

# Addendum to the Engineering Report

## For the NYSDEC Part 360 Series Permit Modification 50<sup>th</sup> Street Transfer Station

OCTOBER 2019  
REVISED APRIL 2020  
REVISED JUNE 2020  
AMENDED JULY 2020

### PRESENTED TO

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#### **Waste Connections of New York, Inc.**

110-120 50<sup>th</sup> Street  
Brooklyn, NY 11232

### SUBMITTED BY

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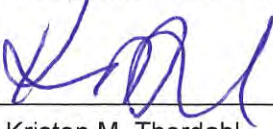
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### REPORT CERTIFICATION

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The material and data in this report were prepared under the supervision and direction of the undersigned.



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Project Engineer

7/31/2020

Date



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## **APPENDICES**

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Appendix G Traffic and Environmental Assessment

## **1.0 INTRODUCTION**

### **1.1 PURPOSE AND OBJECTIVE**

This Engineering Report (Report) and the accompanying companion documents within the NYSDEC Part 360 Series Solid Waste Management Facilities Permit Modification Application (Permit Application), including the Facility Manual (Manual), have been prepared to demonstrate compliance of the 50<sup>th</sup> Street Transfer Station located at 110-120 50th Street in Brooklyn, New York with the requirements of 6 NYCRR Part 360. This Permit Modification Application is being submitted as a request to modify the existing 6 NYCRR Part 360 Series Permit, to allow the acceptance of Construction and Demolition (C&D) Debris, in addition currently permitted acceptance of Putrescible Solid Waste (PSW). No tonnage increase is being requested, as such there will be no increase in traffic to and from the Facility.

A copy of this Report and Manual will be maintained at the Facility and made available, upon request, for inspection and review by agencies having jurisdiction over the Facility and/or its operation.

### **1.2 CONSISTENCY WITH SOLID WASTE MANAGEMENT PLAN**

New York State's Beyond Waste Plan sets forth a new path for solid waste management. The plan shifts from a perspective of focusing on "end-of-the-pipe" waste management techniques to looking "upstream" and more comprehensively at how materials that would otherwise become waste can be more sustainably managed through the state's economy. This shift is central to the state's ability to adapt to an age of growing pressure to reduce demand for energy, reduce dependence on disposal, minimize emission of greenhouse gases and create green jobs.

The City of New York Department of Sanitation (DSNY), as the local planning unit, prepared a Comprehensive Solid Waste Management Plan (SWMP) dated September 2006, which was reviewed and approved by the NYSDEC on October 27, 2006. The Facility is included in the City's SWMP and the Facility's operations are consistent with local and state plans with regards to recovery of recyclable materials and proper disposal of residues.

Nearly 50,000 tons of waste and recyclables are collected in New York City each day and approximately 25% of that amount managed by the DSNY and the remaining is privately managed. The DSNY relies on private transfer stations to handle the balance of the waste generated in New York City.

The SWMP includes the interim use of private waste transfer stations to export New York City's residential trash to out-of-state disposal facilities. Since 2001, the closure of the Fresh Kills Landfill located in Staten Island has forced the DSNY to utilize a predominantly truck-based system that relies on a combination of local, land-based private transfer stations and disposal of waste in neighboring states. The SWMP reinforces the New York State Department of Environmental Conservation (NYSDEC) commitment to sustain and manage resources, environment and economic competitiveness by placing emphasis on waste reduction and recycling, while providing an equitable waste management infrastructure where the needs of its residents, businesses and industry are met.

### **1.3 NYSDEC SUBMITTAL REQUIREMENTS FOR PERMIT MODIFICATIONS**

As per General Condition 3, Applications for Permit Renewals, Modifications or Transfer, of the Facility's existing Solid Waste Management Facility Permit (SWMF Permit) shall be submitted to the following:

October 2019

Revised April 2020 & June 2020, Amended July 2020

Cornerstone Engineering, Geology and Land Surveying, PLLC

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Regional Permit Administrator  
New York State Department of Environmental Conservation  
Region 2 Headquarters  
47-20 21st Street  
Long Island City, New York 11101-5407

As per Permit Condition 25, submissions shall be in duplicate; each duplicate shall be accompanied by a CD ROM containing a separate, searchable OCR PDF file of each volume of the report, each large format drawing, and any cover letter.

## 2.0 REGULATORY OVERVIEW

### 2.1 PERMITTING AND ENVIRONMENTAL ASSESSMENT

This section identifies and briefly discusses the relevant environmental regulations applicable to the operations of receiving and processing solid waste at the Facility. The 50th Street Facility is currently operating under the NYSDEC SWMF Permit (# 2-6102-000067-00004) and the DSNY Putrescible Solid Waste Transfer Station (PSWTS) Permit #10 (refer to Appendix B). These permits authorize the facility to accept putrescible solid waste twenty-four (24) hours per day, Monday through Saturday.

The current NYSDEC SWMF Permit allows the Facility to accept one thousand and seventy five tons per day (1,075 TPD) of Putrescible solid waste (PSW), and store up to two thousand cubic yards (2,000 CY) of PSW. The Facility is requesting the SWMF Permit be modified to also allow the acceptance of Construction and Demolition (C&D) Debris and to be allowed to store up to one thousand cubic yards (1,000 CY) of C&D Debris. No change to the tonnage or storage is requested. Waste Connections would like to modify the Solid Waste Facility permit to allow the acceptance of C&D Debris in addition to the currently permitted PSW, with no modification to tonnage. Waste Connections would like the ability to accept the following combinations of throughput:

- 0 to 1,075 TPD of PSW; or
- 0 to 1,075 TPD of C&D Debris; or
- 0 to 1,075 TPD of PSW and C&D Debris.

Waste Connections is permitted to store up to 2,000 CY of PSW. As part of this Permit modification, Waste Connections would like to store up to 2,000 CY of a combination of PSW and C&D Debris. The Facility has the capacity to store up to 1,000 CY of C&D Debris and 2,000 CY of PSW, but at no time, will there be more than a total of 2,000 CY of any combination of PSW and/or C&D Debris stored in the Facility. For example if 1,000 CY of C&D Debris is stored, than only 1,000 CY of PSW will be stored at that time. If 2,000 CY of PSW is stored, than no C&D Debris will be stored in the Facility.

The DSNY Permit allows the Facility to receive, tip, sort, process, compact, storage and transfer putrescible and non-putrescible solid waste. The volume of solid waste must not exceed 2,000 CY and the maximum amount of PSW throughput that may be processed must not exceed 1,075 TPD.

Permit applications are reviewed in accordance with the New York State Environmental Quality Review Act (SEQRA) (6 NYCRR Part 617), and the Uniform Procedures Act (6 NYCRR Part 621). The following sections describe these requirements and how they pertain to this Facility.

Copies of current permits and authorizations relating to the operation of the Facility are included in Appendix B of this Report and are maintained at the Facility. This Report and its appendices will be made available for inspection to representatives of agencies having jurisdiction over the premises or any aspect of its operation.

### 2.2 STATE ENVIRONMENTAL QUALITY REVIEW ACT (SEQRA)

SEQRA requires that all state, regional, and local government agencies determine whether certain actions, such as the issuance of a 6 NYCRR Part 360 Series Permit to construct or operate a solid waste management facility, may have a significant impact on the environment. If it is determined that the action may have a significant adverse impact, SEQRA requires the preparation of an Environmental Impact Statement (EIS). Regulations implementing SEQRA are contained in 6 NYCRR Part 617.

The June 7, 2011 letter from the New York City Department of Sanitation, acting as lead agency, determined that the installation of a new seventy foot (70') by thirteen and one-half foot (13.5') in-ground tractor trailer truck scale at this Facility would not have a significant adverse impact or effect on the environment, and that a Draft Environmental Impact Statement will not be prepared. This installation was classified as an Unlisted Action. A

copy of the June 7, 2011 letter and the Environmental Assessment Statement (EAS) Short Form/Negative Declaration can be found in Appendix B.

Appendix A includes a completed Full Environmental Assessment Form (EAF) (Part 1) and a Short EAF (Parts 1 and 2) for the requested permit modification to accept Construction and Demolition (C&D) Debris and Putrescible Solid Waste (PSW). Both the SWMF and DSNY Permits allows the Facility to throughput one thousand and seventy five tons per day (1,075 TPD) of PSW and temporarily store a maximum of two thousand cubic yards (2,000 CY) of this material. No modification to throughput or processing rates are being requested by Waste Connections, i.e. the facility can accept 1,075 TPD of PSW and C&D Debris. The Facility is requesting a modification to the SWMF Permit to allow the acceptance of Construction and Demolition (C&D) Debris with no increase to tonnage. Waste Connections is currently permitted to store up to 2,000 CY of PSW. As part of this Permit modification, Waste Connections would like to store up to 2,000 CY of a combination of PSW and C&D Debris. The Facility has the capacity to store up to 1,000 CY of C&D Debris and 2,000 CY of PSW, but at no time, will there be more than a total of 2,000 CY of any combination of PSW and/or C&D Debris stored in the Facility. For example, if 1,000 CY of C&D Debris is stored, than only 1,000 CY of PSW will be stored at that time. If 2,000 CY of PSW is stored, than no C&D Debris will be stored in the Facility.

Appendix G, Traffic and Environmental Assessment, presents the Reasonable Worst Case Development Scenario (RWCDS) that could be expected as a result of the requested permit modification to accept C&D Debris in addition to the currently permitted waste type of PSW with no modification to tonnage of 1,075 TPD. This assessment was completed in accordance with the City Environmental Quality Review (CEQR) Technical Manual .

## 2.3 UNIFORM PROCEDURES ACT

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The Uniform Procedures Act and the associated Permit Hearing Procedures (*6 NYCRR Parts 621 and 624, respectively*) clearly set forth time-tables for the review and approval of environmental permit applications. Under the Uniform Procedures Act, the review process for projects requiring multiple NYSDEC approvals and/or permits is simplified via a concurrent review of applications. The following listing details NYSDEC environmental regulations and permit requirements, as they apply to this Facility.

### Protection of Water Permits

• Disturbance of Bed or Banks of a Protected Stream or Other Watercourse	Not Applicable
• Construction, Reconstruction or Repair of Dams and Other Impoundment Structures	Not Applicable
• Construction, Reconstruction or Expansion of Docking and Mooring Facilities	Not Applicable
• Dredge and Fill of Navigable Waters	Not Applicable
• Excavation or Placement of Fill in Navigable Waters and Their Adjacent and Contiguous Wetlands	Not Applicable
• Water Quality Certification for Placing Fill or Undertaking Activities Resulting in a Discharge to Waters of the United States	Not Applicable
Coastal Erosion Management Permits	Not Applicable
Freshwater Wetlands Permits	Not Applicable
Tidal Wetlands Permits	Not Applicable
Wild, Scenic and Recreational Rivers Permits	Not Applicable

**Wastewater, Stormwater & Water Withdrawal**

- State Pollutant Discharge Elimination System (SPDES) Not Applicable
- Stormwater - SPDES Multi-Sector General Permit for Stormwater Discharges from Industrial Activity Not Applicable
- Stormwater - SPDES General Permit for Stormwater Discharges from Construction Activity - GP-0-15-002 Not Applicable
- Water Withdrawal Permits Not Applicable
- Long Island Well Permits Not Applicable

**Air Permits and Registrations**

- Air Facility Permits (Air State Facility Permits or Air Title V (ATV) Facility Permits) Not Applicable
- Air Facility Registrations Not Applicable

**Mineral Resources**

- Mined Land Reclamation Permits Not Applicable

**Waste Management, Composting & Recycling Permits**

- Solid Waste Management Permits **Applicable**
- Hazardous Waste Management Permits Not Applicable
- Radiation Control Not Applicable

The Facility is permitted under existing 6 NYCRR Part 360 Permit No. 2-6102-000067/00004, valid through April 4, 2021.

**2.4 6 NYCRR PART 360 PROHIBITED SITING**

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As identified by 6 NYCRR Part 360.8, solid waste facilities (with certain exceptions) may not be sited within areas of the following classification:

- **Special flood hazard areas.** A new facility cannot be constructed, or an existing facility be expanded that is located in a special flood hazard area, unless provisions acceptable to the NYSDEC have been made to prevent flooding of the facility and to prevent the constriction of floodwaters. The facility must not pose a significant hazard to human life, wildlife, fisheries, or land or water resources.
- **Endangered species.** A facility cannot be constructed or be laterally expanded in a manner that causes or contributes to the taking of any endangered or threatened species or to the destruction or adverse modification of their critical habitat.
- **Wetlands.** A new facility cannot be constructed, or an existing facility be laterally expanded within the boundary of either state or federally regulated wetlands, unless the required permits are obtained from the U.S. Army Corps of Engineers and/or the NYSDEC.

The Facility will not be expanded as part of the permit modification request, since the request is only for the acceptance of C&D debris, in addition to PSW.



## **3.0 SITE INFORMATION**

### **3.1 BACKGROUND**

The Facility currently holds SWMF Permit #2-6102-000067/00001-0 that was issued by the NYSDEC on April 5, 2016 and will expire on April 4, 2021.

The current NYSDEC Permit allows the Facility to accept one thousand and seventy five tons per day (1,075 TPD) of Putrescible solid waste (PSW), and store up to two thousand cubic yards (2,000 CY) of PSW. The Facility is requesting a modification to their current SWMF permit to allow the acceptance 1,075 TPD of PSW and Construction and Demolition (C&D) Debris, and to store up to 2,000 CY of a combination of PSW and C&D. The Facility has the capacity to store up to 1,000 CY of C&D Debris and 2,000 CY of PSW, but at no time, will there be more than a total of 2,000 CY of any combination of PSW and/or C&D Debris stored in the Facility.

This permit was modified on November 28, 2012 to approve the installation a seventy foot (70') long by thirteen and one-half foot (13.5') wide transfer trailer truck scale within the existing Building to enhance the accuracy of Transfer Trailer weighing at Facility and ensure compliance with roadway truck weight restrictions. To date, this scale has not been installed at the Facility. Waste Connections no longer plans on installing this truck scale.

The Facility also maintains DSNY PSWTS Permit #10 that expires on June 14, 2020.

Both the DSNY and the NYSDEC Permits allow the Facility to handle one thousand and seventy five (1,075) tons per day (TPD) of PSW and store up to two-thousand (2,000) cubic yards (CY) of PSW.

The Facility operates twenty-four (24) hours a day, Monday through Saturday, and is closed on Sunday. Operations are conducted indoors on a reinforced concrete floor. Although typical transfer station operations do not occur on Sundays, it may be necessary to perform periodic equipment/facility maintenance and repairs at that time.

Daily activities include the receipt, initial inspection, and weighing of Tipping Vehicles; tipping of solid waste onto the Tipping Floor; inspection of tipped materials; transfer of materials to Transfer Trailers, and daily transportation and disposal of residual wastes to various disposal facilities. The degree of recycling and separation is variable as it is dependent on waste composition and the effectiveness of manual removal.

Currently, hazardous waste, liquid waste, asbestos, regulated medical waste, C&D debris, and other such materials are not accepted at the Facility, however the Facility is requesting a permit modification to accept C&D debris.

### **3.2 CONTACT INFORMATION**

#### **3.2.1 Name and Address of Facility Owner and Operator**

Waste Connections of New York, Inc.  
102 Wood Avenue South, Suite 302  
Iselin, NJ 08830  
Contact: JR Rahman, (718) 680-3733

#### **3.2.2 Name and Address of Property Owner**

D.C. Properties Inc.  
c/o Abraham Grossman  
1010 Underhill Avenue  
Bronx, NY 10472-6012

### **3.3 LOCATION AND PROPERTY BOUNDARIES**

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The Facility is located at 110-120 50th Street in Brooklyn, New York. The Facility site is located on Block 788, Lot 9 and is situated in the City of New York Zone M3 1, Heavy Manufacturing Zoning District. Operation of a solid waste management facility remains a permitted use within a M3-1 zone. This site location is shown on Sheet No. 1, "Regional Map" and Sheet No. 2, "Vicinity Map".

Waste Connections has an agreement to lease the property from D.C. Properties, Inc. (see Appendix C).

The Facility is comprised of a single Building on the southwest corner of 50<sup>th</sup> Street and 1<sup>st</sup> Avenue. The site occupies an area totaling about 27,650 square feet or approximately 0.64 acres. The Facility has a footprint of approximately 26,098 square feet (0.60 acres). The Building is a single story, approximately twenty-two feet (22') above grade.

The tax parcels that surround the Facility are also situated in the M3 1 zone used for other industrial uses (garages, warehouses, manufacturing, rail yards, etc.). The location and arrangement of adjacent property owners is provided in Sheet No. 4, "Adjacent Property Owners and Zoning Map".

As per FEMA Map Panel 194 of 457 (No. 360497019F) last revised September 5, 2007, the Facility is not located in a flood zone. The Facility is not located in a NYSDEC or Federal wetland.

### **3.4 SITE ACCESS AND SECURITY**

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The Facility includes a secure block Building with overhead doors in its front and rear elevations. Access to the Building receiving and processing areas is restricted to authorized personnel. At the close of business hours all doors are secured and locked to prevent unauthorized access and to preclude illegal dumping.

Access and egress to the Facility is along 50<sup>th</sup> Street. Tipping Vehicles access the Tipping Floor via two (2) rapid roll-up overhead doors and one roll-up overhead door. Transfer Trailers access the one (1) of the two (2) loading bays via roll-up overhead doors.

There is two-way traffic (west to east) along 50th Street which avoids cross traffic and reduces queue, unload and load times. Employee access to the Facility is normally via the front roll up overhead doors or man doors along 50th Street. Parking for approximately six (6) vehicles is available along the streets in the area surrounding the Facility.

#### **3.4.1 Visitors**

Visitors must sign in and sign out in the Scale House. Because of the nature of activities at the Facility, anyone entering the site must receive sufficient instruction to understand the operation and utilize appropriate safety and protective measures. Visitors will not be left unattended and will be escorted whenever entering the waste handling area. Visitors are provided with the necessary PPE when they enter the Facility, which is subsequently returned prior to departing the Facility.

#### **3.4.2 Signs**

Signage is conspicuously posted along 50<sup>th</sup> Street detailing the operator name, address of the Facility, hours of operation, types of wastes accepted and not accepted, regular business and emergency phone numbers, DSNY and NYSDEC permit numbers, and complaint telephone numbers. These signs are clearly legible at these entrances to the Facility from a distance of twenty-five (25) feet.

Additional information on the vehicle traffic at the Facility, as well as traveling to and from the site, is discussed in Section 5.7, "Traffic Routes To and From the Facility".

## 3.5 EXISTING SITE FEATURES

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### 3.5.1 Facility Design Capacity

The available storage volume within the designated location of the Tipping Floor where PSW will be processed is approximately two-thousand cubic yards (2,000 CY) cubic yards, which is sufficient to accommodate any possible peak loading conditions. The available storage volume within the designated location of the Tipping Floor where C&D Debris will be processed is approximately one-thousand cubic yards (1,000 CY) cubic yards. Refer to Appendix D for supporting calculations. PSW received at the Facility is processed within twenty-four (24). C&D debris received at the Facility is removed from the Facility whenever transfer containers is full, or within thirty (30) days of receipt, whichever occurs first. Refer to Appendix D for supporting calculations and Figure 1 for a graphic depiction of the storage piles.

### 3.5.2 Loading Areas

The loading areas consist of two (2) in-ground loading bays approximately seventy foot (70') long, which allows out-bound Transfer Trailers to be loaded with the Facility's roll-up overhead doors in a closed position. The in-ground loading bays are constructed of concrete and have been designed to have grades that do not exceed fifteen percent (15%). Each loading bay has been designed with perimeter curbing.

To assist the drivers with tarping the load Transfer Trailer, Waste Connections has installed rail and a tether fall protection systems above each in-ground loading bay. Refer to Sheet No. 3, "Facility Site Plan".

### 3.5.3 Scales

There are two (2) Truck Scales situated inside the Building as shown on Sheet No. 3, "Facility Site Plan". A forty foot (40') long, sixty (60) ton, multi-deck, in-ground scale is located within the western side of the Building. This scale is equipped with a 5.11 Detection System which is used to detect radioactive materials that may be in the Tipping Vehicles. A second forty foot (40') long, sixty (60) ton, multi-deck, above-ground scale is located on the eastern side of the Building. The Facility will be removing this scale upon approval from the NYSDEC in order to make room for the Proposed Equipment Repair Area. Both scales are manufactured by Mettler Toledo.

Additionally, Waste Connections has received approval on November 28, 2012 from the NYSDEC for the installation of a seventy foot (70') by thirteen and one-half foot (13.5') wide in-ground scale to Transfer Trailer scale however Waste Connections will not be installing this scale in the future.

A Scale House is situated adjacent to the western scale and contains the Facility's scaling and reporting software.

The locations and orientations of the existing Truck Scales and Scale Booth are depicted on Sheet No. 3, "Facility Site Plan." Specifications for the above pieces of equipment can be found in Appendix E in the Facility Manual.

### 3.5.4 Utilities

Electrical service to the Facility is provided by Con Edison. Potable water is supplied to the Facility by the New York City Department of Environmental Protection (NYCDEP), Bureau of Water Supply, in accordance with applicable primary drinking water standards. The Facility maintains two (2) fully functioning restrooms which includes a large restroom/locker room in the western portion of the Building's first floor and a bathroom adjacent to the office on the mezzanine level. The rest room can also be used as a personnel changing room. Water is also available for operational and supplemental fire protection at several locations within the Facility.

Sanitary wastewater from the Facility is discharged into the NYCDEP combined sewer system along 1<sup>st</sup> Avenue via a licensed connection to the NYCDEP Bureau of Wastewater Treatment. The sanitary wastewater facilities have been previously approved by the NYCDEP.

### 3.5.5 Industrial Wastewater (Leachate) Utility

Leachate generated within the eastern portion of the Building is collected in a floor drain and conveyed via gravity pipe to a catch basin/sump pump, which also serves the eastern loading bay, for further transport. This flow is conveyed to a trench drain that spans the width Tipping Floor. The combined flow from these two (2) areas is directed by gravity pipe to a second catch basin/sump pump that serves the western loading bay. From this point the collected leachate is pumped through the trench drains serving the equipment repair area and then ultimately conveyed to a double-walled, underground oil water separator for pretreatment prior to being discharged into the combined sewer system described above.

As above, the leachate collection system was approved by the NYCDEP and the Facility maintains an Industrial Wastewater Facility Permit for this pretreatment system.

## 3.6 FIRE PROTECTION SYSTEM

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Fire protection for the Facility is provided by a suspended “dry” sprinkler system that consists of a ceiling mounted pipe network and sprinkler heads. Supply for the sprinkler system is provided via direct connection to a NYC watermain. This system is suitable for colder climates, with reduced risk of freezing weather affecting critical firefighting measures. Flow controls and mechanical equipment for the sprinkler system are located within the climate controlled sprinkler room of the Building.

Supplemental fire protection is provided at several locations within the Building via one and one-half inch (1 ½”) water connections that are connected to fifty foot (50’) of hose at each station.

In addition, fire extinguishers are located at numerous locations throughout the Building. These fire extinguishers are suitable for use on Class A, B, and C fires making them effective against fires involving wood, paper, cloth, rubber, plastics, flammable liquids, gases and greases, and for electrical components. Additionally, fire hydrants are located on 50<sup>th</sup> Street and 1<sup>st</sup> Avenue.

The locations of each fire protection device are shown on the Sheet No. 3, “Facility Site Plan”.

## 3.7 BUILDING HVAC

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The Facility’s Ventilation System provides a minimum of six (6) building volume air changes per hour and serve to maintain negative air pressure within the Building. The Ventilation System at this Facility consists of five (5) exhaust fans, Model BCRD 360C as manufactured by Twin City, which are located on the roof of the Facility. The exhaust fans are equipped with electrostatic filters. The exhaust fans will be equipped with two filters in order to control the dust generated by the C&D debris. One filter will be a pleated filter as manufactured by Smith Filter Corporation or equivalent. The second filter will be a R-Flo (Merv 6) filter as manufactured by Smith Filter Corporation or equivalent. Alternatively, the Facility may choose to utilize a washable and reusable filter, Mech 8 filter as manufactured Smith Filter Corporation or equivalent. Refer to the specification sheets included in Appendix E.

The Facility is also equipped with four (4) intake louvers, two (2) of which are installed within the Building roof and the remaining two (2) installed within north and south facing exterior walls.

The location of the Ventilation System components are shown on Sheet No 3, “Facility Site Plan”.

### 3.7.1 Dust and Odor Control System

A high pressure dust and odor control misting system is installed within the ceiling structure of the Building as manufactured by AiReactor System and Services, Inc. This system includes atomizing spray heads, set to discharge a combination of atomized water mixed with an odor neutralizing agent at timed intervals. The atomizing spray heads are distributed to provide coverage over the area of the Tipping Floor and each of the five (5) exhaust fan located in the roof of the Facility. When combined with the odor neutralizing agent, the atomized discharge

from the misting system serves to absorb and/or eliminate odors while successfully mitigating dust emissions that may be generated as a result of the PSW and C&D debris processing operations.

DustBoss® 30 (Model DB-30) will be installed, refer to Sheet 3, Facility Site Plan, to control dust from the C&D debris. The system has a 180 degree of oscillation which will cover the area of the building where PSW and C&D debris is tipped and processed.

## 4.0 NOISE EVALUATION

The NYSDEC Program Policy Memorandum, Assessing and Mitigating Noise Impacts, Issued October 6, 2000, Revised February 2, 2001, was developed to provide direction for the evaluation of sound levels and characteristics generated from existing and proposed facilities in New York State. The Memorandum outlines the procedures to be followed in performing a noise assessment and criteria that would necessitate mitigation actions to alleviate unacceptable adverse noise impacts. The Policy Memorandum also provides guidance on the procedures used to calculate the attenuation or reduction of sound over distance from the source and where a potential receptor may be impacted. The Memorandum was used as a basis for the performance of this noise assessment. The NYSDEC Solid Waste Regulations, 6 NYCRR Part 360, limits the sound levels at property lines at locations “zoned or otherwise authorized for residential purposes” for both nighttime (10:00 PM to 7:00 AM) and daytime (7:00 AM to 10:00 PM) periods.

The goals of any project should include minimal increases in sound pressure levels above ambient levels at a chosen point relative to the receptor. Increases in the ambient sound levels from 0 to 3 A-weighted decibels (dBA) generally have no appreciable effect on receptors. Increases from 3 to 6 dBA may have the potential for adverse noise impacts, but typically only where the most sensitive receptors are present. A sound level increase of 6 dBA or more may require a closer analysis of impact potential depending on the existing sound levels and the character of the surrounding land uses and receptors. Because the proposed permit modification at the Facility only involves the acceptance of C&D Debris, in addition currently permitted acceptance of PSW, permitting of an additional solid waste type with no increase to the tonnage accepted per day, no increase in traffic, no change in operating hours, or no change in operations, sounds generated during future operations will not differ from the existing operations performed at the Facility.

### 4.1 SITE LOCATION

The Facility is located at 110-120 50<sup>th</sup> Street in Brooklyn, New York. The Site and the surrounding areas, is in the City of New York Zone M3 1, Heavy Manufacturing Zoning District. Operation of a solid waste management facility is a permitted use within a M3-1 zone. The Site and the surrounding area are zoned for manufacturing uses and the area is highly industrialized. The nearest other zoning district to the M3-1 zone where the Facility is located are the M1-2 zoning district located to the south and M1-2D zoning district located to the east. M1 zoning districts are typically buffers between M2 or M3 districts and adjacent residential or commercial districts. M1 zoning districts contain light industrial uses, including woodworking shops, repair shops, and wholesale service and storage facilities. The adjacent properties to the north across 50<sup>th</sup> Street include a hardwood floors manufacturer's warehouse, a wholesaler and a paint and varnish warehouse and store. To the west across 1<sup>st</sup> Avenue is a large, 6-story warehouse building; to the south is warehouse space, and to the east is a water and sewer repair service business. The nearest Residential Zoned areas are south of 54<sup>th</sup> Street approximately 1,050 feet from the Site and east of the Gowanus Expressway approximately 1,350 feet from the Site. The nearest residential land use to the Facility is located approximately 600 feet to southeast at 217 50<sup>th</sup> Street where a number of apartments are located above storefronts in the M1-2D zoning district.

The 6 NYCRR Part 360 sound pressure level (SPL) limits are provided as follows.

Character of Community within a 1-mile radius of Facility	Leq Energy Equivalent Sound Levels	
	7 AM - 10 PM	10 PM - 7AM
Rural	57 dBA	47 dBA
Suburban	62 dBA	52 dBA
Urban	67 dBA	57 dBA

Considering the existing land uses in the vicinity of the Facility, the zoning designation for much of the area, and the location within Brooklyn, the character of the area is considered to be urban in nature.

## 4.2 DESCRIPTION OF SOUND

Sound is any pressure variation (in air, water, or other medium) that the human ear can detect. The number of pressure variations per second is known as the frequency of the sound and is measured in cycles per second, or Hertz (Hz). Typical human hearing can detect sounds between 20 Hz to 20,000 Hz (20 kHz). The amplitude of a sound wave is equivalent to the sound pressure and therefore, the loudness of a sound increases as the pressure increases.

When conducting a noise study, the ambient noise levels, existing noise sources, and sound receptors in proximity to an activity are important factors to consider. Additionally, the topography, vegetation and the relative location of both the sound source and the receptors must be considered when assessing noise impacts. The expression of overall sound levels, as it relates to the listener, is a single value of sound over a period of time that provides an indicated average of the sound in an area (Leq).

The environmental effects of sound and human perceptions of sound can be described in terms of four (4) characteristics:

1. Sound Pressure Level (SPL) may also be designated by the symbol  $L_p$  or perceived loudness and is expressed in decibels (dB) or A-weighted decibel scale (dBA), which is weighted towards those portions of the frequency spectrum, between 20 and 20,000 Hz, to which the human ear is most sensitive. Both SPL and dBA measure sound pressure in the atmosphere.
2. Frequency (perceived as pitch) is the rate at which a sound source vibrates or makes the air vibrate.
3. Duration may be the recurring fluctuation in sound pressure or tone at an interval; sharp or startling noise at recurring interval; the temporal nature (continuous vs. intermittent) of sound.
4. Pure tone, which is comprised of a single frequency. Pure tones are relatively rare in nature but, if they do occur, they can be extremely annoying.

## 4.3 DESCRIPTION OF NOISE

Most sounds are mixtures of frequencies and amplitudes. The mixture of frequencies and amplitudes contributes to a particular sound having a characteristic “signature” and being clearly distinguishable from other sounds. Sounds that are considered annoying and unwanted are termed “noise.”

## 4.4 DECIBEL EQUIVALENCY

Sound measurement gives a clear indication of when a sound may be heard by the human ear. As such, it is the primary diagnostic tool used in evaluating requirements for acceptable community noise levels. Sound pressure levels, perceivable by the human ear fall within a very large range, which is difficult to manage due to the large numbers involved. The decibel scale simplifies this condition by compressing the million to one audible range into a 140 dB range. The decibel scale uses the hearing threshold of 20 micro pascals (a unit of pressure) as its starting point or reference pressure. This is defined as 0 dB. Each time the sound pressure in pascals is multiplied by 10, 20 dB are added to the decibel level.

Human hearing starts at 0 dBA (with 10 dBA being just audible) and goes up to 150 dBA, although at 130 dBA noise is considered painfully loud and speech is severely limited.

## 4.5 ATTENUATION

The intensity of a sound wave diminishes (attenuates) as it gets further from the source. This attenuation is due to a combination of factors: distance-being the length of path of transmission and the most important factor; absorption

by surfaces such as vegetation, buildings, earth formations, etc.; atmospheric conditions such as fog, rain and snow; and the nature of the ground over which the transmission occurs.

The intensity of an unobstructed sound wave is reduced by 6 decibels each time the distance from the source is doubled, provided the source is not linear in nature. Therefore, a sound level of 70 dB at 50 feet would have a sound level of approximately 64 dB at 100 feet. At 200 feet from the same source, the sound would be perceived at a level of approximately 58 dB. Decibel level attenuation from linear sources, such as continuous flowing highway traffic, drops by about three decibels each time the distance from the source is doubled.

## 4.6 NOISE LEVELS

The Facility is located in a highly urbanized environment, surrounded by other significant industrial operations. The nearest residential uses to the east are closer to the Gowanus Expressway, an elevated 7 lane interstate highway, than the Site. SPLs observed within 50 feet of solid waste transfer stations can typically result in Leqs of up to 72 to 76 dBA during operations, which include trucks tipping waste onto the tipping floor that is then compacted and loaded into transfer trailers using front end loaders and excavators. According to the Federal Highway Administration, highway traffic noise levels typically range from 70 to 80 dBA at a distance of 50 feet from the highway. The Facility's operations are conducted within a structure with doors closed. SPL measurements obtained on May 23, 2019 by Makofka Environmental Consulting, LLC using a ANSI Type I noise meter (Larson Davis Model 831) reported an Leq of 71.6 dBA on 50<sup>th</sup> Street, 6 feet from the building at the noisiest location with respect to operational activities. However, to calculate potential impacts from the solid waste activities at the Facility to the nearest residential land uses, a SPL of 76 dBA was utilized.

The major sources of noise identified in the May 2019 Noise & Vibration Report (Makofka Environmental Consultants) include:

- Traffic on 1<sup>st</sup> Avenue, including truck traffic servicing industrial facilities in the area;
- Noise from trucks idling at area loading docks, and buses at the bus repair facility on 50<sup>th</sup> Street;
- Truck and car traffic on 50<sup>th</sup> Street.

A copy of Makofka Environmental Consultant's Noise and Vibration Report is included in Appendix F.

These sources result in the moderately high ambient noise level in the vicinity of the site. The elevated Gowanus Expressway located 2 blocks to the east provided a noticeable hum of traffic but was not the significant source of noise.

The following equation can be used to calculate the sound level at various distances from the Facility:

$$L_2 = L_1 - |20 \times \log \left( \frac{r_1}{r_2} \right)|$$

where:

- $r_1$  = reference distance from sound source
- $L_1$  = sound level at reference distance
- $r_2$  = another distance from sound source
- $L_2$  = sound level at another distance

As stated earlier, the nearest residential land use area is apartments above retail space east of 2<sup>nd</sup> Avenue, approximately 600 feet from the Transfer Station and roughly 600 feet from the Gowanus Expressway. Using the closest building at 217 50<sup>th</sup> Street and the distance from the rear of the east side of the Transfer Station building (approximately 600 feet) the reduction in the SPL using only the attenuation of the sound levels with distance, the projected SPL from 50<sup>th</sup> Street Transfer Station activities resulting in a SPL of 76 dBA is calculated to be 54.4 dBA at the residential property based upon the above equation where  $r_1$  is 50 feet,  $r_2$  is 600 feet and  $L_1$  is 76 dBA. Potential SPL impacts from the transfer station at the nearest residential zoned area south of 54<sup>th</sup> Street,



approximately 1,050 feet from the Facility, would result in a SPL of 49.6 dBA based upon the above equation where  $r_1$  is 50 feet,  $r_2$  is 1,050 feet and  $L_1$  is 76 dBA. These levels are well below the 6 NYCRR Part 360 Urban daytime and nighttime limits of 67 dBA and 57 dBA, respectively, and are even below the Rural daytime limit of 57 dBA. These levels are achieved without attributing any additional sound reductions related to the buildings adjacent to the Facility and between the Facility and potential receptors which act as sound barriers. An evaluation of truck traffic associated with the Facility is not required at this time, as the proposed action does not result in an increase in material being handled at the Facility nor will there be an increase in traffic. It should be also noted the density of PSW and C&D Debris is similar further reinforcing that traffic will remain the same. Also, there will be no change in equipment used to process/handle the incoming waste.

As a result of the significant distance that exists between the Facility and the nearest residential use, the Facility has no impact on the nearest potential receptors. Sound levels in the area are related to its urban industrial nature and the car and truck traffic associated with the activities in it, as well as the traffic on the nearby elevated Gowanus Expressway. Furthermore, there will be no increase to inbound or outbound truck traffic at the Facility as a result of this permit modifications. Additionally, there will be no changes to the equipment used at the Facility. Based on these findings, no additional SPL measurements are needed.

## 5.0 OPERATING PLAN

### 5.1 HOURS OF OPERATION

The Facility is permitted to operate twenty-four (24) hours a day, Monday through Saturday, and is closed on Sunday. As per the Facility's DSNY Permit, the Tipping Floor must be cleared of solid waste between 11:30 PM and 12:00 midnight. During this time, the Tipping Floor is cleaned by sweeping and/or washing. Routine and emergency equipment repair and maintenance may be conducted on site during regular operating hours while non-routine repairs and maintenance may take place on Sundays, as necessary.

Traffic generated by the handling of inbound empty Transfer Trailers, the pickup of fully or partially loaded Transfer Trailers and the movement of support vehicles for maintenance or repair on facilities and equipment will be acceptable outside of the authorized hours of operation. Any other operations (including trailer loading) outside of the hours of operation must first receive contingency approval from the NYSDEC Regional Solid Materials Engineer.

### 5.2 SERVICE AREA

The Facility only accepts wastes as described within this Report and as authorized by the NYSDEC and the DSNY. The Facility accepts nearly all of its waste materials from the New York/New Jersey Metropolitan Area. The service area is depicted on Sheet No. 1, "Regional Map". It remains a priority of the Facility to continue to reduce solid waste volumes scheduled for landfill disposal through methods of recycling and material recovery.

### 5.3 MATERIALS HANDLED

The Facility currently accepts Putrescible Solid Waste (PSW) which is typically delivered in commercial packer trucks. The Facility is requesting that Construction and Demolition (C&D) Debris be also allowed to be accepted at the Facility. It is anticipated that C&D Debris will be delivered in roll-offs and dump trucks.

Liquid wastes, asbestos containing materials, regulated medical waste, and other potentially hazardous materials are not accepted at the Facility. Waste Connections has trained, and continues to train, its employees to identify unauthorized waste materials that may be encountered on the Tipping Floor pursuant to the Section 7, "Staffing and Training Plan". Should unauthorized waste be identified within the confines of the Facility, it will be treated as outlined in the Section 6, "Waste Control Plan".

Both the current SWMF and DSNY Permits allow the Facility to throughput one thousand and seventy five tons per day (1,075 TPD) of PSW and temporarily store a maximum of two thousand cubic yards (2,000 CY) of this material. The Facility would like to store up to 2,000 CY of PSW and up to 1,000 CY of C&D Debris, but at no time, will there be more than a total of 2,000 CY of any combination of PSW and/or C&D Debris in storage at the Facility. For example if 1,000 CY of C&D Debris is stored, than only 1,000 CY of PSW will be stored at that time. If 2,000 CY of PSW is stored, than no C&D Debris will be stored in the Facility.

No modification to throughput is being requested by Waste Connections.

The Facility is currently authorized to accept PSW from residential, commercial, and institutional sources. The Facility is requesting that C&D Debris be authorized for acceptance. Metal, cardboard, and white goods may be accepted for transfer to an authorized recycling Facility.

Wastes that are not be accepted at the Facility include the following:

- Radioactive Materials;
- Suspected Hazardous Waste;
- Liquid Waste;

- Biosolids;
- Chemical or Explosive Wastes;
- Industrial Wastes, as defined in 6 NYCRR Part 360 and/or Part 371;
- Infectious or Medical Wastes, as defined in Public Health Law 1389-aa and Environmental Conservation Law Article 27 Section 1501;
- Suspected Asbestos Containing Waste;
- Electrical fixtures containing hazardous liquids such as fluorescent light ballasts or transformers;
- Fluorescent lights;
- Furniture and appliances;
- Drums, fuel tanks, or containers greater than 10 gallons in size, and any containers having more than 1 inch of residue remaining on the bottom;
- Source-separated recyclables;
- Source-separated food scraps;
- E-waste;
- Yard Wastes and tree debris; or
- C&D debris, fill material, or similar material from a site being remediated pursuant to a program administered by the NYSDEC or EPA unless accompanied by written approval from the NYSDEC or EPA.

## 5.4 SITE OPERATIONS

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The Facility Supervisor is in charge of all operations at the Facility including traffic control and material handling. Table 2 in the Facility Manual lists the recycling facilities and NYSDEC authorized waste destination facilities currently owned and used by Waste Connections. (Refer to Appendix L of the Facility Manual for facility permits and also a table summarizing the name, address, contact person, type of authorization, expiration date of authorization, and the amount of each type of material that the Facility can send to each facility). Due to ever changing market conditions beyond Waste Connections' control, available disposal facilities may change. Waste Connections will submit to NYSDEC for approval facility disposal authorization letters along with their respective permits prior to use.

Vehicles enter and exit the Facility via 50<sup>th</sup> Street and utilize the designated truck routes described within the Section 5.7. Vehicle movements at the Facility typically proceed from west to east along 50<sup>th</sup> Street, which avoids cross traffic and reduces queuing, tipping and loading times.

Personnel may ingress and egress the Building via the front roll-up overhead or man doors along 50<sup>th</sup> Street. Emergency egress is available at any time through these man doors. See Sheet No 5, "Evacuation Route Plan".

The tipping, storage and transfer areas for handling PSW and C&D debris have been designed so that Tipping Vehicles can back into the Facility to tip their load after the roll-up overhead doors are in the closed position. Waste Connections trains Facility personnel to ensure that waste tipping and transfer operations proceed when the Building's overhead doors are in the closed position.

Unauthorized materials include hazardous waste, liquid waste, asbestos, treated and untreated medical waste, and any other hazardous materials not specifically referred to in this Report and the permit conditions, when renewed. The unauthorized material, if found after waste is tipped onto the Tipping Floor, will be separated manually and kept in secure storage until appropriate handling can be arranged with a licensed waste transporter and disposal facility. Handling of unauthorized waste is described in Section 6, "Waste Control Plan.

### 5.4.1 Waste Tipping Operations

PSW is generally delivered in twenty-five (25) to thirty-one (31) cubic yard packer trucks and twenty-five (25) cubic yard commercial compactor trucks. It is anticipated that C&D Debris will be delivered in roll-off containers, small

dump trucks, vans or packer trucks. The number of tipping vehicles coming to the Facility is approximately 185 vehicles per weekday and on Saturdays based upon the permitted tonnage of 1,075 TPD of PSW. As described in Appendix G, truck traffic to and from the Facility will be less as a result of the permit modification.

Inbound Tipping Vehicles will back onto the in-ground forty foot (40') Truck Scale, which is equipped with a radiation detection system, via 50<sup>th</sup> Street where the gross vehicle weight is obtained. If the Scale Operator determines, upon inquiry of the driver, that the load contains unauthorized waste, the driver will be advised accordingly and Facility personnel will be notified via the intercom system or via a hand-held radio not to permit the Tipping Vehicle to enter the tipping area. This is the first step in the waste screening/inspection program.

If the load contains acceptable material, and the driver has obtained a signed truck weight ticket from the Scale Operator, the Tipping Vehicles then pulls forward off the scale and is directed by the Laborer/Traffic Coordinator to either one (1) of the two (2) rapid roll-up overhead doors if the vehicle is delivering PSW. Vehicles delivering C&D debris will be directed to the roll-up door adjacent to Loading Bay #1.

After tipping, as described below, vehicles exit the Facility. If a tare weight has been recorded for the Tipping Vehicle it may exit the Facility. If a tare weight is not available the outbound Tipping Vehicle maneuvers to the aboveground forty foot (40') long western Truck Scale to obtain a tare weight. The Facility maintains a database of vehicle tare weights associated with the operation of the Facility which eliminates the need for the vehicle truck to be weighed after tipping. Trucks operated by the DSNY are exempt from this provision.

This Tipping Vehicle traffic pattern which flows west to east, eliminates vehicles crossing one another and therefore results in a safe and smooth traffic condition and an efficient waste handling operation.

In instances where one scale is undergoing scheduled or unscheduled maintenance, or special processing and/or transaction procedures are required, the eastern Truck Scale will be used for both in-bound and out-bound weights. After the Truck Scale currently located in the Proposed Equipment Repair Area is removed, Waste Connections will utilize the scale located at the Waste Connections 563-577 Court Street Transfer Station for inbound and outbound transactions.

The total maximum processing time for inbound Tipping Vehicles to unload waste, as described above, is typically performed in less than ten (10) minutes.

#### **5.4.1.1 Waste Tipping Operations – PSW**

After the Tipping Vehicle enters the Building, the rapid roll-up overhead door is then closed. Prior to unloading on the Tipping Floor, the Laborer/Traffic Coordinator and/or Machine Operator will visually inspect the Tipping Vehicle and look for unauthorized materials, or evidence thereof, in the presence of the driver, prior to the tipping. If unauthorized material is found in the load prior to tipping, Waste Connections reserves the right to reject the entire load and not accept it for processing. Immediately upon tipping, the Laborer/Traffic Coordinator and/or Machine Operator inspects the entire load for unauthorized materials. If unauthorized materials are discovered after unloading, Waste Connections will immediately secure such waste and the handling of the materials in accordance with the procedures outlined in Section 6, "Waste Control Plan." Occasional pieces of unauthorized materials are accommodated by hand picking after the waste is unloaded.

After the waste material is tipped, it is loaded into a Transfer Trailer or it is temporarily stockpiled in the designated storage area. Tipping is performed with the rapid roll-up overhead doors closed position; however, there may be a rare exception when rapid roll-up overhead doors may need to be opened in order to loosen waste material that is lodged in the Tipping Vehicle. In such instances, waste handling equipment will be utilized to dislodge the material from the Tipping Vehicle in order to avoid spillage onto 50<sup>th</sup> Street when the Tipping Vehicle exits the Facility.

#### **5.4.1.2 Waste Tipping Operations – C&D Debris**

After the Tipping Vehicle enters the Building, the roll-up overhead door will then be closed. Prior to unloading on the Tipping Floor, the Laborer/Traffic Coordinator and/or Machine Operator will visually inspect the Tipping Vehicle

and look for unauthorized materials, or evidence thereof, in the presence of the driver, prior to the tipping. If unauthorized material is found in the load prior to tipping, Waste Connections reserves the right to reject the entire load and not accept it for processing. Immediately upon tipping, the Laborer/Traffic Coordinator and/or Machine Operator inspects the entire load for unauthorized materials. If unauthorized materials are discovered after unloading, Waste Connections will immediately secure such waste and the handling of the materials in accordance with the procedures outlined in Section 6, "Waste Control Plan." Occasional pieces of unauthorized materials are accommodated by hand picking after the waste is unloaded.

After the waste material is tipped, it is loaded into a Transfer Trailer or it is temporarily stockpiled in the designated storage area. Tipping will be performed with the roll-up overhead door in the closed position; however, there may be a rare exception when the roll-up overhead door may need to be opened in order to loosen waste material that is lodged in the Tipping Vehicle. In such instances, waste handling equipment will be utilized to dislodge the material from the Tipping Vehicle in order to avoid spillage onto 50<sup>th</sup> Street when the Tipping Vehicle exits the Facility.

All processed C&D debris and recyclables culled from the C&D debris will be transported in accordance with 6 NYCRR Part 361-5. All C&D debris and recyclables culled from the C&D debris must be tracked using the Department's Tracking Form or a form that has received written Department approval.

All C&D debris (processed and unprocessed) and recyclables culled from C&D debris will be managed and stored in accordance with 6 NYCRR Part 361-5. Recyclables recovered from the C&D debris will not be stored onsite for more than sixty (60) days unless prior written approval has been granted by the NYSDEC Region 2.

#### **5.4.2 Transfer Operations**

Transfer Trailers ingress and egress into the loading area of the Facility via 50<sup>th</sup> Street through one (1) of two (2) overhead doors which provide entry into their respective loading bays.

The loading areas consist of two (2) in-ground loading bays approximately seventy foot (70') long, which allows Transfer Trailers to be loaded with the Facility's overhead doors in a closed position. Each loading bay accommodates the longest available Transfer Trailer combinations, which are typically approximately sixty (65) feet in length. Transfer Trailers back into one (1) of two (2) loading bays after which the Facility's overhead doors are closed and loading commences with the Facility's Wheel Loaders which are equipped with bucket scales. PSW and C&D Debris may be loaded into separate Transfer Trailers or into the same Transfer Trailer depending upon the market and volume of materials. Facility personnel are trained to ensure that loading operations cannot commence until the Facility roll-up doors are entirely closed. Tractor trailers are tarped once loaded. The driver's tarp their loads while harnessed to a rail and tether fall arrest system mounted above each loading bay.

On a very rare occasion, the overhead doors may need to be opened in order to adjust the load in the Transfer Trailers and to avoid spillage when it departs.

It take approximately fifteen (15) minutes for Transfer Trailers to back into one (1) of the two (2) loading bays, get loaded, tarped, and exit the Facility.

### **5.5 FACILITY WASTE FLOW DIAGRAM**

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The flow of materials through the Facility is depicted in Figure 1, "Facility Process Flow Diagram". This figure illustrates the receipt and handling of PSW and C&D Debris.

### **5.6 START-UP AND SCHEDULED SHUTDOWN OPERATIONS**

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During start-up, the Facility Manager prepares for incoming Tipping Vehicles, completes the Radiation Detection System Daily Background Reading Log, walks the site and conducts the daily safety briefing. The Equipment Operator completes the Daily Mobile Equipment Operator's Checklist then starts up the equipment.

In the event of a scheduled shutdown, the Facility Manager would close the Facility to inbound Tipping Vehicles and the Equipment Operator would turn off the equipment.

## 5.7 TRAFFIC ROUTES TO AND FROM THE FACILITY

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Tipping Vehicles and Transfer Trailers enter and exit the Facility via lawful truck routes as described within Section 5.4, "Traffic Routes To and From the Facility" in the accompanying Facility Manual.

### 5.7.1 Vehicle Staging

Truck queuing areas for the Facility are designated along the northwest side of 1<sup>st</sup> Avenue between 43<sup>rd</sup> Street and 53<sup>rd</sup> Street and along the southeast side of 1<sup>st</sup> Avenue between 51<sup>st</sup> Street and 54<sup>th</sup> Street. Transfer Trailers and Tipping Vehicles queue closest to the Facility when possible. These designated queuing areas not only allow ample Facility truck queuing but also permit vehicle parking and other commercial truck to queue along the 1st Avenue corridor which also allows unobstructed traffic movement on 1<sup>st</sup> Avenue. Queuing along the 50<sup>th</sup> Street across from the Facility is also available. Facility personnel utilize portable hand-held radios to advise the Facility Manager of the availability of queuing areas in order to maintain smooth operating conditions at the Facility.

## 5.8 TRAFFIC FLOW

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The maximum capacity of the Facility is 1,075 TPD which will not be changed as a result of the requested permit modification to accept both PSW and C&D Debris. It is anticipated that C&D Debris will be delivered in roll-off containers, small dump trucks, vans or packer trucks. PSW is generally delivered in rear loading packer trucks.

At a maximum capacity of 1,075 TPD, the reasonable worst case development scenario (RWCDs) would be if all inbound vehicles tipped PSW, since, based upon the volume-to-weight conversion factors obtained on the NYSDEC's FTP site (refer to Attachment 1 of Appendix G), a compacted packer truck was approximately 1 ton per 3.3 cubic yards. This equates to a density of 606 pounds per cubic yard (lbs/cy) for PSW. Attachment 1 was again utilized to determine the average density of C&D Debris. The composition of C&D Debris is based upon Figure 7.10, *Estimated C&D Debris Disposed* in NYS as presented in the NYSDEC's State Solid Waste Management Plan, *Beyond Waste: A Sustainable Materials Management Strategy*. The volume to weight conversion for Gypsum Board was obtained from the US Green Building Council (refer to Attachment 2 of Appendix G). Based upon this mix of C&D Debris, the average density is 630 lb/cy which is greater than the density of 606 lb/cy for PSW.

Based upon current operations, on a weekday and a Saturday, there would be approximately 185 inbound tipping vehicles and approximately 38 outbound transfer trailers per day based upon current operations. As described above and in Appendix G, a tipping vehicle with C&D Debris typically weighs more than a tipping vehicle with PSW, as such, it is expected the number of inbound tipping vehicles will decrease as a result of this permit modification. Since there is no change to throughput, there will be no change in the number of outbound transfer trailers because the weight of these loaded vehicles will remain the same regardless of waste type.

It is expected the peak weekday and weekend hours will remain unchanged. On July 2, 2020, peak hourly weekday traffic (existing conditions) occurred between 4 AM and 5 AM with a peak of 64 PCEs. This peak hour which falls during the typical peak hours of 1 AM and 6 AM which is coincident when PSW is collected throughout the service area. It is anticipated that C&D will also be delivered to the Facility during this timeframe, since the vast majority of construction occurs during the overnight hours.

## 5.9 MATERIAL STORAGE

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The tipping, storage and transfer areas for handling PSW and C&D debris have been designed to allow Tipping Vehicles to back into the Building to tip their waste. The tipping of the PSW and C&D debris will be performed with the Facility's roll-up overhead doors in a closed position. Facility personnel are trained to ensure that tipping operations are only permitted when the Facility's doors are in the closed position.

Waste is neither tipped or stored within the rectangular area bounded by the width of each roll-up overhead door and extending into the Building to a depth of forty feet (40') "Clear Area".

For the purpose of this condition immediately tipped and incidental waste will not be deemed stored waste in any particular "Clear Area" provided the tipped solid waste material is removed from the "Clear Area" prior to the entrance of the next Tipping Vehicle. The boundaries of the "Clear Area" for each Facility door are be clearly demarcated by a painted line or other clearly visible marking and maintained at all times.

The available waste storage space outside of the "Clear Area" is approximately two-thousand cubic yards (2,000 CY), in the PSW processing area and one-thousand cubic yards (1,000 CY) in the proposed C&D Debris processing area, which is sufficient to accommodate the requested storage volumes for PSW and C&D Debris as well as any possible peak loading or emergency conditions. Storage volume calculations are found in Appendix D.

### **5.9.1 Storage Durations**

Recyclable materials are stored in roll-off containers within the Building until the material may be transported to the appropriate market. Recyclable materials may be stored for a maximum period of sixty (60) days if the container is not full or within 72 hours after receipt if the container is full unless prior approval is received from the NYSDEC.

PSW received at the Facility is processed and removed from the Facility within twenty-four (24) hours. C&D debris received at the Facility is processed and removed from the Facility whenever transfer containers is full, or within thirty (30) days of receipt, whichever occurs first. Recyclables pulled from the C&D debris will be stored in containers located in the C&D debris Storage Area. The Tipping Floor will be cleared of waste and cleaned between 11:30 PM and 12:00 AM.

Unauthorized material discovered within the Facility will be removed within seventy-two (72) hours of receipt, in accordance with the procedures in Section 6, "Waste Control Plan".

## **5.10 MOBILE EQUIPMENT**

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In order to process the inbound material streams, the Facility employs a combination of the following mobile equipment:

- (2) Caterpillar Front End Loaders (Model 966H);
- (1) Caterpillar Front End Loader (Model 962G);
- (1) Bobcat Skid Steer Loader (Model S620);
- (1) Caterpillar Skid Steer Loader (Model 262D).

Appendix E of the Facility Manual includes equipment specifications typical of the mobile equipment utilized at the Facility. There will be no changes in equipment as a result of this permit modification.

The above equipment list and associated specifications represent a sample of equipment capable of performing tasks required by the Facility operations. Any or all of the equipment pieces specified in this Report or its appendices may be substituted with equally capable machinery upon approval from the NYSDEC. The necessary equipment will be available at the Facility during hours of operation to prevent curtailment of operations because of equipment failure, except under extraordinary conditions beyond the Waste Connections' control.

In the event of equipment failure, Waste Connections will rent similar equipment to provide immediate backup. Waste Connections will notify the NYSDEC of such situation. In the event the necessary equipment is not available, the PSW may be directed to the 577 Court Street facility. C&D debris Tipping Vehicles will be turned away.

### **5.10.1 Mobile Equipment Fuel Storage and Dispensing**

The Facility utilizes a third party vendor for fueling the mobile equipment. On a daily basis, typically between 4:00 PM and 6:00 PM, the vendor utilizes an over the road tanker truck to directly fuel each piece of mobile equipment.

## **5.11 NUISANCE MITIGATION**

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Nuisance mitigation is described in Section 5.12 of the accompanying Facility Manual.

## **5.12 SITE INSPECTION AND MAINTENANCE**

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Comprehensive Inspection and Maintenance Plans have been developed to ensure that the availability and function of the Facility and equipment are kept in efficient operating condition.

The Facility's Inspection Plan establishes schedules for inspecting various components of the Facility, indicating recommended items to be inspected and procedures for inspections to be performed. The Inspection Plan is accompanied by the Radiation Detection System Daily Background Reading Log, and Monthly Facility Inspection Report (included in the Tables section of the Facility Manual), to provide a record of scheduled inspections.

The Maintenance Plan for the Facility provide for the preventive maintenance of operational components on a time scheduled basis in accordance with industry best practices and/or equipment manufacturer's recommendations. These maintenance activities will be overseen by the Facility Manager and performed by the Facility's Staff.

The detailed Inspection and Maintenance Plans are included within the accompanying Facility Manual.



## 6.0 WASTE CONTROL PLAN

A detailed Waste Control Plan is included in Section 6 of the accompanying Facility Manual (Manual).

The Waste Control Plan includes the following:

- Random load inspections;
- Radioactive waste detection plan;
- Visual observation during lidding process;
- Procedures to manage unauthorized waste, including suspected hazardous waste, upon discovery;
- Notification procedures to report to the NYSDEC the discovery of unauthorized waste, including suspected hazardous waste; and;
- Training of Facility personnel to recognize unauthorized waste, including likely or suspected hazardous waste.

## **7.0 STAFFING AND TRAINING PLAN**

The Facility's Staffing and Training Plan is presented as Section 7 of the accompanying Facility Manual (Manual).

## 8.0 CONTINGENCY PLAN

The Contingency Plan is included within the Facility Manual prepared as a separate companion document within the Permit Modification Application submission.

The Contingency Plan provides emergency operational guidelines to be implemented and followed upon the occurrence of a contingent event. Situations addressed within the accompanying Contingency Plan include:

- Procedures for Contingent Situations;
- Preparedness, Prevention, and Response to Contingent Events;
- Medical Emergencies/First Aid;
- Information for Emergency Services;
- Severe Weather;
- Unauthorized Wastes;
- Unusual Traffic Conditions;
- Reporting and Recordkeeping;
- Closure.

## 9.0 REPORTING AND RECORDKEEPING

Reporting and recordkeeping requirements are presented in Section 11 of the accompanying Facility Manual, relating specifically to the following:

- Application documents required by 6 NYCRR Subpart 360.19 (k)(1);
- Operating records required by 6 NYCRR Subpart 360.19 (k)(2);
- C&D debris tracking forms as per the requirements of 6 NYCRR Part 361-5.6;
- Annual reports submitted to the NYSDEC, as per the requirements of 6 NYCRR Part 360.19(k)(3); and
- Records associated with the radioactive waste detection procedures required by 6 NYCRR Subpart 362-3.5 (e).

## 10.0 CLOSURE

Closure of the facility will be in accordance with the requirements of 6 NYCRR Part 360.21 Closure Requirements. The Facility's Closure Plan and Closure Cost Estimate are presented in further detail as Section 12 and Appendix K of the accompanying Facility Manual.

## 11.0 LIMITATIONS

The work product included in the attached was undertaken in full conformity with generally accepted professional consulting principles and practices and to the fullest extent as allowed by law we expressly disclaim all warranties, express or implied, including warranties of merchantability or fitness for a particular purpose. The work product was completed in full conformity with the contract with our client and this document is solely for the use and reliance of our client and the NYSDEC (unless previously agreed upon that a third party could rely on the work product) and any reliance on this work product by an unapproved outside party is at such party's risk.

The work product herein (including opinions, conclusions, suggestions, etc.) was prepared based on the situations and circumstances as found at the time, location, scope and goal of our performance and thus should be relied upon and used by our client recognizing these considerations and limitations. Cornerstone Engineering, Geology and Land Surveying, PLLC shall not be liable for the consequences of any change in environmental standards, practices, or regulations following the completion of our work and there is no warrant to the veracity of information provided by third parties, or the partial utilization of this work product.

## **APPENDIX G**

### **TRAFFIC AND ENVIRONMENTAL ASSESSMENT**

# Waste Connections of New York, Inc. 50<sup>th</sup> Street PSWTS Traffic and Environmental Assessment

## INTRODUCTION

In accordance with the City Environmental Quality Review (CEQR) Technical Manual (Manual), the following presents the Reasonable Worst Case Development Scenario (RWDCS) that could be expected as a result of the requested permit modification to accept C&D Debris in addition to the currently permitted waste type of PSW with no modification to currently permitted throughput tonnage of 1,075 TPD. As such, the “proposed project” or “proposed development” with respect to the existing Facility operations is limited solely to the potential impacts resultant from the ton for ton substitution of C&D Debris for PSW.

This analysis anticipates the Facility will be permitted to accept the following combinations of throughput:

- 0 to 1,075 TPD of PSW; or
- 0 to 1,075 TPD of C&D Debris; or
- 0 to 1,075 TPD of PSW and C&D Debris.

The objective of this analysis is to determine whether the proposed permit modification (*limited only to accepting an additional waste stream – C&D Debris*) would have potential for significant adverse impact on traffic and environment. The following scenarios were evaluated in order to identify the RWDCS associated with this proposed permit modification.

This analysis is based upon the Facility scale records for July 2, 2020. On this day, the Facility received 901.89 Tons of PSW from 163 Tipping Vehicles. There were 33 Transfer Trailers transporting 793.4 Tons to landfill. This analysis has been applied to both weekdays and Saturdays, since the first two shifts are very similar. Typically Saturday’s are slower during the third shift, as such, the worst case is being presented.

Based upon the Facility scale records for July 2, 2020, the total number of Tipping Vehicles and Transfer Trailers and inbound and outbound tonnage per hour was determined. Based upon Attachment 1, *Volume-to-Weight Conversion Factors*, as obtained from the NYSDEC’s ftp site, a typical compacted packer truck carries approximately 2,000 pounds and contains 3.3 cubic yards of PSW which equates to a material density of 606 pounds per cubic yard (lb/cy) for this waste type.

Attachment 1 was again utilized to determine the average density of C&D Debris. The composition of C&D Debris is based upon Figure 7.10, *Estimated C&D Debris Disposed* in NYS as presented in the NYSDEC’s State Solid Waste Management Plan, *Beyond Waste: A Sustainable Materials Management Strategy*.

The volume to weight conversion for Gypsum Board was obtained from the US Green Building Council (*refer to Attachment 2*). Based upon the typical mix of C&D Debris that is generated in the NYC metropolitan area contains a mix of the following types of materials:

<b>Material</b>	<b>%</b>	<b>lb/cy</b>	<b>Weighted Average (lb/cy)</b>
Rock, Brick, Concrete, Tile	36%	860	309.6
Wood	20%	169	33.8
Plastic	1%	100	1
Roofing	10%	731	73.1
Drywall	5%	467	23.35
Soil/Gravel	9%	1400	126
Paper & Corrugated	3%	100	3
Metal	3%	225	6.75
Other	13%	417	54.21
<b>Overall Density</b>	<b>1</b>	<b>-</b>	<b>630.81</b>



# Waste Connections of New York, Inc.

## 50<sup>th</sup> Street PSWTS

### Traffic and Environmental Assessment

As shown above, the typical composition of C&D Debris has an average density of approximately 630 lb/cy, which is greater than that of a typical load of compacted PSW. This translates to an overall reduction in the number of Tipping Vehicles the Facility is expected to receive when accepting C&D Debris in lieu of PSW.

The inbound and outbound truck count per hour for July 2, 2020 was extrapolated to reflect the permitted tonnage of 1,075 TPD. These truck counts were then converted into Trip Ends and then into Passenger Car Equivalents (PCEs) utilizing the conversions presented in Table 16-3 of Chapter 16, Transportation of the CEQR Technical Manual:

1. Number of Passenger Car Equivalents for employees is 1.0.
2. Number of Passenger Car Equivalents for Tipping Vehicles (Waste Collection Vehicles) is 1.5.
3. Number of Passenger Car Equivalents for Transfer Trailers (Trucks with 4 or more axles) is 2.5.

The weekday and Saturday analyses also includes four (4) employee passenger cars for each of the 3 shifts. The Facility has three (3) operating shifts. Shift No. 1 runs from 12:00 AM to 8:00 AM, Shift No. 2 runs from 8:00 AM to 4:00 PM, and Shift No. 3 runs from 4:00 PM to 12:00 AM. The employee traffic was applied to the hour just before the start each shift, as employees typically arrive in advance of their shift. The proposed permit modification will not result in a change to the number of employees per shift since the throughput will remain the same (1,075 TPD).

The hourly tonnage of both inbound and PSW was converted into cubic yards (cy) using the density of 603 lb/cy (0.303 Tons/cy). Then using the density of C&D of 630 lb/cy (0.315 Tons/cy) presented above, the inbound tonnage was calculated for each hour and then totaled for the day which resulted in 937.61 tons of C&D Debris. This was then extrapolated to 1,075 TPD of C&D Debris.

Since the throughput will not change from the current permitted tonnage of 1,075 TPD, this assessment also retains the number of Transfer Trailers based upon the daily report for July 2, 2020.

With respect to an environmental assessment, the Facility is currently permitted to accept 1,075 TPD of PSW, which can cause odors and also attract vectors. Adding C&D Debris to the permit, will result in a potential reduction in odors. Furthermore, allowing the Facility to accept C&D Debris is beneficial to the environment because there is a greater potential for recycling of materials in C&D Debris.

As part of this RWCDs assessment, the following scenarios for both weekdays and Saturdays were considered and excluded from the traffic assessment since they do not represent a RWCDs:

- Every tipping vehicle during each hour would be transporting only uncompacted gypsum board, the lightest C&D Debris material (*refer to Attachment 2*). It is highly unlikely that every construction project is at the same stage of demolition on a single day. In addition, loads of interior demolition waste (which would include mainly gypsum board), are typically collected and transported via packer truck.

The density developed above based upon the composition of C&D Debris presented in Beyond Waste does not take into consideration that this material will be compacted in the packer trucks, thus further reducing traffic at the Facility. As such, the average material weight for a typical load of NYC C&D Debris was utilized for this assessment.

As such, the average material weight for a typical load of NYC C&D Debris was utilized for this assessment.

Table 1, Comparison of Current Weekday PSW Averages Extrapolated to the permitted Throughput of 1,075 TPD to the Proposed Development for Weekday RWCDs and Table 2, Comparison of Current Saturday PSW Averages Extrapolated to the permitted Throughput of 1,075 TPD to the Proposed Development for Saturday RWCDs.

The Facility plans on maintaining the flexibility of loading transfer trailers with a combination of PSW and C&D Debris or loads containing just PSW or C&D Debris. Tonnage of fully loaded trailers in any of these combination will maintain the current average tonnage of approximately 22 to 24 tons. As such there will be no increase to the Transfer Trailer count since there will be no change in permitted tonnage.

Waste Connections of New York, Inc.  
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**Traffic and Environmental Assessment**

**Table 1: Comparison of Current Weekday PSW Averages Extrapolated to the permitted Throughput of 1,075 TPD to the Weekday RWCDs**

Hour	Existing Weekday PSW Averages Extrapolated to 1075 TPD							Proposed Development Weekday Averages Extrapolated to 1075 TPD for RWCDs							Net Change in PCEs between Proposed Development and Existing Conditions for Weekdays
	Tipping Vehicles			Transfer Trailers			Total PCE (Tipping Vehicles and Transfer Trailers)	Tipping Vehicles			Transfer Trailers			Total PCE (Tipping Vehicles and Transfer Trailers)	
	# of Vehicles	# trip ends	PCE	# of Vehicles	# trip ends	PCE		# of Vehicles	# trip ends	PCE	# of Vehicles	# trip ends	PCE		
00:00-01:00	11	22	33	0	0	0	33	10	20	30	0	0	0	30	-3
01:00-02:00	10	20	30	0	0	0	30	9	18	27	0	0	0	27	-3
02:00-03:00	11	22	33	0	0	0	33	10	20	30	0	0	0	30	-3
03:00-04:00	7	14	21	1	2	5	26	7	14	21	1	2	5	26	0
04:00-05:00	13	26	39	5	10	25	64	13	26	39	5	10	25	64	0
05:00-06:00	11	22	33	0	0	0	33	10	20	30	0	0	0	30	-3
06:00-07:00	5	10	15	0	0	0	15	5	10	15	0	0	0	15	0
07:00-08:00	47	94	141	2	4	10	51	10	20	30	2	4	10	48	-3
Shift 2	4	8	8	0	0	0		4	8	8	0	0	0		
08:00-09:00	2	4	6	2	4	10	16	2	4	6	2	4	10	16	0
09:00-10:00	11	22	33	4	8	20	53	10	20	30	4	8	20	50	-3
10:00-11:00	8	16	24	4	8	20	44	8	16	24	4	8	20	44	0
11:00-12:00	15	30	45	1	2	5	50	15	30	45	1	2	5	50	0
12:00-13:00	8	16	24	4	8	20	44	8	16	24	4	8	20	44	0
13:00-14:00	8	16	24	2	4	10	34	8	16	24	2	4	10	34	0
14:00-15:00	10	20	30	2	4	10	40	9	18	27	2	4	10	37	-3
15:00-16:00	7	14	21	2	4	10	39	28	56	84	2	4	10	39	0
Shift 3	4	8	8	0	0	0		4	8	8	0	0	0		
16:00-17:00	13	26	39	1	2	5	44	13	26	39	1	2	5	44	0
17:00-18:00	1	2	3	4	8	20	23	1	2	3	4	8	20	23	0
18:00-19:00	0	0	0	2	4	10	10	0	0	0	2	4	10	10	0
19:00-20:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20:00-21:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21:00-22:00	1	2	3	0	0	0	3	1	2	3	0	0	0	3	0
22:00-23:00	10	20	30	0	0	0	30	9	18	27	0	0	0	27	-3
23:00-24:00	7	14	21	2	4	10	39	7	14	21	2	4	10	39	0
Shift 1	4	8	8	0	0	0		4	8	8	0	0	0		
<b>Totals</b>	<b>192</b>	<b>384</b>	<b>564</b>	<b>38</b>	<b>76</b>	<b>190</b>	<b>754</b>	<b>185</b>	<b>368</b>	<b>540</b>	<b>38</b>	<b>76</b>	<b>190</b>	<b>730</b>	

Waste Connections of New York, Inc.  
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**Traffic and Environmental Assessment**

**Table 2: Comparison of Current Saturday PSW Averages Extrapolated to the permitted Throughput of 1,075 TPD to the Weekday RWCDs**

Hour	Existing Saturday PSW Averages Extrapolated to 1075 TPD							Proposed Development Saturday Averages Extrapolated to 1075 TPD for RWCDs							Net Change in PCEs between Proposed Development and Existing Conditions for Saturday
	Tipping Vehicles			Transfer Trailers			Total PCE (Tipping Vehicles and Transfer Trailers)	Tipping Vehicles			Transfer Trailers			Total PCE (Tipping Vehicles and Transfer Trailers)	
	# of Vehicles	# trip ends	PCE	# of Vehicles	# trip ends	PCE		# of Vehicles	# trip ends	PCE	# of Vehicles	# trip ends	PCE		
00:00-01:00	11	22	33	0	0	0	33	10	20	30	0	0	0	30	-3
01:00-02:00	10	20	30	0	0	0	30	9	18	27	0	0	0	27	-3
02:00-03:00	11	22	33	0	0	0	33	10	20	30	0	0	0	30	-3
03:00-04:00	7	14	21	1	2	5	26	7	14	21	1	2	5	26	0
04:00-05:00	13	26	39	5	10	25	64	13	26	39	5	10	25	64	0
05:00-06:00	11	22	33	0	0	0	33	10	20	30	0	0	0	30	-3
06:00-07:00	5	10	15	0	0	0	15	5	10	15	0	0	0	15	0
07:00-08:00	47	94	141	2	4	10	51	10	20	30	2	4	10	48	-3
Shift 2	4	8	8	0	0	0		4	8	8	0	0	0		
08:00-09:00	2	4	6	2	4	10	16	2	4	6	2	4	10	16	0
09:00-10:00	11	22	33	4	8	20	53	10	20	30	4	8	20	50	-3
10:00-11:00	8	16	24	4	8	20	44	8	16	24	4	8	20	44	0
11:00-12:00	15	30	45	1	2	5	50	15	30	45	1	2	5	50	0
12:00-13:00	8	16	24	4	8	20	44	8	16	24	4	8	20	44	0
13:00-14:00	8	16	24	2	4	10	34	8	16	24	2	4	10	34	0
14:00-15:00	10	20	30	2	4	10	40	9	18	27	2	4	10	37	-3
15:00-16:00	7	14	21	2	4	10	39	28	56	84	2	4	10	39	0
Shift 3	4	8	8	0	0	0		4	8	8	0	0	0		
16:00-17:00	13	26	39	1	2	5	44	13	26	39	1	2	5	44	0
17:00-18:00	1	2	3	4	8	20	23	1	2	3	4	8	20	23	0
18:00-19:00	0	0	0	2	4	10	10	0	0	0	2	4	10	10	0
19:00-20:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20:00-21:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21:00-22:00	1	2	3	0	0	0	3	1	2	3	0	0	0	3	0
22:00-23:00	10	20	30	0	0	0	30	9	18	27	0	0	0	27	-3
23:00-24:00	7	14	21	2	4	10	39	7	14	21	2	4	10	39	0
Shift 1	4	8	8	0	0	0		4	8	8	0	0	0		
<b>Totals</b>	<b>192</b>	<b>384</b>	<b>564</b>	<b>38</b>	<b>76</b>	<b>190</b>	<b>754</b>	<b>185</b>	<b>368</b>	<b>540</b>	<b>38</b>	<b>76</b>	<b>190</b>	<b>730</b>	

Waste Connections of New York, Inc.  
50<sup>th</sup> Street PSWTS  
**Traffic and Environmental Assessment**

**SUMMARY**

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In accordance with the CEQR Chapter 16 – Transportation, a traffic and environmental assessment has been completed for the proposed permit modification which limits the definition “proposed project” to the ton per ton substitution of C&D Debris in lieu of PSW, with no modification to throughput at the 50<sup>th</sup> Street PSWTS.

As shown on Tables 1 and 2, the difference between acceptance of C&D Debris and PSW, the RWCDs is actually the current permitted condition of 1,075 TPD of PSW. Allowing the acceptance of C&D Debris is facilitating an expected reduction of Tipping Vehicle traffic. This also results in an improvement to the environment regarding air emissions as a result in a potential reduction in truck traffic.

The number of trip ends for Tipping Vehicles was converted into PCEs using a conversion factor of 1.5 (Waste Collection Vehicles) and the number of trip ends for Transfer Trailers was converted into PCEs using a conversion factor of 2.5 (Trucks with 4 or more Axles), as per Table 16-3 for the CEQR Manual. A conversion of 1.0 was utilized for Personal cars. The total number of Tipping Vehicles and Transfer Trailers PCEs is summarized in the analysis presented herein. The difference between the acceptance of 1,075 TPD of the proposed development (*acceptance of C&D Debris*) versus the current permit of PSW has been presented on Tables 1 and 2. As shown, the acceptance of C&D Debris will result in a less Tipping Vehicles.

The Facility plans on maintaining the flexibility of loading Transfer Trailers with a combination of PSW and C&D Debris or separate loads containing just PSW or C&D. Tonnage of fully loaded trailers in any of these combination will maintain the current average tonnage of approximately 24 tons. As such there will be no increase to the Transfer Trailer count since there will be no change in permitted throughput.

On July 2, 2020, peak hourly weekday traffic (existing conditions) occurred between 4 AM and 5 AM with a peak of 64 PCEs. This peak hour which falls during the typical peak hours of 1 AM and 6 AM. Based upon the traffic assessment, these peak hours and total number of PCEs do not change as a result of the permit modification. As such, no further analysis is warranted when the Facility is granted permission to operate under the conditions of the “proposed project”.

**VOLUME-TO-WEIGHT CONVERSION FACTORS**

## VOLUME-TO-WEIGHT CONVERSION FACTORS

Materials:	Volume *	Weight in Pounds *
<b>PAPER:</b>		
Mixed Paper Grades/Junk Mail, loose	One cubic yard	875
Corrugated Cardboard (OCC), baled	One cubic yard	1,100
Corrugated Cardboard (OCC), baled	30" x 60" x 48"	900
Corrugated Cardboard (OCC), compacted	One cubic yard	500
Corrugated Cardboard (OCC), flattened, loose	40 cubic yard roll-off	2000
Newsprint (ONP), loose	One cubic yard	600
Newsprint (ONP), compacted	One cubic yard	860
Newsprint (ONP)	12" stack	35
Office paper	40" x 48" x 40"	650
Office paper	One cubic yard	400
Phone Books	12" stack	25
<b>CONTAINERS:</b>		
Mixed PET, dairy, whole loose	One cubic yard	30 (Average)
Mixed PET, dairy & other rigid, whole, loose	One cubic yard	40 (Average)
PET (soda bottles), whole, loose	One cubic yard	35
PET (soda bottles), whole, loose	Gaylord	45
PET (soda bottles), whole, baled	30" x 48" x 60"	600
HDPE (dairy only), baled	30" x 48" x 60"	650
HDPE (mixed), baled	30" x 48" x 60"	750
HDPE (whole) uncompactd	One cubic yard	24
HDPE (whole) compactd	One cubic yard	270
Aluminum Containers, whole	One cubic yard	62
Aluminum Containers, flattened	One cubic yard	250
Steel Cans, whole	One cubic yard	150
Steel Cans, flattened	One cubic yard	850
Glass Whole Containers	One cubic yard	1,000
Glass Whole Container	Full grocery bag	15
<b>OTHER MATERIALS</b>		
Scrap Metal	One cubic yard	225
Scrap Metal--Used Major Appliances (average of all types and brands)	One appliance	150
Pallets	One, average size	35
Pallets	Five cubic yards	2000
Electronic Scrap	CRT (Computer Monitor)	50
Electronic Scrap	TV	90
Plastic Film, baled	30" x 42" x 48"	1,100
Plastic Film, baled	semi-trailer load	44,000
<b>Other Plastics:</b>		
Mixed rigid, no film, granulated	Gaylord	750
Mixed rigid and densified by mixed plastic mold technology	One cubic foot	average 60
PS, granulated or peanuts	One cubic yard	9
Household Hazardous Waste	One gallon	10
Latex Paint	One gallon	10.9
Mixed Textiles, loose	One cubic yard	240
Mixed Textiles, baled	One cubic yard	480
Mixed Textiles, baled	31" x 45" x 60"	885
Carpet Padding	One cubic yard	62

\* Formula for converting cubic yards to tons:

# of cubic yards x weight in pounds ÷ 2000 pounds = tons

## VOLUME-TO-WEIGHT CONVERSION FACTORS

Materials:	Volume *	Weight in Pounds *
<b>MIXED MUNICIPAL SOLID WASTE (MSW)</b>		
MSW, (uncompacted)	One cubic yard	150-300 (225 Average)
MSW, (compacted in truck)	One cubic yard	500-1,000
MSW, compacted in packer truck	3.3 cubic yards	2000 (Average)
<b>C &amp; D: Clean Fill</b>		
Concrete	One cubic yard	860
Asphalt Paving	One cubic yard	773
Brick, Ceramic, Porcelain	One cubic yard	860
Roofing	One cubic yard	731
Wood	One cubic yard	169
<b>SPECIAL WASTE</b>		
Industrial Waste (Similar to MSW and C & D categories)		
Friable Asbestos/other Regulated Asbestos (Similar different type of C & D)	One cubic yard	Varies
Infectious Waste (Similar to MSW categories)		
Ash	One cubic yard	945-1080
PCS (Petroleum Contaminated Soils)	One cubic yard	929
Offal (animal and fish scraps)	One cubic yard	1350
Sewage Sludge dry	One cubic yard	945
Sewage Sludge wet	One cubic yard	1215
Other Sludges (dry-wet)	One cubic yard	945-1215
<b>Other Materials</b>		
Vegetative--Food Waste	One cubic yard	1,070
Yard Waste, raw, mulched (either for composting or land application)	One cubic yard	350
Yard Waste, finished compost	One cubic yard	1,400
Brush, loose	One cubic yard	300
Scrap Tire-Passenger**	One passenger	22.5
Scrap Tire-Truck**	One truck tire	60
Used Motor Oil***	One gallon	8
Antifreeze***	One gallon	8
Lead Acid Batteries****	One vehicle battery	40

\* Formula for converting cubic yards to tons:  
 # of cubic yards x weight in pounds ÷ 2000 pounds = tons

\*\*Formula for converting tires to tons:  
 # of tires x weight in pounds ÷ 2000 pounds = tons

\*\*\*Formula for converting gallons to tons:  
 # of gallons x weight in pounds ÷ 2000 pounds = tons

\*\*\*\*Formula for converting # of Lead Acid Batteries to tons:  
 # of batteries x weight in pounds ÷ 2000 pounds = tons

\*\* Gaylord size most commonly used in 40" x 48" x 36"; weight of empty Gaylord approx. 45 pounds

One cubic foot = 7.5 gallons or 1728 cubic inches

One cubic yard = 36" x 36" x 36" or 46,656 cubic inches

One cubic yard = 202 gallons or 27 cubic feet

18 bushel hamper = 0.83 cubic yards

SOURCES: National Recycling Coalition Measurement Standards and Reporting Guidelines; EPA; FEEO and CIWMB 2006

**CONSTRUCTION AND DEMOLITION DEBRIS WEIGHT TO VOLUME  
CONVERSION**



## Construction and Demolition Debris Weight to Volume Conversion

Note: These numbers are used throughout this training

	Volume	Weight (pounds)	Weight (tons)
Trash <sup>2</sup>			
Residential waste (uncompacted at curb)	1 cubic yard	150 – 300	.075 – .15
Commercial-industrial waste (uncompacted)	1 cubic yard	300 – 600	.15 – .30
Mixed Waste <sup>1</sup>	1 cubic yard	350	.175
Asphalt <sup>3</sup>	1 square yard 1 inch thick	110 - 115	0.055 – 0.057
Asphalt <sup>3</sup>	1 cubic yard	4,050 – 4,140	2.025 – 2.07
Cans & Bottles <sup>2</sup>			
Aluminum cans (whole)	1 cubic yard	50 – 75	.025 – .038
Glass bottles (whole bottles)	1 cubic yard	500 – 700	.25 – .35
Plastic bottles (soda bottles)	1 cubic yard	30 – 40	.015 – .02
Corrugated Cardboard <sup>1</sup>			
Uncompacted	1 cubic yard	50 – 150	.025 – .075
Compacted	1 cubic yard	300 – 500	.15 – .25
Concrete <sup>4</sup>	1 cubic yard	4,050	2
Rubble <sup>1</sup>	1 cubic yard	1,400	.7
Drywall <sup>1</sup>	1 cubic yard	500	.25
Scrap Metal <sup>1</sup> (loose light iron sheet metal)	1 cubic yard	1,000	.5
Wood – pallets <sup>2</sup>	1 cubic yard	286	.143
Wood – pallets <sup>2</sup> (Each)	1 Unit	30 – 50	.015 – .025
Scrap Wood <sup>1</sup>	1 cubic yard	300	.15

1 US Green Building Council. "LEED Reference Guide for Green Building Design and Construction 2009 Edition, Section 6- Calculations, Table 2- Solid Waste Conversion Factors. Page 360.

2 US Environmental Protection Agency. "Measuring Recycling. A Guide for State and Local Governments." September 1997 Appendix B. Standard Volume-to-Weight Conversion Factors pp. 59 – 62. W [www.epa.gov/epawaste/conserves/tools/recmeas/docs/guide\\_b.pdf](http://www.epa.gov/epawaste/conserves/tools/recmeas/docs/guide_b.pdf)

3 Asphalt Pavement Association of Michigan (4,050 lbs/yd<sup>3</sup>) and LEED EB v. 2.0 Reference Guide (p. 256) Table 2 Volume to Weight Conversions (115 lbs per yd<sup>2</sup> or 4,140 lbs per yd<sup>3</sup>).

4 Reade Advanced Materials, Providence RI 401.433.7000 [www.reade.com/Particle\\_Briefings/spec\\_gra2.html](http://www.reade.com/Particle_Briefings/spec_gra2.html)

What WasteCap Resource Solutions uses:

Material	Volume	Weight (pounds)	Weight (tons)	Cubic Yards Per Ton
Trash	1 cubic yard	350	.175	5.71
Cans & Bottles	1 cubic yard	50	.025	40
Cardboard	1 cubic yard	100	.05	20
Asphalt	1 cubic yard	4,140	2.07	0.48
Rubble	1 cubic yard	1,400	.7	1.43
Drywall	1 cubic yard	500	.25	4
Scrap Metal	1 cubic yard	1,000	.5	2
Scrap Wood	1 cubic yard	300	.15	6.66