addition to the above items. Pursuant to Local Law 146 of 2013 and subsequent rules, food waste from many types of commercial establishments must be collected separately from refuse and conveyed to compost or other beneficial use such as biogas. This applies to hotels serving food with at least 100 sleeping rooms, buildings where food service establishments combined total at least 8000 square feet, individual commercial food service establishments having at least 7000 square feet of floor area, food preparation establishments with at least 6000 square feet of floor area, and retail food stores with at least 10,000 square feet of floor area. Private carters may also separate other types of recyclables from the waste after collection.

To induce shoppers to bring their own reusable bags and minimize waste generation, New York State prohibits single-use plastic carryout shopping bags as of March 1, 2020, with limited exceptions, and New York City requires a minimum five cent fee on paper carryout bags. In addition, pursuant to Local Law 142 of 2013, New York City has banned the sale of single-use food service items made of expanded polystyrene foam, such as coffee cups and clamshell containers, due to their inability to be recycled, effective January 1, 2019.

112. Public and Private Waste Transfer Stations

DSNY delivers most of the refuse it collects to certain public or private solid waste management facilities known as transfer stations, in the City or in adjoining communities, for processing and transportation to out-of-City disposal facilities. Certain transfer stations may accept putrescible solid wastes while others accept only non-putrescible solid wastes. Putrescible solid wastes contain organic matter having the tendency to decompose and form malodorous by-products. Non-putrescible solid wastes do not contain such organic matter. Facilities that accept non-putrescible solid wastes for transfer, sorting out of recyclable items, and disposal of residue are known under state law as "construction and demolition debris processing facilities." A subset of non-putrescible solid waste transfer facilities known as "fill material transfer stations" accepts only construction and demolition wastes consisting of clean fill material, which is typically screened and processed for reuse. Putrescible waste transfer stations require transfer operations to be in fully enclosed buildings subject to stringent dust and odor controls.

At waste transfer stations DSNY-delivered refuse is compacted and loaded onto railroad cars or barges for transport to landfills or waste-to-energy facilities. A map of such transfer stations can be found here. Similar-

ly, commercial MSW and other solid waste that is not carted directly to disposal facilities is delivered to transfer stations for transport to disposal facilities; most of this commercial waste leaves the City by truck. Certain of these transfer stations accept organics for conversion elsewhere into compost or biomethane. Non-putrescible waste such as construction and demolition debris typically is sorted at transfer stations specialized for this waste, which remove clean fill materials, metal, and wood for recycling, and send the residue to landfills for disposal.

113. Landfills, Incinerators and Waste-to-Energy Facilities

New York City has no public or private local disposal facilities such as sanitary landfills, construction and demolition debris landfills, traditional incinerators, or waste-to-energy resource recovery facilities. Consequently, solid wastes that are not recycled, reused, or converted to a useful product locally must be exported from the City for disposal. There are, however, several closed, but still regulated, landfills within the City, such as the Fresh Kills, Pennsylvania Avenue, and Fountain Avenue landfills.

Such landfills generate landfill gas, which is approximately 50% methane—a potent greenhouse gas—from the on-going decomposition of organic wastes. Older closed City landfills vent such gas in gradually declining quantities , while the Fresh Kills Landfill, closed in 2001, still generates commercially viable quantities of landfill gas that is purified into methane at a facility on site and sold as natural gas (bio-methane). DSNY has contracts for the disposal of refuse at certain regional landfills. Such landfills are required by federal and state law to have double liners, leachate treatment systems, landfill gas controls, and stringent permanent cover design standards to prevent groundwater contamination from the landfill. DSNY also has contracts for the thermal treatment of refuse at regional waste-to-energy resource recovery incinerator facilities, with metals recovery from the ash and landfill disposal of the ash residue. Such resource recovery facilities have extensive emissions control systems to limit particulate matter, nitrogen oxides, and other pollutants to specified levels, pursuant to federal and state law. Commercial refuse likewise is transported to various landfills and resource recovery facilities outside the City. The Port Authority of New York and New Jersey owns certain properties used for resource recovery facilities and is authorized to assist in the development of new regional resource recovery facilities.

114. Materials Recovery Facilities

As noted above, DSNY and private carters must collect designated recyclable materials generated within the City and deliver them to materials recovery facilities (MRFs), termed "recyclables handling and recovery facilities" in state regulations. As a result, such recyclable materials are delivered to privately-operated MRFs in the City and adjoining communities for processing and transportation to end product manufacturers. A map of the DSNY's current recycling network can be found here, including a central MRF operated by Sims Municipal Recycling in South Brooklyn under contract with DSNY that sorts bottles, cans, rigid plastics, bulk metal, and paper for transport and further processing into commodities.

Paper recyclables collected by DSNY in Manhattan, Staten Island, and parts of Brooklyn are transported to the Pratt Industries Paper Recycling Plant in Staten Island, which processes them for use in the production of liner board and similar products.

New York State also has a "bottle bill" law that subjects the sale of certain kinds of beverages in bottles and cans to the payment of a deposit that is intended to reduce litter and promote the recovery of natural resources through recycling. Such containers may be brought for deposit redemption at retail stores that sell such products, at certain redemption centers, or at "reverse vending machines".

115. Composting Facilities

A private vendor operates DSNY's yard waste composting facility in western Staten Island (which also accepts food waste). This facility accepts leaf and yard waste collected from the community districts that are served by DSNY's leaf and yard waste collection program, and from commercial landscapers. Compost from this facil-

ity is sold, provided to City agencies such as the Department of Parks and Recreation, and given to community gardens. Other small composting facilities operate locally in partnership with DSNY and local organizations and botanical gardens. The City also runs a small food waste composting facility on Riker's Island that processes food waste from the correctional facility on the island.

Businesses that produce yard waste (*e.g.*, gardening and landscaping services) are required to take such waste to a permitted composting facility, if there is sufficient capacity at facilities in New York City or within 10 miles of the borough in which the yard waste was generated. Other commercial facilities in the region process source-separated organics into compost, or into biomethane via anaerobic digestion.

116. Special Waste Collection Sites

"Special Waste" items are certain designated household waste items that require special handling to avoid mixing with regular refuse and recycling collections. Special Waste includes latex paint, motor oil, automotive batteries, household batteries, motor oil filters, fluorescent light tubes, compact fluorescent bulbs, mercury thermostats, and electronic waste (E-waste). DSNY accepts Special Waste from New York City households at a drop-off collection facility located in each borough. Special Waste is transported and disposed or recycled pursuant to a contract with a private vendor. DSNY also operates household hazardous waste collection events in each borough, which take a broad range of household waste items that warrant special handling, such as pesticides, oil-based paints and solvents, household cleaners, and other toxic items.

120. COMPREHENSIVE SOLID WASTE MANAGEMENT PLAN

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 SWMP adopts an integrated approach to waste management, identifies sufficient capacity for handling and disposal of such wastes, and complies with state law regarding the provision of recycling programs where economically feasible. The SWMP takes into account the objectives of the 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. Solid waste management facilities proposed to be operated by a public entity must be included in the SWMP.

The current SWMP was adopted in July 2006 and covers the period through 2025; it was approved by New York State in October 2006.

The SWMP estimates public and private sector waste quantities that must be managed over the planning period, and identifies processing, transfer, and disposal capacity necessary for such wastes. The SWMP includes programs designed to prevent, reduce, reuse, recycle, and compost solid waste, and includes initiatives intended to reduce truck traffic and air emissions associated with the export of DSNY and commercial waste and recyclables to processors and disposal facilities such as landfills and resource recovery facilities. No new landfill or resource recovery facility capacity is planned within the City. Both the SWMP and OneNYC support the concept of new "waste conversion" technologies such as anaerobic digestion and non-incineration gasification. Waste conversion technologies derive energy from non-recyclable wastes in an environmentally acceptable manner, reducing the impacts, energy use, and greenhouse gas emissions from long distance transport and landfilling of such waste. The following describes the three principal programs in the SWMP: i) recycling; ii) export of refuse for disposal; and iii) commercial waste.

RECYCLING PROGRAM

DSNY's curbside recycling program and plans set forth in the SWMP include:

- A contract with a private vendor to develop and operate a central MRF to process City-wide DSNY collections of source-separated metal, glass, and plastic (MGP) recyclables and paper, which are shipped by barge to the South Brooklyn Marine Terminal. MGP recyclables from

Queens and northern Brooklyn are barged to the MRF from a facility located in Long Island City, while Bronx-origin MGP recyclables are barged there from a Bronx transfer location.

- Development of a Manhattan MGP and paper recyclables transfer facility on the Gansevoort Peninsula where DSNY-collected MGP from Manhattan would be transferred to barges for delivery to the Brooklyn MRF for processing, while paper recyclables from Manhattan would be transferred to barges and delivered to Staten Island for recycling. Until the Gansevoort Peninsula transfer facility is operational, MGP recyclables from southern Manhattan would continue to be tipped in Jersey City, NJ, while MGP from northern Manhattan would continue to be tipped at a Bronx facility.
- A contract for acceptance of Recyclable Paper curbside from Staten Island, Manhattan, and a portion of Brooklyn by a paper recycling mill in Staten Island.
- Yard waste composting facilities.
- A Composting/New Technologies Taskforce to explore and test facilities utilizing new and emerging waste conversion technologies such as anaerobic digestion or thermal technologies that can process organic and other wastes into useful products such as compost, biogas, electricity and/or other products and thereby minimize the need for landfilling.
- Various other initiatives, including expanded outreach efforts to increase recycling rates, and periodic household hazardous waste collection events in each Borough.

REFUSE DISPOSAL PROGRAM

Refuse collected by DSNY for disposal utilizes public and private transfer stations, railroad or barge transport, and long-term contracts for transport and disposal. The SWMP includes the following:

- A contract for containerization and railroad export of DSNY-managed Bronx refuse to a Virginia landfill.
- A DSNY truck-to-railroad transfer station that exports DSNY-managed refuse from Staten Island in sealed containers by a vendor via railroad to a landfill in South Carolina.
- A contract for transfer of DSNY-managed refuse from part of Brooklyn for containerized railroad transport to a landfill in upstate New York.
- A contract for transfer of DSNY-managed refuse from part of Queens and for railroad transport to a landfill in upstate New York.
- A contract to dispose of a portion of DSNY-managed refuse from Manhattan at a waste-to-energy resource recovery facility in Newark, New Jersey.
- Four DSNY waterfront marine transfer stations ("MTSs") that place DSNY-managed refuse in sealed containers for barge transport by vendors from the City and then railroad transport to regional waste-to-energy resource recovery or landfill disposal facilities.

COMMERCIAL WASTE

The SWMP provides for the capacity to barge export certain amounts of commercial refuse from the four DSNY MTSs, plans for barge export of construction and demolition waste from the existing DSNY MTS at West 59th Street in Manhattan, and requires railroad export of commercial refuse from the three private transfer stations in the City that also contract to handle DSNY refuse. The SWMP also includes more stringent restrictions on the siting and operation of commercial solid waste transfer stations, a reduction in the concentration of transfer station capacity, and additional measures to reduce the impacts of commercial waste truck traffic on communities.

200. DETERMINING WHETHER A SOLID WASTE AND SANITATION SERVICES ASSESSMENT IS APPROPRIATE

A solid waste assessment determines whether a proposed project would cause a substantial increase in solid waste production that would overburden available waste management capacity or otherwise be inconsistent with the SWMP or with state policy related to the City's integrated solid waste management system. Few projects have the potential to generate substantial amounts of solid waste (50 tons per week or more) and, therefore, most projects would not result in a significant adverse impact. However, it is recommended that the solid waste and service demand (if relevant) generated by a project be disclosed, based on an estimate using Table 14-1. An unusually large project or a project involving a use with unusual waste generation characteristics may increase a component of the City's waste stream beyond the projections for that component in the SWMP. In these cases, further analysis should be conducted.

Wastes with special characteristics, such as regulated medical wastes, are subject to specific handling and disposal regulations. Compliance with applicable requirements generally eliminates possible significant adverse impacts.

PRELIMINARY CAPACITY ANALYSIS

The capacity of the City's solid waste management system generally consists of carting capacity and transfer/disposal capacity. The SWMP estimates that approximately 50,000 tons per day (tpd) of public and private sector solid wastes (MSW, construction & demolition debris, and fill material, exclusive of dredge spoils and biosolids) are generated in the City. As of September 2020, there is authorized processing capacity within the City of approximately 20,697 tpd for putrescible solid waste and 22,833 tpd for mixed construction and demolition debris, and storage capacity of approximately 784,312 cubic yards for fill material. Certain cuts in local private transfer station capacity have occurred pursuant to the SWMP and Local Law 152 of 2019. There is no refuse disposal capacity in the City. Transfer station operators typically contract for disposal capacity at regional or distant landfills and/or resource recovery facilities. Additionally, there is waste transfer processing (and disposal) capacity outside the City, but within the metropolitan region, and there is disposal capacity well beyond the metropolitan area but accessed by truck, rail or barge. In particular, sufficient transfer capacity is required to meet demand on peak days, as the waste flow quantity fluctuates by day of the week, season, and economic cycle. Sufficient capacity is expected within the City and region to accommodate the transfer of all City-origin refuse over the SWMP planning period.

DSNY has over 2,000 waste collection trucks in its fleet, while the City's Business Integrity Commission licenses over 2,200 private carting trucks to collect the City's commercial MSW, recyclables, and other wastes, and registers over 5,200 more trucks to haul private sector construction and demolition debris in the City (2019 figures). The capacity of DSNY's collection truck fleet and the more than 90 private carting businesses authorized to serve New York City is sufficiently flexible to accommodate increased demand for waste and recyclables collection generated by most proposed projects as needed.

In view of the foregoing, if a project's generation of solid waste in the With-Action condition would not exceed 50 tons per week, it may be assumed that there would be sufficient public or private carting and transfer station capacity in the metropolitan area to absorb the increment, and further analysis generally would not be required. However, it is recommended that the solid waste and service demand (if relevant) to be generated by a project be disclosed, using the citywide average rates for waste generation (Table 14-1) to make this determination. As noted in Section 311 below, any waste management features to be included in the project should also be disclosed.

If a project would result in the development of more than either 500 residential units or 100,000 square feet of commercial space, the proposed location and method of storage of refuse and recyclables prior to collection should be disclosed. New buildings with 300 or more residential units should provide containerized waste storage for collection or explain why this is not feasible. If the use of compactors, dumpsters, and/or "roll on/roll off" refuse containers are proposed to avoid large piles of bags with refuse on the sidewalk or building perimeter awaiting collection, they should also be discussed. If waste set out for collection would consist of large piles of bags with refuse and/or recyclables, the applicant should also discuss the expected location, square footage, volume, and duration of such piles, and their effects upon traffic,

pedestrians, public health, and community character. Based on DSNY field studies, typical multi-unit building residential refuse compactor bags are 36 to 42 inches long, 18 inches wide, and 14 inches high, and weigh approximately 55 lbs on average; they are stacked up to three bags high. Uncompacted refuse bags and recyclables take up more space per bag. Bulk waste such as couches and mattresses also require set-out space.

SYSTEMWIDE IMPACT AND CONSISTENCY WITH SOLID WASTE MANAGEMENT PLAN

Regardless of the amount of solid waste generated by a proposed project, a more detailed discussion is warranted if the project involves the construction, operation, or closing of any type of regulated solid waste management facility, DSNY district garage, or borough repair shop, or if it would involve a regulatory change to public or private waste collection, processing, recycling, or disposal activity. Such a project should be analyzed for its quantitative impact to the solid waste management system, as well as for its consistency with the goals and elements of the SWMP.

As noted above, the SWMP develops goals for the management of the components of the waste generated in the City and identifies procedures and facilities that may be required to meet those goals. The SWMP includes timetables for the phased implementations of its recommendations. Examples of projects that may directly affect the City's current and planned integrated system of solid waste management include, but are not limited to:

- Projects that would close or preclude planned development of one or more major facilities identified in the SWMP to process waste generated within the City (e.g., closure of a City marine transfer station or a permitted transfer station that is on long-term contract with the City to process waste from one or more community districts served by DSNY).
- Projects that would result in the generation of solid waste in quantities that may exceed the available solid waste management capacity in the City or region (*e.g.*, a multi-year harbor deepening project requiring land disposal of hundreds of thousands of cubic yards of dredge spoils).
- Regulatory changes affecting the generation or management of the City's waste.
- Projects causing the dislocation of a DSNY district garage facility or a borough repair shop.

It should be noted that if the project involves a new solid waste management facility, such as an incinerator or autoclave, impact analysis of other technical areas (air, traffic, noise, *etc.*) may also be appropriate. Other chapters of the Manual provide guidance for determining the appropriate level of review for each of these areas.

300. ASSESSMENT METHODS

310. ANALYSIS TECHNIQUES

An assessment of potential solid waste impacts for projects that would generate solid waste consists of describing the waste management features of the project and quantifying the incremental quantities of waste that the project would generate. The assessment of medical facilities is somewhat different, as described below.

311. Projects that Would Generate Solid Waste

The amount of waste that a project would generate should first be determined. For most projects, the citywide average rates for waste generation used in the SWMP may be used to make this determination. These rates are provided in Table 14-1.

Projects with additional waste management features, however, may generate less solid waste than indicated in the table. Features that minimize waste, beyond those required by law, should be identified. Examples include the following:

- Installation of such equipment as air-dryers in public lavatories.
- Provisions for on-site composting.
- Provisions for material storage to allow use of bulk-packaged supplies (this would minimize the use of packaging).
- Installation of kitchen garbage disposal units and compactors.
- Use of double-sided photocopying.
- Use of electronic mail (rather than communication on paper).
- Developing provisions for the return of packaging to the manufacturer/supplier.
- Installation of bottle-less water coolers or other alternatives to plastic bottled water.

Project features that enhance recycling (*i.e.*, those that facilitate the separation, storage, collection, processing, or marketing of recyclables) beyond that required by law should be identified. These may include, for example, on-site measures to process yard waste and/or food waste into compost and/or biogas. Project features to facilitate waste collection, such as provisions for containerized collection or special waste chutes to central collection areas with waste compactors (as at Roosevelt Island) should also be identified. At the same time, any aspects of the project that may make recycling difficult, impede waste collection, or result in the generation of high levels of solid waste, such as the construction of a tunnel shaft, or very large building foundation generating hundreds of truckloads of fill material, should be identified and discussed.

Table 14-1
Solid Waste Generation Rates

Use	Rate (pounds per week)
Residential	
Individual	17
Household	41
Institutional	
Public Elementary School	3 per pupil
Public Intermediate School	4 per pupil
Public High School	2 per pupil
Private School (K-8)	1 per pupil
Private School (9-12)	4 per pupil
College	1 per pupil
Hospital	51 per bed
Government Office	0.03 per square foot
Correctional Facility	13 per inmate
Commercial	
Office Building	13 per employee
Single Office	9 per employee
Wholesale	66 per employee
General Retail	79 per employee
Restaurant	251 per employee
Fast Food	200 per employee
Food Store	284 per employee
Hotel	75 per employee
Industrial	
Apparel and Textile Manufacturing	125 per employee
Printing/Publishing	240 per employee

Source: New York City Department of Sanitation 2019

312. Detailed Solid Waste Generation Analysis

If the proposed project would lead to substantial new development (*e.g.*, Hunters Point South or Atlantic Yards) resulting in at least 50 tons (100,000 pounds) of solid waste generated per week, it may be appropriate to assess whether additional trucks or other sanitation services would be required. Although the additional trucks or services would not necessarily constitute a significant solid waste or sanitation service impact, the information may be appropriate for use in other technical analyses, such as traffic, air quality, and noise. The typical DSNY collection truck for residential refuse (25 cubic yards) carries approximately 12.5 tons of waste material (8 tons for containerized collections). Recycling trucks carry about 11.5 tons of paper or approximately 10.0 tons of metal, glass, and plastic containers. Commercial carter diesel trucks and DSNY diesel collection trucks are required by Local Law 145 of 2013 (Administrative Code of the City of New York 24-163.1.1) and Local Law 39 of 2005 (Administrative Code of the City of New York 24-163.4) respectively to be equipped with Best Available Retrofit Technology (BART) such as diesel particulate filters or to meet 2007 U.S. Environmental Protection Agency model year standards to minimize vehicular emissions to the air. Commercial carters typically carry between 12 and 15 tons of waste material per truck. Private carter diesel trucks and non-road diesel equipment used in the fulfillment of solid waste and recycling contracts with the City of New York and used primarily within New York City are also subject to a mandate to phase in use of BART to limit emissions, pursuant to Local Law 40 of 2005 (Administrative Code of the City of New York 24-163.5). Contact DSNY for information on collection truck routes and capacities, street sweepers and other equipment.

313. Regulated Medical Waste

The assessment considers how regulated medical wastes would be handled and disposed of to ensure that these procedures would comply with the appropriate regulations. With a large waste generator, it may be appropriate to estimate additional truck trips, as discussed above. The number of truck trips associated with the new facility may be obtained from the carrier.

320. CONSISTENCY WITH THE CITY'S SOLID WASTE MANAGEMENT PLAN

For a project identified in Section 200 as warranting a more detailed analysis, either because of the large quantity of waste that it would generate or its potential impact upon the City's solid waste management system, the analysis should include a consideration of the project's consistency with the City's SWMP. The lead agency should review the summary of the SWMP described above, and if more detail is needed, consult the SWMP itself. The review should consider whether the proposed project would materially conflict with the following:

- Adherence to the hierarchy of preferred solid waste management, which places waste prevention first, followed by reuse, recycling, or composting, derivation of energy from non-recyclable waste in an environmentally acceptable way, and disposal by landfilling.
- Implementation of the New York City Recycling Law (Local Law 19 of 1989), as amended.
- Any element of the SWMP, including a significant delay in achieving one or more milestones identified in the SWMP.

400. DETERMINING IMPACT SIGNIFICANCE

Because of the large size of the City's public and private refuse and recyclables collection fleets, the capacity of the local and regional transfer stations and related access to MRFs and disposal facilities, and the fact that solid waste often moves in interstate commerce, any given project's waste generation would not likely be significant relative to the total City-wide and region-wide system. Significant impacts may occur, however, for projects that generate large quantities of solid waste over a multiyear period, such as a river or harbor dredging project, that exceed local and regional disposal or processing capacity. In addition, a project that causes substantial excavation into a closed, regulated City landfill may be considered a significant impact to that solid waste facility.

The closure or dislocation of a substantial, active element of the City's current integrated solid waste management system without identifying substitute capacity within the region may also significantly impact the City's solid waste system. In weighing such effects, a project resulting in closure of a transfer station facility under long-term contract with the City would be more significant than closure of a facility under a short-term City contract.

A regulatory action that materially conflicts with the adopted SWMP or a law that bans solid waste transfer stations could likewise significantly and adversely impact the City's solid waste system. A proposed modification to the City's SWMP should be evaluated for substantial conflict with state policy on solid waste management and for the potential to overburden the capacity of the City's integrated solid waste management system within the next five years, including but not limited to disposal capacity reasonably available to the City via truck, barge, or railroad. Minor modifications to the SWMP that do not overburden or reduce existing system capacity—for example, adjustments to the SWMP implementation schedule, designation of additional recyclables that have a market, special collections of household hazardous waste for separate disposal to protect the environment, or changes in waste transport or disposal technology to reduce greenhouse gas emissions—would generally not be considered a significant adverse impact on the City's system of solid waste management.

500. DEVELOPING MITIGATION

For significant impacts due to the quantity of waste generated, mitigation measures may include minimizing waste at the point of generation, increasing the amount of waste that may be recycled or beneficially reused, or increasing the capacity of the local waste management infrastructure that would be overburdened by the project. For significant impacts resulting from the project's conflict with the current solid waste management system or with the SWMP, mitigation measures may include steps to minimize the specific conflict. For example, if the project would cause the closure of a major DSNY transfer station facility, mitigation may involve proposing alternative capacity or technology to accommodate waste handled by the facility.

600. DEVELOPING ALTERNATIVES

Many of the mitigation measures described in Section 500 may also serve as alternatives. If a proposed project, such as a rezoning and redevelopment plan, would cause an impact due to the closure of a facility relied upon for the current or proposed integrated solid waste management system or a DSNY district garage, an alternative that would result in a lesser impact should be considered. This may include modification to proposed zoning amendments, or a modified project design that incorporates the waste management facility or DSNY Garage use on-site or elsewhere.

700. REGULATIONS AND COORDINATION

710. REGULATIONS AND STANDARDS

SOLID WASTE MANAGEMENT PLANNING

- New York State Solid Waste Management Act of 1988, codified at Article 27, Title 1 of the New York State Environmental Conservation Law (ECL). This law provides for the preparation of New York City's Solid Waste Management Plan. Also see the regulations at Title 6 of the New York Codes, Rules and Regulations (6 NYCRR) Part 366, Local Solid Waste Management Planning.
- City of New York Comprehensive Solid Waste Management Plan (2006)

SOLID WASTE MANAGEMENT FACILITIES

- Solid waste management facilities in New York State are governed by Article 27, Title 7 of the ECL and 6 NYCRR Parts 360 to 363.
- ECL Section 27-0706 required the Fresh Kills Landfill to close and bars the issuance of a permit by the NYSDEC for the proposed Brooklyn Navy Yard Waste-to-Energy Facility. Also see the Fresh Kills Order on Consent between the NYSDEC and DSNY, Modification No. 7, dated April 27, 2000, providing for the landfill's closure.

- Stipulation and Order in the *Matter of The City of New York v. The New York State Department of Environmental Conservation* filed April 20, 1992 in the Supreme Court of New York, Albany County, Index No. 7218/91 stipulated that NYSDEC and DSNY shall act as co-lead agencies and conduct a coordinated SEQRA review for all new facilities proposed in transfer station permit applications for which both NYSDEC and DSNY issue permits.
- New York City Local Law 40 of 1990, codified at Section 16-130 *et seq.* of the Administrative Code of the City of New York, governs transfer stations within New York City. DSNY has promulgated five sets of regulations pursuant to authority granted in this statute. They are codified at 16 Rules of the City of New York (RCNY), Chapter 4. Subchapter A regulates Non-Putrescible Solid Waste Transfer Stations; Subchapter B regulates Putrescible Solid Waste Transfer Stations; Subchapter C regulates the siting, hours of operation, engineering reports, and transportation plans for Solid Waste Transfer Stations. Subchapter D regulates Intermodal Solid Waste Container facilities, and Subchapter E regulates Recycling Processing Facilities.
- Pursuant to Local Law 39 of 1989 and Local Law 38 of 2015, private incinerators are prohibited, except for medical waste incinerators and crematoriums.
- New York City Zoning Resolution. The Zoning Resolution also regulates the siting and operation of waste management facilities in New York City.

RECYCLING

- New York City Recycling Law, Local Law 19 of 1989, as amended, codified at Section 16-301 *et seq.* of the Administrative Code of the City of New York. Also see rules promulgated by DSNY at 16 RCNY §§ 1-08 to 1-11. This law and the rules require households and generators of private carter-collected waste to source separate designated materials in specified manners. The law and rules also require recycling by City agencies and other institutions.

REGULATED MEDICAL WASTE

- Under ECL § 27-1501 *et seq.* and 6 NYCRR Part 365, the NYSDEC regulates the storage, transfer, and disposal of regulated medical waste. Among other things, ECL § 27-1504 provides for a mandatory regulated medical waste tracking program.
- The NYSDEC regulates Regulated Medical Waste Treatment Facilities off the site of the facility producing the waste under 6 NYCRR Part 365-2.
- Regulated Medical Waste is defined as any solid waste generated in the diagnosis, treatment, or immunization of human beings or animals, in research pertaining thereto, or in the production or testing of biologicals including cultures of infectious agents, human pathological wastes, liquid waste human blood and blood products, sharps including hypodermic needles, contaminated animal carcasses, wastes from surgery or autopsy, laboratory wastes from research, dialysis wastes, and biological wastes from humans or animals isolated to protect others. See 6 NYCRR Part 360.2(b)(128) for the complete definition and exemptions and exclusions.
- NYSDOH regulates the generation, treatment, and disposal of regulated medical waste under Article 13, Title XIII of the Public Health Law (PHL § 1389-aa *et seq.*).
- While local regulation of regulated medical waste transportation is largely preempted by State law, Section 16-120.1 of the Administrative Code of the City of New York requires generators of regulated medical waste to file a solid waste removal plan with DSNY. Generators of 50 pounds or more per month of regulated medical waste must file annual updates. See also 16 RCNY, Chapter 11.

- Items that may cause punctures or cuts that are used in the course of home health care, such as intravenous tubing and syringes with needles attached, and are disposed with residential solid waste, must be placed in puncture resistant containers prior to disposal. See 16 RCNY § 1-04.

720. APPLICABLE COORDINATION

Coordination with DSNY for solid waste assessment concerns is recommended.

730. LOCATION OF INFORMATION

The City's SWMP contains relevant data on existing conditions, existing and proposed solid waste management systems, and residential and commercial waste generation projections. Other information on current DSNY operations may be obtained by contacting the Department's Bureau of Legal Affairs.

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