NYC Commercial Waste Zone Program

Draft Generic Environmental Impact Statement

CEQR No. 19DOS003Y

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February 2019

NEW YORK CITY COMMERCIAL WASTE ZONE PROGRAM

DRAFT GENERIC ENVIRONMENTAL IMPACT STATEMENT

Project Name: NYC Commercial Waste Zone Program

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Notice of Completion: February 22, 2019

Public Hearings:

March 11, 2019
Second Floor Auditorium
125 Worth Street, New York, NY, 10013
The hearing will be held from
9 AM to 12 PM.

March 14, 2019
Second Floor Auditorium
125 Worth Street, New York, NY, 10013
The hearing will be held from
6 PM to 9 PM.

Written Comments Accepted Until: 5 PM on March 25, 2019

This document is the Draft Generic Environmental Impact Statement for the adoption of the CWZ Program. Copies may be downloaded from DSNY's website at www.nyc.gov/commercialwaste. Hard copies can be accessed at repositories located at the Department of Sanitation, Bureau of Legal Affairs, 125 Worth Street, Room 708, New York, NY, 10013; and the Mayor's Office of Environmental Coordination, Hilary Semel, Director, 253 Broadway, 14th Floor, New York, New York 10007.

February 2019

Table of Contents

Executive Summary **S-1**

1: Project Description **1-1**
A. Introduction 1-1
B. Background, Purpose, and Need 1-2
C. Description of the Proposed Action 1-5
D. Project Approvals and Coordination 1-7
E. Alternatives to the CWZ Program 1-7
1. Screening of Alternatives 1-7
Evaluation Criteria 1-7
Preferred Zone Design Option 1-11
F. Analysis Framework 1-12
Analysis Year 1-12
Existing Conditions 1-12
Future without the Proposed Action (No Action Condition) 1-12
Future with the Proposed Action (With Action Condition) 1-13
Three Commercial Density Typologies for Environmental Analysis Via Case Study 1-14
Central Business District Study Area 1-14
Neighborhood Retail Corridor Study Area 1-14
Lower (Retail) Density Study Area 1-14
Selected Case Study Areas 1-15
Midtown Manhattan CBD 1-15
Flatbush Nostrand Junction Neighborhood Retail Corridor 1-15
College Point, Queens Lower Density Area 1-16

2: Land Use, Zoning, and Public Policy **2-1**
A. Introduction 2-1
B. Existing Conditions 2-1
Public Policy 2-1
New York City Administrative Code 2-1
Rules of the City of New York 2-2
2006 Solid Waste Management Plan 2-2
One New York: the Plan for A Strong and Just City 2-3
Waterfront Revitalization Program 2-3
C. Future without the Proposed Action 2-4
Public Policy 2-4
New York City Administrative Code and Rules of the City of New York 2-4
2006 Solid Waste Management Program 2-5
OneNYC 2-5
Waterfront Revitalization Program 2-5

D. Future with the Proposed Action 2-5
Public Policy 2-5
New York City Administrative Code and Rules of the City of New York 2-5
2006 Solid Waste Management Program 2-6
OneNYC 2-6
Waterfront Revitalization Program 2-6
E. Conclusion 2-7

3: Socioeconomic Conditions 3-1
A. Introduction 3-1
Principal Conclusions 3-1
Direct Residential Displacement 3-1
Direct Business Displacement 3-2
Indirect Residential Displacement 3-2
Indirect Business Displacement 3-2
Adverse Effects On Specific Industries 3-2
B. Methodology 3-2
Background 3-2
Analysis Format 3-3
Neighborhood Case Study Areas 3-3
Central Business District Study Area—High-Density 3-4
Neighborhood Retail Corridor Study Area—Medium Density 3-4
Lower (Retail) Density Study Area 3-4
Data Sources 3-5
C. Screening Assessment 3-6
1. Direct Residential Displacement 3-6
2. Direct Business Displacement 3-7
3. Indirect Residential Displacement 3-7
4. Indirect Business Displacement 3-7
5. Adverse Effects On Specific Industries 3-7
D. Preliminary Assessment 3-8
Adverse Effects On Specific Industries 3-8
E. Detailed Analysis of Potential Adverse Effects On Specific Industries 3-9
Approach 3-9
Effect of the Proposed Action On Commercial Waste Carters 3-10
Commercial Waste Carters—Existing Condition 3-10
Commercial Waste Carters—Future without Proposed Action 3-13
Commercial Waste Carters—Future with Proposed Action 3-18
Effects of the Proposed Action On Commercial Waste Customers 3-27
Commercial Waste Customers—Existing Condition 3-28
Commercial Waste Customers—Future without Proposed Action 3-43
Commercial Waste Customers—Future with Proposed Action 3-47
Conclusion 3-48

4: Solid Waste Management 4-1
A. Introduction 4-1
B. Existing Conditions 4-2
New York City Laws and Regulations 4-3

2006 Solid Waste Management Plan 4-3
Recycling and Organics Requirements 4-4
Neighborhood Case Study Areas 4-5
Midtown Manhattan CBD 4-6
Flatbush Nostrand Junction Neighborhood Retail Corridor 4-7
College Point, Queens Lower Density Area 4-8
C. Future without the Proposed Action 4-10
D. Future with the Proposed Action 4-10
Neighborhood Case Study Areas 4-11
Midtown Manhattan CBD 4-11
Flatbush Nostrand Junction Neighborhood Retail Corridor 4-12
College Point, Queens Lower Density Area 4-12
Consistency With Swmp 4-12
E. Conclusion 4-13

5: Transportation 5-1
A. Introduction 5-1
B. Transportation Conditions 5-1
Existing Condition 5-1
Future without the Proposed Action 5-2
Future with the Proposed Action 5-3
C. Screening Analysis 5-4
D. Conclusion 5-5

6: Air Quality 6-1
A. Introduction 6-1
B. Air Quality Conditions 6-1
Existing Condition 6-1
National Ambient Air Quality Standard Attainment Status 6-2
Future without the Proposed Action 6-2
Future with the Proposed Action 6-3
C. Screening-Level Assessment 6-3
Regional Assessment (Mesoscale) 6-3
Local Assessment (Microscale) 6-4
D. Conclusion 6-4

7: Greenhouse Gas Emissions 7-1
A. Introduction 7-1
B. Greenhouse Gas Emissions 7-1
Pollutants of Concern 7-1
Policy, Regulations, Standards, and Benchmarks for Reducing GHG Emissions 7-3
Future without the Proposed Action 7-5
Future with the Proposed Action 7-6

8: Noise 8-1
A. Introduction 8-1
B. Screening Assessment 8-1
C. Conclusion 8-2

9: Alternatives 9-1
A. Introduction 9-1
B. No Action Alternative 9-1
Land Use, Zoning, and Public Policy 9-1
2006 Solid Waste Management Plan 9-2
One New York: the Plan for A Strong and Just City (OneNYC) 9-3
Waterfront Revitalization Program 9-3
Socioeconomics 9-3
Commercial Waste Carters 9-3
Commercial Waste Customers 9-8
Solid Waste Management 9-9
Transportation 9-9
Air Quality 9-10
Greenhouse Gas Emissions 9-11
Noise 9-11
C. Exclusive Zone Alternative 9-12
Land Use, Zoning, and Public Policy 9-12
Socioeconomics 9-13
Commercial Waste Carters 9-13
Commercial Waste Customers 9-14
Solid Waste Management 9-14
Transportation 9-15
Air Quality 9-16
Greenhouse Gas Emissions 9-17
Noise 9-17

10: CWZ Transition Period 10-1
A. Introduction 10-1
B. Anticipated Transition Process 10-1
Competitive Solicitation Period 10-1
Carter Transition Period 10-2
Customer Transition Period 10-4
City Support During Transition Period 10-4
C. Potential Impacts of Transition Period 10-4
Land Use, Zoning, and Public Policy 10-5
Socioeconomic Conditions 10-5
Commercial Waste Carters 10-5
Commercial Waste Customer 10-6
Solid Waste and Sanitation Services 10-6
Transportation 10-7
Air Quality 10-7
Greenhouse Gas Emissions and Climate Change 10-8
Noise 10-8

11: Unavoidable Adverse Impacts 11-1
A. Introduction 11-1

12: Growth-Inducing Aspects of the Proposed Action 12-1

13: Irreversible and Irretrievable Commitments of Resources 13-1

LIST OF APPENDICES

Appendix A: Regulation Tables
Appendix B: Waterfront Revitalization Program

List of Tables

3-1 2015 Commercial Carters Operating Expenses....3-12

3-2 No Action Condition Change in Diversion Rate....3-14

3-3 Cost Associated With 9-Percent Increase in the Rate of Diversion in the No Action Condition....3-15

3-4 LL145/2013 Reported Compliance and Anticipated Cost....3-16

3-5 Additional Carter Expenses in the No Action Condition....3-17

3-6 Commercial Carter Expenses in the No Action Condition....3-18

3-7 Proposed Action Anticipated Change in Diversion Rate....3-20

3-8 Cost Associated With Percent Increase in the Rate of Diversion in the Proposed Action....3-20

3-9 Operational Expense Reduction as a Result of Zone Routing Efficiencies Introduced by the CWZ Program....3-21

3-10 Proposed Action Cost of GPS Units and GPS Data Service....3-22

3-11 Proposed Action Cost of Health and Saftey Program....3-23

3-12 Total Anticipated Expenses to Commercial Carting Operations as a Result of the CWZ Program....3-25

3-13 Change in Commercial Carter Operational Expenses as a Result of the CWZ Program 3-26

3-14 Changes to Trucks as a Result of the CWZ Program....3-26

3-15 Changes to Employment as a Result of the Proposed Action1....3-27

3-16 Employment-Based Waste Generation Rates....3-29

3-17 New York City Commercial Waste Generation....3-30

3-18 New York City Annual Carting Costs....3-31

3-19 Modeled New York City Square Footage by Industry Sector....3-32

3-20 Area of Commercial Development within New York City....3-32

3-21 Average Cost for Commercial Carting Services in New York City PSF....3-33

3-22 Midtown Manhattan Waste Generation....3-34

3-23 Midtown Manhattan Annual Carting Costs....3-35

3-24 Area of Commercial Development within Midtown Manhattan....3-36

3-25 Average Cost for Commercial Carting Services in Midtown Manhattan PSF....3-36

3-26 Flatbush Nostrand Junction Waste Generation....3-37

3-27 Flatbush Nostrand Junction Annual Carting Costs 3-38
3-28 Area of Commercial Development within the Flatbush Nostrand Junction 3-39
3-29 Average Cost for Commercial Carting Services in the Flatbush Nostrand Junction PSF 3-39
3-30 College Point Waste Generation 3-41
3-31 College Point Annual Carting Costs 3-41
3-32 Area of Commercial Development within College Point 3-42
3-33 Average Cost for Commercial Carting Services in College Point PSF 3-43
3-34 No Action Anticipated BIC Rate Cap 3-44
3-35 No Action New York City Carting Costs 3-44
3-36 No Action Midtown Manhattan Carting Costs 3-45
3-37 No Action Flatbush Nostrand Junction Carting Costs 3-46
3-38 No Action College Point Carting Costs 3-47
3-39 Proposed Action Minimally Viable Rate for Commercial Carting 3-48
4-1 Employment-Based Waste Generation Rates 4-5
4-2 New York City Commercial Waste Generation 4-6
4-3 Waste Generation in Midtown Manhattan Case Study Area 4-7
4-4 Carters Servicing the Midtown Manhattan Case Study Area 4-7
4-5 Waste Generation in the Flatbush Nostrand Junction Case Study Area 4-8
4-6 Carters Servicing the Flatbush Nostrand Junction Case Study Area 4-8
4-7 Waste Generation in the College Point Case Study Area 4-9
4-8 Carters Servicing the College Point Case Study Area 4-9
4-9 Carters Servicing the Case Study Areas with Proposed Action 4-11
5-1 No Action and Proposed Action VMT (Miles/Day) per Case Study Area 5-4
5-2 No Action and Proposed Action Daily Carting Trucks per Case Study Area 5-5
7-1 Global Warming Potential for Major GHG 7-3
9-1 Cost Associated With 4-Percent Increase in the Rate of Diversion in the No Action Alternative 9-4
9-2 LL145/2013 Reported Compliance and Anticipated Cost 9-5
9-3 Additional Carter Expenses in the No Action Alternative 9-6
9-4 Change in Commercial Carter Expenses 9-7
9-5 No Action Alternative Anticipated BIC Rate Cap 9-8
9-6 No Action and Proposed Action VMT (Miles/Day) per Case Study Area 9-10
9-7 No Action Alternative and Proposed Action Daily Carter Trucks per Case Study Area 9-10

9-8 Carter Operational Expenses in the Exclusive Zone Alternative 9-13

9-9 Changes to Carting Trucks and Employment as a Result of the Exclusive Zone Alternative 9-14

9-10 Proposed Action and Exclusive Zone Alternative VMT (Miles/Day) per Case Study Area 9-15

9-11 Proposed Action and Exclusive Zone Alternative Daily Carting Trucks per Case Study Area 9-16

List of Figures

Following page:

1-1 Map of Proposed Commercial Waste Zones 1-1

1-2 Neighborhood Case Study Areas 1-15

1-3 Midtown Manhattan CBD Case Study Area 1-15

1-4 Flatbush Nostrand Junction Neighborhood Retail Corridor Case Study Area 1-16

1-5 College Point Lower Density Retail Case Study Area 1-16

3-1 Midtown Manhattan Central Business District Case Study Area 3-4

3-2 Flatbush-Nostrand Junction Corridor Case Study Area 3-4

3-3 College Point Low Density Case Study Area 3-5

5-1 Midtown Manhattan CBD NYCDOT-Designated Truck Routes 5-2

5-2 Flatbush Nostrand Junction Neighborhood Retail Corridor NYCDOT-Designated Truck Routes 5-2

5-3 College Point Lower Density Retail NYCDOT-Designated Truck Routes 5-2

5-4 Efficiencies Gained from Existing Condition to Proposed Action in the Flatbush Nostrand Junction Case Study Area 5-3

5-5 Truck Traffic Associated with just one day of operation in the City's Private Waste Collection Industry 5-3

5-6 Daily Changes in the Amount of Trucks in Case Study Areas 5-5

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A. INTRODUCTION

The City of New York is proposing to improve commercial waste carting by implementing a Commercial Waste Zone (CWZ) Program across the five boroughs of the City, consisting of 20 zones with 3 to 5 private carters authorized to operate per zone (the "CWZ Program" or "Proposed Action"). As lead agency for the required environmental review of the Proposed Action, the New York City Department of Sanitation (DSNY) has prepared this Draft Generic Environmental Impact Statement (DGEIS), examining the potential for adverse environmental impacts that could occur as a result of the CWZ Program, in accordance with the State Environmental Quality Review Act (SEQRA) and the City Environmental Quality Review (CEQR) procedures. Implementation of the CWZ Program would involve several discretionary approvals. The City entities that may be potentially involved in the environmental review and approval process for the Proposed Action are:

- Office of the Mayor, City of New York for authorizing legislation;
- New York City Council for authorizing legislation;
- DSNY acting as lead agency for the environmental review,[1] potential rulemaking, and CWZ Program implementation including approvals of zone contracts; and
- New York City Business Integrity Commission (BIC) for oversight and potential rulemaking.

B. DESCRIPTION OF THE PROPOSED ACTION

The CWZ Program would involve an implementation plan and contract-award process to establish a zoned commercial waste system throughout the City's five boroughs. The CWZ Program would be a non-exclusive system of 20 geographic zones permitting at least 3 but no more than 5 carters operating within each zone. Specifically, 14 zones would allow 3 carters, 4 zones (all in Manhattan) would allow 4 carters, and 2 zones (in midtown Manhattan) would allow 5 carters, for a total of up to 68 zone contracts.

The CWZ Program would regulate the collection of commercial refuse, designated recyclables, and source-separated organic waste. It would exclude specialized or intermittent waste streams, which would continue to be collected in the current manner under existing City and State regulatory requirements. The excluded waste streams include construction and demolition (C&D) debris, hazardous or radioactive waste, medical waste, electronic waste, textiles, yard waste (collected by landscapers), junk hauler waste or one-time bulk waste services, grease, and papers collected for the purposes of shredding or destruction.

Private carters would competitively bid for the right to service businesses in each zone. Carters that win zone contracts would be obligated to meet certain contractual requirements aligned with the City's program goals and objectives, as further discussed below. The CWZ Program would

[1] Lead agency status has been delegated by the New York City Council and Office of the Mayor to DSNY.

standardize the carting contract process by requiring written service agreements between carters and customers and by making the pricing structure more transparent. Customers would be able to negotiate supplemental services beyond the required minimum, for an extra fee.

Each carter would be able to compete for one or more zones throughout the City based on its preferences. No carter would be able to win contracts for more than 15 zones. Qualification requirements would be further defined in a Request for Proposal (RFP). The RFP would provide details on the program goals, methods for implementation, and requirements that carters would respond to in order to apply for contracts with the City to collect waste within specific zones. The proposed carting fee would constitute 40 percent of the selection criteria for each proposal. While the RFP would define the maximum number of carters able to operate in a particular zone, the number of carters selected for a zone would be determined by the number and quality of the proposals received and the qualifications of the carters. Additionally, the potential to submit proposals as a consortium with other carters or organized through a broker, as well as certain subcontracting allowances, would provide opportunities for an array of different carters.

Following selection, contracts will have a 10-year term with extension options available. Extension options will be outlined in the contract, and any extension would be at the discretion of the City for the individual carter. Pricing would be negotiated between individual businesses and carters, subject to rate caps for each carter determined through the contract-award process. The overall BIC rate cap for licensed carters of putrescible waste would no longer apply.

Under the CWZ Program, carters would be required to comply with current regulations so they could compete for business within the CWZ Program, and DSNY would have the mechanism to enforce these regulations if carters fail to comply. The CWZ Program would encourage carters to comply with industry health and safety standards and policies, as well as BIC's health and safety guidance documents. Compliance with requirements for safety equipment and training and necessary equipment maintenance would be documented and tracked.

The CWZ Program would encourage carters to comply with existing recycling and source-separation regulations so they could compete for business within the CWZ Program. As part of the solicitation process, the CWZ Program would require carters to develop "zero waste" plans and identify innovative practices to support waste reduction, reuse, and recycling and provide for additional oversight and reporting requirements to ensure that these practices are being followed. With more recycling and organic materials being separated, less waste would be sent to landfills, saving resources and energy, consistent with the City's sustainability and recycling goals.

Billing would be fairer and more transparent, with written service agreements outlining rates and any fees so that New York City businesses would only pay for the waste that they produce. Implementing this non-exclusive CWZ Program is expected to result in a transition that can be planned in order for New York City businesses to preserve customer choice, keep prices competitive and the quality of service high, while substantially reducing truck traffic associated with commercial waste collection.

The CWZ Program would be implemented in multiple steps. The competitive solicitation process would be expected to begin in 2020 and the evaluation and contracting with the City would be expected to last approximately one year. The RFP would be released for all zones, and all proposals would be reviewed and awarded concurrently. Once all contract agreements with the City are executed, customer transition would be expected to begin at the end of 2021 and could take up to two years following the execution of such agreements. Customer transitions to service by an authorized carter would be expected to be complete by 2023 or early 2024. DSNY would

continue to serve as the project manager for the CWZ Program, and in this capacity would oversee the competitive solicitation, the negotiation of each zone's contract between the City and the carter for the right to collect waste, and the overall transition to CWZs. DSNY would continue to enforce regulations controlling commercial waste set out, recycling, and organics separation. DSNY would also become the primary administrator of carter zone contracts under the program and would serve as carter of last resort if carters repeatedly fail to perform services for any reason. DSNY would create a Division of Commercial Waste to administer the CWZ Program and consolidate commercial waste outreach, enforcement, and regulatory functions in the agency under a single chain of command. The Division of Commercial Waste would oversee the transition processes and ensure that the CWZ Program achieves its stated goals and requirements.

In summary, the CWZ Program would build on the current regulatory system, with a contract-based system where carters are subject to clear, written requirements. The contracts awarded to selected carters would be long-term, provide for transparent and fair pricing and customer service mechanisms, require improved environmental performance, and ensure compliance with and enforcement of existing and new requirements. Non-compliance could result in monetary penalties or loss of the contract. Overall, the CWZ Program would provide stability to the commercial waste industry by providing carters with predictable business and promoting long-term investments in recycling services and cleaner trucks.

C. PURPOSE AND NEED

Today's commercial waste system achieves its basic goal of collecting and handling the City's commercial waste, but the competitive market has resulted in inefficiencies, with overlapping carting routes and resulting externalities that must be borne by the public, including extra truck traffic, an increased risk to pedestrian safety, traffic congestion, air and noise pollution, road wear, and increased use of fossil fuels and greenhouse gas (GHG) emissions, contributing to climate change. In some parts of the City, based on data reported to BIC by the carting industry, more than 50 carters service a single community district, and an individual commercial block may see dozens of private waste collection trucks on a single night. Compliance with the City's safety equipment and training requirements, and necessary equipment maintenance, are often not enforceable as a practical matter under the current system, and guidance documents, notably BIC's *Trade Waste Safety Manual*, lack the force of law. Compliance with BIC's rate cap relies on self-reporting and self-policing by carters and customers, resulting in efforts by some to evade the requirements.

Commercial business customers of carters note the lack of transparency between carters and customers in the current system. The majority of contracts are oral in nature. There are no set guidelines on what a carter can charge a customer outside of the citywide rate cap, and many payments are made in cash. Furthermore, for their part, carters note that a customer can change carters with little advance notice to the carter, causing inconvenience.

Moreover, although existing regulations require commercial businesses to recycle metal, glass, plastic (MGP), paper, cardboard, and, in some cases, waste from food preparation (organics) and thereby divert such waste from landfills, enforcing and tracking compliance rates is difficult.

In sum, reforming the City's commercial waste carting system seeks to achieve a series of stakeholder-driven goals. These include:

1. **Environmental Quality and Public Health**: Reduce truck traffic throughout the City to reduce air and noise pollution and improve quality of life for New Yorkers.

2. **Zero Waste**: Reduce commercial waste disposal and incentivize recycling to conserve resources and reduce GHGs.
3. **Pricing**: Provide fair, transparent pricing with competitive prices for businesses large and small.
4. **Customer Service**: Strengthen customer service standards and establish accountability.
5. **Health and Safety**: Improve training and safety standards to make the industry safer for workers and the public.
6. **Labor and Worker Rights**: Improve industry labor standards and uphold worker rights.
7. **Infrastructure and Waste Management**: Prioritize investments in clean, modern fleets that make up a reliable, resilient, and sustainable waste management system.
8. **Robust, competitive carting sector**: Create a system that works for carters of all sizes and prevents overreliance on any single company.

In August 2016, DSNY, in partnership with BIC, released a feasibility study lead by Buro Happold Engineering on the implementation of a CWZ program in New York City.[2] The study concluded that a CWZ program would be beneficial in reducing inefficiencies in waste collection routes and would reduce carter truck miles traveled by roughly half. The CWZ Program builds on this initial work.

To determine the structure of the CWZ Program, a robust, year-long stakeholder engagement process was conducted by DSNY, as lead agency, and the consultant team. Starting October 19, 2017, over 150 different stakeholders in the commercial waste industry were consulted, including commercial businesses, labor groups, environmental justice advocates, private carters, Business Improvement District representatives, real estate owners, property managers, trade organizations, other City agencies, traffic safety advocates, and elected officials. A variety of formats were utilized, including structured one-on-one interviews, small group conversations, phone calls, field interviews, and focus groups. The City used the feedback it gained from this process to determine the CWZ Program goals, implementation strategies, and the necessary requirements for the eventual carter contracts. The City and project team are expected to continue to work with stakeholders during public review and implementation of the CWZ Program.

The CWZ Program that emerged from this process is therefore intended to advance the City's efforts to increase commercial recycling, reduce carter truck traffic and associated air, noise, and GHG emissions, and improve carting industry operational standards. The CWZ Program would thereby help advance several key policy objectives, including improving roadway safety—complementing Vision Zero, furthering the environmental sustainability efforts of *One New York: The Plan for a Strong and Just City* (*OneNYC*), and reducing the environmental and community impacts of the commercial waste system, a goal of the City's Solid Waste Management Plan (SWMP).

D. ANALYSIS FRAMEWORK

The Proposed Action would change the commercial waste collection program throughout New York City's five boroughs. The *2014 CEQR Technical Manual* serves as the general guide on the methodologies and impact criteria for evaluating the Proposed Action's potential effects on the various environmental areas of analysis in the DGEIS.

[2] DSNY, BIC. Private Carter Study. August, 2016. Retrieved from: https://www1.nyc.gov/assets/dsny/site/resources/reports/private-carter-study

ANALYSIS YEAR

Since the Proposed Action's expected year of full implementation after a two-year transition period is 2024, that is the Analysis Year for the environmental review. As such, the environmental setting is not the current environment, but the future environment. Therefore, the technical analyses and consideration of alternatives assess current conditions and forecast these conditions to the expected 2024 Analysis Year for the purposes of determining potential impacts. Each chapter of the DGEIS provides a description of the "existing condition" and assessment of Future without the Proposed Action (the "No Action" condition) and the Future with the Proposed Action (the "With Action" condition).

EXISTING CONDITIONS

For each technical area that has been assessed in the DGEIS, the existing conditions have been described. The analysis framework begins with an assessment of existing conditions because these can be most directly measured and observed. The assessment of existing conditions serves as a starting point for the projection of future conditions with and without the Proposed Action and the analysis of project impacts.

FUTURE WITHOUT THE PROPOSED ACTION (NO ACTION CONDITION)

The No Action condition predicts conditions that would exist in the Analysis Year of 2024 without undertaking the Proposed Action, and thus provides the baseline against which the Proposed Action's impacts may be assessed. Under the No Action condition, it is anticipated existing carters would continue to operate the same as under the existing condition—the routes, frequency, durations and pick-up times would remain approximately the same.

The No Action condition analysis discusses the current commercial waste industry, including its shortcomings, and any regulatory changes to the industry already expected by the Analysis Year of 2024.

FUTURE WITH THE PROPOSED ACTION (WITH ACTION CONDITION)

In the Proposed Action, there would be 20 geographic zones in each of which 3 to 5 carters would be authorized to operate and be required to adhere to certain parameters intended to improve transparency, safety, and customer service. Up to 68 zone contracts would be awarded. The identities of the carters to be awarded zone contracts are to be determined, but are expected to have carting operations and garages in the City or greater metropolitan area.

THREE COMMERCIAL DENSITY TYPOLOGIES FOR ENVIRONMENTAL ANALYSIS VIA CASE STUDY

As the Proposed Action is generic, and the CWZ carter garage locations are not yet known, the DGEIS studies representative types of commercial clusters and corridors within New York City and includes an analysis of the Proposed Action's likely effects on its environmental setting (Future with the Proposed Action) in 2024, the Analysis Year. The analysis examined how proposed changes to the commercial waste system from the CWZ Program might affect three broad classes of commercial development density, into which most development in the City can be categorized. Three representative neighborhood case study areas were selected as typologies of high, medium, and low-density commercial development, respectively, to provide a more detailed and contextual analysis of the potential benefits and adverse impacts of the Proposed Action in

such New York City communities. These areas, and the reasons they were selected for study as typologies for the Proposed Action, are discussed below.

Central Business District Study Area

A central business district (CBD) is the commercial and business center of a city and in larger cities is often synonymous with a city's "financial district." In New York City, these high-density commercial areas are primarily found in Lower Manhattan, Midtown Manhattan, and Downtown Brooklyn. Users of waste removal services are typically building operators, including real estate companies, often with multiple buildings within the district. Typical waste producers within CBD districts include large offices, hotels, commercial retail, and restaurants.

Neighborhood Retail Corridor Study Area

Neighborhood retail corridors primarily serve as the retail and commercial hubs of medium-density residential neighborhoods outside of the City's CBDs, such as Long Island City and Roosevelt Avenue in Queens; Fordham Road, the Hub in the Bronx; the Flatbush Nostrand Junction, portions of Atlantic Avenue, and 5th Avenues in Brooklyn; and Dyckman Street in Manhattan. Businesses within these medium-density commercial corridors tend to be smaller in footprint and produce less waste per footprint area than larger buildings found in the City's CBDs. Commercial waste customers within these neighborhood retail corridors include medium-sized office buildings, small commercial retailers, neighborhood supermarkets, delis, and restaurants.

Lower (Retail) Density Study Area

Lower commercial density areas are characterized by commercial retail uses scattered throughout the district, as opposed to being concentrated in defined clusters or corridors. These low-density districts are found in the more automobile-oriented neighborhoods of the outer boroughs, including Howard Beach and College Point in Queens, Canarsie in Brooklyn, and neighborhoods throughout Staten Island. Businesses in these areas vary and include a wide variety of different retailers including chain convenience stores, gas stations, bodegas, fast-casual and take-out restaurants, other automotive businesses, big box retail, and pharmacies such as Rite Aid and Duane Reade.

Selected Case Study Areas

The following three case study areas are discussed in this DGEIS: the Midtown Manhattan CBD; a neighborhood retail corridor in the Flatbush Nostrand Junction within Brooklyn; and a lower-density study area in College Point, Queens. These study areas are used in the technical area analyses to provide detailed and contextual analyses of impacts from the CWZ Program upon these classes of commercial density and thus demonstrate the types of issues, potential effects, and benefits that could result in any section of the City as a result of the Proposed Action.

SCREENING ASSESSMENTS

Detailed analyses are provided for land use, zoning, and public policy; socioeconomic conditions; solid waste; transportation; air quality; GHG emissions; and noise. Based on the anticipated limited impact of the Proposed Action, the following *CEQR* technical areas did not warrant detailed discussion: community facilities and services; open space; shadows; historic and cultural resources; urban design and visual resources; natural resources; hazardous materials; water and sewer infrastructure; energy; and construction.

E. PROBABLE IMPACTS OF THE PROPOSED ACTION

LAND USE, ZONING, AND PUBLIC POLICY

The Proposed Action is limited to regulatory changes regarding the collection of commercial solid waste throughout the City and would not change land use or result in any new or different development.

The CWZ Program would be authorized through the enactment of a new local law to be developed by the New York City Council. The new local law would specify the basic elements of the program, including the RFP requirements and contract-award process.

In addition, under the Proposed Action, carters would be required to comply with existing legal requirements in order to compete for business, and DSNY and BIC would have the mechanism to enforce these laws and regulations if carters fail to comply. These include Local Law 145 of 2013 (LL145/2013), which requires all trucks to implement Best Available Retrofit Technology (BART) such as diesel particulate traps or be equipped with a United States Environmental Protection Agency (EPA)-certified 2007 model year or later engine by January 1, 2020, and LL56 of 2015 (LL56/2015), which requires all licensed carting trucks to be equipped with side guards designed to protect pedestrians and cyclists by January 1, 2024.

LL146/2013 requires DSNY to assess, at least annually, the available regional capacity to process organic waste and to designate certain categories of businesses that must separate this material for a beneficial use, such as composting or anaerobic digestion to produce biogas. Under the Proposed Action, there would be an increase in the collection rate of organic material from 3 percent under the No Action condition to 6 percent throughout the City under the Proposed Action, due to improved diversion, recycling collection, and enforcement facilitated by the CWZ Program.[3]

Additional enforcement of other recycling requirements would also occur under the With Action condition, for the same reasons. Under the Proposed Action, the recyclable collection rate is projected to increase to 38 percent, compared to 30 percent under the No Action condition.

The Proposed Action would support the goals of the SWMP and would further the environmental sustainability efforts of *OneNYC*. The Proposed Action would be consistent with goals of the New York City Waterfront Revitalization Program (WRP).

Therefore, the Proposed Action would not result in significant adverse impacts to land use, zoning, or public policy.

SOCIOECONOMIC CONDITIONS

The CWZ Program is not anticipated to result in significant adverse effects on the commercial waste carting industry, or the customers of commercial waste carters. While the CWZ Program has the potential to reduce the total number of commercial carters operating within the City of New York, carters that fail to win zone contracts may transition into the collection of non-CWZ waste streams such as C&D, engage in other agreements such as subcontracts to support contracted carters and/or consolidate companies, concentrate on carting opportunities in the metropolitan area outside New York City, or remove themselves from the industry. Despite the potential for some carters to close, the remaining commercial carters continuing to operate in the Proposed Action condition are anticipated to continue providing effective waste collection services across the City.

[3] Collection rate is the amount of designated recyclables or organic material collected in the system.

In the Proposed Action condition, potential changes in commercial carting industry operational costs would not jeopardize the viability of the industry, or the ability to provide citywide carting services at a reasonable cost to commercial businesses. In total, as a result of the efficiencies associated with zoned routing, including the reduction in routes necessary to collect an equal amount of waste, the total operational expenses to be incurred by the carting industry are anticipated to decrease by approximately 2 percent compared to the No Action condition, despite additional equipment and administrative costs associated with the CWZ Program.

Expenses associated with commercial carting are anticipated to decrease in the Proposed Action condition as a result of efficiencies in the daily operation of the commercial carting industry. These efficiencies, however, include the reduction in total staffing necessary to collect commercial waste in the Proposed Action. Based on the reported baseline employment estimates provided by BIC 2015 Carter Financial Statements the CWZ Program would reduce employment by an estimated 2 percent compared to the No Action condition. However, as discussed above, it is anticipated that as a result of the CWZ Program employment within secondary markets such as the recyclable sorting and processing industry would increase.

Businesses that pay for commercial carting services would likely benefit from the Proposed Action, as the CWZ Program would not result in a substantial increase to the expenses associated with the commercial waste collection. Customers, regardless of industry sector or location, would likely receive improved services, including free waste assessments, and access to a dedicated call center, at a competitive rate as a result of the CWZ Program.

Therefore, the CWZ Program is not anticipated to result in significant adverse environmental impacts on the socioeconomic conditions of New York City, as the changes introduced by the CWZ Program would make carting more efficient, thereby decreasing the expenses associated with the operation of the commercial carting industry compared to the No Action condition, which is anticipated to reduce the cost of waste collection services for commercial customers within the City.

SOLID WASTE MANAGEMENT

One goal of the CWZ Program is to increase recycling and organics diversion. To help achieve this goal, those carters awarded contracts for the right to collect waste in a zone would be required to provide recycling and organics collection as standard services in addition to refuse collection and carters would be allowed to form consortiums or subcontract with other carters for these services. In addition, under the Proposed Action, both carters and customers would be required by their contracts to comply with existing laws regarding recycling and organics separation of commercial waste, and with any new or revised laws or regulations enacted during the contract term. With more recycling and organic materials being separated under the Proposed Action, less waste would be sent to landfills, saving resources and energy, consistent with the City's sustainability and recycling goals.

As such, the Proposed Action would not be expected to increase the volume of waste being produced or collected but would result in a redistribution of what waste would be collected and by which carter it would be collected. Under the Proposed Action, there would be an expected shift in the waste streams collected, with an increased emphasis on diversion, from an estimated 30 percent collection rate of recyclables and 3 percent of organics in the No Action condition to a 38 percent collection rate of recyclables and 6 percent of organics with the Proposed Action.[4]

[4] Collection rate is the percentage of designated recyclables or organic material collected in the system.

The CWZ Program would not directly affect any facility identified in the SWMP for the transfer, sorting, or disposal of refuse, organics or recyclables, or change New York City's plan to rely on remote disposal capacity such as landfills and waste-to-energy plants for refuse. Further, existing recycling and organic processing facilities within New York City and the surrounding regional area are anticipated to have adequate capacity to accommodate the increase in diversion as a result of the CWZ Program.

Another goal of the Proposed Action is to reduce truck trips related to the commercial waste industry. In creating zones and limiting the number of carters servicing those zones, there is expected to be more efficient routing and truck loading (e.g., filling to capacity), reducing the overall waste carting truck traffic. This would support the SWMP truck traffic reduction goals and thereby reduce truck traffic-related impacts to communities, including noise and air emissions, and enhance pedestrian safety while still providing sufficient capacity to collect the commercial waste generated within New York City.

Therefore, the Proposed Action would not result in significant adverse impacts to solid waste or sanitation services.

TRANSPORTATION

Under the Proposed Action, the number and type of customers would be expected to remain the same as under the No Action condition. However, the Proposed Action would limit the number of carters within geographic zones, which would result in increased efficiency in waste collection routes, such that associated Vehicle Miles Traveled (VMT) and overall carter truck traffic would decrease.

To help achieve the Proposed Action's goal of increasing recycling and organic diversion, carters would be required to provide recycling and organics collection in addition to refuse collection as standard services. To do this, carters would be able to form consortiums or subcontract with other carters for these services. Collection trucks carting recyclables or organic waste do not carry the same density of waste as similar-sized putrescible refuse collection trucks, thus a net increase in the total number of waste collection trucks would be expected as a result of the increased diversion to recycling and organics. However, under the Proposed Action, the increased efficiency coupled with the increased diversion to recycling and organics would result in an overall decrease of overlapping trucks along road segments, which would result in decreased VMT within New York City and region-wide for travel to transfer stations and garages in New Jersey, Long Island, and nearby upstate New York counties. The Proposed Action is expected to reduce citywide commercial carter truck VMTs by approximately 50 percent from the No Action condition, and by 47 to 60 percent within the case study areas.

Therefore, there would be no predicted exceedance of the *CEQR Technical Manual* Level 1 Traffic Screening threshold to warrant further analysis. Additionally, the collection times, duration of collections, collection dates, and frequency of collections would not significantly change with the Proposed Action. Therefore, detailed traffic analyses are not warranted and the Proposed Action is not anticipated to result in any significant adverse transportation impacts.

AIR QUALITY

As noted above, under the Proposed Action, the number and type of customers, pick-up times, and frequency of pick-ups would be expected to remain the same as under the No Action condition, but the CWZ Program would result in an overall decrease of overlapping commercial carter truck trips.

The increased efficiency in routes coupled with the increased diversion to recycling and organics would result in decreased VMTs within New York City and region-wide for truck routes to and from transfer stations and garages in Long Island, upstate New York, and New Jersey. Fleet-wide emissions associated with commercial carting trucks would be reduced from levels in both the existing condition and No Action condition.

The Proposed Action would not result in an exceedance of the respective screening levels for carbon monoxide and fine particulate matter ($PM_{2.5}$) in the *CEQR Technical Manual* for incremental peak hour vehicles at intersections within any of the three case study areas; therefore, there would be no potential for mobile source air impacts from the Proposed Action.

The CWZ Program would not cause a significant adverse air quality impact.

GREENHOUSE GAS EMISSIONS

As noted above, a key goal of the CWZ Program is to reduce commercial carting truck traffic by improving the efficiency of the carting system and reducing the amount of overlapping truck collection routes. The CWZ Program would not change the mode of transport of commercial waste (for example, from truck to rail or barge), nor would the Proposed Action result in increased distances traveled by commercial waste from waste transfer stations to disposal facilities, such as landfills or waste-to-energy plants. Likewise, the CWZ Program would not require a change in the disposal technology for such waste. The CWZ Program would result in a potential reduction to the distance commercial carter trucks travel within the New York City region and thus would reduce GHG emissions.

In addition, the contracts awarded to selected carters would include incentives to provide improved environmental performance. Some of these improvements could include the conversion of commercial carter trucks to electric vehicles or the use of compressed natural gas, which is a cleaner fuel. These improvements in performance, if implemented, would further reduce GHG emissions with the CWZ Program.

As a result, GHG emissions are expected to be reduced with the CWZ Program compared to baseline existing condition and No Action condition levels. Therefore, the Proposed Action would be consistent with the City's 80 by 50 GHG reduction goals (80 percent GHG reductions by 2050) under *OneNYC*.

NOISE

The Proposed Action would reduce inefficiencies in commercial waste collection routes, resulting in a reduction in truck traffic. As a result, the Proposed Action would not cause any roadway segments to experience an increase in maximum hourly truck volume. The Proposed Action would not require changes in operations that would affect collection times, duration of collections, collection dates, frequency of collections, or number of nighttime collections. Consequently, the Proposed Action would not generate any increase in noise from mobile sources.

Commercial carter trucks are stationary when compacting refuse and, therefore, would, also be considered a stationary noise source. The compacting cycle noise from all commercial carter trucks is already regulated by Subchapter 5, §24-225 of the New York City Noise Control Code to a consistent level of noise emission. Fewer commercial trucks are expected at any one time in the case study areas than under the No Action condition. Consequently, the Proposed Action would not generate any increase in noise from stationary sources.

Since the Proposed Action would not result in additional mobile or stationary source noise at any noise receptors, a more detailed noise analysis is not warranted, and the Proposed Action would not have the potential to result in a significant adverse noise impact.

ALTERNATIVES

Although the DGEIS has not identified a significant adverse impact from the Proposed Action with respect to any CEQR environmental category, nevertheless, two alternatives to the CWZ Program were considered: the No Action Alternative (required by SEQRA/CEQR to be studied) and the Exclusive Zone Alternative.

NO ACTION ALTERNATIVE

The No Action Alternative is the same as the No Action condition, and predicts the environmental conditions that would exist if the CWZ Program was not implemented. Under the No Action Alternative, the commercial waste industry would remain unchanged, with the exception of any regulatory changes to the industry already expected by the Analysis Year of 2024.

As with the Proposed Action, the No Action Alternative would not result in significant adverse impacts to land use, zoning, and public policy; socioeconomic conditions; solid waste; transportation; air quality; GHG emissions and noise. However, many benefits of the Proposed Action—advancing the City's efforts to increase commercial recycling, reducing carter truck traffic and associated air, noise, and GHG emissions, improving carting industry operational standards and establishing a mechanism to enforce applicable regulations—would not be realized.

EXCLUSIVE ZONE ALTERNATIVE

Under the Exclusive Zone Alternative, a single carter would be awarded the exclusive right to provide collection services within each designated service zone. The goals of the Exclusive Zone Alternative would be the same as the CWZ Program, and the same 20-zone configuration would be used; however, only a single carter would operate within each zone as compared with 3 to 5 carters per zone under the CWZ Program.

As with the Proposed Action, the Exclusive Zone Alternative would not result in significant adverse impacts to land use, zoning and public policy; socioeconomic conditions; solid waste; transportation; air quality; GHG emissions; or noise.

However, the Exclusive Zone Alternative would have drawbacks in comparison with the preferred CWZ Program option, with respect to anticipated price increases to customers as a function of reduced competition, greater risks to carter solvency within a restrictive market, and increased risk of inability of the exclusive carter to meet customer needs. The elimination of competition within commercial waste zones has the potential to increase the costs of commercial carting services on customers and could lead to a reduction in customer service and satisfaction due to the single-service provider monopoly created by an exclusive zone system. Further, implementing the Exclusive Zone Alternative has the potential to be a substantial logistical challenge, as few carters have the capacity to exclusively service a single zone, a larger number of customers would be required to change service providers in the transition period, and potential future service issues could develop if the single carter is unable to successfully provide the necessary services. Therefore, the CWZ Program remains the preferred alternative.

CWZ TRANSITION PERIOD

As other cities around the United States have adopted similar programs to the Proposed Action, the City has been able to review their transition and implementation, adopt best practices, and implement lessons learned from these peer cities. These best practices and lessons learned have been incorporated into the planning, transition, and implementation of the CWZ Program to minimize adverse impacts to the City during the transition period.

The CWZ Program would likely be implemented in multiple steps. The transition would begin with a period for competitive solicitation of contracts through RFP in late 2019 to 2020. Upon selection of the carters for the CWZ Program, a two-year transition period from 2021 to 2023 would begin customer transition to the awarded carters and allow for a smooth transition. Full implementation of the CWZ Program is expected by the Analysis Year of 2024.

The two-year transition period is longer than transition periods seen for commercial waste zone systems implemented in other cities. This is due to the size of the New York City commercial waste market in comparison to other cities and to allow a longer period of time for carters to adjust to new customers and service requirements. Customer transition may occur in multiple phases, with certain zones transitioning prior to other zones.

Overall, activities associated with the transition period of the Proposed Action are not expected to result in significant adverse impacts to land use, zoning, and public policy; socioeconomic conditions; solid waste; transportation; air quality; GHG emissions; or noise.

UNAVOIDABLE ADVERSE IMPACTS

Unavoidable significant adverse impacts resulting from the CWZ Program have not been identified in any of the technical areas.

GROWTH-INDUCING ASPECTS OF THE PROPOSED ACTION

The Proposed Action would not add substantial new land use, new residents or employment that could induce additional development, nor will the Proposed Action introduce or expand infrastructure capacity.

IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

The Proposed Action would not involve construction of new buildings or infrastructure on land. As such, the Proposed Action would not constitute a long-term commitment of resources typically associated with construction projects, including the materials used in construction; energy in the form of fuel and electricity consumed during construction and operation of the projects; and the human effort (i.e., time and labor) required to develop, construct, and operate various components of the projects. Further, the Proposed Action would not constitute a long-term commitment of land resources.

The Proposed Action's commitment of resources consists principally of the use of fuel consumed by the commercial carter trucks for the collection of refuse, recyclables and organics throughout the City under the CWZ Program. This commitment is expected to be higher during the transition period but will be reduced by the Proposed Action overall as a result of more efficient truck routes after full program implementation. This short-term increase is considered irretrievably committed because its reuse for some purpose would be highly unlikely. However, the Proposed Action would result in a net reduction in the use of fossil fuels, compared to the No Action condition, and thus lead to a net reduction in the irreversible and irretrievable commitment of resources.

The short-term, minor increase in the commitment of resources during the transition period are weighed against the overall net reduction under the full program, and the Proposed Action's goals of creating a safer and more efficient collection system that would provide high-quality, low-cost service while advancing the City's sustainability and recycling goals. The CWZ Program would improve customer service, safety, and labor standards; promote fairness and transparency; and reduce adverse environmental impacts from commercial carting trucks upon traffic, pedestrians, air quality, and noise levels. In addition, the CWZ Program would help meet the City's sustainability goals by furthering the goals of the SWMP and *OneNYC* (including increasing recycling and reducing landfill disposal of waste and reducing GHG emissions). ✷

Chapter 1: Project Description

A. INTRODUCTION

The City of New York is proposing to improve commercial waste carting by implementing a Commercial Waste Zone (CWZ) Program across the five boroughs of the City, consisting of 20 zones with 3 to 5 private carters authorized to operate per zone (the "CWZ Program" or "Proposed Action"). As lead agency for the required environmental review of the Proposed Action, the New York City Department of Sanitation (DSNY) has prepared this Draft Generic Environmental Impact Statement (DGEIS) examining the potential for adverse environmental impacts that could result from it, in accordance with the State Environmental Quality Review Act (SEQRA) and the City Environmental Quality Review (CEQR) procedures.

An initial Environmental Assessment Statement was prepared and released on November 5, 2018, based on which DSNY concluded that the CWZ Program has the potential for at least one significant adverse environmental impact. This determination, a Positive Declaration, noted that a detailed DGEIS was warranted and would be prepared under DSNY's direction for consideration by the public, other agencies, and decision makers, prior to taking action on the proposal. Accordingly, DSNY caused a Draft Scope of Work for the DGEIS to be released for public comment on November 9, 2018. Public comments on the Draft Scope of Work for the DGEIS were invited and the public comment period was extended to January 4, 2019. Public notices of the Positive Declaration and Public Scoping Meeting were published in the City Record, the Environmental Notice Bulletin, and newspapers of general circulation (the *New York Post*, the *El Diario* and the *Chinese World Journal*), and circulated to community boards and elected officials. The public Scoping Meeting was held on December 11, 2018 to receive comments on the Draft Scope for the DGEIS.

The Final Scope of Work for the DGEIS was released on February 22, 2019, consisting of revisions to the Draft Scope of Work, and DSNY's responses to public comments received on that document. This DGEIS, the Final Scope of Work for the DGEIS, and other environmental review documents are available on DSNY's website http://www.nyc.gov/commercialwaste. Hard copies can be accessed at repositories located at the Department of Sanitation, Bureau of Legal Affairs, 125 Worth Street, Room 708, New York, NY, 10013; and the Mayor's Office of Environmental Coordination, Hilary Semel, Director, 253 Broadway, 14th Floor, New York, New York 10007. The DSNY Contact Person for further information regarding the Environmental Review is Abas Braimah, DSNY Bureau of Legal Affairs, 125 Worth Street, Room 708, New York, NY 10013 Tel: 646-885-4993; email: abraimah@dsny.nyc.gov, Fax: 212-442-9090.

The DGEIS is based on the Final Scope of Work. DSNY invites public comments on the DGEIS and will hold public hearings to receive oral and written comments at the following times and locations:

March 11, 2019
Second Floor Auditorium
125 Worth Street, New York, NY, 10013
The hearing will be held from 9 AM to 12 PM.

March 14, 2019
Second Floor Auditorium
125 Worth Street, New York, NY, 10013
The hearing will be held from 6 PM to 9 PM.

Public comments on the DGEIS can also be sent electronically to DSNY at cwzcomments@dsny.nyc.gov or by fax, mail or hand delivery to the DSNY Contact Person; comments received by 5 PM on March 25, 2019 will be considered. After the public comment period on the DGEIS closes, a Final GEIS (FGEIS) will be prepared, including a summary of the comments and responses on the DGEIS and any revisions to the DGEIS. DSNY, as lead agency, will then prepare a Statement of Findings that describes the environmental impacts of the Proposed Action and any required mitigation.

This chapter of the DGEIS describes the current commercial waste system, including a background discussion of the purpose and need for the CWZ Program. The chapter then includes a detailed discussion of the CWZ Program, and identifies the public actions required to implement it. Next, the chapter summarizes the methodology used to consider the potential environmental impacts of this generic action. Lastly, the chapter identifies the Exclusive Zone Alternative that was analyzed in the DGEIS, along with the No Action Alternative, and discusses the range of alternatives to the CWZ Program which DSNY considered in a preliminary way as it formulated the Proposed Action as the preferred Alternative.

In accordance with the Scope of Work for the DGEIS, consideration is given in the following chapters to the impacts of the CWZ Program upon the relevant environmental impact categories. These include land use, zoning, and public policy; socioeconomic conditions; solid waste and sanitation services; transportation; air quality; greenhouse gases; noise; neighborhood character; and public health. A chapter is also devoted to discussing the expected transition period for implementing the CWZ Program.

B. BACKGROUND, PURPOSE, AND NEED

Waste management is one of the lifelines of New York City. Effective waste management has kept the City functioning and clean since the reforms to the Department of Street Cleaning (now DSNY) in 1895. The City's waste comes in two broad categories: residential waste and commercial waste. DSNY is responsible for residential and institutional waste collection, while commercial waste is collected by privately owned waste collection companies (private carters). Private carters entered the City's commercial waste collection system in the late 1950s.

Each year, more than 100,000 New York City office buildings, retailers, restaurants, manufacturers, and other commercial establishments generate more than 3 million tons of waste (i.e., refuse, recyclables, and organics).[1] A network of approximately 95 private carters with

[1] BIC 2017 Q2-Q4 Customer Registry. This dataset includes customer information reported by individual carters on a regular basis to BIC.

approximately 1,100 trucks collect waste from these businesses.[2] As defined for the purpose of the Proposed Action, "private carters" refer only to commercial carters licensed by the Business Integrity Commission (BIC) to collect putrescible waste—refuse, recycling and organics—and not to other BIC-licensed or registered entities that collect construction and demolition (C&D) debris, waste oil, or perform other services outside the scope of the Proposed Action.

Most waste pickups occur overnight between the hours of 8:00 PM and 6:00 AM. Daytime pickups are between 6:00 AM and 8:00 PM. Typically, approximately 23 percent of all pickups occur in the daytime and approximately 77 percent occur at night, with 15 percent occurring in the early nighttime hours between 8:00 PM and 10:00 PM, 35 percent occurring around midnight (between 10:00 PM and 2:00 AM) and 27 percent occurring in the early morning hours from 2:00 AM and 6:00 AM.[3] These pick-up patterns occur across all business types, with no real difference between industry sectors.

Currently, New York City's commercial waste system is an open market, regulated system in which private waste carters collect refuse, recyclables, and organics from commercial businesses and compete for contracts with each business. BIC licenses and oversees the private carter industry; this oversight includes setting a citywide rate cap, which is a maximum price that carters can charge customers for collection and disposal services. DSNY regulates the setout (the curbside placement of waste) and transfer of commercial waste at solid waste transfer stations within the City and enforces against illegal dumping. DSNY regulates commercial recycling requirements, registers recycling processors within the City, and enforces the separation of designated recyclables from refuse by commercial waste generators (i.e., the customer).

More specifically, each private carter must register with BIC prior to being allowed to operate within the system. Private carters are required to provide BIC with information such as the number of vehicles in their fleet, tax identifiers, insurance policies, state permits, up-to-date customer information, and financial statements. BIC's Commissioner also has the ability to request additional information through a Commissioner Directive.[4] In addition, BIC sets operational requirements that private carters must comply with in order to retain their license to operate. These requirements include (1) operating in a safe and sanitary manner, (2) following DSNY commercial waste source-separation and recycling requirements, (3) properly labeling containers and waste-hauling vehicles, and (4) keeping customer and employee data up to date.[5]

In addition to BIC and DSNY regulations, carters must also comply with all other Federal, State, and local regulations that apply to their business operations (e.g., minimum wage laws).

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[2] BIC, 2015, Private Carter Financial Statements
BIC, 2015, Private Carter Customer Register
BIC, 2017 Q2-Q4, Private Carter Customer Register
BIC, 2017, LL145/2013 Compliance Plan Reports
BIC, 2018, LL145/2013 Compliance Reports.

[3] 2018 Routing Data collected between March 4, 2018 and March 17, 2018.

[4] The two most recent Commissioner Directives were made on February 22, 2018 and March 7, 2018. These asked carters to submit routing data for carter operations from March 4 to 11, 2018 and March 13 to 15, 2018.

[5] The Rules of the City of New York, Title 17: BIC, Chapter 1: Trade Waste, Subchapter A: General Provisions, § 1-09 General Prohibitions and Subchapter E: Conduct of Licensee.

According to BIC's 2017 Q2-Q4[6] customer register, the current system contains approximately 100,000 customers covered by approximately 117,000 customer register entries served by carters across the City. Based on the customer registry, large carters serve approximately 62 percent,[7] medium carters serve 22 percent, and small carters serve the remaining 16 percent. Customers are considered unique if they are listed in the customer register under a unique name and location. In recent years, the commercial waste industry has begun to see market consolidation through acquisitions on the part of some of the larger operating carters.

Today's commercial waste system achieves its basic goal of collecting and handling the City's commercial waste, but the competitive market has resulted in inefficiencies, with overlapping carting routes and resulting externalities that must be borne by the public, including extra truck traffic, an increased risk to pedestrian safety, traffic congestion, air and noise pollution, road wear, and increased use of fossil fuels and greenhouse gas (GHG) emissions, contributing to climate change. In some parts of the City, based on data reported to BIC by the carting industry, more than 50 carters service a single community district, and an individual commercial block may see dozens of private waste collection trucks on a single night. Compliance with the City's safety equipment and training requirements, and necessary equipment maintenance, are often not enforceable as a practical matter under the current system. Moreover, guidance documents, notably BIC's *Trade Waste Safety Manual*, lack the force of law. Compliance with BIC's rate cap relies on self-reporting and self-policing by carters and customers, resulting in efforts by some to evade the requirements.

Commercial business customers of carters note the lack of transparency between carters and customers in the current system. The majority of contracts are oral in nature. There are no set guidelines on what a carter can charge a customer outside of the citywide rate cap and many payments are made in cash. Furthermore, for their part, carters note that a customer can change carters with little advance notice to the carter, causing inconvenience.

Moreover, although existing regulations require commercial businesses to recycle metal, glass, plastic (MGP), paper, cardboard, and, in some cases, waste from food preparation (organics) and thereby divert such waste from landfills, enforcing and tracking compliance rates is difficult.

In sum, reforming the City's commercial waste carting system seeks to achieve a series of stakeholder-driven goals. These include:

1. **Environmental Quality and Public Health**: Reduce truck traffic throughout the City to reduce air and noise pollution and improve quality of life for New Yorkers.
2. **Zero Waste**: Reduce commercial waste disposal and incentivize recycling to conserve resources and reduce GHGs.
3. **Pricing**: Provide fair, transparent pricing with competitive prices for businesses large and small.

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[6] This dataset includes customer information reported by individual carters on a regular basis to BIC for the 2017 Q2-Q4 Customer Register. The number of customers is not linked to the number of commercial businesses serviced by carters since in large office buildings carters may collect waste from multiple businesses but may only report the single building management company as a customer. 2017 Q2-Q4 Carter Customer Register counts: 117,384 rows reported (some customers are listed in 1 row with multiple waste streams; others are listed in multiple rows for multiple waste streams); 100,302 unique customers (unique by name and location); 172,503 by customer and waste stream (all customers are split up into 1 entry per waste stream serviced).

[7] As used here, small carters each capture less than 1 percent of the market share (defined by the number of customers). Medium carters each capture between 1 and 3 percent of the market share. Large carters each capture greater than 3 percent of the market share.

4. **Customer Service**: Strengthen customer service standards and establish accountability.
5. **Health and Safety**: Improve training and safety standards to make the industry safer for workers and the public.
6. **Labor and Worker Rights**: Improve industry labor standards and uphold worker rights.
7. **Infrastructure and Waste Management**: Prioritize investments in clean, modern fleets that make up a reliable, resilient, and sustainable waste management system.
8. **Robust, competitive carting sector**: Create a system that works for carters of all sizes and prevents overreliance on any single company.

In August 2016, DSNY, in partnership with BIC, released a feasibility study led by Buro Happold Engineering on the implementation of a CWZ program in New York City.[8] The study concluded that a CWZ program would be beneficial in reducing inefficiencies in waste collection routes and would reduce carter truck miles traveled by roughly half. The CWZ Program described herein builds on this initial work.

To determine the optimal structure of the CWZ Program, a robust, year-long stakeholder engagement process was conducted by DSNY, as lead agency, and the consultant team. Starting October 19, 2017, over 150 different stakeholders in the commercial waste industry were consulted, including commercial businesses, labor groups, environmental justice advocates, private carters, Business Improvement District representatives, real estate owners, property managers, trade organizations, other City agencies, traffic safety advocates, and elected officials. A variety of formats were utilized, including structured one-on-one interviews, small group conversations, phone calls, field interviews, and focus groups. The City used the feedback it gained from this process to determine the program goals, implementation strategies, and the necessary requirements for the eventual carter contracts. The City and project team are expected to continue to work with stakeholders during public review and implementation of the CWZ Program.

The CWZ Program that emerged from this process is therefore intended to advance the City's efforts to increase commercial recycling, reduce carter truck traffic and associated air, noise, and GHG emissions, and improve carting industry operational standards. The CWZ Program would thereby help advance several key policy objectives, including improving roadway safety, complementing Vision Zero; furthering the environmental sustainability efforts of *One New York: The Plan for a Strong and Just City* (*OneNYC*); and reducing the environmental and community impacts of the commercial waste system, a goal of the City's Solid Waste Management Plan (SWMP).

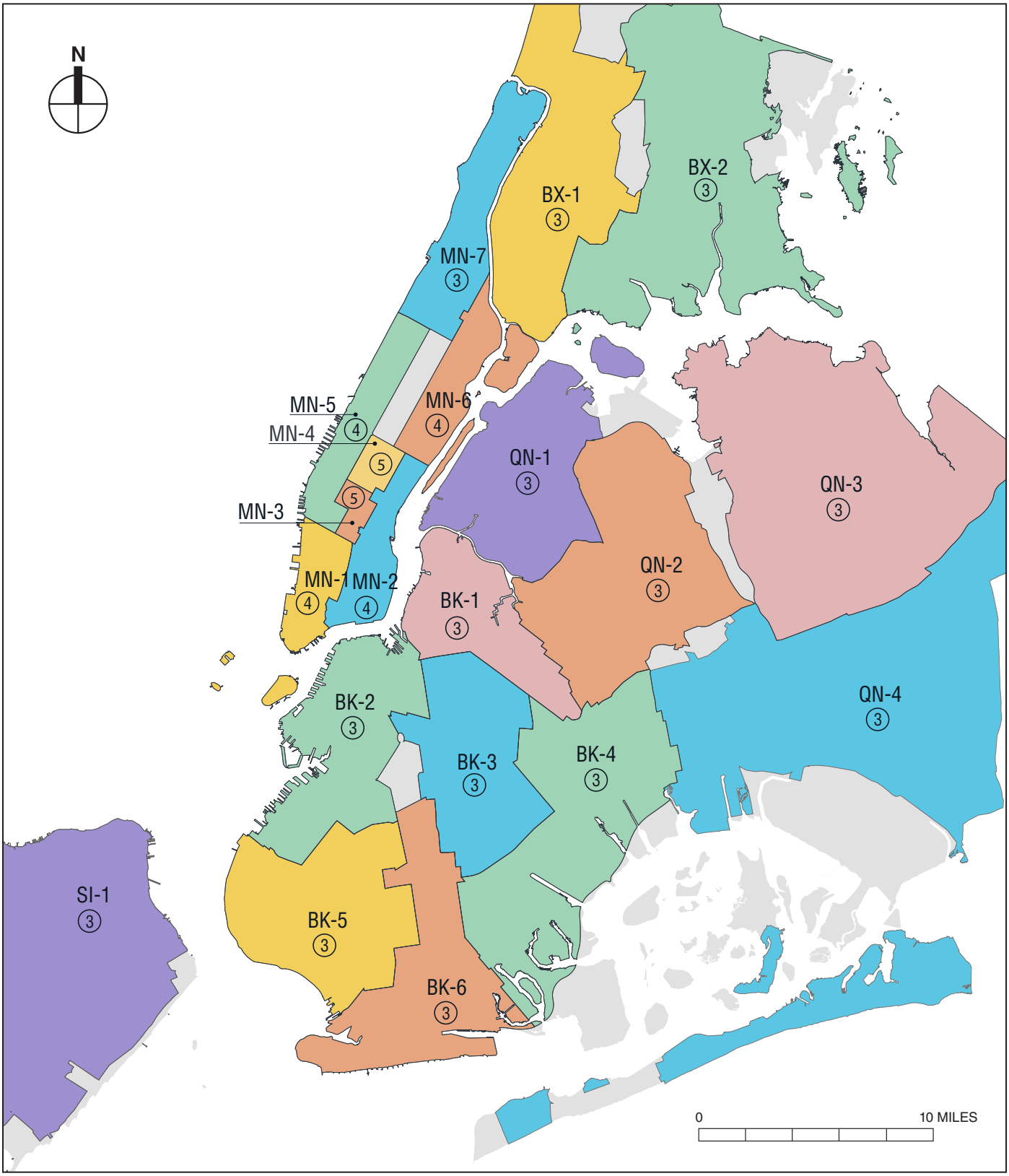
C. DESCRIPTION OF THE PROPOSED ACTION

The CWZ Program would involve an implementation plan and contract-award process to establish a zoned commercial waste system throughout the City's five boroughs. The CWZ Program would be a non-exclusive system of 20 geographic zones permitting at least 3 but no more than 5 carters operating within each zone (see **Figure 1-1**). Specifically, 14 zones would allow 3 carters, 4 zones (all in Manhattan) would allow 4 carters, and 2 zones (in midtown Manhattan) would allow 5 carters.

The CWZ Program would regulate the collection of refuse, designated recyclables, and source-separated organic waste. It would exclude specialized or intermittent waste streams, which would continue to be collected in the current manner under existing City and State regulatory requirements. The excluded waste streams include C&D debris; hazardous or radioactive waste; medical waste;

[8] New York City Department of Sanitation, City of New York BIC. Private Carter Study. August, 2016. Retrieved from: https://www1.nyc.gov/assets/dsny/site/resources/reports/private-carter-study

12.4.18



(#) *Number of Carters To Operate In Each Zone*

Map of Proposed Commercial Waste Zones

electronic waste; textiles; yard waste (collected by landscapers); junk haulers or one-time bulk waste services; grease; and papers collected for the purposes of shredding or destruction.

Private carters would competitively bid for the right to service businesses within each zone. Carters that win zone contracts would be obligated to meet certain contractual requirements aligned with the City's program goals and objectives, as further discussed below. The CWZ Program would standardize the carting contract process by requiring written service agreements between carters and customers and making the pricing structure more transparent. Customers would be able to negotiate supplemental services beyond the required minimum, for an extra fee.

Each carter would be able to compete for one or more zones throughout the City based on its preferences. No carter would be able to win contracts for more than 15 zones. Qualification requirements would be further defined in a Request for Proposal (RFP). The RFP would provide details on the program goals, methods for implementation, and requirements that carters would respond to in order to apply for contracts with the City to collect waste within specific zones. The proposed carting fee would constitute 40 percent of the selection criteria for each proposal. While the RFP would define the maximum number of carters able to operate in a particular zone, the number of carters selected for a zone would be determined by the number and quality of the proposals received and the qualifications of the carters. Additionally, the potential to submit proposals as a consortium with other carters or organized through a broker, as well as certain subcontracting allowances, would provide opportunities for an array of different carters.

Following selection, contracts will have a 10-year term with extension options available. Extension options will be outlined in the contract, and any extension would be at the discretion of the City for the individual carter. Pricing would be negotiated between individual businesses and carters, subject to rate caps for each carter determined through the contract-award process. The overall BIC rate cap for licensed carters of putrescible waste would no longer apply.

Under the CWZ Program, carters would be required to comply with current regulations so they could compete for business within the CWZ Program, and DSNY would have the mechanism to enforce these regulations if carters fail to comply. The CWZ Program would encourage carters to comply with industry health and safety standards and policies, as well as BIC's health and safety guidance documents. Compliance with requirements for safety equipment and training and necessary equipment maintenance would be documented and tracked.

The CWZ Program would encourage carters to comply with existing recycling and source-separation regulations so they could compete for business within the CWZ. As part of the solicitation process, the CWZ Program would require carters to develop "zero waste" plans and identify innovative practices to support waste reduction, reuse, and recycling and provide for additional oversight and reporting requirements to ensure that these practices are being followed. With more recycling and organic materials being separated, less waste would be sent to landfills, saving resources and energy, consistent with the City's sustainability and recycling goals.

Billing would be fairer and more transparent, with written service agreements, outlining rates and any fees so that New York City businesses would only pay for the waste that they produce. Implementing this non-exclusive CWZ Program is expected to result in a transition that can be planned in order for New York City businesses to preserve customer choice, keep prices competitive and the quality of service high, while substantially reducing truck traffic associated with waste collection.

The CWZ Program would be implemented in multiple steps. The competitive solicitation process would be expected to begin in 2020 and the evaluation and contracting with the City would be

expected to last approximately one year. The RFP would be released for all zones, and all proposals would be reviewed and awarded concurrently. Once all contract agreements with the City are executed, customer transition would be expected to begin at the end of 2021 and could take up to two years following the execution of such agreements. Customer transitions to service by an authorized carter would be expected to be complete by 2023 or early 2024. DSNY would continue to serve as the project manager for the CWZ Program, and in this capacity would oversee the competitive solicitation, the negotiation of each zone's contract between the City and the carter for the right to collect waste, and the overall transition to CWZs. DSNY would continue to enforce regulations controlling commercial waste set out, recycling, and organics separation. DSNY would also become the primary administrator of carter zone contracts under the program and would serve as carter of last resort if carters repeatedly fail to perform services for any reason. DSNY would create a Division of Commercial Waste to administer the CWZ Program and consolidate commercial waste outreach, enforcement, and regulatory functions in the agency under a single chain of command. The Division of Commercial Waste would oversee the transition processes and ensure that the CWZ Program achieves its stated goals and requirements.

In summary, the CWZ Program would build on the current regulatory system, with a contract-based system where carters are subject to clear, written requirements. The contracts awarded to selected carters would be long-term, provide for transparent and fair pricing and customer service mechanisms, require improved environmental performance, and ensure compliance with and enforcement of existing and new requirements. Non-compliance could result in monetary penalties or loss of the contract. Overall, the CWZ Program would provide stability to the commercial waste carting industry by providing carters with predictable business and promoting long-term investments in recycling services and cleaner trucks.

D. PROJECT APPROVALS AND COORDINATION

Implementation of the CWZ Program would involve several local approvals. The City entities that may be potentially involved in the environmental review and approval process for the Proposed Action are:

- Office of the Mayor, City of New York for authorizing legislation;
- New York City Council for authorizing legislation;
- DSNY acting as lead agency for the environmental review,[9] potential rulemaking, and CWZ Program implementation including approvals of zone contracts; and
- New York City BIC for oversight and potential rulemaking.

E. ALTERNATIVES TO THE CWZ PROGRAM

1. SCREENING OF ALTERNATIVES

EVALUATION CRITERIA

In addition to the No Action Alternative, the DGEIS studies the impacts from the Exclusive Zone Program Alternative, whereby each zone would have just one authorized private carter for

[9] Lead agency status has been delegated by the New York City Council and Office of the Mayor to DSNY.

commercial waste. The following section discusses the screening process that DSNY used to formulate the CWZ Program, which included consideration of a number of possible alternatives.

Potential zone configurations and CWZ Program elements were formulated and analyzed through a comprehensive data analysis process, including review of routing and customer data submitted by private carters to BIC. The process to develop the CWZ Program design involved consideration of various iterations of potential zone configurations based on a wide consideration of factors, including the types of zone boundaries, level of exclusivity (i.e., the number of carters per zone), the number of zones, and the size of each zone, as further described below. Final zone designs were assessed using stakeholder feedback, ease of regulatory oversight, and potential pricing impact.

Zone Boundary Consideration

Two boundary types were considered in the shaping of potential zones for the CWZ Program: governmental boundaries and transportation infrastructure boundaries. Governmental boundaries included the City, boroughs, community districts, zip codes, and census tracts. Transportation infrastructure included certain existing major roadways, among other infrastructure.

Governmental boundaries such as zip codes and census tracts were rejected as CWZ boundaries given that these would create a system with a high number of potential zones relative to the total number of carters operating in the City.

Designating one zone that covered the City as a whole was also rejected for both exclusive and non-exclusive programs as it would not achieve the goals of the CWZ Program. The current private carter system is based on approximately 95 carters competing in one citywide zone, resulting in the inefficiencies discussed above. Moreover, creating one citywide zone exclusive to one carter would not be feasible as one carter cannot service the entire City.

Community districts were determined to be the most appropriate governmental boundaries as a basis for the CWZ Program, as they produced zones of manageable size and number. Moreover, in implementing the CWZ Program, DSNY could benefit from its long experience of using community district boundaries for its residential waste collection service areas. For zones delineated using community districts, both exclusive and non-exclusive zone designs were considered.

Borough boundaries were considered for zone boundaries in one non-exclusive "extreme case" design option that would reduce the overall change and thus result in the least impact to the waste carting industry. Borough boundaries were not considered for any exclusive design options as very few New York City licensed carters could effectively service an entire borough on their own.

Transportation boundaries were removed from the zone design selection process, since basing boundaries upon transportation infrastructure would create new boundaries within the City, which was determined to be undesirable from a management and community accountability perspective, which could otherwise be avoided using governmental boundaries. However, access to major roads, tunnels, and bridges were used as a secondary metric to refine zone designs when choosing which community districts to cluster or to split into single zones.

Level of Exclusivity

The first rounds of the CWZ Program design considered various levels of exclusivity (i.e., the number of carters that should be included in each zone), including an exclusive system, non-exclusive system, limited exclusive system, limited non-exclusive system, material stream or generator type system, and the current market share system. Each is explained below:

- **Exclusive zone system**: one carter obtains the right to operate alone or exclusively in the zone.

- **Non-exclusive zone system:** multiple carters are allowed to operate within each zone.
- **Limited exclusive zone system:** grants the exclusive right to provide a certain type of collection services, such as residential or commercial organics collection in designated zones, and the non-exclusive right to compete with each other to provide other services, such as commercial collection within the zone.
- **Limited non-exclusive zone system:** establishes service zones and awards the right to provide service non-exclusively to a set number of carters that are then eligible to compete in a specific zone or zones.
- **Material stream or generator type zone system**: specifies a material stream (e.g., organics such as food waste) or generator type (e.g., institutions) for which carters are allowed to provide collection service. This could apply to either an exclusive or a non-exclusive system.
- **Current market share zone system**: establishes an exclusive system in which zones are designated and awarded to carters currently operating within the jurisdiction based on their existing market share.

As the last four zone system types are variations of exclusive and non-exclusive zones and DSNY already collects waste generated by residences and institutions, these four options were eliminated and consideration of zone system types was simplified in a first level of screening analysis and limited to either exclusive or non-exclusive systems for commercial generators.

Exclusive zone options would restrict each zone to one operating carter. Non-exclusive zone options would restrict each zone to a set number of carters. In refining the CWZ Program design, the number of carters per zone was set at three to five based on customer density and existing waste tonnage. Five carters was considered the upper limit for number of carters per zone due to the fact that truck route overlap increases as more carters operate in each zone, and the economic and operational benefits of a zone contract to a carter are reduced with each carter added to a zone. The range of three to five carters per zone would also minimize disruption to the regulated carter market by still allowing for competition within each of the zones, encouraging price stability while allowing customers to continue to have a choice of carter to serve them.

Number of Zones

Based on discussions with DSNY and analysis of the City's current carters, the analysis focused on a range of 15 to 30 zones. Data on Vehicle Miles Traveled (VMT)[10]—the amount of miles traveled by carters to complete their routes—was also considered under various zone scenarios. This sensitivity analysis showed that varying the number of zones generally had minimal impact on VMT reduction. However, the more zones that are included in the system, the more difficult it would be to manage that number of zones, especially under a non-exclusive system with up to five contracts per zone.

If the City were to have fewer than 15 zones, smaller carters would lack the ability to serve the resulting large zones. This would likely give larger carters, which have the ability to serve a larger customer base, a competitive edge resulting in a less competitive CWZ Program contract award process. Therefore, a program with fewer than 15 zones was removed from further consideration.

[10] VMT is a parameter that represents the number of miles that all trucks drive to pick up and drop off waste each day, and is generally referred to as an average value. The route begins at the garage, continues to each customer for waste collection, then to the transfer station for waste disposal/removal, and ends back at the garage, for the total VMT.

To understand the VMT reduction benefit of either a very limited or a large number of zones, this analysis also considered two additional options: one with only 5 zones—one for each borough—and one with 59 zones, mirroring the established New York City community district boundaries.

Customer density per zone was considered. The customer entries from the 2016 Q4-2017 Q1 Customer Register dataset[11] provided by BIC showed that the number of commercial waste customers in each community district (excluding parks and airports) ranged from 653 in the Bronx Community District 3 to approximately 11,300 in Manhattan Community District 5. Manhattan had the greatest density of customers.

After several revisions to the zone sizing methodologies, the analysis considered zone design options with 15, 20, 25, and 30 zones of relatively equal sizes, as well as a zone design option of 23 mixed-sized zones. Based on customer counts and data from existing routes, individual community districts had customer counts so low that several community districts were combined to form comparable zones. The grouping methodology for equal-sized zones aimed to group community districts so that each zone had a roughly equal number of customers, while minimizing the disruption to the current system. The grouping methodology for equal-sized zones grouped zones primarily based on number of route connections between community districts derived from the 2014-2015 routing data.[12] For community districts with a similar level of connectivity, customer counts from the 2016 Q4-2017 Q1 Customer Register were used to balance the zones.

Zone Design Options

The zone design selection process used a top-down, tiered approach. At the highest level, generic zone design options as described above (e.g., types of zone boundaries, level of exclusivity--the number of carters per zone--number of zones, size of each zone) were analyzed based on industry knowledge and best practices in the communities around the country. Surveys across 21 cities and counties across the United States were conducted to obtain best practices. Those surveyed included Los Angeles, Fresno, Long Beach, Oakland, Sacramento, San Diego, San Jose, and Santa Barbara County in California; Austin and Fort Worth in Texas; Hillsborough County and Palm Beach County in Florida; Boston, Massachusetts; Chicago, Illinois; Las Vegas, Nevada; Minneapolis, Minnesota; Philadelphia, Pennsylvania; Phoenix, Arizona; Portland, Oregon; and Seattle, Washington.

Fifty-nine zones (one for each community district) and five zones (one for each borough) were considered the maximum and the minimum numbers, respectively, for the zones to be studied. This range was chosen to show the range of VMT reduction and market impact that could be achieved with the CWZ Program. Community districts were then grouped into zones based on the number of customers in each zone, creating equal-sized (by customer count) or mixed-sized zones. Finally, the level of exclusivity, or the range in the number of carters operating in each zone, was chosen. In a fully exclusive zone, only one carter is allowed to operate in the zone. For non-

[11] This dataset includes customer information reported by individual carters on a regular basis to BIC. The 2016 Q4-2017 Q1 dataset contains information from 119,000 customer entries and 94 carters that collect refuse, recyclables, and organics across New York City, including names of customers, addresses, customer business types, contact information, and prices charged for the collection of nine waste streams. Five of those waste streams (refuse, food waste, paper, cardboard, and MGP) are included under the scope of the CWZ Program.

[12] BIC 2014-2015 routing data covers 96,000 customers and was collected via a Commissioner Directive from BIC. It covers 3 weeks in 2014 and 1 week in 2015.

exclusive zone design, the analysis settled on a maximum of five carters within one zone, given the contract management challenges that higher numbers of carters would place on the City.

As the next step in the zone design process, 11 possible specific zone configurations were formed based on DSNY input, stakeholder feedback, and configurations that proved effective in other jurisdictions in the United States. Of these 11 potential zone designs, 5 were exclusive systems based on governmental/community district boundaries for the City. Another 6 were non-exclusive systems based on similar boundaries. Since governmental/community district boundaries already exist, these were grouped together to form the zones. Of the 11 potential zone designs, 3 were composed of mixed-sized zones to provide opportunities for small carters to bid on zones of similar size to their existing market share. The others varied between 15 to 30 zones of roughly equal size based on the number of customers per zone. Ultimately, as noted above, exclusive zones were removed from further consideration given concerns about anticipated price increases as a function of reduced competition, carter solvency within a restrictive market, and the ability to meet the needs of the customer. Non-exclusive options were considered to reduce potential adverse impacts on customer service by providing a level of competition.

From the 11 zone design options, 4 finalist options for the CWZ Program were chosen for further evaluation. All 4 finalist options were non-exclusive. These design options were (a) 15 zones with a cap of 5 carters per zone; (b) 20 zones with 2 to 5 carters per zone, based on waste tonnage; (c) 23 zones with 2 to 4 carters per zone, based on tonnage with the inclusion of a small zone in every borough; and (d) 30 zones with a cap of 2 carters per zone.

PREFERRED ZONE DESIGN OPTION

Following the zone selection process, the four finalist zone design options were provided to the stakeholders to receive and incorporate their feedback. The stakeholder groups were divided into four large groups listed below, with their respective concerns:

- **Customer Businesses**: price, quality of service, and ability to keep existing carter;
- **Carters***:* ability to compete in the market, and ability of smaller carters to continue operations;
- **Environment**: truck traffic, safety, air and GHG emissions, and noise;
- **New York City Administration**: ease of management, ease of transition process, and increase in recycling.

Based on consideration of stakeholder feedback, the preferred zone design consists of 20 non-exclusive zones with 3 to 5 carters allowed to operate within each zone. This preferred zone design was chosen due in part to a desire to maintain competition, fair pricing, and profitability for carters—and thus minimize market disruption. Customer businesses would be able to choose from a number of carters, allowing prices to be competitive. Carters would be able to protect profitability through competitive pricing and maintaining their customer base.

With multiple carters allowed to operate within a zone, there would be opportunities for both larger and smaller carters to win the rights to operate within a zone. Smaller carters may benefit in proposal evaluations from a strong local presence in a given zone and knowledge of a particular neighborhood. Moreover, multiple carters could join in a consortium to serve a particular zone. The CWZ Program thus accounts for the current market structure and would give carters of all sizes the opportunity to compete in the new system.

F. ANALYSIS FRAMEWORK

The Proposed Action would change the commercial waste collection program throughout New York City's five boroughs. The *2014 CEQR Technical Manual* serves as the general guide on the methodologies and impact criteria for evaluating the Proposed Action's potential effects on the various environmental areas of analysis in this DGEIS.

ANALYSIS YEAR

Since the Proposed Action's expected year of full implementation after a two-year transition period is 2024, that is the Analysis Year for the environmental review. As such, the environmental setting is not the current environment, but the future environment. Therefore, the technical analyses and consideration of alternatives assess current conditions and forecast these conditions to the expected 2024 Analysis Year for the purposes of determining potential impacts. Each chapter of the DGEIS provides a description of the "existing condition" and assessment of Future without the Proposed Action (the "No Action" condition) and the Future with the Proposed Action (the "With Action" condition).

EXISTING CONDITIONS

For each technical area that has been assessed in the DGEIS, the existing conditions have been described. The analysis framework begins with an assessment of existing conditions because these can be most directly measured and observed. The assessment of existing conditions serves as a starting point for the projection of future conditions with and without the Proposed Action and the analysis of project impacts.

FUTURE WITHOUT THE PROPOSED ACTION (NO ACTION CONDITION)

The No Action condition predicts conditions that would exist in the Analysis Year of 2024 without undertaking the Proposed Action, and thus provides the baseline against which the Proposed Action's impacts may be assessed. Under the No Action condition, it is anticipated existing carters would continue to operate the same as under the existing condition—the routes, frequency, durations and pick-up times would remain essentially the same.

The No Action condition analysis discusses the current commercial waste industry, including its shortcomings, and any regulatory changes to the industry already expected by the Analysis Year of 2024. Current commercial waste regulations are listed in **Appendix A**, and summarized below.

The current commercial waste industry is regulated largely by Titles 16 and 16A of the New York City Administrative Code, and Titles 16 and 17 of the Rules of the City of New York. Titles 16 and 16A of the Code establish waste collection and recycling requirements for commercial business owners and grant DSNY certain authority in connection with the commercial waste industry. Commercial business establishments must have waste removed by a licensed carter, with specified exceptions. In addition, the Administrative Code defines waste set-out requirements for commercial businesses and authorizes DSNY to adopt and enforce recycling rules.

Title 16 of the Rules of the City of New York provides requirements specific for the commercial waste carters. The rules broadly (a) allow commercial establishments generating less than a defined amount of waste per week to share a disposal location with another commercial establishment; (b) define designated recyclable materials for commercial waste; (c) set forth source-separation, set-out, and collection requirements and responsibilities; (d) allow the

Commissioner of DSNY to conduct inspections; and (e) establish commercial waste-hauling vehicle requirements and specifications.

Title 16A of the Code establishes BIC as the body that provides oversight for the commercial waste carting industry. Title 17 of the City Rules defines rate caps for waste collection, outlines licensing requirements for carters and brokers, sets license application requirements, provides terms for license application rejection, and specifies certain procedures for investigations, license revocation, license suspension, penalties, liabilities, enforcement, hearings, and other steps related to addressing improper carter and broker conduct.

In addition, commercial carters are required to comply with a number of Local Laws (LLs) that will take effect over the next six years. LL145 of 2013 (LL145/2013) requires heavy-duty diesel waste-hauling truck engines older than Model Year 2007 to be upgraded to reduce their exhaust emissions either by installing a newer engine from 2007 or later, or to retrofit the engine with pre-approved Best Available Retrofit Technology (BART) emission controls, such as diesel particulate traps, by January 1, 2020. It provides an option for carters to apply for a waiver based on financial burden, which would potentially extend the time allowed to modify the fleet until 2025. In the absence of a waiver, commercial waste carters must be in compliance by the year 2020. The requirements of LL145/2013 take effect before the customer transition for the proposed CWZs. LL56 of 2015 (LL56/2015) requires all trade waste hauling vehicles to be equipped with side guards to protection pedestrians and cyclists by January 1, 2024. Since the CWZ Program Analysis Year is 2024, operating carters are expected to be in full compliance with LL145/2013 and LL56/2015 and they are considered part of the No Action condition.

The SWMP, adopted by New York City in July 2006 and approved by New York State in October 2006, is a five-borough plan that addresses New York City's waste management needs. The City is required to adopt a SWMP for at least a 10-year period under New York State Environmental Conservation Law. The current plan is in effect through 2025, at which point a new plan will be evaluated and initiated. The SWMP provides for the shift from a long-haul trucking-oriented system for DSNY-managed waste, by which such waste is transported by trucks from area transfer stations to landfills and waste-to-energy plants outside the City, to a system of transporting such waste from marine and rail transfer stations located throughout the five boroughs. Overall, the SWMP has two major goals: (1) the gradual elimination of long-haul truck transport of DSNY-managed municipal solid waste and (2) the improvement of neighborhood equity with respect to waste management by reducing the intensity of waste transfer activity in certain affected neighborhoods and reducing related truck traffic. These goals are being achieved through the reconstruction of four marine transfer stations and building a rail-based transfer station, contracts for rail export from four other facilities, the construction of a central, barge-based recycling handling and recovery facility, and the reduction of solid waste transferred in certain overburdened districts of Brooklyn, the Bronx, and Queens with disproportionate numbers of waste transfer stations. In particular, the SWMP seeks to improve environmental and public health effects of waste collection through the reduction in truck transport. Full implementation of the SWMP will reduce annual City-collection truck travel by nearly 3 million miles and reduce private long-haul truck travel on City streets by 2.8 million miles and reduce noise, traffic congestion, and air pollution.

Implementation of the current SWMP is considered part of the No Action condition.

FUTURE WITH THE PROPOSED ACTION (WITH ACTION CONDITION)

In the With Action condition, there would be 20 geographic zones in each of which 3 to 5 carters would be authorized to operate and be required to adhere to certain parameters intended to improve

transparency, safety, and customer service. Up to 68 zone contracts would be awarded. The identities of the carters to be awarded zone contracts are to be determined, but are expected to have carting operations and garages in the City or greater metropolitan area.

THREE COMMERCIAL DENSITY TYPOLOGIES FOR ENVIRONMENTAL ANALYSIS VIA CASE STUDY

As the Proposed Action is generic, and the CWZ carter garage locations are not yet known, the DGEIS studies representative types of commercial clusters and corridors within New York City and includes an analysis of the Proposed Action's likely effects on its environmental setting (Future with the Proposed Action) in 2024, the Analysis Year. The analysis examined how proposed changes to the commercial waste system from the CWZ Program might affect three broad classes of commercial development density, into which most development in the City can be categorized. Three representative neighborhood case study areas were selected as typologies of high, medium, and low-density commercial development, respectively, to provide a more detailed and contextual analysis of the potential benefits and adverse impacts of the Proposed Action in such New York City communities. These areas, and the reasons they were selected for study as typologies for the Proposed Action, are discussed below. As the CWZ Program is implemented and specific zones are selected for award to specific carters with known garage locations, consideration will be given as appropriate to the potential for significant individual or cumulative impacts that were not studied in the DGEIS. Such further review under CEQR would be based on guidance impact thresholds and criteria in the *CEQR Technical Manual*.

CENTRAL BUSINESS DISTRICT STUDY AREA

A central business district (CBD) is the commercial and business center of a city and in larger cities is often synonymous with a city's "financial district." In New York City, these high-density commercial areas are primarily found in Lower Manhattan, Midtown Manhattan, and Downtown Brooklyn. Users of commercial waste services are typically building operators, including real estate companies, often with multiple buildings within the district. Typical waste producers within CBD districts include large offices, hotels, commercial retail, and restaurants.

NEIGHBORHOOD RETAIL CORRIDOR STUDY AREA

Neighborhood retail corridors primarily serve as the retail and commercial hubs of medium-density residential neighborhoods outside of the City's CBDs, such as Long Island City and Roosevelt Avenue in Queens; Fordham Road, the Hub in the Bronx; the Flatbush Nostrand Junction, Atlantic and 5th Avenues in Brooklyn; and Dyckman Street in Manhattan. Businesses within these medium density commercial corridors tend to be smaller in footprint and produce less waste per footprint area than larger buildings found in the City's CBDs. Commercial waste customers within these neighborhood retail corridors include medium-sized office buildings, small commercial retailers, neighborhood supermarkets, delis, and restaurants.

LOWER (RETAIL) DENSITY STUDY AREA

Lower commercial density areas are characterized by commercial retail uses scattered throughout the district, as opposed to being concentrated in defined clusters or corridors. These low-density districts are found in the more automobile-oriented neighborhoods of the outer boroughs, including Howard Beach and College Point in Queens, Canarsie in Brooklyn, and neighborhoods throughout Staten Island. Businesses in these areas vary and include a wide variety of different retailers

including chain convenience stores, gas stations, bodegas, fast-casual and take-out restaurants, other automotive businesses, big box retail, and pharmacies such as Rite Aid and Duane Reade.

SELECTED CASE STUDY AREAS

The following three case study areas are discussed in this DGEIS: the Midtown Manhattan CBD; a neighborhood retail corridor in the Flatbush Nostrand Junction within Brooklyn; and a lower-density study area in College Point, Queens (see **Figure 1-2**). These study areas are used in the technical area analyses to provide detailed and contextual analyses of impacts from the CWZ Program upon these classes of commercial density and thus demonstrate the types of issues, potential effects, and benefits that could result in any section of the City as a result of the Proposed Action.

MIDTOWN MANHATTAN CBD

The Midtown Manhattan CBD was selected since it is representative of a high-density CBD. Midtown Manhattan has a high diversity of commercial waste producers, ranging from small-scale retail and restaurants to large offices. The area also includes large destination retail, as well as major entertainment destinations. The study area's density and diversity of waste generators make it suited to understand the effects of the Proposed Action on the City's other large commercial districts. The Midtown Manhattan CBD study area represents an area approximately 0.56 square miles in size and would be located within CWZ Zones MN-3 and MN-4 (see **Figure 1-3**).

The Midtown Manhattan CBD case study area is characterized by approximately 17,000 unique[13] commercial waste customers currently served by 38 different carters. Half of the businesses in this area are classified as office (approximately 50 percent), followed by non-food retail[14] (approximately 31 percent), and manufacturing businesses (approximately 11 percent). Combined, the businesses in this area generates approximately 218,900 tons of waste per year at a median rate of $8.90 per 100 pounds of waste.[15] This is below the BIC rate cap (as of August 9, 2018) of $13.62 per 100 pounds of refuse. There are no transfer stations or carter garages within this study area.

FLATBUSH NOSTRAND JUNCTION NEIGHBORHOOD RETAIL CORRIDOR

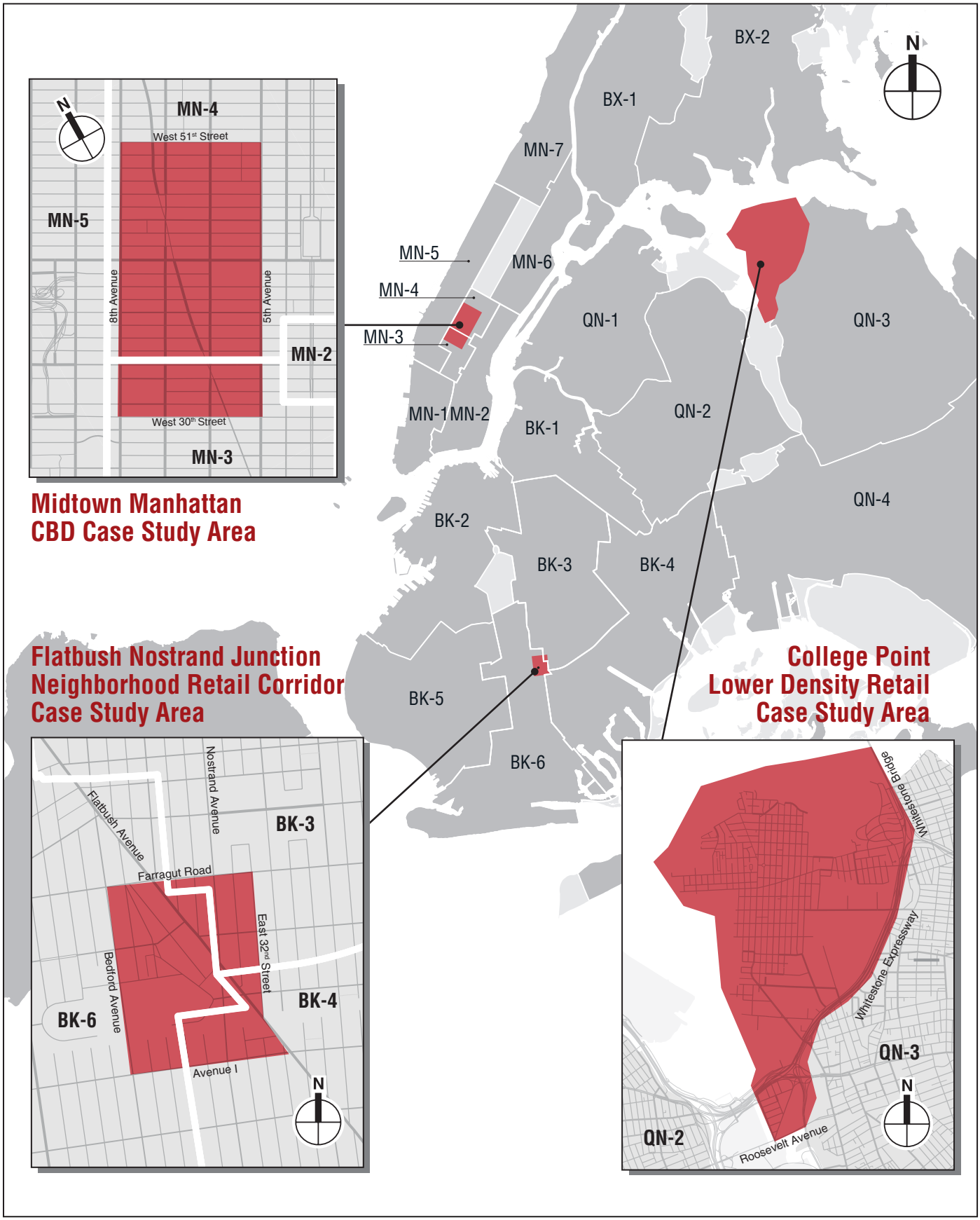
The Flatbush Nostrand Junction was selected as a case study area as it is representative of a medium-density mixed-use neighborhood corridor and commercial cluster. The Flatbush Nostrand Junction serves as a major retail and transportation center in central Brooklyn. It primarily serves the Flatbush and Midwood neighborhoods of Brooklyn, as well as the Brooklyn College campus to the west of the area. The Interborough Rapid Transit (IRT) Nostrand Avenue subway line (Nos. 2 and 5 trains) terminate at the Flatbush Nostrand Junction and the area is well served by buses, including the B44 Select Bus Service, which runs along Nostrand Avenue. Commercial retail within the district includes small businesses, and in recent years, larger

[13] Unique customers could represent individual business entities or landlords covering multiple commercial business entities.

[14] Non-food retail includes motor vehicle and parts dealers; furniture and home furnishings stores; electronics and appliance stores; building material and garden equipment and supplies dealers; health and personal care stores; gasoline stations; clothing and clothing accessories stores; sporting goods; hobby, musical instrument, and book stores; general merchandise stores; miscellaneous store retailers; and non-store retailers.

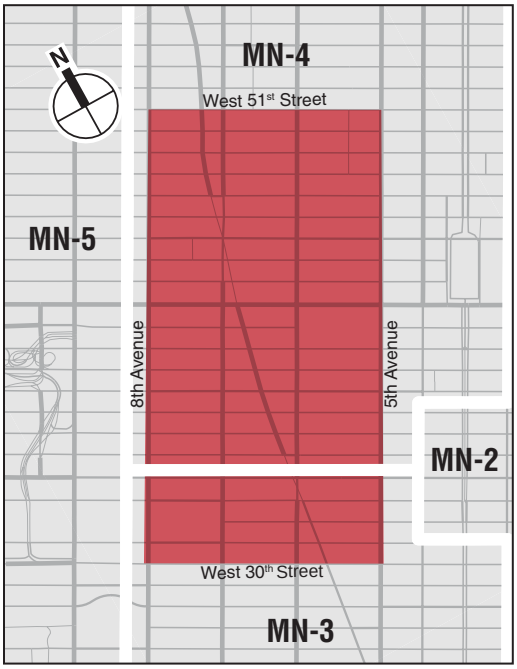
[15] This dataset includes customer information reported by individual carters on a regular basis to BIC for the 2017 Q2-Q4 Customer Register.

12.4.18



Neighborhood Case Study Areas

12.4.18



Midtown Manhattan CBD
Case Study Area

Figure 1-3

corporate stores, including those within the new Flatbush Nostrand Junction mall development. In addition, the Flatbush Nostrand Junction includes various small offices and other commercial spaces, adding to the mix of businesses found within the area. This high intensity commercial cluster with waste generators of various sizes makes the Flatbush Nostrand Junction well suited as a case study to understand the effects of the Proposed Action more generically on neighborhood retail corridors and clusters throughout the City. The Flatbush Nostrand Junction case study area represents an area approximately 0.18 square miles in size and would be located within CWZ Zones BK-3, BK-4, and BK-6 (see **Figure 1-4**).

The Flatbush Nostrand Junction study area is characterized by approximately 370 unique customers, currently served by 17 different carters. Nearly half of businesses in this area are classified as office (approximately 47 percent), followed by non-food retail (approximately 26 percent), and food services[16] (approximately 15 percent). Combined, the businesses within the Flatbush Nostrand Junction case study area generates approximately 3,380 tons of commercial waste per year at a median rate of $ $11.30 per 100 pounds of waste, below the current BIC rate cap.[17] There are no transfer stations or carter garages within this area.

COLLEGE POINT, QUEENS LOWER DENSITY AREA

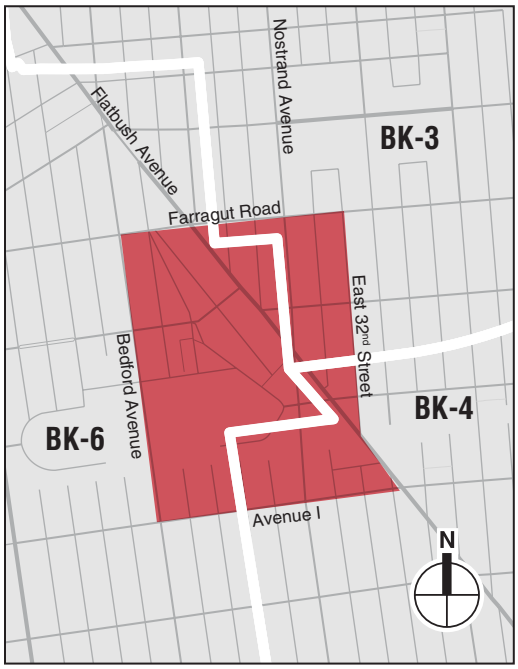
The College Point neighborhood in Queens was selected as a case study as it is representative of a lower-density district. College Point's businesses are not centralized within a defined cluster or corridor but are distributed throughout the neighborhood. College Point is primarily a low-density residential neighborhood with limited access to public transit. This character makes the district more automobile-oriented than neighborhoods located closer to the Midtown Manhattan CBD. Commercial waste generators within the College Point neighborhood include small businesses such as restaurants, and local retail; however, the district also includes larger commercial waste producers including the Pepsi-Cola Bottling Plant, New York Times Printing Facility, and a large commercial retail center. The low-density, automobile-oriented character of College Point makes it suited to understanding the effects of the Proposed Action on lower density areas of New York City. The College Point study area represents an area approximately 3.4 miles in size and would be located within CWZ Zone QN-3 (see **Figure 1-5**).

This College Point case study area is characterized by approximately 700 unique customers, served by 23 different carters. A majority of businesses in this area are classified as office (approximately 38 percent), followed by non-food retail (approximately 35%) and manufacturing (approximately 14 percent). Combined, this study area generates approximately 19,300 tons of commercial waste per year at a median rate of $10.80 per 100 pounds of waste, below the current BIC rate cap.[18] This case study area includes the Tully Transfer Station located to the south of Flushing Creek on Willets Point and two carter garages. ✷

[16] Food services include restaurants and bars.

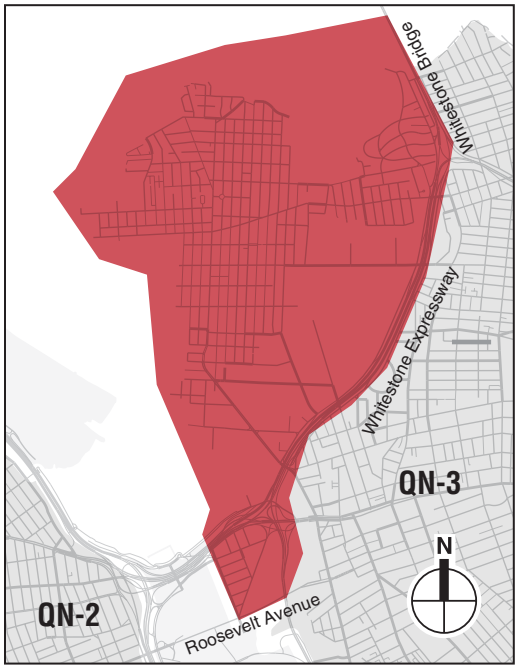
[17] This dataset includes customer information reported by individual carters on a regular basis to BIC for the 2017 Q2-Q4 Customer Register.

[18] This dataset includes customer information reported by individual carters on a regular basis to BIC for the 2017 Q2-Q4 Customer Register.



Flatbush Nostrand Junction
Neighborhood Retail Corridor
Case Study Area

Figure 1-4



College Point Lower Density Retail
Case Study Area

Figure 1-5

Chapter 2: Land Use, Zoning, and Public Policy

A. INTRODUCTION

In accordance with the 2014 *City Environmental Quality Review (CEQR) Technical Manual*, the Land Use, Zoning, and Public Policy analysis evaluates the land uses and development trends of an area and determines how a proposed project may affect them. It also considers a project's effect on the area's zoning and applicable public policies.

As described in Chapter 1, "Project Description," the City of New York is proposing to establish and implement a Commercial Waste Zone (CWZ) Program across the five boroughs of the City to improve the carting of refuse, recyclables, and organic waste from commercial businesses (the "CWZ Program" or "Proposed Action").

Since the Proposed Action is limited to regulatory changes regarding the collection of commercial solid waste throughout the City and is not expected to change land use or result in any new or different development, a detailed analysis of land use is not warranted. Similarly, the Proposed Action would not modify or otherwise affect any zoning regulations; therefore, a detailed analysis of zoning is not warranted.

This chapter evaluates whether the Proposed Action is consistent with any officially adopted public policies and initiatives. Drawbacks of the current commercial waste system and future benefits with implementation of the Proposed Action are also addressed in this chapter.

B. EXISTING CONDITIONS

PUBLIC POLICY

New York City requires commercial business owners to comply with solid waste collection standards pursuant to a variety of Business Integrity Commission (BIC) and New York City Department of Sanitation (DSNY) regulations, Local Laws (LLs), and public policy programs. Below, this section describes the policies that are relevant to solid waste collection for commercial businesses.

NEW YORK CITY ADMINISTRATIVE CODE

Title 16 of the New York City Administrative Code requires commercial businesses to acquire a Trade Waste Removal License, indicate the name of the carter they employ, and sets forth requirements to manage recyclables separately from refuse, per the City's Recycling Law.

Title 16A, Chapter 1 of the New York City Administrative Code defines how BIC licenses, registers, and oversees businesses that remove, collect, or dispose of trade waste. It gives BIC the right to establish and regulate appropriate safety and service standards, appoint employees, and provide educational programs to inform both carters and customers about their rights and responsibilities.

LL145 of 2013 (LL145/2013) is an amendment to the New York City Administrative Code that seeks to reduce pollution and emissions from commercial carter trucks. It requires all trucks to

implement Best Available Retrofit Technology (BART) such as diesel particulate traps or be equipped with a United States Environmental Protection Agency (EPA)-certified 2007 model year or later engine by January 1, 2020. The New York City Department of Environmental Protection (DEP) and BIC enforce this law. Waivers are available to carters facing financial burden, but all trucks must comply by 2025. Approximately 64 carters that fall under the scope of the CWZ Program submitted compliance data in 2017. As of summer 2017, the total number of compliant commercial carter trucks in the industry represented at least one third of the total applicable commercial waste trucks operating in the New York City region.[1]

In 2013, the New York City Council passed LL146 of 2013 (LL146/2013) amending the New York City Administrative Code (codified as §16-306.1) which requires DSNY to assess, at least annually, the available regional capacity to process organic waste and to designate certain categories of businesses that must separate this material for beneficial use, such as composting or anaerobic digestion to produce biogas.

LL56 of 2015 (LL56/2015) requires all large trucks in the City's fleet to be equipped with side guards designed to protect pedestrians and cyclists by January 1, 2024.

LL152 of 2018 (LL152/2018) amends the New York City Administrative Code to reduce the permitted capacity at putrescible and non-putrescible solid waste transfer stations in four overburdened community districts in New York City.

RULES OF THE CITY OF NEW YORK

Title 16 of the Rules of the City of New York provides requirements specific for commercial waste carters. The rules broadly (a) allow commercial establishments generating less than a defined amount of waste per week to share a disposal location with another commercial establishment; (b) define designated recyclable materials for commercial waste; (c) provide source-separation, set-out, and collection requirements and responsibilities; (d) allow the Commissioner of DSNY to request inspections; and (e) define commercial carter truck requirements and specifications.

Title 17 of the Rules of the City of New York establishes BIC as the body that provides oversight for the commercial waste industry. Title 17 also establishes rate caps (e.g., maximum carting fees) for waste collection, outlines licensing requirements for carters and brokers, sets license application requirements, provides terms for license application rejection, and specifies certain procedures for investigation, license revocation or suspension, penalties, liabilities, enforcement, hearings, and other steps related to addressing improper carter and broker conduct.

2006 SOLID WASTE MANAGEMENT PLAN

The current Solid Waste Management Plan (SWMP), adopted in July 2006 and approved by New York State in October 2006, is a five-borough plan that addresses New York City's waste management needs. The City is required to adopt a SWMP for at least a 10-year period under New York State Environmental Conservation Law. The current plan is in effect through 2025, at which point a new plan will be evaluated and initiated.

The SWMP generally projects waste quantities and identifies the facilities that would manage the transfer of residential and commercial waste, including designated recyclables, putrescible waste, construction and demolition debris, and fill material such as dirt, concrete, brick and rock. The

[1] BIC, 2017 LL145/2013 Compliance Plan Reports provided by carters by request of BIC.

adopted SWMP emphasizes three broad categories of goals: (1) the improvement of conditions around transfer stations upon which both public and private carters currently rely; (2) transitioning from a system reliant on trucks to export waste from local waste transfer stations to one that takes advantage of barge and rail transport, reducing local waste truck traffic; and (3) the redistribution of transfer stations so that low-income and minority communities are not disproportionately burdened. In addition, the SWMP sets ambitious goals for recycling within the City, which will ultimately reduce the exportation of waste.

ONE NEW YORK: THE PLAN FOR A STRONG AND JUST CITY

In April 2007, the Mayor's Office of Long Term Planning and Sustainability released *PlaNYC: A Greener, Greater New York (PlaNYC).* In 2015, the Mayor's Office updated *PlaNYC* to build on its original sustainability goals and amend its objectives and strategies. The new plan, entitled *One New York: The Plan for a Strong and Just City* (*OneNYC*) is not a mandate, but sets forth a variety of goals related to urban growth, equity, environmental sustainability, resiliency, and diversity.

The mission of *OneNYC* is to motivate growth, equity, sustainability, resiliency, and diversity through public policy. Among its hundreds of initiatives, *OneNYC* committed the City to conducting a comprehensive study of CWZs as well as including increasing recycling and reducing landfill disposal of waste.

WATERFRONT REVITALIZATION PROGRAM

The Federal Coastal Zone Management Act (CZMA) of 1972 was enacted to support and protect the distinctive character of the waterfront and to set forth standard policies for reviewing proposed development projects along coastlines. The program responded to City, State, and Federal concerns about the deterioration and inappropriate use of the waterfront. The CZMA emphasizes the primacy of State decision-making regarding the coastal zone. In accordance with the CZMA, New York State adopted its own Coastal Management Program (CMP), designed to balance economic development and preservation by promoting waterfront revitalization and water-dependent uses. At the same time, it was designed to protect fish, wildlife, open space, scenic areas, farmland, and public access to the shoreline in order to minimize adverse changes to ecological systems, erosion, and flood hazards. The New York State CMP provides for local implementation when a municipality adopts a local waterfront revitalization program (WRP), as is the case in New York City.

The New York City WRP is the City's principal coastal zone management tool, originally adopted in 1982 and approved by the New York State Department of State (NYSDOS) for inclusion in the New York State CMP. The WRP establishes the City's policies for the development and use of the waterfront and provides a framework for evaluating activities proposed within the Coastal Zone. Revisions to the WRP were approved by the New York City Council on October 30, 2013. The revisions are intended to reflect policy elements included in the New York City Department of City Planning's (DCP) 2011 *Vision 2020: New York City Comprehensive Waterfront Plan*, including incorporation of climate change and sea level rise considerations to increase the resiliency of the waterfront area, promotion of waterfront industrial development and both commercial and recreational water-borne activities, increased restoration of ecologically significant areas, and design of best practices for waterfront open spaces. The changes were recently approved by NYSDOS and the United States Department of Commerce.

C. FUTURE WITHOUT THE PROPOSED ACTION

The Future without the Proposed Action (the "No Action" condition) includes the current commercial waste industry and any regulatory changes to the industry expected by the Analysis Year of 2024, as described in Chapter 1, "Project Description."

PUBLIC POLICY

NEW YORK CITY ADMINISTRATIVE CODE AND RULES OF THE CITY OF NEW YORK

As discussed in "Existing Conditions," the commercial waste industry is regulated largely by Titles 16 and 16A of the New York City Administrative Code and Titles 16 and 17 of the Rules of the City of New York. These laws and regulations would continue to regulate the industry and carters would need to comply with applicable policies; however, similar to the current system, there would be no adequate enforcement mechanisms to ensure that the private carters comply with these regulations.

As noted above, LL145/2013 requires commercial carter truck engines older than Model Year 2007 to be upgraded to reduce their exhaust emissions either by installing a newer engine from 2007, or later, or to retrofit the engine with pre-approved BART emission controls, such as diesel particulate traps, by January 1, 2020. Under the No Action condition, all operating carters are expected to be fully compliant with LL145/2013 in the 2024 Analysis Year.

LL56/2015 requires that all commercial carter trucks be equipped with side guards by January 1, 2024. Accordingly, 100-percent compliance with LL56/2015 would be part of the No Action condition.

LL152/2018 requires the reduction of permitted capacity at putrescible and non-putrescible solid waste transfer stations in four overburdened community districts in New York City. Under the No Action condition, such reductions would occur at the identified transfer stations and waste that would be displaced from these facilities by these reductions would be distributed to other transfer stations.

Existing regulations require commercial businesses to recycle metal, glass, plastic (MGP), paper, cardboard and, in some cases, food preparation waste (organics) and, thereby, divert such waste from landfills; however, enforcement and tracking compliance rates is difficult. LL146/2013 requires DSNY to assess, at least annually, the available regional capacity to process organic waste and to designate certain categories of businesses that must separate this material for composting or digestion. Under the No Action condition, businesses would continue to comply with LL146/2013, and carters would collect the organics waste. It is estimated that 30 percent of commercial waste would be collected as recyclables (i.e., cardboard, paper, and MGP) and 3 percent of commercial waste would be collected as organics throughout the City under the No Action condition.[2] This reflects a slight increase from existing conditions in which an estimated 24 percent of commercial waste is collected as recyclables and 1 percent is collected as organics throughout the City.

[2] Collection rate is the percentage of designated recyclables or organic material collected in the system.

2006 SOLID WASTE MANAGEMENT PROGRAM

Implementation of the SWMP would continue under the No Action condition.

ONENYC

The City would continue to encourage sustainability and recycling under the No Action condition. However, as under the existing condition, there would be no adequate enforcement mechanisms and it would be expected the City would fall short on meeting such goals set forth in *OneNYC.*

WATERFRONT REVITALIZATION PROGRAM

Under the No Action condition, there would be no changes to the commercial waste industry to warrant review against the WRP policies.

D. FUTURE WITH THE PROPOSED ACTION

The Future with the Proposed Action (the "With Action" condition) evaluates the changes to public policy conditions that would exist in the Analysis Year of 2024 as a result of the implementation of the Proposed Action.

PUBLIC POLICY

The Proposed Action would not replace existing laws and regulations. Rather, the Proposed Action would require compliance with the laws and regulations to obtain contracts under the CWZ Program, and DSNY and BIC would have the mechanism to enforce these regulations if carters fail to comply. Further, the Proposed Action would enhance the goals of public policies. The current public policies described in "Existing Condition," and how the CWZ Program supports and enhances these public policies are discussed below.

NEW YORK CITY ADMINISTRATIVE CODE AND RULES OF THE CITY OF NEW YORK

The CWZ Program would be implemented through the enactment of a new local law to be developed by the New York City Council. The new local law would provide provisions for the program, including the Request for Proposal (RFP) requirements and contract-award procedures.

In addition, under the Proposed Action, carters would be required to comply with the relevant regulations in order to compete for business, and DSNY and BIC would have the mechanism to enforce these regulations if carters fail to comply.

As noted previously, LL145/2013 requires commercial carter truck engines older than Model Year 2007 to be upgraded to reduce their exhaust emissions either by installing a newer engine from 2007, or later, or to retrofit the engine with pre-approved BART emission controls, such as diesel particulate traps, by January 1, 2020. Under the Proposed Action—as with the No Action condition—all commercial carter trucks operating in the City are anticipated be in full compliance with the requirements of LL145/2013 by the 2024 Analysis Year.

LL56/2015 requires that all commercial carter trucks be equipped with side guards by January 1, 2024. Accordingly, under the Proposed Action there would be 100 percent compliance with LL56/2015.

LL146/2013 requires DSNY to assess, at least annually, the available regional capacity to process organic waste and to designate certain categories of businesses that must separate this material for

composting or digestion. Under the Proposed Action, there would be an increase in organic waste from 3 percent collection rate under the No Action condition to 6 percent collection rate throughout the City due to improved enforcement facilitated by the CWZ Program.

Additional enforcement of other recycling requirements would also occur under the Proposed Action, for the same reasons. Under the Proposed Action, the blended recyclables collection rate would increase to 38 percent, compared to 30 percent under the No Action condition.

2006 SOLID WASTE MANAGEMENT PROGRAM

The Proposed Action would support the goals of the SWMP. One of the goals of the CWZ Program is to increase diversion—the carters who are awarded contracts will be required to collect all waste that the program applies to, including refuse, recycling and organics. As mentioned, under the Proposed Action, the capture rate of both recycling and organics would increase.

In addition, another goal of the Proposed Action is to reduce traffic related to the commercial waste industry. In creating zones and limiting the number of carters servicing those zones, it is anticipated that the overall truck trips would be reduced. This would be in line with the SWMP goal and addressing concerns of truck traffic-related impacts to communities, including noise and air quality.

ONENYC

The Proposed Action would further the environmental sustainability efforts of *OneNYC*.

One goal of the Proposed Action is to increase diversion of waste in order to work towards the City's zero waste goals. The CWZ Program would encourage carters to comply with existing recycling and source-separation regulations so they could compete for contracts. As part of the RFP process, carters would develop "zero waste" plans and identify innovative practices to support waste reduction, reuse, and recycling and provide for additional oversight and reporting requirements to ensure that these practices are being followed. With more recycling and organic materials being separated, less waste would be sent to landfills, saving resources and energy, consistent with the City's sustainability and recycling goals that align with *OneNYC*'s goals and adhere to the proposed policies pertaining to recycling and the disposal of organic waste.

In addition, the CWZ Program would advance the City's efforts to increase commercial recycling, reduce carter truck traffic and associated air, noise and greenhouse (GHG) emissions, and improve carting industry operational standards. Reduction in truck traffic would result in a reduction in GHG emissions and noise, as well as improve air quality, thereby adhering to *OneNYC*'s goals.

WATERFRONT REVITALIZATION PROGRAM

The Proposed Action would be implemented throughout the City, including in areas within the City's Coastal Zone Boundary and, therefore, the Proposed Action would be subject to review for consistency with the policies of the WRP.

The WRP includes policies designed to maximize the benefits derived from economic development, environmental preservation, and public use of the waterfront, while minimizing the conflicts among those objectives. The WRP Consistency Assessment Form (CAF) lists the WRP policies and indicates whether the Proposed Action would promote or hinder a particular policy, or if that policy would not be applicable (see **Appendix B**). The Proposed Action would be

consistent with goals of the WRP. This section provides additional information for the policies that have been checked "promote" in the WRP CAF.

Policy 7: *Minimize environmental degradation and negative impacts on public health from solid waste, toxic pollutants, hazardous materials, and industrial materials that may pose risks to the environment and public health and safety.*

> *Policy 7.3: Transport solid waste and hazardous materials and site solid and hazardous waste facilities in a manner that minimizes potential degradation of coastal resources.*

The CWZ Program would convert the current open market to a zoned system for commercial waste collection. The CWZ Program would be intended to reduce the existing overlap of commercial carter routes and enhance efficiency, worker and pedestrian safety, transparency in contracting, and customer service. It would also further the City's recycling and sustainability goals and reduce truck traffic and associated air, noise and GHG emissions. Currently, New York City's commercial waste system is an open market, regulatory-based system in which private service providers, licensed and overseen by BIC, collect waste and recyclables from commercial businesses and compete for contracts with each business. The Proposed Action would establish a CWZ program that would create geographic zones with a limited number of service providers licensed to operate within each zone. Adverse environmental impacts from commercial waste carting would be reduced. Therefore, the Proposed Action would promote Policy 7.3.

E. CONCLUSION

In view of the foregoing, it can be concluded that the CWZ Program would not cause a significant adverse impact to public policy. ✷

Chapter 3: Socioeconomic Conditions

A. INTRODUCTION

As described in Chapter 1, "Project Description," the City of New York is proposing to establish and implement a Commercial Waste Zone (CWZ) Program across the five boroughs of the City to improve the carting of refuse, recyclables, and organic waste from commercial businesses (the "CWZ Program" or "Proposed Action").

This chapter describes the potential impacts of the Proposed Action on socioeconomic conditions within the City of New York. As stated in the *2014 City Environmental Quality Review (CEQR) Technical Manual,* the socioeconomic character of an area includes its population, housing, and economic activities. Even when socioeconomic changes would not result in impacts under CEQR, they are disclosed if they would affect land use patterns, low-income populations, the availability of goods and services, or economic investment in a way that changes the socioeconomic character of the area. This analysis focuses on how potential changes to the commercial waste carting industry could change socioeconomic conditions within certain areas or for the City as a whole.

In some cases, the predicted socioeconomic changes may be substantial but not adverse. In other cases, these changes may be good for some groups, but bad for others. The objective of the CEQR analysis is to disclose whether any changes created in the Future with the Proposed Action (the "With Action" condition or the "Proposed Action" condition) would result in a significant adverse socioeconomic impact compared with what would happen in the Future without the Proposed Action (the "No Action" condition). Specifically, this analysis focuses on the potential for the Proposed Action to increase the costs of commercial carting operations to the point that commercial carting becomes too expensive to be a viable industry and carting businesses close, or to increase the costs associated with commercial carting services to the point that local businesses are unable to pay for carting services, refuse remains uncollected, and these businesses ultimately close due to the burden associated with commercial waste collection.

PRINCIPAL CONCLUSIONS

This analysis finds that the Proposed Action would not result in significant adverse socioeconomic impacts. The following summarizes the conclusions for each of the five CEQR areas of socioeconomic concern.

DIRECT RESIDENTIAL DISPLACEMENT

A screening-level assessment finds that the Proposed Action would not result in significant adverse impacts due to direct residential displacement as the Proposed Action would not directly displace residents. The Proposed Action is a generic city regulatory program that would change the operations of specific businesses within New York City, not a site-specific development project that could directly displace a residential population.

DIRECT BUSINESS DISPLACEMENT

A screening-level assessment finds that the Proposed Action would not result in significant adverse impacts due to direct business displacement as the Proposed Action would not directly displace any businesses. The Proposed Action is a generic city regulatory program that would affect the commercial carting businesses operating within New York City, not a site-specific development project that could directly displace businesses. The potential loss of jobs in the carting industry is addressed in the specific industries assessment (see Screening Criteria #5).

INDIRECT RESIDENTIAL DISPLACEMENT

A screening-level assessment finds that the Proposed Action would not result in significant adverse impacts due to indirect residential displacement as the Proposed Action would be a generic citywide regulatory program which would affect the commercial carting businesses within New York City, and would not result in changes to residential development within the City of New York.

INDIRECT BUSINESS DISPLACEMENT

A screening-level assessment finds that the Proposed Action would not result in significant adverse impacts due to indirect business displacement as the Proposed Action not result in any commercial development that could influence market conditions in specific neighborhoods. The Proposed Action's potential to affect the viability of commercial waste carters and carting customers (i.e., individual neighborhood businesses) is addressed as part of the specific industries assessment (see below).

ADVERSE EFFECTS ON SPECIFIC INDUSTRIES

A detailed analysis finds that the Proposed Action would not result in significant adverse impacts on the viability of the commercial carting industry, or on businesses that rely on the commercial carting industry. The Proposed Action would reduce the costs of commercial carting operations within the City of New York, streamlining the operation of commercial carting businesses, despite additional costs associated with the Proposed Action. Employment within the commercial carting industry would be reduced by approximately 2 percent as the industry becomes more efficient with the CWZ Program, requiring shorter routes and fewer hours of carting truck operation, and some carting companies may close.

Further, commercial businesses that rely on the commercial carting industry are anticipated to be provided more transparent (e.g., clearly defined rate caps) and reliable services (e.g., through the provision of customer service hotlines), while paying a more competitive rate for carting services. As a result of the Proposed Action, these businesses would receive an enhanced and more affordable service, as compared to the No Action condition.

B. METHODOLOGY

BACKGROUND

An assessment of socioeconomic impacts of a proposed project typically distinguishes between impacts on residents and businesses in an area and separates these impacts into direct and indirect impacts, measured by the displacement it may cause for both segments. The Proposed Action is not tied to a specific location but may affect the operation and viability of a specific industry not necessarily tied to a specific location. In such cases, the CEQR review process involves an assessment of the economic impacts of a project on that specific industry, and any businesses that

may rely on that industry to operate. This analysis therefore considers the CWZ Program's potential impact on both the commercial carters, and the businesses which rely on commercial waste collection (i.e., commercial customers) to assess whether industry changes could jeopardize the viability of the carting industry in New York City and result in adverse socioeconomic impacts.

ANALYSIS FORMAT

Based on *CEQR Technical Manual* guidelines, the analysis begins with a screening-level assessment (see Section C, "Screening Assessment") that determines for each of the five areas of socioeconomic concern whether there would be expected results that would warrant further review in the form of a "preliminary" assessment:

1. Direct displacement of a residential population;
2. Direct displacement of existing businesses and institutions;
3. Indirect displacement of a residential population;
4. Indirect displacement of businesses and institutions due to increased rents or retail market saturation; and
5. Adverse effects on specific and important industries within the City of New York.

The *CEQR Technical Manual* defines thresholds for analysis for each of the five categories. The screening assessment found that further preliminary assessment was necessary to determine if the Proposed Action would result in significant adverse impacts to industries within the City of New York.

The objective of the preliminary assessment is to learn enough about the potential effects of the Proposed Action to either rule out the possibility of significant adverse impacts or determine that a more detailed analysis is required to fully determine the extent of potential impacts. As detailed in Section D, "Preliminary Assessment," the preliminary assessment found that additional detailed analysis was warranted in order to determine whether the Proposed Action could result in significant adverse impacts on specific industries.

Section E, "Detailed Analysis of Potential Adverse Effects on Specific Industries," is structured to provide the existing condition as a baseline and then assesses the No Action condition and Proposed Action, by the Analysis Year 2024. As discussed in Chapter 2, "Land Use, Zoning, and Public Policy," specific policies that are implemented in the No Action condition are identified, as these public policies have the potential to change the socioeconomic conditions within the area of study. The No Action condition is then compared to the Proposed Action in order to determine the potential for significant adverse impacts as a result of the Proposed Action.

NEIGHBORHOOD CASE STUDY AREAS

As described in Chapter 1, "Project Description," the Proposed Action is a generic, citywide action that would affect commercial waste collection throughout the entire City of New York. In order to provide a more localized geography for analysis and the effects of the Proposed Action on neighborhood socioeconomic conditions, three representative neighborhood case study areas were selected as typologies of high, medium, and low-density commercial development, respectively, to provide a more detailed and contextual analysis of the potential benefits and adverse impacts of the Proposed Action in such New York City communities. These three study area typologies are used to analyze the Proposed Action's likely effects on its environmental setting (Proposed Action) in the 2024 Analysis Year.

CENTRAL BUSINESS DISTRICT STUDY AREA—HIGH-DENSITY

A Central Business District (CBD) is a commercial and business center of a city and in larger cities is often synonymous with a city's "financial district." In New York City, these high-density commercial areas are primarily found in Lower Manhattan, Midtown Manhattan, Western Queens, and Downtown Brooklyn. Users of commercial waste services are typically building operators, including real estate companies, often with multiple buildings within the district. Typical waste producers within CBD districts include large offices, hotels, commercial retail, and restaurants.

The Midtown Manhattan CBD was selected as representative of a high-density CBD, as it contains a large number of highly diverse commercial waste producers, ranging from small-scale retail and restaurants to large office buildings. In addition, the area includes large destination retail as well as major entertainment venues. In contrast to the other two typologies, the Midtown Manhattan CBD study area is characterized by a high density of businesses and large-volume waste producers.

The analysis of the socioeconomic conditions relies on demographic analysis. Therefore, it is appropriate to adjust the socioeconomic study area to conform to the census tract delineation that most closely approximates the desired study area boundary in order to provide a geography large enough for a meaningful demographic analysis. As shown in **Figure 3-1,** the Midtown Manhattan CBD study area includes New York County Census Tracts 76, 84, 96, 101, 104, 109, 113, 119, 125, and 131. This is roughly equivalent to the area bounded by 54th Street to the north, Fifth Avenue to the east, 30th Street to the south, and Eighth Avenue to the west.

NEIGHBORHOOD RETAIL CORRIDOR STUDY AREA—MEDIUM DENSITY

A neighborhood retail corridor or cluster is the primary commercial hub of a typical medium-density neighborhood outside of the City's CBDs. These are often located in proximity to subway stations and include areas such as Roosevelt and Steinway Avenues in Queens, Fordham Road and the Hub in the Bronx, Dykeman Street in Manhattan, and portions of Atlantic and 5th Avenues in Brooklyn. Commercial waste customers within neighborhood retail corridors include medium-sized office buildings, small commercial retailers, neighborhood supermarkets, delis, and restaurants.

The Flatbush Nostrand Junction was selected as a case study area as it is representative of a medium-density mixed-use neighborhood corridor and commercial cluster. The study area contains a large variety of commercial activity, including both medium-sized department store retail, and smaller retail businesses, such as bakeries, barber shops, and jewelry stores. The Flatbush Nostrand Junction's central location within Brooklyn, surrounded by large low- and medium-density residential neighborhoods and proximity to transit, makes it a typical commercial cluster found in the outer boroughs.

As shown in **Figure 3-2,** the Flatbush Nostrand Junction study area includes Kings County Census Tracts 770, 772, 774, 776, 786, and 788. This is roughly equivalent to the area bounded by Foster and Farragut Avenues to the north, New York and Albany Avenues to the east, Avenue I to the south, and Ocean Avenue to the west.

LOWER (RETAIL) DENSITY STUDY AREA

Lower density retail areas are characterized by commercial uses scattered throughout a district, as opposed to being concentrated in defined clusters or corridors. These lower density districts are found in more automobile-oriented areas of the outer boroughs, with fewer public transportation options, such as Howard Beach and College Point in Queens, Canarsie in Brooklyn, and various neighborhoods in Staten Island. Businesses within these areas vary but include a variety of

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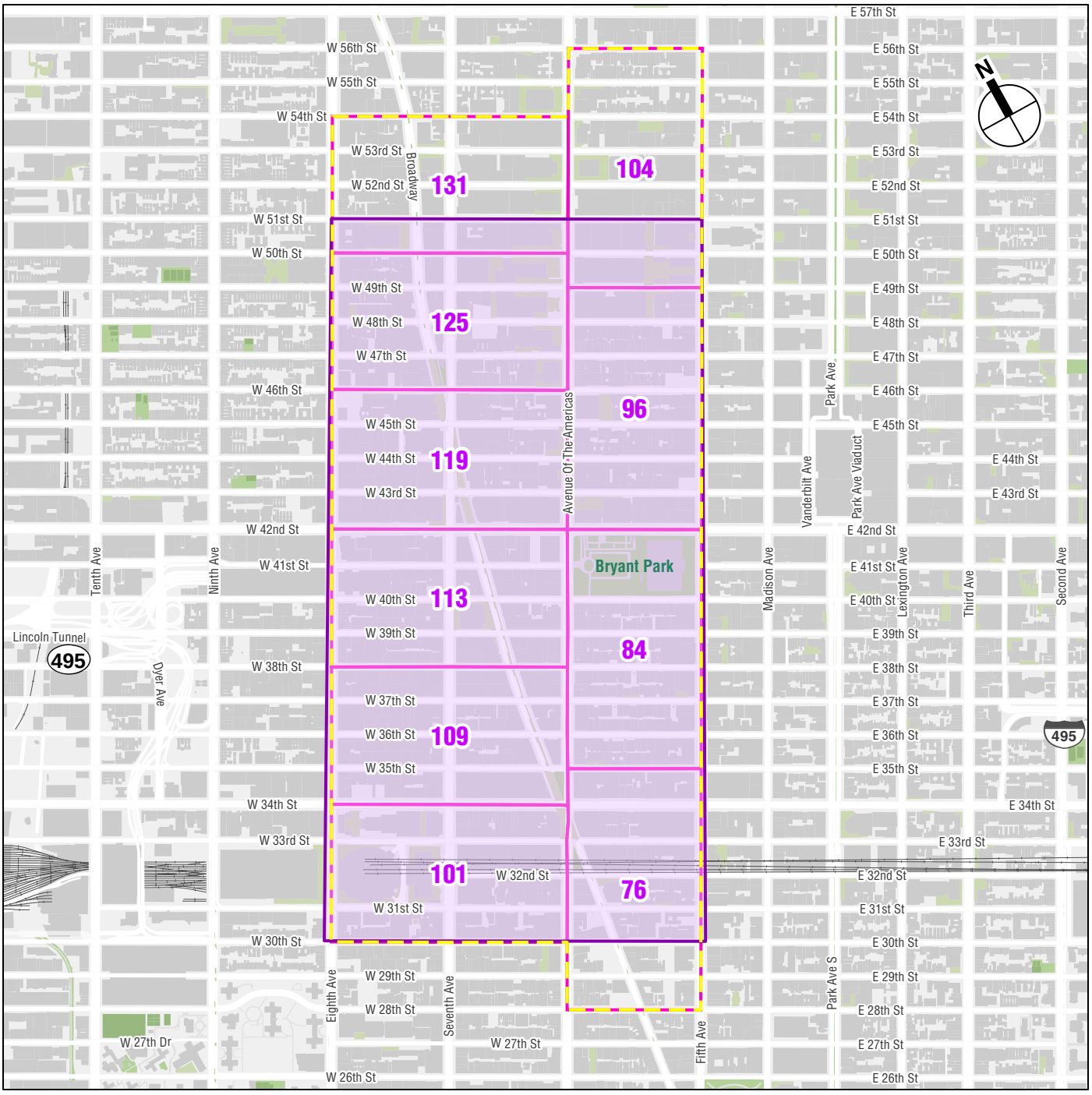
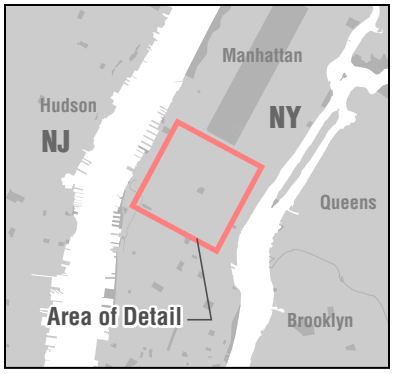


0 1,000 FEET

Commercial Area

Socioeconomic Case Study Area

Census Tracts

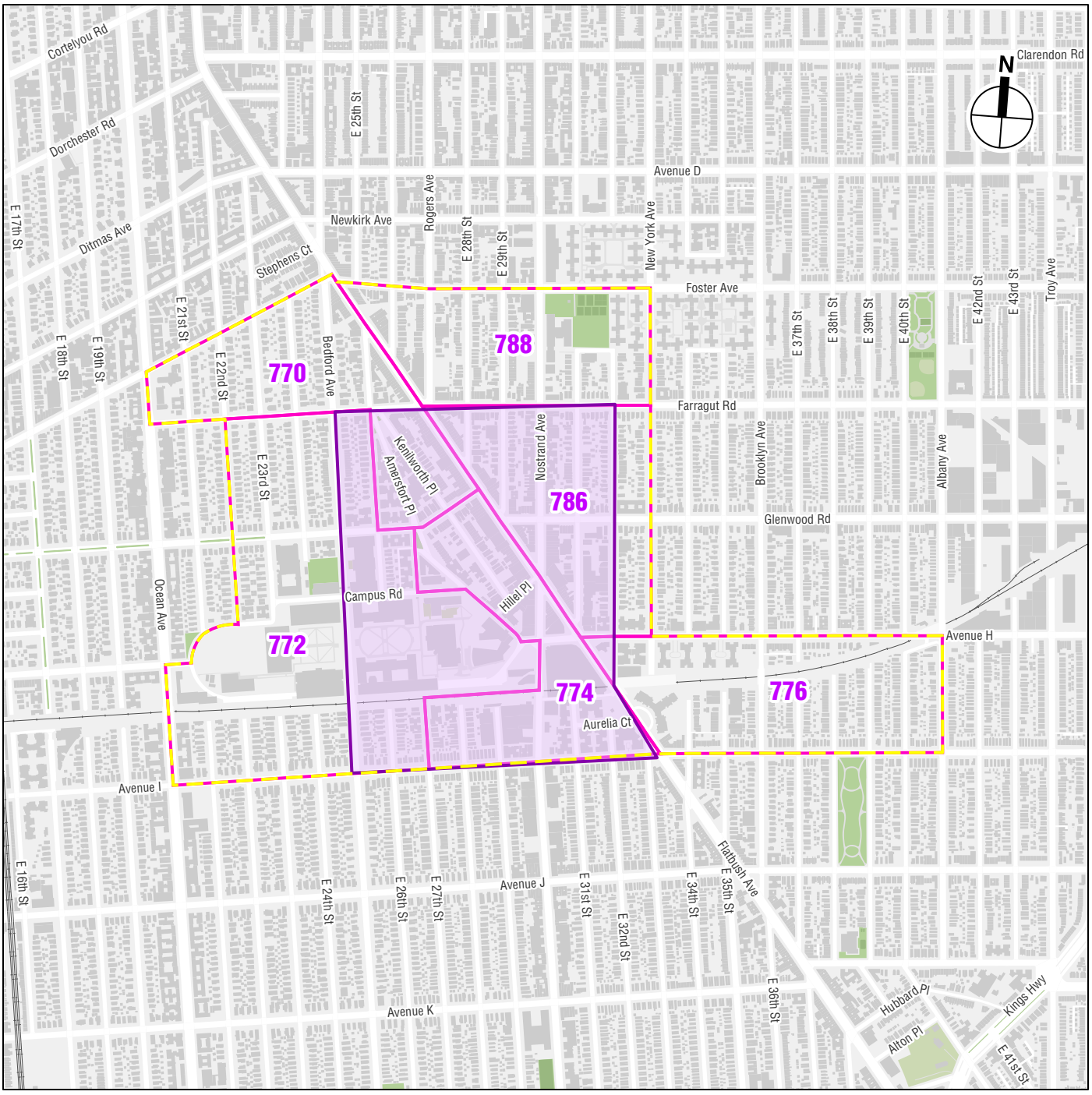


Midtown Manhattan Central Business District
Case Study Area

NYC COMMERCIAL WASTE ZONE PROGRAM

Figure 3-1

2.11.19



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Commercial Area

Socioeconomic Case Study Area

Census Tracts

Flatbush-Nostrand Junction Corridor
Case Study Area

NYC COMMERCIAL WASTE ZONE PROGRAM

Figure 3-2

retailers, including chain convenience stores, gas stations, fast-casual restaurants, automotive businesses, and big-box retail.

College Point, Queens was selected as the representative case study area for a low-density retail district. This neighborhood was selected as it is a low-density automobile-oriented neighborhood, which includes a variety of commercial waste generators, including small restaurants, stores and larger commercial waste producers such as the Pepsi-Cola Bottling Plant, *New York Times* printing facility, and a large shopping center. The College Point study area also includes the Tully Environmental waste transfer station located on Willets Point just south of Flushing Creek.

As shown in **Figure 3-3** the College Point study area includes Queens County Census Tracts 383.01, 907, 919, 925, 929, 939, 945, and 947. This is roughly equivalent to the area bounded by the East River to the north, the Whitestone Expressway to the east, Flushing Creek to the south (with the exception of the Census Track 383.01, which is just to the south of Flushing Creek bounded by Flushing Bay to the north, Flushing Creek to the east, Roosevelt Avenue to the south, and 126th Street to the west), and Flushing Bay to the west.

DATA SOURCES

The socioeconomic analysis of the Proposed Action was conducted utilizing a variety of data sources, including publicly accessible data such as census data collected by the New York State Department of Labor (NYSDOL), data reported by commercial carters and compiled by the Business Integrity Commission (BIC), and supplemented by data provided by private companies, including Esri. This data provided inputs and assumptions used to model the socioeconomic effects of the Proposed Action on the commercial carting industry, as well as commercial businesses served by commercial carters.

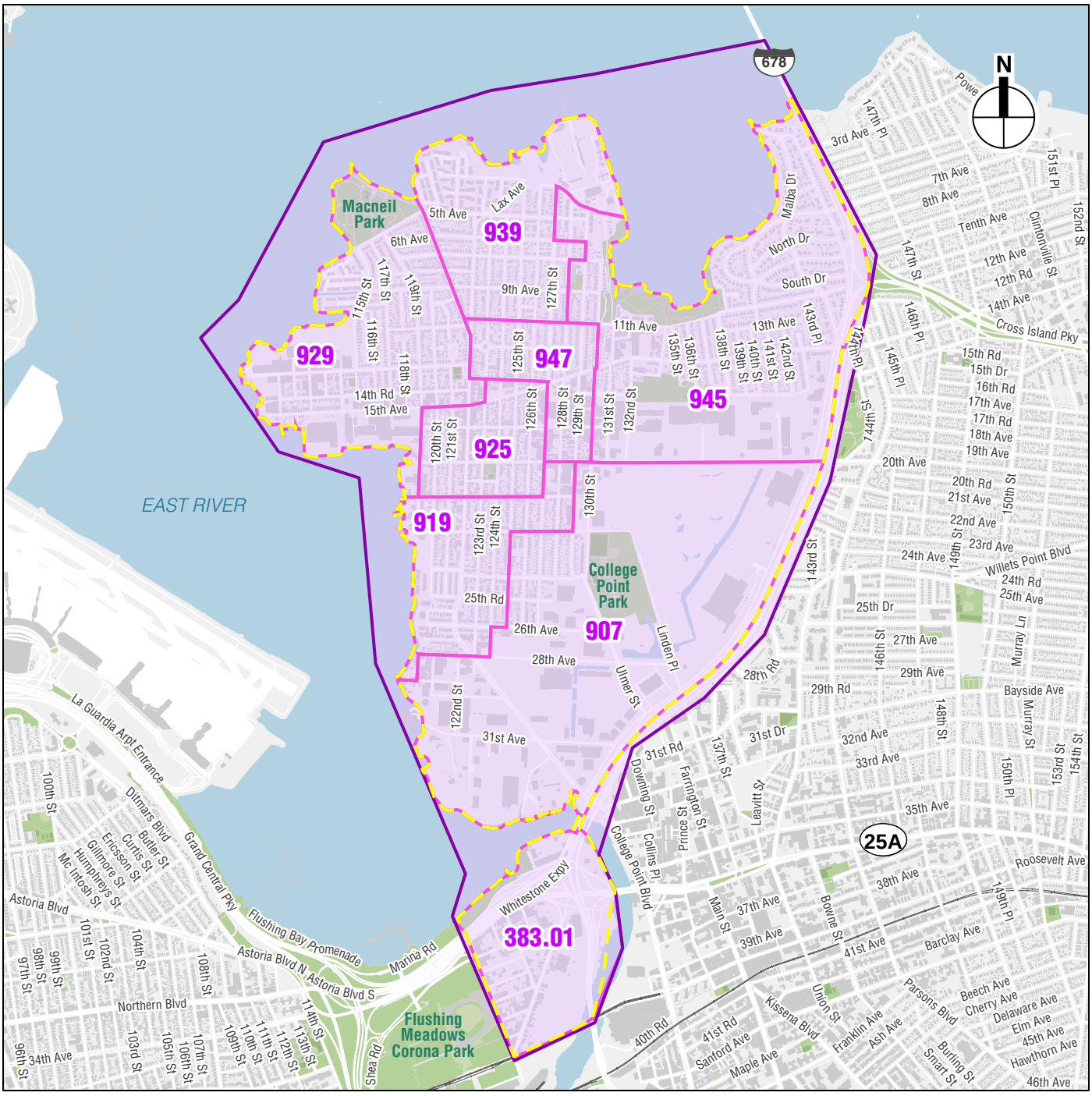
In order to analyze the potential effects of the Proposed Action on the commercial carting industry, a variety of datasets and sources were utilized. In order to assess the existing revenues and expenses of commercial carters, the 2015 Private Carter Financial Statements were utilized.[1] Data on equipment costs and additional expenses anticipated to be introduced as a result of the CWZ Program were provided in the "New York City Department of Sanitation, Commercial Waste Zones: A Plan to Reform, Reroute, and Revitalize Private Carting in New York City" (CWZ Implementation Plan) and through market research.[2] Estimated payroll and employment data for the commercial waste industry was provided by the NYSDOL Quarterly Census of Employment and Wages (QCEW) dataset, which provides a census of wages and employment in New York City. In addition to the data collected, outreach to the commercial carting industry was conducted during 2018. In multiple advisory committee meetings, commercial carters and other stakeholders provided information and commentary on the CWZ Program in order to inform both this analysis and the Implementation Plan.

The potential effects of the Proposed Action on commercial businesses served by commercial carters was modeled and analyzed through an examination of carter expenses and the cost of carting services throughout New York City. This examination included a preliminary inventory of

[1] For the purpose of analysis, the 2015 Private Carter Financial Statements were utilized as it is the most complete dataset currently available. More recent Private Carter Financial Statements were not used for this analysis. This is because as of January 2019, carters were still submitting data for 2017 reports.

[2] DSNY, Commercial Waste Zones: A Plan to Reform, Reroute, and Revitalize Private Carting in New York City (2018).

2.11.19



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Commercial District

Socioeconomic Case Study Area

Census Tracts

College Point Low Density Case Study Area

NYC COMMERCIAL WASTE ZONE PROGRAM

Figure 3-3

the carting industry, including equipment used, waste collected and employment. In order to model waste generation within New York City and within the three case study areas, total employment and commercial businesses counts were identified utilizing the NYSDOL QCEW data, which provides both employment and business estimates by industry category within the State of New York. Additional employment and business data for the City of New York was provided by Esri's Business Analyst Online (BAO)—a private data services company. Waste generation rates from the CalRecycle 2014 Generator Based Characterization of Commercial Sector Disposal and Diversion in California employment were utilized to model commercial waste generation within New York City and the three study areas.[3] This dataset was selected because it provides employment-based multipliers based on identified North American Industry Classification Survey (NAICS) codes. While the *CEQR Technical Manual* provides generic waste generation rates for uses within the City of New York (see *CEQR Technical Manual* Table 14-1), the detailed industry analysis required more refined waste generation rate estimates that align with the identified NYSDOL QCEW employment data and NAICS codes used to analyze the industry sectors affected by the CWZ Program. Additional waste generation methodologies were considered; however, for the purposes of this analysis, they were determined to be insufficient as they did not utilize employee based generation rates necessary for the purposes of socioeconomic analysis, or were not applicable to the New York City context. Waste generation rates provided in the CalRecycle model were further modified in order to normalize the modeled waste generation rates with reported waste rates provided to DSNY and BIC by transfer stations and carters within New York City. Specifically, this normalization was based on tonnages recorded at waste transfer stations and recycling facilities, supplemented by private carter surveys and routing data, which catalog the real-world waste collected by commercial carters.[4,5,6] Other supplemental data was provided by the 2017 Q2-Q4 BIC Carter Customer Register dataset, including the average and median cost charged to commercial customers within the three study areas.

C. SCREENING ASSESSMENT

The screening assessment applies the *CEQR Technical Manual* threshold guidelines to determine if the Proposed Action warrants further assessment based on one or more of the five principal areas of concerns discussed below.

1. DIRECT RESIDENTIAL DISPLACEMENT

Would the proposed project directly displace residential population to the extent that the socioeconomic character of the neighborhood would be substantially altered? Displacement of fewer than 500 residents would not typically be expected to alter the socioeconomic character of a neighborhood.

The Proposed Action would be a generic citywide regulatory program that would change the operations of specific businesses within New York City, not a site-specific development project

[3] CalRecycle, Sept. 2015, 2014 Generator-Based Characterization of Commercial Sector Disposal and Diversion in California.

[4] DSNY, 2014-2017, NYC Transfer Station and Recycling Facility Tonnage Reports.

[5] DSNY, 2014-2016, Private Carter Inbound/Outbound Tonnage Surveys

[6] BIC, 2014-2015, Private Carter Routing Data. In this analysis, BIC, 2014-2015, Private Carter Routing Data is used only to help estimate the proportion of waste generated in NYC but disposed of outside of NYC. For all other part of this analysis, BIC, 2018, Private Carter Routing Data is used.

that could directly displace a residential population. Therefore, direct residential displacement is not an area of concern for the socioeconomic analysis.

2. DIRECT BUSINESS DISPLACEMENT

Would the proposed project directly displace more than 100 employees, or would it displace any business that is unusually important because its products or services are uniquely dependent on its location, are subject to policies or plans aimed at its preservation, or that serves a population uniquely dependent on its services in its present location?

The Proposed Action would be a generic citywide regulatory program that would affect the commercial carting businesses operating within New York City, not a site-specific development project that could directly displace businesses. Therefore, direct business displacement is not an area of concern for the socioeconomic analysis. The potential loss of jobs in the carting industry is addressed in the specific industries assessment (see Screening Criteria #5).

3. INDIRECT RESIDENTIAL DISPLACEMENT

Would the Proposed Project result in substantial new development that is markedly different from existing uses, development, and activities within the neighborhood? Residential development of 200 units. Development of 200 units or less would typically not result in significant socioeconomic impacts.

As the Proposed Action would be a generic citywide regulatory program affecting commercial waste collection, it would not introduce any residential development or result in changes to the residential market conditions of New York City. Therefore, indirect residential displacement is not an area of concern warranting further analysis.

4. INDIRECT BUSINESS DISPLACEMENT

Would the proposed project result in substantial new development that is markedly different from existing uses, development, and activities within the neighborhood.

The Proposed Action would not result in any commercial development that could influence market conditions in specific neighborhoods. Therefore, indirect business displacement is not an area of concern warranting further analysis The Proposed Action's potential to affect the viability of commercial waste carters and carting customers (i.e., individual neighborhood businesses) is addressed as part of the specific industries assessment (see Screening Criteria #5).

5. ADVERSE EFFECTS ON SPECIFIC INDUSTRIES

Is the Proposed Project expected to affect conditions within a specific industry? This could affect socioeconomic conditions if a substantial number of workers or residents depend on the goods or services provided by the affected businesses, or if the project would result in the loss or substantial diminishment of a particularly important product or service within the city.

The Proposed Action affects the operation of commercial waste carters within New York City. This industry includes approximately 95 private commercial carters that are permitted to operate within the City that handle putrescible waste, recyclables, and organics. Of these 95, 74 have provided the required Private Carter Financial Statements to BIC, detailing that they employ over 2,600 workers

in a variety of positions.[7] In addition, the Proposed Action would affect private businesses within New York City that rely on commercial waste carters to remove waste generated daily by these businesses. Based on the screening assessment, and as all private businesses within New York City rely on commercial waste carting and these services are considered an important service within the City, a preliminary assessment of adverse effects on specific industries is warranted.

D. PRELIMINARY ASSESSMENT

ADVERSE EFFECTS ON SPECIFIC INDUSTRIES

According to the *CEQR Technical Manual*, a significant adverse impact to an industry may occur if an action would quantifiably diminish the viability of a specific industry that has substantial economic value to the City's economy; for example, if new regulations are introduced that prohibit or restrict the use of certain processes that are critical to certain industries. Using *CEQR Technical Manual* assessment criteria (in bold italics below), this preliminary assessment considers ways in which the Proposed Action could affect the commercial waste carting industry within New York City, including its effects on carting operations, employment, and the operations of businesses that rely on the waste-removal services provided by the commercial waste carting industry. If the answer to the question posed is not clearly "no," further analysis is warranted.

1. ***Would the Proposed Action significantly affect business conditions in any industry or any category of business within or outside of the Study Area?***

The commercial carting industry provides a unique and particularly important service within the City of New York. The CWZ Program is intended to improve the operations of commercial carters, while maintaining their ability to effectively service commercial businesses throughout the five boroughs of the City. In the existing condition, licensed commercial carters are able to compete for customers throughout New York City without restrictions, while in the Proposed Action, commercial carters would bid for the right to provide carting services within specific zones. The Proposed Action also has the potential to affect the commercial carting industry through the additional costs associated with regulatory compliance introduced by the Proposed Action, including health and safety training, hiring additional employees, and acquiring new equipment.

2. ***Would the Proposed Project indirectly substantially reduce employment or have an impact on the economic viability in the industry or category of business?***

Further analysis is required to determine whether the Proposed Action could result in a substantial reduction of employment or have an impact on the economic viability of the industry or a category of businesses within the industry. The CWZ Program would award a potential total of 68 contracts to commercial carters, lower than the approximately 95 carters which currently operate within the industry. Based on this limit, it is expected that some carters may decide to consolidate (e.g., smaller carters may partner with larger carters), or may remove themselves from the market.

In addition to estimating potential changes in industry employment, the detailed analysis will consider whether the Proposed Action could result in the disruption of commercial waste carting services (e.g., if commercial carters are not able to recoup the cost of compliance with the

[7] Analysis of BIC, 2015, Private Carter Financial Statements and NYSDOL, 2015-2017, Occupational Wages for New York City Region accounts for approximately 2,600 workers for 74 reporting carters. While approximately 21 carters remain unaccounted in this data, these carters make up approximately 5.3 percent of the commercial carting industry based on customer coverage.

Proposed Action through waste collection fees). Such disruptions would be an environmental concern because, without adequate servicing, commercial waste may remain on City streets, potentially negatively affecting neighborhood conditions, quality of life, and public health.

In addition, the Proposed Action has the potential to affect the costs associated with waste carting services and, therefore, the fees charged to commercial businesses for collection services. An increase in waste removal fees may affect the operating costs of neighborhood businesses and, thus may ultimately, their profitability and viability. Businesses burdened by higher waste costs may not be able to operate profitably and close or relocate, resulting in increased commercial vacancies within the City and the loss of employment associated with these businesses.

This preliminary assessment finds that a more detailed analysis is warranted in order to determine if the Proposed Action could result in significant adverse effects on the commercial carting industry or businesses that rely on the industry. See Section E, "Detailed Analysis of Potential Adverse Effects on Specific Industries."

E. DETAILED ANALYSIS OF POTENTIAL ADVERSE EFFECTS ON SPECIFIC INDUSTRIES

APPROACH

The detailed analysis evaluates business conditions within the carting industry, including the interaction of commercial carters and commercial waste service customers, (commercial businesses) and the potential effects of the Proposed Action on the industry. Both analysis sections utilize the *CEQR Technical Manual's* analysis format evaluating the existing condition as a baseline for analysis and then comparing that baseline to the No Action condition, and to the Proposed Action in the 2024 Analysis Year.

The Commercial Waste Carters section, below, assesses the potential for costs introduced by the Proposed Action to affect the carting industry or subsets of the industry and compares these costs to potential carter costs in the No Action condition. The Commercial Waste Service Customers section, below, assesses if the Proposed Action could increase pricing for carting services and place an undue burden on businesses, limiting their ability to successfully operate.

The assessment of potential effects on commercial carters begins by describing the existing operational and financial characteristics of the carting industry, particularly the expenses associated with the operation of the commercial waste carting industry. The analysis then considers the incremental cost to carters from the implementation of policies and regulations anticipated to take effect with or without the Proposed Action as described in Chapter 2, "Land Use, Zoning and Public Policy," including Local Law (LL) 145 of 2013 (LL145/2013), which requires all diesel carting trucks to implement Best Available Retrofit Technology (BART) such as diesel particulate traps or be equipped with a United States Environmental Protection Agency (EPA)-certified 2007 model year or later engine by January 1, 2020 and LL146 of 2013 (LL146/2013), which addresses citywide organics diversion. Finally, the operational expenses and operational efficiencies associated with the No Action condition and Proposed Action are estimated in order to evaluate their potential effect on the commercial carting industry's ability to operate effectively under the Proposed Action.

Similarly, the assessment of potential effects on commercial waste service customers describes the major industry sectors served by the carting industry (e.g., manufacturing, office, non-food retail, food retail, food services, and hotel) and evaluates the costs associated with waste removal services

in the existing condition, the No Action condition, and Proposed Action. The case study areas are utilized to provide contextual and local analysis of costs and potential socioeconomic effects at smaller geographies compared to the City overall. The analysis models waste generation volume by industry sector and the prices charged to businesses for waste removal services. In both the No Action condition and Proposed Action, the potential changes in customer pricing, as a function of additional carter expenses, are assessed to understand whether potential changes in customers' rates could jeopardize the financial viability of businesses (customers) or a subset of businesses.

EFFECT OF THE PROPOSED ACTION ON COMMERCIAL WASTE CARTERS

COMMERCIAL WASTE CARTERS—EXISTING CONDITION

This section describes the operational characteristics of the commercial carting industry. Currently, carters are able to collect waste from any business across the City, which achieves the basic goal of collecting the City's commercial waste; however, the system is inefficient. Nightly, lengthy collection routes extend across the City, with collection routes taking an average of 10 hours to complete. Based on routing data, dump ticket reporting and discussions with commercial carters, even with long routes, trucks do not necessarily fill to capacity, with trucks collecting approximately ½-ton at the low end to approximately 25 tons on the high end. On average, trucks fill to approximately 9 tons nightly.[8] Some Community Districts are served by 50 or more carters, resulting in overlapping truck trips with dozens of trucks servicing the same individual commercial blocks, resulting in noise and air pollution. Under the current regulatory framework, competition for customers is high, and carters compete with each other to provide customers the lowest price, and as a result, safety and customer service are often sacrificed.

Business Composition of the Carting Industry

The commercial carting industry serves every commercial business within the City, from standalone retail to large office buildings. According to BIC's 2017 Q2-Q4 customer register, there are approximately 100,000 commercial waste customers within the City.[9] Approximately 95 commercial carting companies service commercial customers within New York. Of those carters, 74 provided financial statements to BIC in 2015 (this covers approximately 78 percent of licensed carters, which service 95 percent of the commercial customers served by the carting industry).[10] These 74 carters collectively employ an estimated 2,600 workers based on employment reported by carters in the 2015 BIC Private Carter Financial Statements including an estimated 1,800 field workers, operating approximately 975 waste collection trucks.[11,12]

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[8] Analysis of BIC, 2018, Private Carter Routing Data and BIC, 2018, Private Carter Dump Tickets

[9] This dataset includes customer information reported by individual carters on a regular basis to BIC. The number of unique "customers" identified in the 2017 Q2-Q4 Carter Customer Register (these customers can also be understood conceptually as unique billing entities) is not linked to the number of commercial businesses serviced by carters, since in large office buildings carters may collect waste from multiple businesses but may only report the single building management company as the billing entity.

[10] For the purpose of analysis, these 74 carters which have reported financial data, and service approximately 95 percent of total commercial waste market based on number of customers were used to represent the costs associated with operation of the commercial carting industry.

[11] BIC, 2015, Private Carter Financial Statements

[12] Real employment within the industry is thus higher than the reported 2,600 workers since 21 commercial carters provided no financial reporting to BIC in 2015. It is more realistic to assume that employment

Of these 74 carters there are 50 carters considered small operators that each collect less than 1 percent of the commercial waste market, 16 carters considered medium operators that each collect between 1 and 3 percent of the commercial waste market, and 8 carters considered large operators that each collect more than 3 percent of the commercial waste market. Other carters beyond the 74 reporting carters either collect other types of waste (e.g., tires and grease) or did not accurately report revenues or expenses and are, therefore, uncounted within the 2015 Private Carter Financial Statements.

Carter Revenues

As self-reported by commercial carters in 2015 to BIC, during that year, the commercial carting industry reported generating approximately $566 million in gross revenue.[13,14] As the CWZ Program would only affect putrescible, recyclable and organic waste, other specialized waste streams would continue to be collected in the existing manner under existing City and State requirements, and are, therefore, not included in the commercial carter costs and revenues analysis. These excluded waste streams include construction and demolition (C&D), hazardous or radioactive waste, medical waste, electronic waste, textiles, yard waste (collected by landscapers), junk carter waste or one-time bulk waste services, grease, and paper that is collected for the purposes of shredding or destruction. Of the $566 million in revenue generated from commercial carters that collect waste covered under the CWZ Program, $445 million was generated in revenue from the collection of putrescible, organic, and recyclable waste, approximately 79 percent. The remaining $122 million in revenue that these carters generate is from collecting material that is excluded from the CWZ program and will remain unchanged.

Carter Expenses

The operation of the commercial carting industry requires carters to take on numerous operational expenses associated with the collection of waste (including commercial waste covered by the Proposed Action, and other waste streams not covered by the Proposed Action) within New York City. These costs must be offset by the revenue carters collect from commercial businesses for the commercial carting industry to remain viable. Currently, based on data self-reported by commercial carters to BIC, the commercial carting industry incurs an estimated $553 million in operational expenses, such as employee payroll, waste disposal, fleet maintenance, and other expenses such as garage rental and utilities (see **Table 3-1**).[15,16]

ranges from 2,500 to 3,000, however for the purposes this analysis the reported 2,600 workers was utilized as the basis for calculations presented within the DGEIS.

[13] BIC, 2015, Private Carter Financial Statements

[14] Commercial carter revenues as reported by BIC, 2015, Private Carter Financial Statements. Dollar values have been adjusted for inflation and are presented in 2018 dollars. Note that this may not reflect the total revenue collected by the commercial waste industry as approximately 5 percent of the carting market (by market share) is not captured in the data and those reporting to BIC are potentially underreporting revenues.

[15] BIC, 2015, Private Carter Financial Statements.

[16] BIC, 2015, Private Carter Financial Statements do not require carters to break out expenses by waste type; therefore, carter expenses also include expenses associated with collecting waste that the Proposed Action excludes, such as C&D debris, and medical waste.

Table 3-1
2015 Commercial Carters Operating Expenses

Expense	Cost[1]	Percent of Total Expenses[2]
Disposal Costs	$203,270,074	37
Operating Payroll	*$149,450,237*	*27*
Sales, General and Administrative Payroll	*$50,855,376*	*9*
Total Payroll	200,305,613	36
Truck and Equipment	$74,939,119	14
Other Expenses[3]	$74,733,006	14
Total	**$553,247,812[4]**	**100**

Notes:
[1] Dollar values have been adjusted for inflation and are presented in 2018 dollars.
[2] Due to rounding, totals may not add up to 100 percent.
[3] Other Expenses includes garage rental, utilities, insurance, office supplies, service vehicles, third-party labor, and other costs not associated with the day-to-day provision of commercial waste carting services.
[4] Total expense reporting comes from the 74 commercial carters which submitted reporting to BIC in the 2015 Private Carter Financial Statements. This accounts for approximately 78 percent of licensed carters operating within New York City, and 95 percent of the carting market in terms of customers.
Sources:
BIC, 2015, Private Carter Financial Statements

Disposal Costs

As shown in **Table 3-1,** disposal costs are the largest share of carter expenses. Annually, carters pay approximately $203 million (approximately 37 percent of total expenses) to dispose of commercial waste at waste transfer stations throughout New York City. Carters pay waste transfer stations to process and then transport waste outside of New York City for disposal.

Payroll

Payroll costs carters approximately $200 million per year, 36 percent of the total expense associated with the operation of the commercial carting industry. Operations payroll includes all payments to field workers employed by carters, including drivers, helpers, and support staff such as mechanics, dispatchers, and garage workers. Sales, general, and administrative payroll includes all payments to officers and administrative staff. NYSDOL Occupational Wage and QCEW data were used to estimate total industry employment and wages within the industry.[17]

In total, approximately 2,600 workers are employed by the 74 commercial carters that reported information to BIC in the 2015 Private Carter Financial Statements. Based on NYSDOL Occupational Wage data for the New York City Region, field staff make an estimated $64,010 per annum, company officers make an estimated $76,060 per annum, and administrative roles make an estimated $47,540 per annum.[18] For the purposes of the socioeconomic analysis, it is assumed that all employees working for commercial carters are paid at the wages identified above.

[17] NYSDOL, 2015-2017, Occupational Wages for New York City Region with comparisons from NYSDOL, 2015-2017, QCEW and NYSDOL, 2018 Prevailing Wage Schedule for Public Work

[18] NYSDOL, 2014-2017, Occupational Wages for New York City Region. Wages have been adjusted for inflation and are presented in 2018 dollars.

Truck and Equipment

Trucks and equipment cost carters approximately $75 million annually, representing approximately 14 percent of total expenses. This cost includes the purchase and maintenance of trucks and other equipment necessary to perform waste collection services. As reported by BIC 2015 Private Carter Financial Statements covering the 74 reporting carters, there are approximately 975 trucks within New York City's commercial carting fleet. The average age of a commercial waste truck is 12 years old.[19] New trucks cost approximately $300,000; however, the primary cost associated with operating the fleet is related to maintenance rather than the purchase of new equipment.[20]

Other Expenses

Other expenses, including garage rental, utilities, insurance, office supplies, service vehicles, and any third-party labor contracted by a carting company, cost approximately $75 million annually and represent approximately 14 percent of total expenses.[21]

While carters of varying sizes have differing expenses and break-even points, the carting industry overall generates approximately $553 million in annual operational expenses. Currently, as reported by carters to BIC in 2015, total revenues associated with commercial carting, including C&D and other excluded waste streams, totaled approximately $566 million. When compared with expenses, the industry generates operational profits of approximately $13 million per year.[22]

COMMERCIAL WASTE CARTERS—FUTURE WITHOUT PROPOSED ACTION

The No Action condition includes the current commercial waste industry and any regulatory changes to the industry expected by the Analysis Year of 2024, as described in Chapter 1, "Project Description."

As described in Chapter 2, "Land Use, Zoning and Public Policy," policies to be implemented in the No Action condition include, but are not limited to, an increased collection of organic and recyclable waste by commercial carters, retrofit of older collection trucks with modern engine technology per LL145/2013, and installation of side guards on all commercial carting vehicles per LL156/2015. Compliance with these regulatory changes in the No Action condition will increase the costs associated with commercial waste collection and will require substantial investments by the commercial carting industry, which will increase the costs of commercial waste carting services. Therefore, this section describes the anticipated changes to the commercial carting industry in the No Action condition and estimates the incremental operating cost to the industry.

Recycling and Organics Collection Requirements

The City launched a progressive recycling program in 1989 (LL19 of 1989 codified at New York City Administrative Code §16-306), which mandated recycling requirements for City residents, businesses, and institutions. The Citywide Recycling Program requires curbside recycling of designated recyclable materials, including paper, cardboard, metal, glass, and plastic (MGP) as well as other materials such as textiles. On February 5, 2016, the DSNY adopted new rules to allow for single stream collection of

[19] BIC, 2017, LL145 of 2013 Compliance Plan Reports

[20] BIC, 2015, Private Carter Financial Statements

[21] BIC, 2015, Private Carter Financial Statements

[22] Analysis assumes that commercial waste carters are accurately reporting revenues to BIC through annual Private Carter Financial Statements. However revenues reported to BIC by commercial carters may be underreported.

recycling (i.e., when all designated recyclable MGP and paper are placed in the same bags or bins by a business) and co-collection of recyclables (i.e., when all designated recyclable MGP is source separated from designated paper by the business, but a private carter places the source-separated materials into the same compartment of a waste carting truck). The intent of the new rule was to help make commercial recycling easier to manage and increase diversion of recyclables from landfills.

As seen in **Table 3-2** it is estimated that in the No Action condition 30 percent of commercial waste would be collected as recyclables (i.e., cardboard, paper, and MGP) and 4 percent of commercial waste would be collected as organics throughout the City under the No Action condition.[23] This reflects a slight increase from existing conditions in which an estimated 24 percent of commercial waste is collected as recyclables and 1 percent is collected as organics throughout the City. [24] This improved diversion is anticipated to come about due to the introduction of single-stream recycling, increased enforcement, and other policies and programs as discussed in Chapter 2, "Land Use, Zoning, and Public Policy".[25]

Table 3-2
No Action Condition Change in Diversion Rate

	Paper Cardboard MGP	Organics	Total Diversion
Existing Condition	24%	1%	25%
No Action Condition	30%	4%	34%
Change in Diversion Rate	**6%**	**3%**	**9%**

Sources:
SNY, 2018, Transfer Station and Recycling Processor Reports
DSNY, 2018, Private Operator Disposal System (PODS) Database

In order to reach the diversion rate anticipated in the No Action condition, carters would need to run an estimated 4 percent more collection routes and employ 4 percent more field employees to service the additional collection routes.[26] It is expected that in order to service the increased collection routes an estimated 39 additional trucks and approximately 72 additional employees would be required.

[23] Collection rate refers to the percentage of designated recyclables and organics in the system.

[24] Current waste stream capture rates are estimated through comparison of DSNY, 2018, Transfer Station and Recycling Processor Reports and DSNY, 2018, PODS Database with total waste streams based on a waste characterization model derived from Census industry employment in New York City and waste intensities from *CalRecycle, Sept. 2015, 2014 Generator-Based Characterization of Commercial Sector Disposal and Diversion in California*. It is estimated that increased enforcement and other City policies between the current year and the 2024 Analysis Year can increase capture rates by 15 percent for each waste stream compared to current conditions. It is assumed that at maximum no waste stream will reach a capture rate over 95 percent. With organics, the only organics material considered in the analysis is the organic material from the category of businesses covered by LL146 of 2013. The overall impact of increased enforcement is a potential increase in diversion by 9 percent in the No Action condition from existing conditions.

[25]The City estimates that approximately 250,000 tons of organic material is generated by the businesses specified in LL146 of 2013 if all businesses were designated and it included front and back-of-the-house material. Currently, the City has designated a portion of the businesses specified in LL146 and only back-of-the-house material, which amounts to a small amount of the organic material available in the waste stream. The No Action condition contemplates full designation of all businesses specified in LL146 and includes both front and back-of-house material.

[26] An estimated 4 percent increase in routes is attributed to differences in load weights of putrescible, recyclables, and organics loads. Recyclable and organic routes carry less material per drop-off than putrescible routes based

Further, additional operational expenses and administrative costs would increase the cost of operation associated with diversion in the No Action condition. As seen in **Table 3-3**, in total, it is anticipated that the increase in the rate of diversion in the No Action condition would cost approximately $15 million across the industry in the Analysis Year including the $1.2 million necessary to acquire the additional trucks required to complete the additional diversion routes in the No Action condition.

Table 3-3
Cost Associated with 9-Percent Increase in the Rate of Diversion in the No Action Condition

Expense	Cost
Disposal Costs	$- [1]
Operating Payroll	*$6,017,190*
Sales, General & Administration Payroll	*$2,047,547*
Total Payroll	$8,064,737
Truck and Equipment	$3,017,211[2]
Other Expenses	$3,008,912
Total	**$15,256,894**

Notes:
[1] It is assumed that the cost of disposing of commercial waste will remain constant as the total amount of waste collected remains constant in the No Action condition.
[2] The costs of trucks and equipment includes the expense associated with acquiring additional trucks to service expanded diversion routes in the No Action condition.
Sources:
Analysis of BIC, 2015, Private Carter Financial Statements
BIC, 2018, Private Carter Dump Tickets
Waste Characterization Model based on Census industry employment in New York City and waste intensities from CalRecycle, Sept. 2015, 2014 Generator-Based Characterization of Commercial Sector Disposal and Diversion in California

Local Law 145 of 2013

LL145/2013 requires commercial carters to modify all diesel waste collection truck engines older than Model Year 2007 to reduce their emissions. Non-compliant vehicles must have new engines installed or have engines retrofit with pre-approved BART emissions controls by 2020. While compliance with LL145/2013 is not fully reported, a majority of commercial carters have filed Compliance Plan Reports with BIC in 2017 providing insight into the industry's existing level of compliance and future plans for compliance by the 2020 deadline.[27]

Approximately 64 carters that fall under the scope of the CWZ Program submitted compliance data in 2017. As of summer 2017, approximately one third of the trucks that were reported to BIC were in compliance with LL145/2013.[28]

Based on reporting by commercial carters to BIC and the additional vehicles introduced as a result of increased diversion in the No Action condition discussed above, approximately 1,014 commercial carting trucks would be accounted for within New York City in the scope of this analysis. Based on carter reporting, as shown in **Table 3-4** under LL145/2013, the 975 existing

on BIC, 2018, Private Carter Dump Tickets. Thus, to service 9 percent more material as recyclables or organics instead of putrescible, an estimated 4 percent additional collection routes are needed.

[27] BIC, 2017, LL145/2013 Compliance Plan Reports provided by carters at the request of BIC.

[28] BIC, 2017 LL145/2013 Compliance Plan Reports provided by carters by request of BIC.

trucks are expected to become compliant utilizing the following compliance methods at the following rates: approximately 35 percent (approximately 341 trucks) are already compliant with LL145/2013; 22 percent (approximately 215 trucks) are anticipated to be replaced with new compliant trucks; 21 percent (approximately 205 trucks) would be retrofitted with BART; 16 percent (approximately 156 trucks) would be retrofitted with new engines; and 6 percent (approximately 59 trucks) would be removed from service. For the 39 added trucks due to the increased rate of diversion, it is assumed that they would be purchased new and therefore would be compliant with LL145/2013 (see **Table 3-4**).

Table 3-4
LL145/2013 Reported Compliance and Anticipated Cost

Compliance Method	Unit Replacement Cost	Count of Fleet[1]	Retrofit Rate[2,3]	Total LL145/2013 Cost	Annual LL145/2013 Cost[4]
Compliant	$-	341	35%	$-	$-
Replaced	$297,036	215	22%	$63,714,222	$6,371,422
BART	$13,500	205	21%	$2,764,125	$276,413
New Engines	$4,075	156	16%	$635,700	$63,570
Removed from Service	$(2,964)[5]	59	6%	$(173,394)	$(173,394)
Additional Diversion Trucks	$-	39	-	$-	$-
Total		**1,014**		**$66,940,653**	**$6,538,011**

Notes:
[1] Due to rounding the fleet count as presented above may not total 1,014.
[2] The retrofit rate is based on the LL145 of 2013 Carter Compliance Plan Reports and assesses the rate of LL145 of 2013 compliance of the existing truck fleet (975 trucks), and does not include trucks introduced as a result of increased diversion in the No Action condition.
[3] Due to rounding, the retrofit rate may not total 100 percent.
[4] Due to the high cost of acquiring additional equipment, it is assumed that these costs would be distributed over a period of 10 years.
[5] Vehicles removed from service are assumed to be sold for scrap at the identified rate.
Sources:
BIC, 2017, LL145 of 2013 Carter Compliance Plan Reports
BIC, 2018, LL145 of 2013 Carter Compliance Reports

Based on the reported compliance methods anticipated to be used by commercial carters to retrofit or replace vehicles per LL145/2013, the total anticipated costs for full fleet compliance is approximately $67 million or if equipment acquisition costs are distributed over the course of 10 years, approximately $6.5 million per annum.[29]

Local Law 56 of 2015

LL56/2015 requires commercial waste collection trucks to be equipped with side guards by 2020 in an effort to decrease the number of serious or fatal injuries that occur as a result of a result of pedestrians or cyclists being run over by the front or rear axles of carting trucks during a side impact collision. Unlike LL145/2013 where carters have provided information related to their intent to comply with the law, the number of vehicles already in compliance with LL56/2015 is unknown. Therefore, it is assumed that under the No Action condition, to be compliant with LL56/2015, the entire commercial carting fleet will have to be equipped with side guards. The purchase and installation of side guards is estimated at approximately $3,000 per vehicle, and

[29] BIC, 2017, LL145 of 2013 Carter Compliance Plan Reports.

these costs are anticipated to be distributed over 8 years.[30] The total cost of bringing the commercial carting fleet into compliance with LL56/2013 would require the retrofitting of the entire 1,014 vehicle fleet at a cost of approximately $3 million which totals approximately $380,346 per annum over the course of 8 years.

No Action Incremental Costs

In total, in the No Action condition, the commercial carting industry is expected to increase operational costs as a result of increased diversion by 4 percent, retrofitting of trucks to comply with new emissions requirements, and installation of side guards on all commercial carter trucks. As seen in **Table 3-5** these expenses are expected to total approximately $22 million per year assuming that costs associated with LL145/2013 are distributed over the course of 10 years and the costs associated with LL56/2015 over 8 years. Again, in addition to the costs associated with these policies in the No Action condition, carters are expected to acquire an additional 39 trucks, and employ approximately 72 additional staff to account for the increased routes as a result of the increased rate in diversion.[31]

Table 3-5
Additional Carter Expenses in the No Action Condition

No Action Policy	Annual Expense
LL145/2013	$6,538,011[1]
LL56/2015	$380,346[2]
Diversion	$15,256,894
Total Expense	**$22,175,250**

Notes:
[1] The costs of LL145/2013 are anticipated to be distributed over the course of 10 years. This 10-year span is meant to account for the 3 years between the LL145/2013 Compliance Plan Report year (2017) and the final compliance date according to legislation (2020) plus an additional 7 years from the date of last truck purchase due to the normal depreciable life of a truck, which is 7 years.
[2] The costs of LL56/2015 are anticipated to be distributed over the course of 8 years. This 8-year span is meant to account for the duration between the initiation of the policy (2015) and the final compliance date according to legislation (2023).
Sources:
BIC, 2017, LL145 of 2013 Carter Compliance Plan Reports
BIC, 2018, LL145 of 2013 Carter Compliance Reports

In total, as seen in **Table 3-6**, as a result of the additional annual expenses commercial carters will incur in the No Action condition, the cost of providing commercial carting services in the No Action condition is anticipated to rise by approximately 4 percent ($22 million), from approximately $553 million to $575 million.

[30] New York City Office of the Mayor, Feb. 9, 2015, "City Begins Installing Truck Sideguard to Protect Pedestrians and Cyclists"

[31] Increased diversion of organic and recyclable material in the No Action condition is not anticipated to result in additional revenues to commercial carters.

Table 3-6
Commercial Carter Expenses in the No Action Condition

Expense Category	Total Expense		No Action Increment	
	Existing Condition[1]	No Action Condition	Cost	Percent Change
Disposal Costs	$203,270,074	$203,270,074	$-	0%
Operating Payroll	*$149,450,238*	*$155,467,428*	*$6,017,190*	*4%*
Sales, General & Administration Payroll	*$50,855,376*	*$52,902,923*	*$2,047,547*	*4%*
Total Payroll	$200,305,614	$208,370,351	$8,064,737	4%
Truck and Equipment	$74,939,120	$86,040,720	$11,101,600	15%
Other Expenses	$74,733,006	$77,741,918	$3,008,912	4%
Total	**$553,247,814**	**$575,423,064**	**$22,175,250**	**4%**

Notes:
[1] Dollar values have been adjusted for inflation and are presented in 2018 dollars.
Sources:
BIC, 2015, Private Carter Financial Statements
BIC, 2017, LL145 of 2013 Carter Compliance Plan Reports
BIC, 2018, LL145 of 2013 Carter Compliance Reports

The expenses associated with operation in the No Action condition as a result of compliance with existing Local Laws and increased diversion rates may be too large for some commercial carters to bear without increasing the price of waste collection services. However, if the costs are too great it is anticipated that some commercial carters would exit the market or cease operations in the No Action condition.

Secondary Employment Market

In the No Action condition, as seen in **Table 3-2**, it is anticipated that diversion would increase by approximately 9 percent over the existing rate of diversion. In response to this increased rate of diversion in the No Action condition, the secondary recycling market would require additional sorting capacity, and therefore is expected to require additional workers to manage and sort the additional diverted waste. The NYSDOL QCEW reports approximately 400 employees working in materials recovery facilities in New York City.[32] With a net increase in diversion rate of 9 percent over the existing condition, it is anticipated that approximately 139 additional jobs could be generated in the secondary market under the No Action condition.

COMMERCIAL WASTE CARTERS—FUTURE WITH PROPOSED ACTION

The Proposed Action condition evaluates the changes to socioeconomic conditions of commercial waste carters as a result of the implementation of the Proposed Action.

Under the Proposed Action, the City of New York would implement a zoned commercial waste collection system throughout the five boroughs. Under this system, each of the 20 zones would have three to five commercial carters collecting waste from commercial customers within the specific zone, with 14 zones having 3 commercial carters, 4 zones having 4 commercial carters and 2 zones having 5 commercial carters operating within each zone. In total, up to 68 contracts would be awarded for commercial waste collection within New York City. With multiple carters allowed to operate within a zone, there are opportunities for various sized carters to win zone contracts. Smaller carters may benefit from a strong local presence in a given zone and knowledge of a particular neighborhood in the evaluation of proposals. The CWZ Program also accounts for

[32] DSNY, 2016, Private Carting Study

the current market structure and gives carters of all sizes the opportunity to compete in the new system. Additionally, the City would promote opportunities for an array of different carters by accepting proposals submitted by a consortium of carters or organized through a broker and by allowing subcontracting in certain circumstances in order to ensure commercial waste collection is done effectively and efficiently based on the criteria outlined in the Implementation Plan.

However even if, despite numerous opportunities for carters to engage in competitive bidding, carters are unable to submit competitive bids in response to the CWZ Request for Proposals (RFP), as the Proposed Action only affects the collection of certain commercial waste streams (i.e., putrescible, recyclable and organic waste), commercial carters that do not win bids to collect commercial waste under the Proposed Action may elect to collect other waste streams such as C&D.

In order to receive a zone to collect waste, in response to a RFP to be developed in coordination with carters and businesses, commercial carters would prepare and submit competitive proposals to DSNY for review. Proposals would be evaluated on criteria outlined in the RFP that would determine which carters provide the best overall value consistent with program goals and service requirements. Each proposal would be evaluated based on designated criteria to determine an overall weighted score of each proposal, with pricing accounting for at least 40 percent of the overall weighted score. In addition to price, the RFP is anticipated to include a number of requirements that carters would implement in order to be demonstrate compliance with applicable policies. As complying with these additional policies would be required for commercial carters to receive a service contract under the CWZ Program, they are considered part of the Proposed Action and, therefore, must be analyzed for the purposes of environmental review.

Operational Expenses

Expenses under the Proposed Action include the installation of Global Positioning Systems (GPS) devices on all commercial carter trucks, an enhanced health and safety program, a City Administration fee, free waste assessments, and the establishment of a customer hotline and call center to respond to customer concerns. In addition to these additional costs associated with the Proposed Action, it is anticipated that the rate of commercial waste diversion would increase (due to increased recycling and organics collections) under the Proposed Action, adding to the costs associated with complying with the CWZ Program.

In addition to the additional costs associated with the Proposed Action, the Proposed Action is expected to provide expense savings as a result of zone route efficiencies (ZRE) which would reduce the overlapping of routes and time necessary to complete a route. These efficiencies are expected to reduce the total expense associated with truck operations, including the amount of gas purchased by carters, truck maintenance, and payroll associated with long and inefficient routing.

Under the Proposed Action, carters that win zone contracts would be obligated to meet certain contractual requirements aligned with the City's program goals and objectives. As stated in Chapter 1, "Project Description," the overall goal of the CWZ Program would be to reduce the existing overlap of commercial carting routes and reduce truck traffic and its emissions, and enhance worker and pedestrian safety, transparency in contracting, and customer service. Meeting this goal would require operational changes for carters awarded service contracts, including additional costs associated with the effort to increase the amount of material that is to be diverted from the commercial waste stream, as well as savings associated with ZRE as a result of the Proposed Action.

Diversion

Similar to the No Action condition, under the Proposed Action commercial carters are anticipated to increase the rate of material diverted from the commercial waste stream destined for disposal. As

shown in **Table 3-7** it is anticipated that as a result of the Proposed Action, the rate of material diverted would increase to 44 percent as a result of further polices to be incorporated into the solicitation process, including the requirement that all carters submit a zero waste plan, which would further incentivize diversion of commercial waste in the Proposed Action. In total these diversion policies would result in an increase in diversion by approximately 10 percent over the No Action condition.

Table 3-7
Proposed Action Anticipated Change in Diversion Rate

	Paper Cardboard MGP	Organics	Total Diversion[1]
Existing Condition	24%	1%	25%
No Action Condition	30%	4%	34%
Proposed Action Diversion Rate	38%	6%	44%
Change in Diversion Rate between No Action condition and Proposed Action	**8%**	**2%**	**10%**

Notes:
1 Due to rounding percentages may not equal 100 percent
Sources:
DSNY, 2018, Transfer Station and Recycling Processor Reports
DSNY, 2018, PODS Database

In order to meet this increased rate of diversion under the Proposed Action, commercial carters are expected to operate 5.7 percent more routes as compared to the No Action condition (9.7 percent more routes than in the existing condition) in order to collect the additional diverted material. As a result the carting industry is expected to hire additional employees and purchase additional vehicles to service the additional routes necessary to collect the additional diverted material. In total, increasing the rate of diversion by 5.7 percent over the No Action condition would require the employment of an additional 103 field workers, and the purchase of 56 additional trucks over the employment and equipment necessary to operate in the No Action condition. As seen in **Table 3-8**, the total costs anticipated with the increased rate of diversion are approximately $34 million.

Table 3-8
Cost Associated with Percent Increase in the Rate of Diversion in the Proposed Action

Expense	Cost
Disposal Costs[1]	$- [1]
Operating Payroll	*$14,496,673*
Sales, General & Administration	*$4,932,971*
Total Payroll	$19,429,645
Truck and Equipment	$7,269,095
Other Expenses	$7,249,102
Total	**$33,947,841**

Notes:
[1] It is assumed that the cost of disposing of all commercial waste will remain constant as the total amount of waste collected (including putrescible, recyclable and organic) remains constant in the Proposed Action; therefore the cost of disposal is not anticipated to increase as a result of the increased rate of diversion as a result of the proposed action.
Sources:
Analysis of:
BIC, 2015, Private Carter Financial Statements
BIC, 2018, Private Carter Dump Tickets
Waste Characterization Model based on Census industry employment in New York City and waste intensities from CalRecycle, Sept. 2015, 2014 Generator-Based Characterization of Commercial Sector Disposal and Diversion in California

Zone Routing Efficiencies (ZRE)

As stated above, one of the goals of the Proposed Action is to increase the efficiency of the commercial carting industry by reducing the amount of overlapping routes and reducing the time necessary to collect the same amount of material. Private carter routing data from 2018 indicates that, in the existing condition, the average route takes just under 10 hours to complete, while, in the Proposed Action, due to the proximity of customers in the zoned system the average route is anticipated to take approximately 7 hours to complete.[33]

On average, the ZREs introduced as part of the Proposed Action are anticipated to reduce the expenses associated with the operation of the commercial carting industry by approximately 31 percent. This includes reductions to the cost of gas, equipment, and maintenance. Further, it is anticipated that due to ZRE the expense associated with field worker payroll would be reduced by approximately 11 percent as fewer routes and employees would be necessary to collect commercial waste within New York City.[34] It is anticipated that the operational expenses associated with the commercial carting industry under the Proposed Action before ZREs are implemented total approximately $594 million per year (see **Table 3-9**).[35]

Table 3-9
Operational Expense Reduction as a Result of Zone Routing Efficiencies Introduced by the CWZ Program

Expense	Pre-ZRE Expense	ZRE Reduction	Post-ZRE Expense
Disposal Costs	$203,270,074	$-[1]	$203,270,074
Operating Payroll	*$163,946,911*	*$(18,526,001)*	*$145,420,910*
Sales, General & Administration Payroll	*$55,788,347*	*$-*	*$55,788,347*
Total Payroll	$219,735,259	$(18,526,001)	$201,209,258
Truck and Equipment	$89,126,571	$(27,540,110)	$61,586,461
Other Expenses	$81,982,108	$-	$81,982,108
Total	**$594,114,011**	**$(46,066,111)**	**$548,047,900**

Notes:
[1] It is assumed that the cost of disposing of all commercial waste will not be impacted by routing efficiencies as the total amount of waste collected remains constant. .
Sources:
BIC, 2015, Private Carter Financial Statements
BIC, 2018 Private Carter Routing Data

As seen in **Table 3-9**, as a result of the CWZ Program and the application of ZREs, carter operating expenses are anticipated to be reduced to approximately $548 million per year, a reduction of

[33] Analysis of BIC, 2018, Private Carter Routing Data

[34] The projected decrease in employee payroll generated by route efficiencies does not necessarily equate to a reduction in workers' annual wages. There are numerous factors that would influence potential changes in workers' wages, including for example the nature of employment contracts, compensation for overtime, and accounting for the additional effort required for an individual worker to collect a similar amount of waste in a shorter amount of time.

[35] **Table 3-8** summarized the total cost of commercial carting operations in the Proposed Action condition before ZRE have been applied to the carter expenses. This is the sum of the operational costs presented in the existing condition plus the costs associated with compliance with LL145/2013, and LL56/2015 under the No Action condition, as well as the Proposed Action operational condition costs associated with a 9.7 percent increase in routes due to increased diversion over the existing condition.

approximately $46 million over pre-ZRE operations. Due to more efficient routing and loading as a result of ZRE, the commercial carting industry would require less payroll and fewer trucks as compared to the No Action condition. Under the Proposed Action, the commercial carting industry would require an estimated fleet of 739 trucks, and employ and estimated 1,751 field staff in order to collect commercial putrescible waste, recyclables, and organics within New York City.

Additional Proposed Action Expenses

In addition to the operational expenses associated with the Proposed Action identified above, the Proposed Action would include requirements for commercial carters to purchase additional equipment, such as GPS units, as well as provide additional services to commercial carting customers, including free waste assessments, and dedicated customer hotlines. These additional equipment purchases and the provision of additional services are anticipated to add additional expenses to the operation of the commercial carting industry, which would not be assessed on the industry in the No Action condition. In total these additional equipment expenses represent approximately 2 percent of total Proposed Action operating expenses.

GPS Units

Compliance with the CWZ Program would require the commercial carting industry to add GPS units to all trucks used to collect commercial waste. GPS units allows carters to better track vehicles and help improve route performance. For a conservative approach, since existing information on GPS unit utilization is unavailable, it is assumed that no trucks currently have these technologies and that GPS devices would need to be installed on all approximately 739 commercial carting vehicles in the Proposed Action. GPS devices range in cost from $50 to $400 depending on the device.[36] In addition to these costs, GPS data management costs approximately $240 per truck per year.[37] In order to calculate this cost the average price for adequate GPS equipment ($225) was used to determine the added cost per vehicle in the industry.

As seen in **Table 3-10**, based on the unit price of $225 per GPS unit, and the $240 annual data management fee, the total cost of bringing 739 commercial carting vehicles into compliance with the requirements of the CWZ Program would cost approximately $343,670 in the Analysis Year, with the $177,378 GPS data service fee assessed every year after.

Table 3-10
Proposed Action Cost of GPS Units and GPS Data Service

Equipment	Unit Cost	Compliance Cost[1]
GPS Units	$225	$166,292
GPS Data Service	$240	$177,378
Total		**$343,670**

Notes:
[1] Assumes a commercial carting fleet size of approximately 739 vehicles.
Sources:
Assessment of multiple GPS service provider companies on the market.

Enhanced Health and Safety Program

As described in Chapter 1, "Project Description," one of the goals of the CWZ Program is to improve training and safety standards to make the industry safer for workers and the public. Under

[36] Review of GPS device costs in the market

[37] Review of GPS service costs in the market

the Proposed Action, commercial carters would be required to implement an enhanced health and safety program, which would include the purchase of personal protective equipment (PPE), including cut-resistant gloves, safety vests, and safety glasses for all commercial waste field employees, and biannual safety training for all employees. For the purposes of this analysis, it is assumed that all carters are expected to purchase new PPE for all employees as a result of the Proposed Action and would provide safety training to all staff during the 2024 Analysis Year. It is anticipated that the annual impact of PPE and safety training in future years would be lower as compared to the 2024 Analysis Year.

Safety training includes the cost associated with paying to provide training for commercial carting staff, as well as the payroll expense associated with paying staff to participate in the training program. As outlined in the Implementation Plan, health and safety training is anticipated to take approximately 16 hours for workers to complete. Per employee, safety training costs are approximately $300 (not including wages), with wage compensation for the safety course costing approximately $466 per field staff.

Post-ZRE field employment under the Proposed Action would total approximately 1,751 workers. As seen in **Table 3-11**, the total cost of PPE as a result of the Proposed Action would be approximately $1 million.[38] In addition, the cost of safety training for all field employees in the 2024 Analysis Year (including fees and wages) would be approximately $1.3 million. In total, in the 2024 Analysis Year, the cost of an enhanced health and safety program in the Proposed Action would total approximately $2.3 million.

Table 3-11
Proposed Action Cost of Health and Saftey Program

Expense	Unit Cost	Compliance Cost[1]
Personal Protective Equipment	$580	$1,015,853
Safety Training (Fee)[2]	$300	$525,441
Safety Training (Wages)	$466	$815,660
Total		**$2,356,953**

Notes:
[1] Assumes approximately 1,751 field employees are employed by the commercial waste industry in the 2024 Analysis Year.
[2] Fee is the per-employee cost paid to a third-party to provide safety training.
Sources:
BIC, 2015, Private Carter Financial Statements
NYSDOL, 2015-2017, Occupational Wages for New York City Region
Market research on PPE equipment and safety training fees.

City Administrative Fee

As part of the Proposed Action, DSNY would staff a new Division of Commercial Waste to administer the CWZ Program. In order to recover the costs associated with oversight of the CWZ Program, DSNY would levy an administrative fee on commercial carters operating under the CWZ Program. This administrative fee is anticipated to total no more than 1 percent of commercial carters gross operating revenues.

[38] The unit cost for PPE of $580 per employee is estimated based on purchase costs for cut-resistant gloves, latex/nitrile gloves, reflective jackets, puncture-proof work boots, safety glasses, and ear plugs for all field staff based on market price research.

Free Waste Assessments for Customers

In an effort to increase the transparency of the commercial waste carting industry, as part of the Proposed Action, commercial carters would be required to provide free third-party waste assessments to customers. While free waste-assessments would occur in the transition period before full implementation of the CWZ Program, in the 2024 Analysis Year, the cost of providing waste assessments would be a cost directly incurred by carters as a result of the Proposed Action and is therefore included in this analysis. Based on the number of commercial carting customers in New York City (approximately 100,000) and the assumption that one-quarter of those customers would request assessment services, within the transition period, approximately seven full-time staff would need to be hired in order to complete free waste assessments by the 2024 Analysis Year.[39] In total, based on the additional cost of employing these waste assessors, it is anticipated that third-party waste assessments would cost commercial carters approximately $1.4 million by the 2024 Analysis Year. [40]

Customer Hotline and Call Center

As stated in Chapter 1, "Project Description," one of the goals of the CWZ Program is to strengthen customer service standards and establish accountability. As part of the implementation of the Proposed Action, commercial carters bidding on and subsequently operating within commercial carting zones would be required to establish a call center to assist customers to resolve issues such as missed pickups or late payments. It is anticipated that, in order to provide these hotline and call center services, all commercial carters would need to employ additional office staff to answer calls and assist customers, as the number of carters that include such service under the existing condition is not known. It is anticipated that, under the Proposed Action, hotline employees would work regular 8-hour shifts, 6-days-a-week at a rate of $15 per hour. In total, in order for the carting industry to have a sufficient number of call center employees to adequately service all commercial carting customers within New York City (approximately 100,000), the commercial carting industry is expected to employ approximately 73 additional staff, a cost of approximately $3.4 million per annum.

Anticipated Expenses as a Result of the CWZ Program

As shown in **Table 3-12**, the additional operating expenses associated with the implementation of the Proposed Action would total approximately $13 million in the 2024 Analysis Year. After applying the efficiencies associated with the Proposed Action to the cost of operation and the additional costs associated with the Proposed Action, the total operating expenses of the commercial carting industry are anticipated to be approximately $561 million in the 2024 Analysis Year.

[39] BIC, 2017 Q2-Q4, Private Carter Customer Register.

[40] Assumes employees can conduct, on average, seven assessments per day, work 8-hour shifts 5 days a week, and are paid $100 per hour to conduct waste assessments.

Table 3-12
Total Anticipated Expenses to Commercial Carting Operations as a Result of the CWZ Program

Expense Category	Existing Condition	No Action Condition	Proposed Action Post-ZRE Operational Expense	Additional Proposed Action Expenses	Total Proposed Action Expenses
Disposal Costs	$203,270,074	$203,270,074	$203,270,074	$- [1]	$203,270,074
Operating Payroll	*$149,450,238*	*$155,467,428*	*$145,420,910*	*$815,660*	*$146,236,570*
Sales, General & Administration (SGA) Payroll	*$50,855,376*	*$52,902,923*	*$55,788,347*	*$4,855,050*	*$60,643,397*
Total Payroll	$200,305,614	$208,370,351	$201,209,258	$5,670,710	$206,879,967
Truck and Equipment	$74,939,120	$86,040,720	$61,586,461	$1,182,145	$62,768,606
Other Expenses	$74,733,006	$77,741,918	$81,982,108	$6,366,506	$88,348,613
Total	**$553,247,814**	**$575,423,064**	**$548,047,900**	**$13,219,360**	**$561,267,260**

Notes:
[1] It is assumed that the cost of disposing of all commercial waste will remain constant as the total amount of waste collected (including putrescible, recyclable and organic) remains constant in the Proposed Action; therefore the cost of disposal is not anticipated to increase as a result of the increased rate of diversion as a result of the proposed action.

Sources:
BIC, 2015, Private Carter Financial Statements
Previous Analyses as Indicated in this Chapter.

Compared to the operational expenses found in the No Action condition ($575 million), operational expenses for the commercial carting industry are anticipated to decrease as a result of the ZRE introduced as part of the CWZ Program as less resources are needed to service customers as a result of more efficient routes across the industry. As seen in **Table 3-13**, the total operational costs associated with commercial waste carting in the Proposed Action would total approximately $561 million in the 2024 Analysis Year. As compared to the No Action condition, the Proposed Action would reduce total carter operational expenses by approximately 2 percent, including a reduction in the total expense associated with trucks and equipment of approximately 27 percent, a reduction in operational payroll by approximately 3 percent, an increase in SGA payroll by approximately 5 percent, and an increase in other expenses by approximately 14 percent.

Table 3-13
Change in Commercial Carter Operational Expenses as a Result of the CWZ Program

Expense Category	Existing Condition	No Action Condition	Proposed Action	Change Between Existing Condition and Proposed Action		Change Between No Action Condition and Proposed Action	
				Count	Percent	Count	Percent
Disposal Costs	$203,270,074	$203,270,074	$203,270,074	$-	0%	$-	0%
Operating Payroll	*$149,450,238*	*$155,467,428*	*$151,091,620*	$(3,213,668)	-2%	$(9,230,858)	-6%
Sales, General & Administration Payroll	*$50,855,376*	*$52,902,923*	*$55,788,347*	*$9,788,021*	*19%*	*$7,740,474*	*15%*
Total Payroll	$200,305,614	$208,370,351	$206,879,967	*$6,574,353*	*3%*	*($1,490,384)*	*-1%*
Truck and Equipment	$74,939,120	$86,040,720	$62,768,606	$(12,170,514)	-16%	$(23,272,115)	-27%
Other Expenses	$74,733,006	$77,741,918	$88,348,613	$13,615,607	18%	$10,606,695	14%
Total	**$553,247,814**	**$575,423,064**	**$561,267,260**	$8,019,446	1%	$(14,155,804)	-2%

Sources:
BIC, 2015, Private Carter Financial Statements
Previous Analyses as Indicated in this Chapter.

As seen in **Table 3-13**, compared to the No Action condition, the Proposed Action expenses associated with trucks and equipment would be reduced by approximately 27 percent, and payroll expenses would decrease by 1 percent. Despite the requirements to purchase additional GPS and personal safety equipment in the Proposed Action, commercial carters are expected to have lower expenses as a result of zoning efficiencies and the reduction in trucks necessary to collect commercial waste in New York City. As seen in **Table 3-14**, in the Proposed Action, it is anticipated that approximately 739 trucks would be required to effectively and efficiently collect commercial waste within New York City, a reduction of approximately 275 vehicles compared to the No Action condition (in which it is anticipated a total of 1,014 vehicles would be required to collect a similar amount of waste).

Table 3-14
Changes to Trucks as a Result of the CWZ Program[1]

Unit	Existing Condition	No Action Condition	Proposed Action	Change Between Existing Condition and Proposed Action		Change Between No Action and Proposed Action	
				Count	Percent	Count	Percent
Trucks	975[1]	1,014	739	(236)	-24%	(275)	-27%

Notes:
[1] Based on 74 reporting carting companies, representing 95% of the commercial waste carting market in terms of customers.
Sources:
BIC, 2015, Private Carter Financial Statements
NYSDOL, 2015-2017, Occupational Wages for New York City Region
Previous Analyses as Indicated in this Chapter.

The reduction in operational expenditures in the Proposed Action is primarily the result of operational efficiencies associated with the consolidated and efficient routing of commercial carters under the CWZ Program. As seen **in Table 3-13**, compared to the No Action condition, the Proposed Action has an approximately 1 percent reduction in payroll expenses as a result of the CWZ Program. This reduction is the result of the lower level of employment necessary to efficiently service commercial businesses in the Proposed Action. As seen in **Table 3-15**, in the Proposed Action, it is anticipated that approximately 2,631 workers would be employed by the commercial carting industry, approximately 41 fewer total employees than would be required in the No Action condition (2,672).

Table 3-15
Changes to Employment as a Result of the Proposed Action[1]

Unit	Existing Condition	No Action Condition	Proposed Action	Change Between Existing Condition and Proposed Action		Change Between No Action and Proposed Action	
				Count	Percent	Count	Percent
Field Employees	1,800	1,872	1,751	(49)	-3%	(121)	-6%
Office Employees	800	800	880	80	10%	80	10%
Total Employment	2,600	2,672	2,631	31	1%	(41)	-2%

Notes:
[1] Employment calculations are based on carter-reported employment from BIC 2015, Private Carter Financial Statements, with 74 carters responding. Exact employment may differ and this could change the total employment count, however as adjustments made in the No Action condition and Proposed Action are proportional adjustments the rates of change between the existing, No Action condition and Proposed Action would remain constant.

Sources:
BIC, 2015, Private Carter Financial Statements
NYSDOL, 2015-2017, Occupational Wages for New York City Region
Previous Analyses as Indicated in this Chapter.

Proposed Action Secondary Employment Market

As a result of the Proposed Action, the commercial carting industry serving New York City would require approximately 121 fewer field employees to collect commercial waste than in the No Action condition. While these jobs would no longer be in the traditional commercial carting industry, it is likely that, as a result of the CWZ Program, additional secondary employment opportunities would open up to workers with previous experience in commercial waste management. The rate of diverted material is anticipated to increase by 19 percent under the Proposed Action from the existing condition; therefore, it is anticipated that the secondary sorting market would require a requisite increase in employment in order to sort and process the additional divertible waste collected. The NYSDOL QCEW reports approximately 400 employees working in materials recovery facilities in New York City. With a net increase in diversion rate of 19 percent over the existing condition, it is anticipated that approximately 304 additional jobs could be generated in the secondary market under the Proposed Action, an increase of approximately 165 jobs over the potential employment from the secondary market in the No Action condition.

EFFECTS OF THE PROPOSED ACTION ON COMMERCIAL WASTE CUSTOMERS

The Proposed Action would change the operational characteristics of the commercial carting industry with the intent of creating a more efficient and transparent carting industry, which is organized more efficiently and provides a higher level of service to commercial carting customers (commercial businesses). Changes to the commercial waste system, therefore, have the potential

to affect businesses that utilize commercial waste carting services. The changes to commercial carting services as a result of the Proposed Action are analyzed in this section to determine whether the cost of service associated with commercial waste collection would increase to a level where the service would be unaffordable to specific categories of commercial waste generators, or waste generators within specific neighborhoods. Commercial waste generators include all private businesses within the City, such as restaurants, commercial offices, manufacturing businesses, hotels and retail stores. Waste from institutional uses, such as museums, and schools, as well as households and public facilities, is collected by DSNY and would not be affected by the Proposed Action. Further, as described earlier in this Chapter, the CWZ Program excludes other waste streams including C&D, hazardous or radioactive waste, medical waste, electronic waste, textiles, yard waste (collected by landscapers), junk carter waste or one-time bulk waste services, grease, and paper that is collected for the purposes of shredding or destruction.

COMMERCIAL WASTE CUSTOMERS—EXISTING CONDITION

In the existing condition, private businesses contract with commercial carters to remove waste on a regular schedule with fixed-rate pricing based on the weight or volume of waste collected. While individual businesses negotiate the price with carters, removal costs cannot exceed a price cap imposed by BIC. This cap can be adjusted every two years to reflect external influences on the carting industry, and to adjust for inflation. Most recently, the price cap was adjusted in August 2018, and the current price cap for waste removal is $13.62 per 100 lbs. of waste and $20.76 per cubic yard (cu. yd.) of waste. BIC Carter Customer Register data and discussions with carters and commercial businesses suggest that most businesses in New York City pay a rate lower than the ceiling rate. Based on BIC, 2017 Q2-Q4, Private Carter Customer Register data this analysis models commercial carting costs using the median rate of $10.00 per 100 lbs. of commercial waste.[41]

As different industries produce varying amounts of waste, waste generation and cost models based on reported employment were developed to determine (1) the amount of waste produced within a specific geographic area and (2) the total and average cost of waste removal services for businesses.[42] Data collected from the Longitudinal Employer-Household Dynamics (LEHD) database (a product of the United States Census Bureau) and supplemented with data provided by Esri Business Analysist was used for the basis of the waste generation model. For the purpose of the analysis, employment reported for a range of North American Industry Classification System (NAICS) categories were combined to form a set of specific use categories. For example, businesses and employment counts reported for the Information (NAICS 51); Finance and Insurance (NAICS 52); Real Estate and Leasing (NAICS 53); Professional, Scientific, and Technical Services (NAICS 54); Management of Companies and Enterprises (NAICS 55); Administration and Support (NAICS 56); and Health Care and Social Assistance (NAICS 62) sectors were assumed to be the primary occupants of office space and are, therefore, assumed to compose the office industry sector. Overall, the analysis included manufacturing, office, non-food retail, food retail, food services, and hotel uses distinguished by the following NAICS codes:

- Manufacturing (NAICS codes 21, 22, 31, 32, 33,48, 49),

[41] BIC, 2017 Q2-Q4, Private Carter Customer Register

[42] The employee-based revenue model utilized assumes single stream waste production and does not break waste production down into specific waste streams (i.e. putrescible, recyclable, and organic).

- Office[43] (NAICS codes 51, 52, 53, 54, ,55, 56 and 62,),
- Non-food retail[44] (NAICS codes 42, 441, 442, 443, 444, 446, 447, 448, 451, 452, 453),
- Food-retail (NAICS code 445),
- Food Services: Restaurants and Bar (NAICS code 722), and
- Hotel (NAICS code 721).

Use-specific waste generation ratios, reported on a per-employee basis were then applied to estimate the amount of waste generated by the specific industry sectors. Commercial waste generation rates from the State of California "CalRecycle" program were utilized to model waste generation in New York City.[45] Waste generation ratios from the CalRecycle program were developed in 2014 and are based on a comprehensive review of waste generation and waste composition of commercial waste producers in California.[46] Waste generation ratios are expressed in pounds per employee and provide additional detail on waste composition.[47] **Table 3-16** shows the employee-based waste generation rates utilized in the analysis.

Table 3-16
Employment-based Waste Generation Rates

Industry Sector	Generation Rate[1]	
	Lbs. per Employee per Year	Tons per Employee per Year
Manufacturing[2]	3,540	1.77
Office[3]	2,747	1.37
Non-Food Retail	4,820	2.41
Food Retail	13,280	6.64
Food Services	5,820	2.91
Hotel	4,260	2.13

Notes:
[1] Waste generation rates assume that all waste is collected as a single stream and that diversion of waste would not result in a net decrease in waste produced, just a change to the compositional ratio of waste produced.
[2] The manufacturing rate used for analysis is calculated by averaging the waste generation rates of electronic, food, and all other manufacturing generation rates found in the CalRecycle model.
[3] The office rate used for analysis is calculating the average waste generation rate of management, professional, and health services found in the CalRecycle Model.
Sources:
CalRecycle, Sept 2015, 2014 Generator-Based Characterization of Commercial Sector Disposal and Diversion in California.

[43] Health care and social assistance were considered to be office waste steams as medical waste is collected by specialty carters, and the remaining waste produced is likely to be more similar to large offices than other industry categories.

[44] Wholesale businesses are included within non-food retail, as within New York City, these businesses are more similar in character to retail stores as opposed to larger industrial wholesalers found in other regions.

[45] *CEQR Technical Manual* Waste Generation Rates were not utilized in this analysis as they do not reflect updated waste composition and generation for New York City. In addition these rates do not accurately reflect the industry sectors analyzed for the purposes of the CWZ Program.

[46] CalRecycle, Sept. 2015, 2014 Generator-Based Characterization of Commercial Sector Disposal and Diversion in California

[47] Multiple alternative waste generation rate models were considered for analysis. The CalRecycle model was determined to be the most suitable for the purposes of this analysis.

In order to adjust the CalRecycle employment-based waste generation ratios for New York City, the total tonnage of waste produced within New York City, (approximately 3.3 million tons per year) was multiplied by the proportional composition of waste generation by industry sector modeled utilizing the unadjusted CalRecycle rates seen above. As shown in **Table 3-17**, New York City generates an estimated 3.3 million tons of commercial waste annually (including putrescible, recyclable, and organic waste). Approximately 51 percent of this waste (an estimated 1.7 million tons per year) is generated by office businesses, which employ approximately 67 percent of New York City's private sector employees. An estimated 16 percent is produced by food services (an estimated 522,781 tons per year), which employ approximately 10 percent of New York City's private sector employees. Approximately 15 percent of commercial waste (an estimated 488,383 tons per year) is produced by non-food retail, employing approximately 21 percent of New York City's private sector employment.

Table 3-17
New York City Commercial Waste Generation

	Businesses		Employment		Waste Generation	
Industry Sector	**Count**	**Percent**	**Count**	**Percent**	**Tons per Year[1]**	**Percent of Total Waste Generated**
Manufacturing	12,874	6%	210,608	8%	254,810	8%
Office	110,288	55%	1,806,201	67%	1,695,757	51%
Non-Food Retail	42,761	21%	296,466	11%	488,383	15%
Food Retail	7,122	4%	51,969	2%	235,873	7%
Food Services	25,629	13%	262,819	10%	522,781	16%
Hotel	1,389	1%	75,091	3%	109,330	3%
Total	**200,063[2]**	**100%**	**2,703,154**	**100%**	**3,306,934**	**100%**

Note:
1 New York City waste generation by industry sector was normalized to reflect the known waste production rate within New York City. The CalRecycle waste generation by industry sector was calculated and then applied proportionally to the New York City waste generation total.
2 The approximately 200,000 total businesses includes all unique commercial businesses within the six identified NAICS industry sector codes (as reported by Esri Business Analyst). Note that the 100,000 unique customers listed in the BIC customer registry can include multiple commercial businesses.
Sources:
U.S. Census Bureau, 2018, LEHD Origin-Destination Employment Statistics (2002-2015)
Esri Business Analyst Infogroup, 2018
CalRecycle, Sept. 2015, 2014 Generator-Based Characterization of Commercial Sector Disposal and Diversion in California
DSNY, 2015-2017, Transfer Station and Recycling Processor Reports
DSNY, 2016, Private Carter Surveys

As shown in **Table 3-18**, utilizing the modeled waste generation estimates for New York City from **Table 3-17** and applying the median reported rate of $10.00 per 100 lbs. of commercial waste results in a total maximum cost for commercial carting services across New York City of approximately $661 million per year.

Table 3-18
New York City Annual Carting Costs

Industry Sector	Tons per Year[1]	Annual Carting Cost[2,3]
Manufacturing	254,810	$50,962,074
Office	1,695,757	$339,151,472
Non-Food Retail	488,383	$97,676,534
Food Retail	235,873	$47,174,643
Food Services	522,781	$104,556,128
Hotel	109,330	$21,865,936
Total	**3,306,934**	**$661,386,787**

Notes:
[1] New York City waste generation by industry sector was normalized to reflect the known waste production rate within New York City. The CalRecycle waste generation by industry sector was calculated and then applied proportionally to the New York City waste generation total.
[2] For the purposes of this analysis, it is assumed that all commercial businesses pay the median reported rate of $10.00 per 100 lbs. of waste.
[3] For the purposes of consistent analysis, it is assumed that all waste is collected and measured by weight and not by the cubic yard.
Sources:
U.S. Census Bureau, 2018, LEHD Origin-Destination Employment Statistics (2002-2015)
Esri Business Analyst Infogroup, 2018
CalRecycle, Sept. 2015, 2014 Generator-Based Characterization of Commercial Sector Disposal and Diversion in California
DSNY, 2015-2017, Transfer Station and Recycling Processor Reports
DSNY, 2016, Private Carter Surveys

As detailed in **Tables 3-17 and 3-18,** in total, New York City is home to approximately 200,000 unique commercial businesses within the six identified industry sectors, which combined incur an estimated $661 million in annual commercial carting expenses. Based on the total waste generation cost estimates, on average, each commercial business pays approximately $3,300 in annual carting costs, irrespective of size or industry sector.[48,]

However, as businesses within similar industry sectors can vary greatly by size, commercial carting costs per pound per square foot (psf) were calculated in order to normalize the cost of commercial waste collection across the City and provide a measurement of carting costs that could be easily compared to other business costs such as rent.

In order to calculate the psf cost of carting services, the total area of commercial development by industry sector was modeled by multiplying the industry sector employment numbers provided in **Table 3-17** by commonly used CEQR employment density multipliers, as shown in **Table 3-19**.

[48] The approximately 200,000 total businesses identified includes all unique businesses within the studied NAICS industry sectors, which would have waste collected under the Proposed Action. Other industries likely unaffected by the Proposed Action, such as institutions are not accounted for in this total. Esri Business Analyst, Infogroup, Inc. 2018. Note that the 100,000 unique customers listed in the BIC customer registry can include multiple commercial businesses.

Table 3-19
Modeled New York City Square Footage by Industry Sector

Industry Sector	Square footage per employee[1]
Manufacturing	1,000
Office	250
Non-Food Retail	400
Food Retail	400
Food Services	250
Hotel	650

Notes:
[1] Estimates of square footage per employee are based on industry employment density ratios commonly used for CEQR analysis (including the East Harlem Rezoning FEIS).
Sources:
East Harlem Rezoning FEIS

As shown in **Table 3-20**, industry sectors analyzed comprise an estimated 916 million square feet (sf) across all of New York City. This includes approximately 452 million sf of office development (49 percent of total development), 210 million sf of manufacturing development (23 percent of total), and 119 million sf of non-food retail (13 percent of total development). Based on the calculations, the average cost of waste services by business and average cost psf was calculated by industry sector for all of New York City.

Table 3-20
Area of Commercial Development Within New York City

Industry Sector	Study Area Employment	Square Feet per Employee	Total Estimated Square Footage[1]	Percent by Industry
Manufacturing	210,608	1000	210,608,000	23%
Office	1,806,201	250	451,550,250	49%
Non-Food Retail	296,466	400	118,586,220	13%
Food Retail	51,969	400	20,787,467	2%
Food Services	262,819	250	65,704,868	7%
Hotel	75,091	650	48,809,331	5%
Total	**2,703,154**		**916,046,136**	**100%**

Notes:
[1] Sector totals may not add up to the real totals in NYC as the generation rates are general and do not perfectly reflect the size of total businesses within New York City. Further, as industry categories utilized are an amalgamation of various industry sectors, this should only be used to understand the approximate total square feet of development by industry sector.
Sources:
U.S. Census Bureau, 2018, LEHD Origin-Destination Employment Statistics (2002-2015)
Esri Business Analyst Infogroup, 2018
CalRecycle, Sept. 2015, 2014 Generator-Based Characterization of Commercial Sector Disposal and Diversion in California
DSNY, 2015-2017, Transfer Station and Recycling Processor Reports
DSNY, 2016, Private Carter Surveys

As shown in **Table 3-21**, the average cost of carting services depends on the employment density and the waste generation rates of the industry sectors studied. Industries that are employee-dense and produce a higher amount of waste have higher carting costs than businesses that are not employee dense or have low generation rates. While on a square-foot basis, both hotels and manufacturing businesses are, on average, larger than businesses of other industry sectors (35,140 sf and 16,359 sf respectively). Both have lower employment density (650 sf per employee and 1,000 sf per employee

respectively) and lower waste generation rates (4,260 lbs. per employee per year and 3,540 lbs. per employee per year respectively) as compared to other industry sectors, resulting in low average waste collection costs psf ($0.45 and $0.24 psf annually). Food services businesses, such as restaurants, which on average have the smallest businesses of studied industry sectors (an average of 2,564 sf), have high employment density and waste generation rates (250 sf per employee and 5,820 lbs. per employee per year) resulting in a higher average annual cost for commercial waste services ($1.59 psf annually). Food retail, which also has a smaller average footprint (2,919 sf) and higher employment density and waste generation rates (400 sf per employee, and 13,280 lbs. per employee per year), has the highest average psf cost for waste collection services ($2.27 psf annually).

Table 3-21
Average Cost for Commercial Carting Services in New York City PSF

Industry Sector	Businesses (Count)	Total Estimated Square Footage	Total Annual Carting Costs	Annual Average Cost PSF
Manufacturing	12,874	210,608,000	50,962,074	$0.24
Office	110,288	451,550,250	339,151,472	$0.75
Non-Food Retail	42,761	118,586,220	97,676,534	$0.82
Food Retail	7,122	20,787,467	47,174,643	$2.27
Food Services	25,629	65,704,868	104,556,128	$1.59
Hotel	1,389	48,809,331	21,865,936	$0.45
Total	**200,063**	**916,046,136**	**661,386,787**	**$0.72[1]**

Notes:
1. Annual average cost is presented as a weighted average based on the proportional total estimated square footage by industry sector.

Sources:
U.S. Census Bureau, 2018, LEHD Origin-Destination Employment Statistics (2002-2015)
Esri Business Analyst Infogroup, 2018
CalRecycle, Sept. 2015, 2014 Generator-Based Characterization of Commercial Sector Disposal and Diversion in California
DSNY, 2015-2017, Transfer Station and Recycling Processor Reports
DSNY, 2016, Private Carter Surveys

Case Study Analysis

Midtown Manhattan CBD Study Area

The Midtown Manhattan CBD study area is the primary business and entertainment district of New York City. As seen in **Figure 3-1**, the study area covers a geography of approximately 0.7 square miles, roughly equivalent to the area bound by 54th Street to the north, Fifth Avenue to the east, 30th Street to the south and Eighth Avenue to the west. This area includes a wide variety of businesses and uses, including large office buildings, active retail corridors, such as 34th Street and Herald Square, and a number of entertainment venues, including Madison Square Garden and the Theater District. The study area also includes the wholesale district, an area of stores devoted to the bulk sale of merchandise, often imported into the United States. In the existing condition, an estimated 38 commercial carters service the Midtown Manhattan CBD study area, bringing, on average, an estimated 167 daily commercial waste trucks through the Midtown Manhattan CBD study area, servicing approximately 17,000 businesses.[49]

As shown in **Table 3-22**, the Midtown Manhattan study area generates an estimated 218,907 tons of commercial waste per year (including putrescible, recyclable, and organic waste). Approximately

[49] BIC, 2018, Private Carter Routing Data

57 percent of the waste (an estimated 124,819 tons) is produced by the office industry sector, employing approximately 70 percent of study area employees (314,434 persons). Non-food retail is the second largest waste generator within the study area, producing approximately 24 percent of study area waste (an estimated 53,366 tons) and employs approximately 17 percent of study area employees (76,717 persons). Food services are the third largest commercial waste generator within the study area, producing approximately 10 percent of commercial waste (an estimated 22,210 tons) and employs 6 percent of study area employees (26,408 persons).

Table 3-22
Midtown Manhattan Waste Generation

	Businesses		Employment		Waste Generation[1]	
Industry Sector	Count	Percent	Count	Percent	Tons per Year	Percent of Total Waste Generated
Manufacturing	1,930	11%	13,723	3%	7,020	3%
Office	8,508	50%	314,434	70%	124,819	57%
Non-Food Retail	5,286	31%	76,617	17%	53,366	24%
Food Retail	87	1%	558	0%	1,071	0%
Food Services	1,102	6%	26,408	6%	22,210	10%
Hotel	182	1%	16,926	4%	10,420	5%
Total	**17,095**	**100%**	**448,666**	**100%**	**218,907**	**100%**

Notes:
[1] The Midtown Manhattan waste generation rate was normalized against tonnage data collected at transfer stations and recycling facilities, as well as supplemental data from private carter surveys in order to better align with real-world waste generation for the study area. 1 Midtown Manhattan ton equals 0.3 CalRecycle tons.

Sources:
UU.S. Census Bureau, 2018, LEHD Origin-Destination Employment Statistics (2002-2015)
Esri Business Analyst Infogroup, 2018
CalRecycle, Sept. 2015, 2014 Generator-Based Characterization of Commercial Sector Disposal and Diversion in California
DSNY, 2015-2017, Transfer Station and Recycling Processor Reports
DSNY, 2016, Private Carter Surveys

As shown in **Table 3-23**, utilizing the waste generation rates modeled for the Midtown Manhattan CBD study area, and applying the median rate charged by commercial carters within the case study area as reported by BIC Customer Register of $8.90 per 100 lbs of commercial waste, produces an estimated total annual waste removal cost of approximately $34 million for commercial businesses within the Midtown Manhattan CBD study area.[50]

[50] BIC, 2017 Q2-Q4, BIC Customer Register

Table 3-23
Midtown Manhattan Annual Carting Costs

Industry Sector	Tons per Year[1]	Annual Carting Cost[2,3]
Manufacturing	7,020.15	$1,249,586
Office	124,819.39	$22,217,852
Non-Food Retail	53,366.11	$9,499,167
Food Retail	1,071.03	$190,643
Food Services	22,209.98	$3,953,376
Hotel	10,419.92	$1,854,746
Total	**218,906.58**	**$38,965,371**

Notes:
[1] The Midtown Manhattan waste generation rate was normalized based on tonnages recorded at waste transfer stations and recycling facilities, supplemented by private carter surveys and routing data, in order to better align with real-world waste generation for the study area. 1 Midtown Manhattan ton equals 0.3 CalRecycle tons
[2] For the purposes of analysis, it is assumed that all commercial businesses pay the median rate of $8.90 per 100 lbs.
[3] For the purposes of consistent analysis, it is assumed that all waste is collected and measured by weight and not by the cubic yard.
Sources:
U.S. Census Bureau, 2018, LEHD Origin-Destination Employment Statistics (2002-2015)
Esri Business Analyst Infogroup, 2018
CalRecycle, Sept. 2015, 2014 Generator-Based Characterization of Commercial Sector Disposal and Diversion in California
DSNY, 2015-2017, Transfer Station and Recycling Processor Reports
DSNY, 2016, Private Carter Surveys

As detailed in **Tables 3-22 and 3-23**, in total, the Midtown Manhattan CBD study area is the location of approximately 17,000 commercial businesses, which combined incur an estimated $40 million in annual waste removal costs. Based on the total waste generation and cost estimates commercial businesses within the Midtown Manhattan CBD study area spend an average of $2,280 per year on waste removal costs irrespective of industry.

Commercial carting costs psf were then calculated in order to normalize the cost of commercial waste collection within the study area and provide a contextual measurement of the cost that could be calculated by commercial business owners and the public seeking to estimate the cost of waste collection.

In order to calculate the psf cost of carting services, the total square footage per industry sector was modeled using the study area employment provided in **Table 3-22** and the employment multipliers presented in **Table 3-16.**

As shown in **Table 3-24**, the industry sectors analyzed comprise an estimated 141 million sf of commercial space within the Midtown Manhattan CBD study area. This includes approximately 79 million sf of office development (approximately 56 percent of total commercial development), 31 million sf of non-food retail) approximately 22 percent of total commercial development), and 14 million sf of manufacturing development (approximately 10 percent of total commercial development). Based on these calculations, the average cost of waste collection psf was calculated by industry sector for the Midtown Manhattan CBD study area.

Table 3-24
Area of Commercial Development Within Midtown Manhattan

Industry Sector	Study Area Employment	Square Feet per Employee	Total Estimated Square Footage[1]	Percent by Industry
Manufacturing	13,723	1000	13,723,000	10%
Office	314,434	250	78,608,500	56%
Non-Food Retail	76,617	400	30,646,762	22%
Food Retail	558	400	223,238	0%
Food Services	26,408	250	6,601,935	5%
Hotel	16,926	650	11,002,069	8%
Total	**448,666**		**140,805,504**	**100%**

Notes:
[1] Sector totals may not add up to the real totals in New York City as the generation rates are general and do not perfectly reflect the size of total businesses within New York City. Further, as industry categories utilized are an amalgamation of various industry sectors this should only be used to understand the approximate total square feet of development by industry sector.
Sources:
U.S. Census Bureau, 2018, LEHD Origin-Destination Employment Statistics (2002-2015)
Esri Business Analyst Infogroup, 2018
CalRecycle, Sept. 2015, 2014 Generator-Based Characterization of Commercial Sector Disposal and Diversion in California
DSNY, 2015-2017, Transfer Station and Recycling Processor Reports
DSNY, 2016, Private Carter Surveys

As shown in **Table 3-25**, the average cost of carting services depends on the employment density and waste generation rates of industry sectors within Midtown Manhattan. Within the Midtown Manhattan CBD study area, businesses within the food retail sector pay $0.85 psf in annual carting costs, while food services pay an estimated $0.60 psf in annual carting costs. Manufacturing businesses within the study area pay an estimated $0.09 psf in annual carting costs, and the office industry sector pays an estimated $0.28 psf in annual carting costs. Weighted for proportional size of industry sector, within the Midtown Manhattan CBD study area, across all sectors businesses pay $0.28 psf on average in annual carting costs.

Table 3-25
Average Cost for Commercial Carting Services in Midtown Manhattan PSF

Industry Sector	Businesses (Count)	Total Estimated Square Footage	Total Annual Carting Costs	Annual Average Cost PSF
Manufacturing	1,930	13,723,000	1,249,586	$0.09
Office	8,508	78,608,500	22,217,852	$0.28
Non-Food Retail	5,286	30,646,762	9,499,167	$0.31
Food Retail	87	223,238	190,643	$0.85
Food Services	1,102	6,601,935	3,953,376	$0.60
Hotel	182	11,002,069	1,854,746	$0.17
Total	**17,095**	**140,805,504**	**38,965,371**	**$0.28[1]**

Notes:
1. Annual average cost is presented as a weighted average based on the proportional total estimated square footage by industry sector.
Sources:
U.S. Census Bureau, 2018, LEHD Origin-Destination Employment Statistics (2002-2015)
Esri Business Analyst Infogroup, 2018
CalRecycle, Sept. 2015, 2014 Generator-Based Characterization of Commercial Sector Disposal and Diversion in California
DSNY, 2015-2017, Transfer Station and Recycling Processor Reports
DSNY, 2016, Private Carter Surveys

Flatbush Nostrand Junction Study Area

The Flatbush Nostrand Junction study area is a major commercial and retail hub located in central Brooklyn, at the intersection of Flatbush and Nostrand Avenues. As shown in **Figure 3-2**, the study area covers a 0.3 square mile geography roughly equivalent to the area bounded by Foster and Farragut Avenues to the north, New York and Albany Avenues to the east, Avenue I to the south, and Ocean Avenue to the west. This area includes a wide variety of businesses, including commercial retail, restaurants, and some small offices. The study area also includes the Flatbush Nostrand Junction shopping center, a medium-sized shopping mall. In the existing condition, an estimated 17 commercial carters service the Flatbush Nostrand Junction study area, creating on average an estimated 45 daily trucks through the case study area, servicing approximately 368 businesses.[51]

As shown in **Table 3-26**, the Flatbush Nostrand Junction case study area generates an estimated 3,382 tons of commercial waste per year. The non-food retail sector produces approximately 44 percent of study area commercial waste (an estimated 1,485 tons per year) and employs approximately 39 percent of all study area employees (1,029 workers). The office industry sector is the second largest producer of commercial waste within the study area, annually producing approximately 27 percent of study area waste (an estimated 905 tons per year) and employs approximately 41 percent of study area workers (1,100 employees). Food services produce approximately 21 percent of commercial waste (an estimated 710 tons per year) and employs approximately 15 percent of study area employees (408 workers). Both manufacturing and hotel industry sectors produce approximately 1 percent of study area commercial waste (an estimated 48 and 27 tons respectively per year) and together employ approximately 3 percent of study area employees (66 workers).

Table 3-26
Flatbush Nostrand Junction Waste Generation

	Businesses		Employment		Waste Generation[1]	
Industry Sector	Count	Percent	Count	Percent	Tons per Year	Percent of Total Waste Generated
Manufacturing	23	6%	45	2%	48	1%
Office	172	47%	1,100	41%	905	27%
Non-Food Retail	94	26%	1,029	39%	1,485	44%
Food Retail	20	5%	52	2%	208	6%
Food Services	55	15%	408	15%	710	21%
Hotel	4	1%	21	1%	27	1%
Total	**368**	**100%**	**2,655**	**100%**	**3,382**	**100%**

Notes:

[1] The Flatbush Nostrand waste generation rate was normalized based on tonnages recorded at waste transfer stations and recycling facilities, supplemented by private carter surveys and routing data, in order to better align with real-world waste generation for the study area. 1 Flatbush Nostrand Junction ton equals 0.6 CalRecycle tons.

Sources:

U.S. Census Bureau, 2018, LEHD Origin-Destination Employment Statistics (2002-2015)
Esri Business Analyst Infogroup, 2018
CalRecycle, Sept. 2015, 2014 Generator-Based Characterization of Commercial Sector Disposal and Diversion in California
DSNY, 2015-2017, Transfer Station and Recycling Processor Reports
DSNY, 2016, Private Carter Surveys

[51] BIC, 2018, Private Carter Routing Data

Based on the estimated waste generated within the Flatbush Nostrand Junction study area, utilizing the median price for commercial waste services within the case study area of $11.30 per 100 lbs. of commercial waste, the total estimated cost of commercial waste carting services within the study area was modeled. As shown in **Table 3-27**, the Flatbush Nostrand Junction study area generates an estimated $764,389 in total annual commercial waste carting costs.

Table 3-27
Flatbush Nostrand Junction Annual Carting Costs

Industry Sector	Tons per Year[1]	Annual Carting Cost[2,3]
Manufacturing	47.69	$10,779
Office	904.70	$204,462
Non-Food Retail	1,484.63	$335,527
Food Retail	207.66	$46,932
Food Services	710.31	$160,530
Hotel	27.25	$6,158
Total	**3,382.25**	**$764,389**

Notes:
[1] The Flatbush Nostrand Junction waste generation rate was normalized based on tonnages recorded at waste transfer stations and recycling facilities, supplemented by private carter surveys and routing data, in order to better align with real-world waste generation for the study area. 1 Flatbush Nostrand Junction ton equals 0.6 CalRecycle tons.
[2] For the purposes of conservative analysis, it is assumed that all commercial businesses pay the median rate of $11.30 per 100 lbs.
[3] For the purposes of consistent analysis, it is assumed that all waste is collected and measured by weight and not by the cubic yard.
Sources:
U.S. Census Bureau, 2018, LEHD Origin-Destination Employment Statistics (2002-2015)
Esri Business Analyst Infogroup, 2018
CalRecycle, Sept. 2015, 2014 Generator-Based Characterization of Commercial Sector Disposal and Diversion in California
DSNY, 2015-2017, Transfer Station and Recycling Processor Reports
DSNY, 2016, Private Carter Surveys

As detailed in **Table 3-26 and 3-27**, in total, the Flatbush Nostrand Junction study area includes approximately 368 private businesses, which together generate an estimated $764,389 in annual carting costs. The average annual commercial carting cost incurred by a business within the Flatbush Nostrand Junction case study area is estimated to be $2,077 regardless of industry.

Commercial carting costs psf were then calculated in order to normalize the cost of commercial waste collection within the study area and provide a contextual measurement of cost, which could be calculated by commercial business owners and the public seeking to estimate the cost of waste collection.

In order to calculate the psf cost of carting services, the total square footage per industry sector was modeled using the study area employment provided in **Table 3-26** by the employment multipliers presented in **Table 3-19.**

As shown in **Table 3-28**, the industry sectors analyzed comprise an estimated 868,196 sf of commercial space within the Flatbush Nostrand Junction study area. This includes approximately 411,508 sf of non-food retail development (approximately 47 percent of total commercial development), 275,000 sf of office development (approximately 32 percent of total commercial development), and 101,909 sf of food services development (approximately 12 percent of total commercial development). Based on these calculations, the average cost of waste collection psf was calculated by industry sector for all of the Flatbush Nostrand Junction study area.

Table 3-28
Area of Commercial Development Within the Flatbush Nostrand Junction

Industry Sector	Study Area Employment	Square Feet per Employee	Total Estimated Square Footage[1]	Percent by Industry
Manufacturing	45	1,000	45,000	5%
Office	1,100	250	275,000	32%
Non-Food Retail	1,029	400	411,508	47%
Food Retail	52	400	20,892	2%
Food Services	408	250	101,909	12%
Hotel	21	650	13,887	2%
Total	**2,655**		**868,196**	**100%**

Notes:
1. Sector totals may not add up to the real totals in NYC as the generation rates are general and do not perfectly reflect the size of total businesses within New York City. Further, as industry categories utilized are an amalgamation of various industry sectors this should only be used to understand the approximate total square feet of development by industry sector.

Sources:
U.S. Census Bureau, 2018, LEHD Origin-Destination Employment Statistics (2002-2015)
Esri Business Analyst Infogroup, 2018
CalRecycle, Sept. 2015, 2014 Generator-Based Characterization of Commercial Sector Disposal and Diversion in California
DSNY, 2015-2017, Transfer Station and Recycling Processor Reports
DSNY, 2016, Private Carter Surveys

As shown in **Table 3-29**, the average cost of carting services depends on the employment density and waste generation rates of industry sectors within the case study area. Industries that are employee dense, and produce a higher amount of waste have higher carting costs than businesses that are not employee dense or have low generation rates. Within the Flatbush Nostrand Junction study area, businesses in the food retail sector pay $2.25 psf in annual carting costs, while food services pay on average $1.58 psf in annual commercial carting costs. The office industry sector pays on average $0.74 psf in annual commercial carting costs, and manufacturing businesses within the study areas pay on average $0.27 psf in annual commercial carting costs. Weighted for the proportional size of industry sector, within the Flatbush Nostrand Junction study area businesses, regardless of industry sector, pay $0.88 psf on average in annual carting costs.

Table 3-29
Average Cost for Commercial Carting Services in the Flatbush Nostrand Junction PSF

Industry Sector	Businesses (Count)	Total Estimated Square Footage	Total Annual Carting Costs	Annual Average Cost PSF
Manufacturing	23	45,000	10,779	$0.24
Office	172	275,000	204,462	$0.74
Non-Food Retail	94	411,508	335,527	$0.82
Food Retail	20	20,892	46,932	$2.25
Food Services	55	101,909	160,530	$1.58
Hotel	4	13,887	6,158	$0.44
Total	**368**	**868,196**	**764,389**	**$0.88[1]**

Notes:
1. Annual average cost is presented as a weighted average based on the proportional total estimated square footage by industry sector.

Sources:
U.S. Census Bureau, 2018, LEHD Origin-Destination Employment Statistics (2002-2015)
Esri Business Analyst Infogroup, 2018
CalRecycle, Sept. 2015, 2014 Generator-Based Characterization of Commercial Sector Disposal and Diversion in California
DSNY, 2015-2017, Transfer Station and Recycling Processor Reports
DSNY, 2016, Private Carter Surveys

College Point Study Area

The College Point study area encompasses an area of eastern Queens that includes a diverse range of commercial activity, as well as a low-density residential community. As seen in **Figure 3-3**, the study area is approximately 4.5 square miles, roughly equivalent to the area bound by the East River to the north, the Whitestone Expressway to the east, Flushing Creek to the south (with the exception of the Census Track 383.01, which is just to the south of Flushing Creek bounded by Flushing Bay to the north, Flushing Creek to the east, Roosevelt Avenue to the south and 126th Street to the west), and Flushing Bay to the west. College Point includes the College Point Corporate Park, which includes a number of large office buildings, as well as manufacturing buildings such as the *New York Times* printing works. The area also includes neighborhood retail along College Point Boulevard, and larger big-box style commercial retailers along 20th Avenue.

In the existing condition, an estimated 23 commercial carters service the College Point study area, bringing on average an estimated 83 trucks daily through the case study area, servicing approximately 697 businesses.[52] In addition, the College Point case study area includes the Tully Environmental waste transfer station on Willets Point, which receives waste collected throughout the City for consolidation and shipment to disposal facilities.

As shown in **Table 3-30**, the College Point study area generates 19,335 tons per year. Approximately 37 percent of this waste (an estimated 7,117 tons per year) is generated by the non-food retail industry sector, employing approximately 27 percent (4,252 employees) of all study area employees (15,365 total employees). The second largest waste generator within the College Point study area is the office industry sector, which produces approximately 36 percent (an estimated 7,023 tons per year) of study area waste and employs an approximately 48 percent of study area employees (7,363 employees). Manufacturing businesses account for an estimated 20 percent of waste generated within the study area (an estimated 3,952 tons per year) and employ approximately 20 percent of case study area employees (3,215 employees). Food Service businesses account for approximately 4 percent of study area waste generation (an estimated 763 tons per year) and employ approximately 2 percent of case study area workers.

Based on the estimated waste generated within the College Point study area, utilizing the median rate reported for commercial waste carting services in BIC Customer Register of $10.80 per 100 lbs., the total potential cost of commercial waste carting services within the study area was generated. As shown in **Table 3-31**, the College Point study area generates an estimated $4.2 million in annual commercial waste carting costs.

As detailed in **Tables 3-30 and 3-31**, in total, the College Point study area includes approximately 697 private businesses, which together generate approximately 4.2 million in annual carting costs. Based on this, the average annual commercial carting cost incurred by a business within the College Point case study area is estimated to be approximately $6,000 per year regardless of industry.

[52] BIC, 2018, Private Carter Routing Data

Table 3-30
College Point Waste Generation

	Businesses		Employment		Waste Generation[1]	
Industry Sector	Count	Percent	Count	Percent	Tons per Year	Percent of Total Waste Generated
Manufacturing	96	14%	3,215	21%	3,952	20%
Office	266	38%	7,363	48%	7,023	36%
Non-Food Retail	245	35%	4,252	28%	7,117	37%
Food Retail	19	3%	80	1%	368	2%
Food Services	68	10%	378	2%	763	4%
Hotel	3	0%	76	0%	113	1%
Total	**697**	**100%**	**15,364**	**100%**	**19,335**	**100%**

Notes:
[1] The College Point waste generation rate was normalized based on tonnages recorded at waste transfer stations and recycling facilities, supplemented by private carter surveys and routing data, in order to better align with real-world waste generation for the study area. 1 College Point ton equals 0.7 CalRecycle tons.
Sources:
U.S. Census Bureau, 2018, LEHD Origin-Destination Employment Statistics (2002-2015)
Esri Business Analyst Infogroup, 2018
CalRecycle, Sept. 2015, 2014 Generator-Based Characterization of Commercial Sector Disposal and Diversion in California
DSNY, 2015-2017, Transfer Station and Recycling Processor Reports
DSNY, 2016, Private Carter Surveys

Table 3-31
College Point Annual Carting Costs

Industry Sector	Tons per Year[1]	Annual Carting Cost[2,3]
Manufacturing	3,951.77	$853,583
Office	7,022.97	$1,516,962
Non-Food Retail	7,116.56	$1,537,177
Food Retail	367.88	$79,462
Food Services	762.96	$164,799
Hotel	113.09	$24,427
Total	**19,335.23**	**$4,176,410**

Notes:
1. The College Point waste generation rate was normalized based on tonnages recorded at waste transfer stations and recycling facilities, supplemented by private carter surveys and routing data, in order to better align with real-world waste generation for the study area. 1 College Point ton equals approximately 0.7 CalRecycle tons.
2. For the purposes of conservative analysis, it is assumed that all commercial businesses pay the median reported rate of 10.80 per 100 lbs.
3. For the purposes of consistent analysis, it is assumed that all waste is collected and measured by weight and not by the cubic yard.
Sources:
U.S. Census Bureau, 2018, LEHD Origin-Destination Employment Statistics (2002-2015)
Esri Business Analyst Infogroup, 2018
CalRecycle, Sept. 2015, 2014 Generator-Based Characterization of Commercial Sector Disposal and Diversion in California
DSNY, 2015-2017, Transfer Station and Recycling Processor Reports
DSNY, 2016, Private Carter Surveys

Commercial carting costs psf were then calculated in order to normalize the cost of commercial waste collection within the study area and provide a contextual measurement of cost which could

be calculated easily by commercial business owners seeking to estimate the cost of waste collection, and in order to compare the cost of commercial carting to the overall monthly cost for rent, which is also expressed on a psf basis.

In order to calculate the psf cost of carting services, the total square footage per industry sector was modeled using the study area employment provided in **Table 3-30** by the employment multipliers presented in **Table 3-19.**

As shown in **Table 3-32**, the industry sectors analyzed comprise an estimated 6.9 million sf of commercial space within the College Point study area. This includes approximately 3.2 million sf of manufacturing development (approximately 46 percent of total development), 1.8 million sf of office development (approximately 27 percent of total development), and 1.7 million sf of non-food retail development (approximately 25 percent of total development). In addition, hotel, food services, and food retail account for approximately 4 percent of total study area development. Based on these calculations, the average cost of waste collection psf was calculated by industry sector for all of the College Point study area.

Table 3-32
Area of Commercial Development Within College Point

Industry Sector	Study Area Employment	Square Feet per Employee	Total Estimated Square Footage[1]	Percent by Industry
Manufacturing	3,215	1,000	3,215,000	46%
Office	7,363	250	1,840,750	27%
Non-Food Retail	4,252	400	1,700,888	25%
Food Retail	80	400	31,912	0%
Food Services	378	250	94,387	1%
Hotel	76	650	49,695	1%
Total	**15,364**		**6,932,631**	**100%**

Notes:
[1] Sector totals may not add up to the real totals in New York City as the generation rates are general and do not perfectly reflect the size of total businesses within New York City. Further, as industry categories utilized are an amalgamation of various industry sectors this should only be used to understand the approximate total square feet of development by industry sector.

Sources:
U.S. Census Bureau, 2018, LEHD Origin-Destination Employment Statistics (2002-2015)
Esri Business Analyst Infogroup, 2018
CalRecycle, Sept. 2015, 2014 Generator-Based Characterization of Commercial Sector Disposal and Diversion in California
DSNY, 2015-2017, Transfer Station and Recycling Processor Reports
DSNY, 2016, Private Carter Surveys

As shown in **Table 3-33**, the average cost of carting services depends on the employment density and waste generation rates of industry sectors within the study area. Industries that are employee dense, and produce a higher amount of waste have higher carting costs than businesses that are not employee dense or have low generation rates. Within the College Point study area, businesses within the food retail sector pay $2.49 psf in annual carting costs, while food services pay on average $1.75 psf in annual commercial carting costs. The office industry sector pays on average $0.82 psf in annual commercial carting costs, and manufacturing businesses within the case study areas pay $0.27 psf in annual commercial carting costs. Weighted based on the proportional size of industry sector within the College Point study area businesses, regardless of industry sector, pay $0.60 psf on average in annual carting costs.

Table 3-33
Average Cost for Commercial Carting Services in College Point PSF

Industry Sector	Businesses (Count)	Total Estimated Square Footage	Total Annual Carting Costs	Annual Average Cost PSF
Manufacturing	96	3,215,000	853,583	$0.27
Office	266	1,840,750	1,516,962	$0.82
Non-Food Retail	245	1,700,888	1,537,177	$0.90
Food Retail	19	31,912	79,462	$2.49
Food Services	68	94,387	164,799	$1.75
Hotel	3	49,695	24,427	$0.49
Total	**697**	**6,932,631**	**4,176,410**	**$0.60**

Notes:
1. Annual average cost is presented as a weighted average based on the proportional total estimated square footage by industry sector.

Sources:
U.S. Census Bureau, 2018, LEHD Origin-Destination Employment Statistics (2002-2015)
Esri Business Analyst Infogroup, 2018
CalRecycle, Sept. 2015, 2014 Generator-Based Characterization of Commercial Sector Disposal and Diversion in California
DSNY, 2015-2017, Transfer Station and Recycling Processor Reports
DSNY, 2016, Private Carter Surveys

COMMERCIAL WASTE CUSTOMERS—FUTURE WITHOUT PROPOSED ACTION

The No Action condition includes the current commercial waste industry and any regulatory changes to the industry expected by the Analysis Year of 2024, as described in Chapter 1, "Project Description."

In the No Action condition, it is anticipated that, overall, the cost of waste collection services would increase as a result of the additional costs associated with the policies to be implemented by the 2024 Analysis Year.[53] As seen in **Table 3-7**, the expenses associated with commercial waste collection services in the No Action condition would likely increase by approximately 4 percent over the existing condition. This approximately $22 million increase in operating expenses in the No Action condition would require commercial carters to increase the cost of commercial carting services in order to recoup the expenses associated with policies to be implemented in the No Action condition.

However, in the No Action condition, a carter's ability to recoup the full cost of commercial carting services is limited, as the price for commercial waste collection services within New York City is capped by BIC and increases to the rate cap are adjusted approximately every two years. It is anticipated that between 2018 and the 2024 Analysis Year BIC rate cap assessed per 100 lbs. of commercial waste collected would increase by approximately 5.25 percent every 2-year cycle. As seen in **Table 3-34**, it is anticipated that BIC rate cap would increase by approximately 17 percent by the Analysis Year, from the current rate of $13.62 per 100 lbs. in the existing condition to the rate of $15.88 per 100 lbs. in the No Action condition.[54] Further as BIC Rate Cap would increase

[53] Due to external market forces outside of the control of carters, or the recycling industry that services New York City, recycling does not return a profit for commercial carters. Due to these market conditions if recyclables collection results in a business loss, carters may dispose recyclable waste as putrescible waste in landfills. However, if recyclables are able to return a profit for commercial carters it is anticipated that carters could reduce the expense associated with disposal of this waste stream and potentially pass on these savings to customers.

[54] Based on assumptions provided by DSNY/BIC.

by 5.25 percent in the 2024 analysis year, it is assumed that the median rate for commercial carting services within New York City would also increase at this rate.

Table 3-34
No Action Anticipated BIC Rate Cap

Study Area	Existing Condition (per 100 lbs.)	No Action[1] (per 100 lbs.)
New York City BIC Rate Cap	$13.62	$15.88
New York City Median Rate	$10.00	$11.66
Midtown Manhattan CBD Median Rate	$8.90	$10.38
Flatbush Nostrand Junction Median Rate	$11.30	$13.17
College Point Median Rate	$10.80	$12.59

Notes:
1. The No Action rate cap is anticipated to increase by 5.25 percent every 2 years between 2018 and 2024. In total, this amounts to a 17 percent increase in the rate cap between the existing condition and No Action condition.

Sources:
NYC Rules, 2018, Adopted Rules-http://rules.cityofnewyork.us/tags/trade-waste-0
BIC, 2017 Q2-Q4, Private Carter Customer Register

As a result of the approximately 17 percent increase in the median rate charge for commercial carting services between the existing condition and the No Action condition, it is anticipated that, for private businesses, the total cost of commercial waste collection in the No Action condition will increase. As outlined in **Table 3-35**, conservatively assuming all commercial waste carting customers pay the No Action median rate of $11.66 per 100 lbs. commercial carting costs would total $771 million per annum. On average, this would increase the average annual per business waste collection costs from $3,300 per year to $3,450 per year. On a psf basis weighted based on the proportional size of industry sector, this would result in an increase in the average psf costs from $0.72 psf annually to $0.84 psf in annual waste collection costs across all industry sectors studied.

Table 3-35
No Action New York City Carting Costs

Industry Sector	Existing Condition Total Annual Carting Cost	Existing Condition Average Annual Carting Cost (per business)	Existing Condition Average Annual Carting Cost (psf)	No Action Total Annual Carting Cost	No Action Average Annual Carting Cost (per business)	No Action Average Annual Commercial Waste Cost (psf)
Manufacturing	$50,962,074	$3,959	$0.24	$59,417,368	$4,615	$0.28
Office	$339,151,472	$3,075	$0.75	$395,421,264	$3,585	$0.88
Non-Food Retail	$97,676,534	$2,284	$0.82	$113,882,385	$2,663	$0.96
Food Retail	$47,174,643	$6,624	$2.27	$55,001,551	$7,723	$2.65
Food Services	$104,556,128	$4,080	$1.59	$121,903,397	$4,756	$1.86
Hotel	$21,865,936	$15,742	$0.45	$25,493,788	$18,354	$0.52
Total / Average	**$661,386,787**	**$3,306**	**$4.33**	**$771,119,752**	**$3,854**	**$0.84[1]**

Notes:
1. Annual average cost is presented as a weighted average based on the proportional total estimated square footage by industry sector.

Sources:
U.S. Census Bureau, 2018, LEHD Origin-Destination Employment Statistics (2002-2015)
Esri Business Analyst Infogroup, 2018
CalRecycle, Sept. 2015, 2014 Generator-Based Characterization of Commercial Sector Disposal and Diversion in California
DSNY, 2015-2017, Transfer Station and Recycling Processor Reports
DSNY, 2016, Private Carter Surveys

Case Study Areas

Assuming the average rate for commercial waste collection services within the identified case study areas increases at the same rate as BIC rate cap increases in the No Action condition within each of the identified case study areas, it is anticipated that the cost for commercial waste collection services will also increase by 5.25 percent every 2 years, or approximately 17 percent, by the 2024 Analysis Year.

Midtown Manhattan CBD Study Area

As presented in **Table 3-34**, the average rate for waste collection services within the Midtown Manhattan CBD study area would increase from $8.90 per 100 lbs. to $10.86 per lbs. This increase in the rate charged by commercial carters will result in an increase in the total cost for commercial carting services within the study area, as well as the average price for carting services by business and psf. As detailed in **Table 3-36**, the annual cost for commercial waste services within the Midtown Manhattan CBD study area would increase from approximately $39 million to approximately $45 million. Per business, this results in an increase in the commercial carting cost from $2,279 to $2,658 per year. On a psf basis, weighted based on the proportional size of industry sector, this would result in an increase in the average psf costs from $0.28 psf annually to $0.32 psf in annual waste collection costs across all industries sectors.

Table 3-36
No Action Midtown Manhattan Carting Costs

Industry Sector	Existing Condition Total Annual Carting Cost	Existing Condition Average Annual Carting Cost (per business)	Existing Condition Average Annual Carting Cost (psf)	No Action Total Annual Carting Cost	No Action Average Annual Carting Cost (per business)	No Action Average Annual Commercial Waste Cost (psf)
Manufacturing	$1,249,586	$647	$0.09	$1,456,909	$755	$0.11
Office	$22,217,852	$2,611	$0.28	$25,904,092	$3,045	$0.33
Non-Food Retail	$9,499,167	$1,797	$0.31	$11,075,207	$2,095	$0.36
Food Retail	$190,643	$2,191	$0.85	$222,273	$2,555	$1.00
Food Services	$3,953,376	$3,587	$0.60	$4,609,294	$4,183	$0.70
Hotel	$1,854,746	$10,191	$0.17	$2,162,474	$11,882	$0.20
Total / Average	**$38,965,371**	**$2,279**	**$1.66**	**$45,430,250**	**$2,658**	**$0.32[1]**

Notes:
1. Annual average cost is presented as a weighted average based on the proportional total estimated square footage by industry sector.

Sources:
U.S. Census Bureau, 2018, LEHD Origin-Destination Employment Statistics (2002-2015)
Esri Business Analyst Infogroup, 2018
CalRecycle, Sept. 2015, 2014 Generator-Based Characterization of Commercial Sector Disposal and Diversion in California
DSNY, 2015-2017, Transfer Station and Recycling Processor Reports
DSNY, 2016, Private Carter Surveys

Flatbush Nostrand Junction Study Area

As shown in **Table 3-34**, the average rate for waste collection services within the Flatbush Nostrand Junction study area would increase from $11.30 per 100 lbs. to $13.17 per 100 lbs. This increase in the rate charged by commercial carters would result in an increase in the total cost for

commercial carting services within the study area, as well as the individual price for carting services by business and psf. As detailed in **Table 3-37**, the annual cost for commercial waste services within the Flatbush Nostrand Junction study area would increase from approximately $764,389 to approximately 891,212. Per business, this results in an increase in the annual cost of commercial carting services from $2,077 to $2,422. On a psf basis, weighted based on the proportional size of industry sector, this would result in an increase in the average psf costs from $0.88 psf annually to $1.03 psf in annual waste collection costs across all industry sectors.

Table 3-37
No Action Flatbush Nostrand Junction Carting Costs

Industry Sector	Existing Condition Total Annual Carting Cost	Existing Condition Average Annual Carting Cost (per business)	Existing Condition Average Annual Carting Cost (psf)	No Action Total Annual Carting Cost	No Action Average Annual Carting Cost (per business)	No Action Average Annual Commercial Waste Cost (psf)
Manufacturing	$10,779	$469	$0.24	$12,567	$546	$0.28
Office	$204,462	$1,189	$0.74	$238,385	$1,386	$0.87
Non-Food Retail	$335,527	$3,569	$0.82	$391,196	$4,162	$0.95
Food Retail	$46,932	$2,347	$2.25	$54,719	$2,736	$2.62
Food Services	$160,530	$2,919	$1.58	$187,165	$3,403	$1.84
Hotel	$6,158	$1,540	$0.44	$7,180	$1,795	$0.52
Total / Average	**$764,389**	**$2,077**	**$5.28**	**$891,212**	**$2,422**	**$1.03**

Notes:
1. Annual average cost is presented as a weighted average based on the proportional total estimated square footage by industry sector.

Sources:
U.S. Census Bureau, 2018, LEHD Origin-Destination Employment Statistics (2002-2015)
Esri Business Analyst Infogroup, 2018
CalRecycle, Sept. 2015, 2014 Generator-Based Characterization of Commercial Sector Disposal and Diversion in California
DSNY, 2015-2017, Transfer Station and Recycling Processor Reports
DSNY, 2016, Private Carter Surveys

College Point Study Area

As shown in **Table 3-34**, the average rate for waste collection services within the College Point study area would increase from $10.80 per 100 lbs. to $12.59 per 100 lbs. This increase in the rate charged by commercial carters would result in an increase in the total cost for commercial carting services within the study area, as well as the average price for carting services by business and psf. As detailed in **Table 3-38**, the annual cost for commercial waste services within the College Point study area would increase from approximately $4.2 million to approximately $4.9 million. Per business, this results in an annual increase in the cost of commercial carting services from $5,992 to $6,986. On a psf basis, weighted based on the proportional size of industry sector, this would result in an increase in the average psf costs from $0.60 psf annually to $0.70 psf in annual waste collection costs across all industry sectors

Table 3-38
No Action College Point Carting Costs

Industry Sector	Existing Condition Total Annual Carting Cost	Existing Condition Average Annual Carting Cost (per business)	Existing Condition Average Annual Carting Cost (psf)	No Action Total Annual Carting Cost	No Action Average Annual Carting Cost (per business)	No Action Average Annual Commercial Waste Cost (psf)
Manufacturing	$853,583	$8,891	$0.27	$995,203	$10,367	$0.31
Office	$1,516,962	$5,703	$0.82	$1,768,646	$6,649	$0.96
Non-Food Retail	$1,537,177	$6,274	$0.90	$1,792,216	$7,315	$1.05
Food Retail	$79,462	$4,182	$2.49	$92,646	$4,876	$2.90
Food Services	$164,799	$2,424	$1.75	$192,141	$2,826	$2.04
Hotel	$24,427	$8,142	$0.49	$28,480	$9,493	$0.57
Total / Average	**$4,176,410**	**$5,992**	**$3.61**	**$4,869,332**	**$6,986**	**$0.70[1]**

Notes:
1. Annual average cost is presented as a weighted average based on the proportional total estimated square footage by industry sector.

Sources:
U.S. Census Bureau, 2018, LEHD Origin-Destination Employment Statistics (2002-2015)
Esri Business Analyst Infogroup, 2018
CalRecycle, Sept. 2015, 2014 Generator-Based Characterization of Commercial Sector Disposal and Diversion in California
DSNY, 2015-2017, Transfer Station and Recycling Processor Reports
DSNY, 2016, Private Carter Surveys

Analysis

In New York City under the No Action condition, the cost of contracting commercial waste carting services is anticipated to increase by approximately $100 million (17 percent) from $661 million per year under existing conditions to $771 million per year (conservatively assuming all commercial waste carting customers pay the median rate of $11.66 per 100 lbs. in 2024). Based on the modeled cost to commercial businesses, the commercial carting industry would still be able to collect sufficient revenues from businesses customers to offset the approximately $575 million in expenses necessary to operate in the No Action condition.

COMMERCIAL WASTE CUSTOMERS—FUTURE WITH PROPOSED ACTION

The Proposed Action condition evaluates the changes to commercial customers as a result of the implementation of the CWZ Program.

In the Proposed Action, it is anticipated that commercial carting companies would be able to set their own rate caps within zones. As documented above, a specified evaluation team comprised of City employees from DSNY and BIC would evaluate each proposal based on designated criteria to determine an overall weighted score for each proposal where pricing would account for at least 40 percent of the overall weighted score. In order to be awarded a contract to service a zone, and be competitive with other operators within that zone, carters would need to set a competitive cap rate. Since the Proposed Action rate cap would no longer be set by BIC, the analysis utilizes the total expense associated with commercial carter operations in the Proposed Action as a price floor that the rate cap would need to be above in order for the commercial carting industry to remain viable.

As shown in **Table 3-39**, in the Proposed Action, in order for commercial carters to recoup the costs associated with providing commercial waste carting services throughout New York City, the minimum viable rate for commercial waste carting services would need to total $8.49 per 100 lbs., which is less than the median rate charged to commercial businesses in both the existing condition and No Action condition. If all businesses were to be charged at this minimum rate, commercial carters would be able to recoup the expenses associated with commercial carting and the industry would remain operationally viable. It is anticipated that carters would charge a rate higher than the minimum viable rate in order to generate operational profits.

Table 3-39
Proposed Action Minimally Viable Rate for Commercial Carting

Proposed Action Total Operational Cost of Commercial Waste Collection	Total Waste Produced in NYC (100 lbs.)	Minimum Viable Price for Commercial Carting Services (per 100 lbs.)
$561,267,260	66,138,679	$ 8.49
Sources: BIC, 2015, Private Carter Financial Statements Previous Analyses as Indicated in this Chapter.		

As carters would be able to set their own rate caps under the Proposed Action, exact rates at which waste would be collected are currently unknown and would be determined during the solicitation process. However, based on the analysis presented above, the price for collection services is not anticipated to increase substantially, or reach a point where the price of waste collection becomes burdensome on businesses. The non-exclusive, competitive nature of the solicitation process—which would include evaluative criteria whereby 40 percent of the weighted score used to evaluate a carter's proposal would be based on their proposed pricing—is anticipated to limit the rate charged to customers. As a result, in the Proposed Action, the costs associated with commercial carting services are unlikely to negatively impact the operations of commercial businesses.

CONCLUSION

Based on the analysis presented above, the Proposed Action is not anticipated to result in significant adverse effects on the commercial waste carting industry, or the operation of private businesses that require commercial waste collection services. As the total number of potential contracts awarded is less than the total number of existing commercial carters, and fewer total collection routes are needed to provide commercial waste services, some carters are expected to cease operating in New York City with the CWZ Program. While the CWZ Program has the potential to reduce the total number of commercial carters operating within the City of New York, many carters may transition into the collection of excluded waste streams such as C&D, engage in other agreements to support contracted carters and/or consolidate companies, pursue carting opportunities in the metropolitan area outside New York City, or remove themselves from the industry. Even if, despite these various opportunities for carters to engage in the competitive bidding process, the remaining commercial carters continuing to operate in the Proposed Action are anticipated to continue providing competitive, effective commercial waste collection services across the City.

Further, in the Proposed Action, the expenses associated with the operation of the commercial carting industry are anticipated to decrease by approximately 2 percent as compared to the No Action condition. In total, as a result of the efficiencies associated with zoned routing, including the reduction in routes necessary to collect an equal amount of waste, the total operational expenses to be incurred by the carting industry are anticipated to reduce by an estimated $14

million over the No Action condition, despite additional equipment and administrative costs associated with the Proposed Action.

Expenses associated with commercial carting are anticipated to decrease in the Proposed Action as a result of efficiencies in the daily operation of the commercial carting industry. These efficiencies, however, include the reduction in total staffing necessary to collect commercial waste in the Proposed Action. Based on the reported baseline employment estimates provided by BIC 2015 Private Carter Financial Statements the CWZ Program would reduce employment by an estimated 41 employees (an approximately 2 percent loss in staffing) compared to the No Action condition. However, as discussed above, it is anticipated that as a result of the Proposed Action additional employment within secondary markets such as the recyclable sorting and processing industry is expected to increase. Businesses that pay for commercial carting services would likely benefit from the Proposed Action, as the Proposed Action would not result in a substantial increase to the expenses associated with the commercial waste collection. Customers, regardless of industry sector or location, would likely receive improved services, including free waste assessments, and access to a dedicated call center, at a competitive rate as a result of the Proposed Action.

Based on the analysis presented above, the CWZ Program is not anticipated to result in significant adverse environmental impacts on the socioeconomic conditions of New York City, as the Proposed Action would not substantially limit or impair businesses within the City of New York. Efficiencies introduced by the CWZ Program would make carting more efficient, decreasing the expenses associated with the operation of the commercial carting industry compared to the No Action condition, which is anticipated to reduce the cost of waste collection services for businesses within the City. ✷

Chapter 4: Solid Waste Management

A. INTRODUCTION

In accordance with the 2014 *City Environmental Quality Review (CEQR) Technical Manual*, a solid waste assessment determines whether a project has the potential to cause a substantial increase in solid waste production that may overburden available waste management capacity or otherwise be inconsistent with the City's Solid Waste Management Plan (SWMP) or with State policy related to the City's integrated solid waste management system. According to the *CEQR Technical Manual*, a solid waste assessment is appropriate if a project involves a regulatory change to public or private waste collection, processing, recycling, or disposal.

As described in Chapter 1, "Project Description," the City of New York is proposing to establish and implement a Commercial Waste Zone (CWZ) Program across the five boroughs of the City to improve the carting of refuse, recyclables, and organic waste from commercial businesses (the "CWZ Program" or "Proposed Action").

Specifically, the Proposed Action would create 20 geographic zones in each of which a limited number of carters would be authorized to operate while adhering to certain parameters intended to improve transparency, safety, and customer service, among other objectives. The implementation of the Proposed Action is intended to create a safe and more efficient collection system that provides high-quality, reasonably cost service while advancing the City's sustainability and recycling goals. Fourteen zones would each have three authorized carters, four zones would each have four carters, and two zones would each have five carters, for a potential total of up to 68 zone contracts. No carting company could have more than 15 zone contracts. Consortiums of larger and smaller carting companies could be awarded one or more zone contracts.

While the Proposed Action would not result in an increase in solid waste generation, an assessment of the Proposed Action's potential effects on the solid waste management system is warranted as well as a review of the Proposed Action's consistency with the SWMP because the Proposed Action would change the system of commercial waste collection.

The CWZ Program would not directly affect any facility used for the transfer or disposal of solid waste generated within New York City, any recyclables handling and recovery facility that accepts recyclables, or any facility that processes organic waste originating within New York City. Likewise, the CWZ Program would not affect the carting of residential waste, or commercial carting of medical waste, mixed construction and demolition debris, materials such as dirt, rock, concrete and masonry that is processed into clean fill material. Therefore, the Solid Waste analysis focuses on the Proposed Action's impact upon the available commercial carting capacity within the City to collect and mixed municipal solid waste (MSW) (putrescible waste), designated recyclables (metal, glass, and plastic [MGP], paper, cardboard), and organics such as food preparation waste from the commercial sector.

B. EXISTING CONDITIONS

This section describes the current conditions of the commercial waste carting industry, including applicable laws and regulations and management plans.

As described in Chapter 1, "Project Description," each year more than 100,000 New York City office buildings, retailers, restaurants, manufacturers, and other commercial establishments generate more than 3 million tons of waste (i.e., refuse, recyclables, and organics).[1] A current network of approximately 95 private carters from the City and region collect waste from these businesses, utilizing a total of approximately 1,100 licensed carting trucks.[2] According to the Business Integrity Commissions' (BIC) 2017 Q2-Q4[3] customer register, approximately 62 percent of customers are served by large carters,[4] 22 percent served by medium carters, and 16 percent served by small carters. In recent years, the commercial waste industry has begun to see market consolidation through acquisitions on the part of some of the larger operating carters.

Carters take the commercial refuse they collect within New York City to waste transfer stations in the City or region, where it is transferred to long-haul trucks or rail cars and sent to disposal facilities such as landfills and waste-to-energy plants. Some commercial refuse is carted directly to waste-to-energy plants in the metropolitan area outside New York City without passing through a transfer station. Carters take designated MGP recyclables to recyclable processing and recovery facilities in the City and region. Sorted recyclables are then sent to other manufacturing facilities to be made into new products, while the residue is disposed of. Carters take designated waste paper and cardboard to paper recycling sorting or processing facilities, including the Visy Paper Mill in Staten Island, which uses it to make grades of cardboard. Carters take organics either to transfer stations or to organic processing facilities in the region.

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[1] BIC 2017 Q2-Q4 Customer Registry. This dataset includes customer information reported by individual carters on a regular basis to BIC.

[2] BIC, 2015, Private Carter Financial Statements

BIC, 2015, Private Carter Customer Register

BIC, 2017 Q2-Q4, Private Carter Customer Register

BIC, 2017, LL145/2013 Compliance Plan Reports

BIC, 2018, LL145/2013 Compliance Reports

[3] This dataset includes customer information reported by individual carters on a regular basis to BIC for the 2017 Q2-Q4 Customer Register. The number of customers is not linked to the number of commercial businesses serviced by carters since in large office buildings carters may collect waste from multiple businesses but may only report the single building management company as a customer. 2017 Q2-Q4 Carter Customer Register counts: 117,384 rows reported (some customers are listed in 1 row with multiple waste streams; others are listed in multiple rows for multiple waste streams); 100,302 unique customers (unique by name and location); 172,503 by customer and waste stream (all customers are split up into 1 entry per waste stream serviced).

[4] For the purposes of this analysis, a "Small" carter captures less than 1 percent of the market share (defined by the number of customers). A "Medium" carter captures between 1 and 3 percent of the market share. A "Large" carter captures more than 3 percent of the market share.

NEW YORK CITY LAWS AND REGULATIONS

As discussed in Chapter 2, "Land Use, Zoning and Public Policy," the current commercial waste industry is regulated largely by Titles 16 and 16A of the New York City Administrative Code, and Titles 16 and 17 of the Rules of the City of New York.

Title 16 ("Sanitation") of the New York City Administrative Code requires commercial businesses to acquire a Trade Waste Removal License and indicate the name of the carter they employ, and sets forth waste and recyclables source-separation requirements per the City's Recycling Law.

Title 16A, Chapter 1 ("Commercial Waste Removal") of the New York City Administrative Code authorizes BIC to license, register, and regulate businesses that remove, collect, or dispose of trade waste. It authorizes BIC to investigate the background and make determinations of fitness concerning the employees of licensed carters; determine the maximum and minimum rates for collection; removal and disposal of trade waste; conduct studies or investigations; establish and regulate appropriate safety and service standards; hire BIC staff; and provide educational programs to inform both carters and customers about their rights and responsibilities.

Title 16 of the Rules of the City of New York provides requirements specific for commercial waste carters. The rules broadly (a) allow commercial establishments generating less than a defined amount of waste per week to share a disposal location with another commercial establishment; (b) define designated recyclable materials for commercial waste; (c) provide source-separation, set-out, and collection requirements and responsibilities; (d) allow the Commissioner of the New York City Department of Sanitation (DSNY) to request inspections; and (e) define commercial waste-carting vehicle requirements and specifications.

Title 17 Chapter 1 of the Rules of the City of New York sets forth BIC's regulations for commercial waste carters. Title 17 establishes rate caps (e.g., maximum costs) for waste collection, outlines licensing requirements for carters and brokers, sets license application requirements, provides terms for license application rejection, and specifies certain procedures for investigation, license revocation or suspension, penalties, liabilities, enforcement, hearings, and other steps related to addressing improper carter and broker conduct.

In addition, commercial carters are required to comply with a number of Local Laws (LLs) that will take effect over the next few years. LL145 of 2013 (LL145/2013) requires heavy-duty diesel waste-carting truck engines older than Model Year 2007 to be upgraded to reduce their exhaust emissions either by installing a newer engine from 2007 or later, or to retrofit the engine with pre-approved Best Available Retrofit Technology (BART) emission controls, such as diesel particulate traps, by January 1, 2020.

LL56 of 2015 (LL56/2015) requires all trade waste-carting vehicles to be equipped with side guards by January 1, 2024. Sideguards help prevent pedestrians and bicyclists from falling into the exposed space between the front axle and rear axle of the carting truck.

LL152 of 2018 (LL152/2018) requires cuts in the permitted capacity of putrescible and non-putrescible solid waste transfer stations in four community districts in New York City that are overburdened with disproportionately higher amounts of waste transfer station capacity.

2006 SOLID WASTE MANAGEMENT PLAN

The current SWMP, adopted in July 2006 and approved by New York State in October 2006, is a five-borough plan that addresses New York City's waste management needs. It projects quantities of refuse and recyclables that need management; identifies local waste transfer stations, recyclables

processing and recovery facilities, and composting facilities; and discusses disposal plans for refuse via export from the City to landfills and waste-to-energy facilities. The City is required to adopt a SWMP for at least a 10-year period under New York State Environmental Conservation Law. The current plan is in effect through 2025, at which point a new plan will be evaluated and initiated.

The SWMP emphasizes three broad categories of goals: (1) the improvement of conditions around transfer stations upon which both public and private carters currently rely; (2) the transition from a system reliant on long-haul truck transport to disposal facilities to one that takes advantage of barge and rail transportation and related transfer station and recyclables processing infrastructure development, to reduce local truck traffic; and (3) reductions in the concentrations of transfer station capacity so that low-income and minority communities are not disproportionately burdened. In addition, the SWMP sets ambitious goals for recycling within the City, which will ultimately reduce the exportation and disposal of waste. The SWMP does not discuss commercial carting arrangements or specify facilities outside the City for management or disposal of commercial refuse or recyclables.

RECYCLING AND ORGANICS REQUIREMENTS

The City launched a progressive recycling program in 1989 (LL19 of 1989, and amended New York City Administrative Code §16-306), which mandated recycling requirements for City residents, businesses, and institutions. The Citywide Recycling Program requires separation from refuse of designated recyclable materials for collection, including paper, cardboard, MGP as well as other materials such as textiles. On February 5, 2016, DSNY adopted new rules to allow for single stream collection and recycling of commercial waste (whereby all designated recyclable MGP and paper are placed in the same bags or bins by a business) and for co-collection of recyclables (whereby all designated recyclable MGP is source separated from designated paper by the business, but a private carter places the source-separated materials into the same compartment of a waste-carting truck with no refuse). The intent of the new rule is to help make commercial recycling easier to manage and increase diversion of recyclables from landfills.

In 2013, the City Council passed LL146 of 2013 (codified as New York City Administrative Code §16-306.1) which requires DSNY to assess, at least annually, the available regional capacity to process organic waste and to designate certain categories of businesses that must separate this material for composting or aerobic or anaerobic digestion to make useful products such as soil amendments and/or biogas. To date, DSNY has identified the following categories of businesses that are required to source-separate organic waste for such beneficial use:

- Food service establishments with a floor area of at least 15,000 square feet (sf), targeting food preparation organic waste, not post-consumer food waste
- Food service establishments that are part of a chain of 100 or more locations in the City of New York
- Retail food stores with a floor area of at least 25,000 sf
- Food service establishments in hotels with 150 or more rooms
- Arenas and stadiums with a seating capacity of at least 15,000 people
- Food manufacturers with a floor area of at least 25,000 sf
- Food wholesalers with a floor area of at least 20,000 sf

NEIGHBORHOOD CASE STUDY AREAS

To provide a baseline of the for each of the three commercial density typology case study areas defined in Chapter 1, "Project Description," the current conditions of the commercial waste system in each study area were characterized, including the estimated number of customers, the total waste generated, the major waste streams, and the number of carters.

As individual businesses and different industries produce varying amounts of waste, a waste generation and cost model was developed based on reported employment to estimate (1) the amount of waste produced within a specific geographic area and (2) the total and average costs of waste removal services for businesses. As described in detail in Chapter 3, "Socioeconomic Conditions," use-specific waste generation ratios, reported on a per-employee basis were applied to estimate the amount of waste generated by the specific industry sectors that are typically collected by commercial carters. Commercial waste generation rates from the State of California "CalRecycle" program were utilized to model waste generation in New York City.[5,6] **Table 4-1** shows the employee-based waste generation rates utilized for this analysis.

Table 4-1
Employment-based Waste Generation Rates

Industry Sector	Generation Rate (tons/employee/yr)[1]
Manufacturing[2]	1.77
Office[3]	1.37
Non-Food Retail	2.41
Food Retail	6.64
Food Services	2.91
Hotel	2.13

Notes:
[1] Waste generation rates includes all waste streams (refuse, recyclables, and organics) and assumes that diversion of waste would not result in a net decrease in waste produced, just a change to the compositional ratio of waste produced.
[2] The manufacturing rate used for analysis was calculated by averaging the waste generation rates of electronic, food, and all other manufacturing generation rates found in the CalRecycle model.
[3] The office rate used for analysis was calculated with the average waste generation rate from management, professional, and health services.
Sources:
CalRecycle, Sept 2015, 2014 Generator-Based Characterization of Commercial Sector Disposal and Diversion in California.

In order to adjust the CalRecycle employment-based waste generation ratios for New York City, the total tonnage of waste produced within New York City, (approximately 3.3 million tons per year) was multiplied by the proportional composition of waste generation by industry sector modeled utilizing the unadjusted CalRecycle rates seen above. As shown in **Table 4-2**, New York City generates an estimated 3.3 million tons of commercial waste annually (including putrescible, recyclable, and organic waste). Approximately 51 percent of this waste is generated by office

[5] *CEQR Technical Manual* Waste Generation Rates were not utilized in this analysis as the industry analysis required more refined waste generation rate estimates that align with the identified NYSDOL QCEW employment data and NAICS codes used to analyze the industry sectors affected by the commercial waste zone program.

[6] CalRecycle, Sept. 2015, 2014 Generator-Based Characterization of Commercial Sector Disposal and Diversion in California

businesses, approximately 16 percent is produced by food services and approximately 15 percent of commercial waste is produced by non-food retail.

Table 4-2
New York City Commercial Waste Generation

Industry Sector	Approximate Employment		Approximate Waste Generation	
	Approximate Count	Percent[1]	Tons per Year[2]	Percent of Total Waste Generated[1]
Manufacturing	210,608	8%	254,810	8%
Office	1,806,201	67%	1,695,757	51%
Non-Food Retail	296,466	11%	488,383	15%
Food Retail	51,969	2%	235,873	7%
Food Services	262,819	10%	522,781	16%
Hotel	75,091	3%	109,330	3%
Total	**2,703,154**	**100%**	**3,306,934**	**100%**

Note:
1 Due to rounding totals may not equal 100 percent.
2 New York City waste generation by industry sector was normalized to reflect the known waste production rate within New York City. The CalRecycle waste generation by industry sector was calculated and then applied proportionally to the New York City waste generation total.
Sources:
U.S. Census Bureau, 2018, LEHD Origin-Destination Employment Statistics (2002 - 2015)
ESRI Business Analyst Infogroup, 2018
CalRecycle, Sept. 2015, 2014 Generator-Based Characterization of Commercial Sector Disposal and Diversion in California
DSNY, 2015-2017, Transfer Station and Recycling Processor Reports
DSNY, 2016, Private Carter Surveys

MIDTOWN MANHATTAN CBD

Following the waste generation model described above, the waste generation was modeled for the Midtown Manhattan Central Business District (CBD) case study area. As indicated in **Table 4-3**, based on the U.S. Census Bureau 2018 data, the majority of employees within the Midtown Manhattan CBD high commercial density case study area fall within the office industry sector (approximately 70 percent), followed by non-food retail[7] (approximately 17 percent), and food service (approximately 6 percent).

The Midtown Manhattan CBD case study area produces an average of 218,907 tons of commercial waste per year (including putrescible, recyclable, and organic waste) (see **Table 4-3**). The office industry sector generates the greatest amount of commercial waste (approximately 57 percent), followed by non-food retail (approximately 24 percent) and food services (approximately 10 percent).

[7] Non-food retail includes motor vehicle and parts dealers, furniture and home furnishings stores, electronics and appliance stores, building material and garden equipment and supplies dealers, health and personal care stores, gasoline stations, clothing and clothing accessories stores, sporting goods, hobby, musical instrument, and book stores, general merchandise stores, miscellaneous store retailers, and non-store retailers.

Table 4-3
Waste Generation in Midtown Manhattan Case Study Area

Industry Sector	Employees		Approximate Waste Generation	
	Approximate Count	Percent[1]	Tons/Year[2]	Percent of Waste Generated[1]
Manufacturing	13,723	3%	7,020	3%
Office	314,434	70%	124,819	57%
Non-Food Retail	76,617	17%	53,366	24%
Food Retail	558	0%	1,071	1%
Food Services	26,408	6%	22,210	10%
Hotel	16,926	4%	10,420	5%
Total	**448,666**	**100%**	**218,907**	**100%**

Notes:
1 Due to rounding totals may not equal 100 percent
2 The Midtown Manhattan waste generation rate was normalized against tonnage data collected at transfer stations and recycling facilities, as well as supplemental data from private carter surveys in order to better align with real-world waste generation for the study area. Midtown Manhattan ton equals 0.3 CalRecycle tons.
Sources:
U.S. Census Bureau, 2018, LEHD Origin-Destination Employment Statistics (2002-2015)
ESRI Business Analyst Infogroup, 2018
CalRecycle, Sept. 2015, 2014 Generator-Based Characterization of Commercial Sector Disposal and Diversion in California
DSNY, 2015-2017, Transfer Station and Recycling Processor Reports
DSNY, 2016, Private Carter Surveys

There are 38 carters that currently serve the Midtown Manhattan CBD, with 7 large carters servicing the area, 11 medium carters servicing the area, and 20 small carters servicing the area (see **Table 4-4**).

Table 4-4
Carters Servicing the Midtown Manhattan Case Study Area

	Small Carters[1]	Medium Carters[2]	Large Carters[3]	Total
No. of Carters Servicing the Area	20	11	7	38
% Customers Served in the Area	6	32	62	100

Notes:
[1] Small carter—has 1 percent or less of the total market share
[2] Medium carter—has 1 to 3 percent of the total market share
[3] Large carter—has greater than 3 percent of the total market share
Source:
BIC 2017 Q2-Q4 Customer Register.

FLATBUSH NOSTRAND JUNCTION NEIGHBORHOOD RETAIL CORRIDOR

Following the waste generation model described above, the waste generation was modeled for the Flatbush Nostrand Junction case study area. As indicated in **Table 4-5**, based on the U.S. Census Bureau 2018 data, employees within the Flatbush Nostrand Junction medium commercial density case study area mainly fall within the office industry sector (approximately 41 percent), non-food retail (approximately 39 percent), and food services (approximately 15 percent).

The Flatbush Nostrand Junction case study area produces an average of 3,382 tons of commercial waste per year (including putrescible, recyclable, and organic waste) (see **Table 4-5**). The non-food retail industry sector generates the greatest amount of commercial waste (approximately 44

percent), followed by the office industry sector (approximately 27 percent), and food services (approximately 21 percent).

Table 4-5
Waste Generation in the Flatbush Nostrand Junction Case Study Area

Industry Sector	Employment		Waste Generation	
	Count	Percent[1]	Tons/Year[2]	Percent of Waste Generate[1]
Manufacturing	45	2%	48	1%
Office	1,100	41%	905	27%
Non-Food Retail	1,029	39%	1,485	44%
Food Retail	52	2%	208	6%
Food Services	408	15%	710	21%
Hotel	21	1%	27	0%
Total	**2,655**	**100%**	**3,382**	**100%**

Notes:
1 Due to rounding totals may not equal 100 percent
2 The Flatbush Nostrand waste generation rate was normalized based on tonnages recorded at waste transfer stations and recycling facilities, supplemented by private carter surveys and routing data, in order to better align with real-world waste generation for the study area. Flatbush Nostrand Junction ton equals 0.6 CalRecycle tons.
Sources:
U.S. Census Bureau, 2018, LEHD Origin-Destination Employment Statistics (2002 - 2015)
ESRI Business Analyst Infogroup, 2018
CalRecycle, Sept. 2015, 2014 Generator-Based Characterization of Commercial Sector Disposal and Diversion in California
DSNY, 2015 - 2017, Transfer Station and Recycling Processor Reports
DSNY, 2016, Private Carter Surveys

There are 17 carters that currently serve the Flatbush Nostrand Junction case study area, with 6 large carters servicing the area, 4 medium carters servicing the area, and 7 small carters servicing the area (see **Table 4-6**).

Table 4-6
Carters Servicing the Flatbush Nostrand Junction Case Study Area

	Small Carters[1]	Medium Carters[2]	Large Carters[3]	Total
No. of Carters Servicing the Area	7	4	6	17
% Customers Served in the Area	4	3	93	100

Notes:
[1] Small carter—has 1 percent or less of the total market share
[2] Medium carter—has 1 to 3 percent of the total market share
[3] Large carter—has greater than 3 percent of the total market share
Source:
BIC 2017 Q2-Q4 Customer Register.

COLLEGE POINT, QUEENS LOWER DENSITY AREA

Following the waste generation model described above, the waste generation was modeled for the College Point case study area. As indicated in **Table 4-7**, based on the U.S. Census Bureau 2018 data, the majority of employees within the College Point lower commercial density case study

area fall within the office industry sector (approximately 48 percent), followed by non-food retail[8] (approximately 28 percent), and manufacturing (approximately 21 percent).

Table 4-7
Waste Generation in the College Point Case Study Area

Industry Sector	Employees		Waste Generation	
	Count	Percent[1]	Tons/Year[2]	Percent of Waste Generated[1]
Manufacturing	3,215	21%	3,952	20%
Office	7,363	48%	7,023	36%
Non-Food Retail	4,252	28%	7,117	37%
Food Retail	80	1%	368	2%
Food Services	378	2%	763	0%
Hotel	76	0%	113	1%
Total	**15,364**	**100%**	**19,335**	**100%**

Notes:
[1] Due to rounding, totals may not equal 100 percent.
[2] The College Point waste generation rate was normalized based on tonnages recorded at waste transfer stations and recycling facilities, supplemented by private carter surveys and routing data, in order to better align with real-world waste generation for the study area. College Point ton equals 0.7 CalRecycle tons.
Sources:
U.S. Census Bureau, 2018, LEHD Origin-Destination Employment Statistics (2002-2015)
ESRI Business Analyst Infogroup, 2018
CalRecycle, Sept. 2015, 2014 Generator-Based Characterization of Commercial Sector Disposal and Diversion in California
DSNY, 2015-2017, Transfer Station and Recycling Processor Reports
DSNY, 2016, Private Carter Surveys

The College Point case study area produces an average of 19,335 tons of commercial waste per year (including putrescible, recyclable, and organic waste) (see **Table 4-7**). The non-food retail industry sector generates the greatest amount of commercial waste (approximately 37 percent), followed by the office industry sector (approximately 36 percent) and manufacturing industry sector (approximately 20 percent).

There are 23 carters that currently serve the College Point case study area, with 6 large carters servicing the area, 6 medium carters servicing the area, and 11 small carters servicing the area (see **Table 4-8**).

Table 4-8
Carters Servicing the College Point Case Study Area

	Small Carters[1]	Medium Carters[2]	Large Carters[3]	Total
No. of Carters Servicing the Area	11	6	6	23
% Customers Served in the Area	25	29	46	100

Notes:
[1] Small carter—has 1 percent or less of the total market share
[2] Medium carter—has 1 to 3 percent of the total market share
[3] Large carter—has greater than 3 percent of the total market share
Source:
BIC 2017 Q2-Q4 Customer Register.

[8] See footnote 3, above.

C. FUTURE WITHOUT THE PROPOSED ACTION

The Future without the Proposed Action (the "No Action" condition) includes the current commercial waste industry and any regulatory changes to the industry expected by the Analysis Year of 2024.

Under the No Action condition, the local laws concerning commercial waste discussed above under "Existing Conditions" are assumed to be implemented and the 2006-2025 SWMP would continue to guide solid waste policy for the City. The City would continue to expand recycling and organics diversion, and under the No Action condition all commercial businesses designated in LL146/2013 would be required to separate organics for composting or digestion.

Continued implementation of the SWMP would occur under the No Action condition. The goals of the SWMP are being achieved through the reconstruction of marine transfer stations and the reduction of solid waste processed in certain overburdened districts of Brooklyn, the Bronx, and Queens. As indicated in "Existing Conditions," LL152/2018 will reduce the permitted capacity at putrescible and non-putrescible solid waste transfer stations in four overburdened community districts would be implemented in the No Action condition.

In regards to recycling and organics, it is estimated that 30 percent of commercial waste would be collected as recyclables (i.e., cardboard, paper, and MGP) and 3 percent of commercial waste would be collected as organics throughout the City under the No Action condition.[9] This reflects a slight increase from existing conditions in which an estimated 24 percent of commercial waste is collected as recyclables and 1 percent is collected as organics throughout the City.

Under the No Action condition, there would be no changes to the volume of commercial waste generated within each of the three case study areas.

D. FUTURE WITH THE PROPOSED ACTION

The Future with the Proposed Action (the "With Action" condition) evaluates changes to the solid waste management system that would exist in the Analysis Year of 2024 as a result of the implementation of the Proposed Action, to determine their effect on the system's capacity to manage commercial refuse and recyclables and for consistency with the SWMP.

As described in Chapter 1, "Project Description," one of the goals of the CWZ Program would be to increase recycling and organics diversion. To help achieve this goal, those carters awarded contracts for the right to collect waste in a zone would be required to provide recycling and organics collection as standard services in addition to refuse collection. As indicated above, carters would be allowed to form consortiums or subcontract with other carters for these services.

In addition, under the Proposed Action, both carters and customers would be required by their contracts to comply with existing laws regarding recycling and organics separation of commercial waste, and they will be required by contract to comply with any new or revised laws or regulations enacted during the contract term. As part of their response to the City's Request for Proposals (RFP), the Proposed Action would require carters to develop "zero waste" plans and identify innovative practices to support waste reduction, reuse, and recycling. The RFP and resulting contracts would provide for additional oversight and reporting requirements to ensure that these practices are implemented. With more recycling and organic materials being separated under the Proposed Action, less waste would be sent to landfills, saving resources and energy, consistent with the City's

[9] Collection rate is the percentage of designated recyclables or organic material collected in the system.

sustainability and recycling goals. Customers would be responsible for ensuring that they follow the laws regarding recycling, including signage, education, separation, and set-out requirements.

As such, the Proposed Action would not be expected to increase the volume of waste being produced or collected but would result in a redistribution of what waste would be collected and by which carter it would be collected. Under the Proposed Action, there would be an expected shift in the waste streams collected, with an increased emphasis on diversion, from an estimated 30 percent collection rate of recyclables and 3 percent of organics in the No Action condition to 38 percent collection rate of recyclables and 6 percent of organics with the Proposed Action. Recycling and organic waste collection trucks carry fewer tons due to lower waste density than similar putrescible waste collection trucks. Thus a net increase in the total number of collection trucks for these commodities would be expected as a result of the increased diversion to recycling and organics. However, as detailed in Chapter 5, "Transportation," the Proposed Action would limit the number of carters within geographic zones, which would result in increased efficiency in waste collection routes, such that, the total number of commercial carter trucks would be reduced as a result of the implementation of the Proposed Action. As detailed in Chapter 3, "Socioeconomic Conditions," it is anticipated that as a result of more efficient routing and more efficient truck loading (e.g., filling to capacity), the commercial carting industry would require 275 fewer trucks under the Proposed Action as compared to the No Action condition. Under the Proposed Action, the commercial carting industry would require an estimated fleet of 739 trucks, which would provide sufficient capacity in order to collect the commercial waste generated within New York City.

NEIGHBORHOOD CASE STUDY AREAS

To determine potential changes to the commercial waste system under the Proposed Action, an assessment was performed for each neighborhood case study area that analyzed anticipated changes to the respective quantities of refuse, recyclables, and organics set out for collection and waste collection capacity.

MIDTOWN MANHATTAN CBD

As described in Chapter 1, "Project Description", under the Proposed Action, the Midtown Manhattan CBD high commercial density case study area would fall within CWZ Zones MN-3 and MN-4. Under the Proposed Action, there would be a maximum of 5 carters that serve each of these zones, a reduction from 38 carters that currently serve this Midtown Manhattan CBD case study area (see **Table 4-9**).

Table 4-9
Carters Servicing the Case Study Areas with Proposed Action

	Midtown Manhattan CBD		Flatbush Nostrand Junction			College Point
Total No. of Carters Currently Servicing the Area	38		17			23
Associated CWZ Zone	MN-3	MN-4	BK-3	BK-4	BK-6	QN-3
Total No. Carters Servicing under Proposed Action	5	5	3	3	3	3
Source: BIC 2017 Q2-Q4 Customer Register.						

The Proposed Action is not expected to result in changes in the total quantity of waste generated by customers within the study area. However, as a goal of the Proposed Action would be to increase recycling and organic diversion, and carters awarded contracts would be required to collect all three

waste streams, there would be a change in the respective volumes of waste types picked up: a decrease in the mixed MSW (i.e., refuse) and an increase in recyclables and source-separated organics.

FLATBUSH NOSTRAND JUNCTION NEIGHBORHOOD RETAIL CORRIDOR

As described in Chapter 1, "Project Description", under the Proposed Action, the Flatbush Nostrand Junction case study area would fall within CWZ Zones BK-3, BK-4, and BK-6. Under the CWZ Program, a maximum of 3 carters would serve each of these zones, a reduction from the 17 carters that currently serve the Flatbush Nostrand Junction case study area (see **Table 4-9**).

As with the Midtown Manhattan CBD case study, the Proposed Action is not expected to result in changes in the total quantity of waste generated by customers within the Flatbush Nostrand Junction study area. However, as a goal of the Proposed Action would be to increase recycling and organic diversion, and carters awarded contracts would be required to collect all three waste streams, there would be a change in the respective volumes of waste types picked up—a decrease in mixed MSW (i.e., refuse) and an increase in recyclables and organics.

COLLEGE POINT, QUEENS LOWER DENSITY AREA

As described in Chapter 1, "Project Description," under the Proposed Action, the College Point case study area would fall within CWZ Zone QN-3. Under the CWZ Program, there would be a maximum of 3 carters that would serve this zone, a reduction from the 23 carters that currently serve the College Point case study area (see **Table 4-9**).

As with the other two case study areas, the Proposed Action is not expected to result in changes in the total quantity of waste generated by customers within the College Point case study area. However, as a goal of the Proposed Action would be to increase recycling and organic diversion, and carters awarded contracts would be required to collect all three waste streams, there would be a change in the respective volumes of waste types picked up—a decrease in mixed MSW (i.e., refuse) and an increase in recyclables and organics.

CONSISTENCY WITH SWMP

As noted above, the SWMP establishes certain policy goals to manage the various components of residential and commercial waste generated in the City and identifies procedures and facilities that may be required to meet those goals.

The CWZ Program would not directly affect any facility identified in the SWMP for the transfer, sorting or disposal of refuse, organics or recyclables, or change New York City's plan to rely on remote disposal capacity such as landfills and waste-to-energy plants for refuse. Further, existing recycling and organic processing facilities within New York City and the surrounding area are anticipated to have adequate capacity to accommodate the increase in diversion as a result of the CWZ Program.

As described earlier, one of the goals of the Proposed Action would be to increase the diversion capture rate of designated recyclables, and thus reduce the amount of refuse that must be disposed of. The carters who are awarded contracts under the Proposed Action in each zone would be required to collect all three waste types, including refuse, recycling, and organics. If a carter would not be able to provide this service on its own, it would be allowed to create a consortium or to contract with other carters who would be able to pick up recyclable and/or organics. This goal of the Proposed Action would support the goals of the SWMP.

In addition, another goal of the Proposed Action is to reduce truck trips related to the commercial waste industry. As described in Chapter 5, "Transportation," in creating zones and limiting the number of carters servicing those zones, there is expected to be more efficient routing and more efficient truck loading (e.g., filling to capacity), reducing the overall waste carting truck traffic. This would support the SWMP truck traffic reduction goals and thereby reduce truck traffic-related impacts to communities, including pedestrian safety, noise and air emissions. In total up to 68 contracts would be awarded for commercial waste collection within New York City. With multiple carters allowed to operate within a zone, there are opportunities for various sized carters to win zone contracts. Small carters may benefit from a strong local presence in a given zone and knowledge of a particular neighborhood in the evaluation of proposals. The CWZ Program also accounts for the current market structure and gives carters of all sizes the opportunity to compete in the new system. Additionally, the City would promote opportunities for an array of different carters by accepting proposals submitted by a consortium of carters or organized through a broker and by allowing subcontracting in certain circumstances in order to ensure commercial waste collection is done effectively and efficiently based on the criteria outlined in the Implementation Plan.

Therefore, the Proposed Action would be consistent with the SWMP in the Analysis Year.

E. CONCLUSION

In view of the foregoing, it can be concluded that the CWZ Program would not cause a significant adverse impact to solid waste management. ✷

Chapter 5: Transportation

A. INTRODUCTION

In accordance with the 2014 *City Environmental Quality Review (CEQR) Technical Manual*, this chapter examines the potential effects of a project on the City's transportation systems.

As described in Chapter 1, "Project Description," the City of New York is proposing to establish and implement a Commercial Waste Zone (CWZ) Program across the five boroughs in the City to improve the carting of refuse, recyclables, and organic waste from commercial businesses (the "CWZ Program" or "Proposed Action").

In order to examine the potential effects of the Proposed Action, a regional traffic assessment was conducted. In addition, a screening level analysis of the number of trucks within the three representative neighborhood case study areas, as described in Chapter 1, "Project Description," was performed. This screening assessment was conducted pursuant to the methodologies outlined in the *CEQR Technical Manual*. As this is a Generic Environmental Impact Statement (GEIS), should individual zones result in an increment of 50 or more passenger car equivalents (PCE) once all the contracts have been awarded, additional analyses may be needed.

B. TRANSPORTATION CONDITIONS

EXISTING CONDITION

Current commercial carter practices need to be considered to understand how the number of trucks would likely be affected by the Proposed Action. Typically, commercial waste is collected by a private carter pursuant to an agreement with a private establishment (i.e., customer). The type of commercial waste generated by customers and collected by these carters is diverse. In addition to refuse, carters may pick up source-separated waste paper, cardboard, and metal, glass, and plastic (MGP) as well as organics. As discussed in Chapter 1, "Project Description," a network of approximately 95 private carters with approximately 1,100 trucks collect refuse, recyclables and organics from these businesses.[1] Carters in New York City typically use rear-loading diesel packer trucks and roll-on roll-off container trucks. The frequency of pickups (daily or less regularly) varies, depending on the arrangement the customer makes with the carter. Carters typically operate up to six days per week and can work hours around the clock for pickups and disposal of commercial waste.

[1] BIC, 2015, Private Carter Financial Statements

BIC, 2015, Private Carter Customer Register

BIC, 2017 Q2-Q4, Private Carter Customer Register

BIC, 2017, LL145/2013 Compliance Plan Reports

BIC, 2018, LL145/2013 Compliance Reports.

Most waste pickups occur overnight between the hours of 8:00 PM and 6:00 AM. Daytime pickups are between 6:00 AM and 8:00 PM. Typically, approximately 23 percent of all pickups occur in the daytime and 77 percent occur at night. Of the night-time pick-ups, approximately 15 percent occurs in the early nighttime hours between 8:00 PM and 10:00 PM, 35 percent around midnight, between 10:00 PM and 2:00 AM, and 27 percent in the overnight to early morning hours from 2:00 AM and 6:00 AM.[2] These pick-up patterns occur across all business types, with no significant difference between industry sectors.

On a given street or in a local community, numerous carters collect solid waste from these customers. As discussed in Chapter 1, "Project Description," in some parts of the City, more than 50 private commercial carters service a single neighborhood, resulting in up to dozens of private commercial carter trucks per individual commercial block on a single night. Carters' collection activities are often dispersed and overlap throughout New York City. When not on local streets for collections, commercial carter trucks travel along New York City Department of Transportation (NYCDOT)-designated truck routes. They remain on the designated truck routes for as long as possible at both the regional and neighborhood levels, until reaching their destination. These collection trucks arrive at the pickup location, afterwards traveling through neighborhoods for other pickups, and ultimately, to NYCDOT-designated truck routes and transfer stations in or outside of the City. The NYCDOT-designated truck routes located within each case study area are shown in **Figures 5-1 through 5-3**.

Under existing conditions, the number of commercial carter trucks over the course of 24-hour period is approximately 167, 45, and 83, within the Midtown Manhattan Central Business District (CBD), the Flatbush Nostrand Junction, and the College Point case study areas, respectively.[3]

Commercial carter truck Vehicle Miles Traveled (VMT) includes the estimated number of miles that all commercial carter trucks serving New York City businesses drive to pick up and drop off waste each day, beginning at a truck's starting point, continuing to each customer for waste collection, then to the transfer station for waste disposal/removal, and ending back at its origination point. Existing inefficiencies in waste collection routes lead to an elevated VMT, within New York City and region-wide for travel to transfer stations and garages in New Jersey, Long Island, and nearby upstate New York counties.

FUTURE WITHOUT THE PROPOSED ACTION

The Future without the Proposed Action (the "No Action" condition) includes the commercial waste industry and any changes to the industry expected by the Analysis Year of 2024.

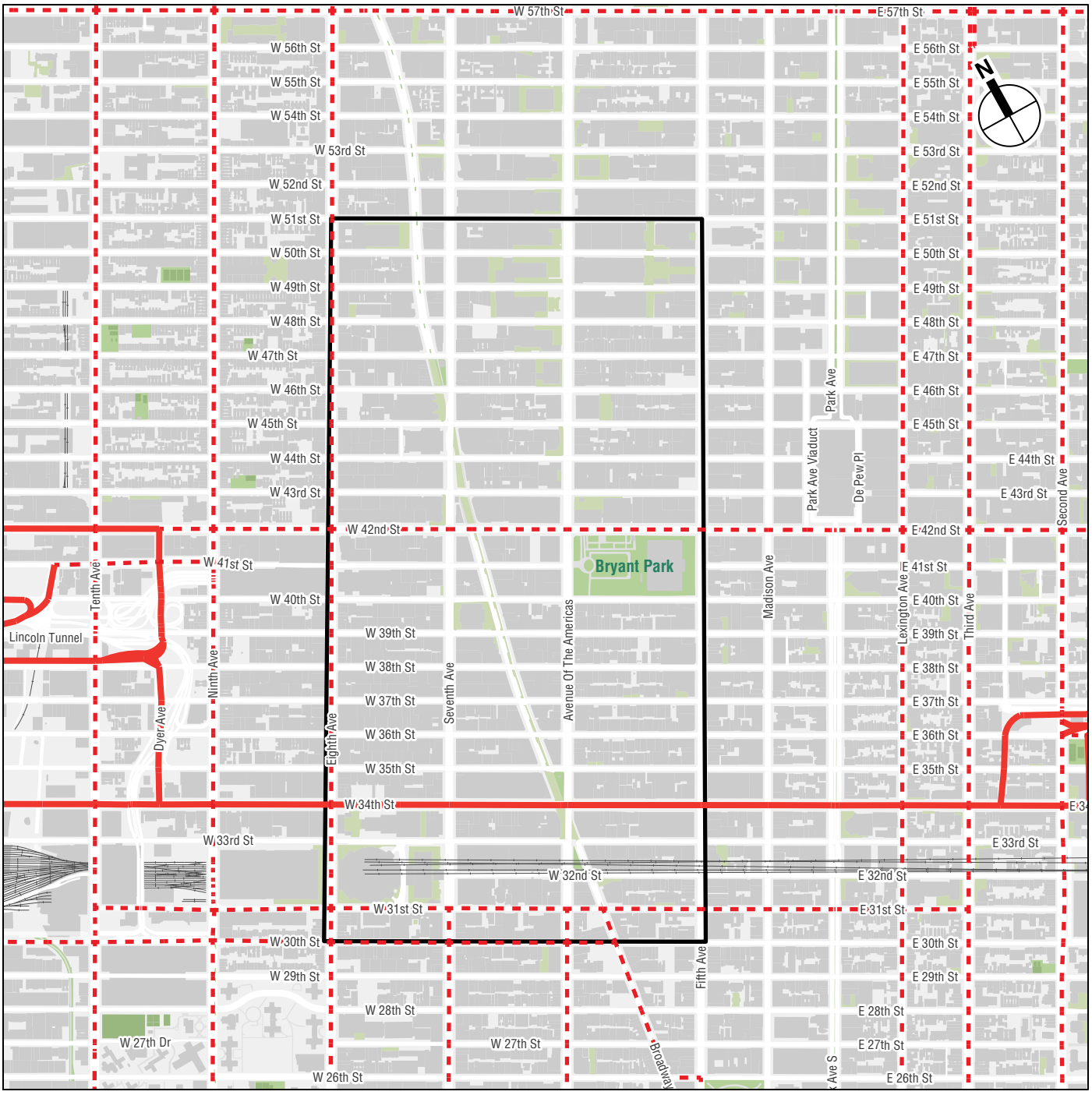
Under the No Action condition, carters would continue to operate as they do under the existing condition—the routes, frequency, durations, and pick-up times would remain essentially the same.

As described in Chapter 2, "Land Use, Zoning and Public Policy," existing regulations require commercial businesses to separately manage recyclables from refuse to facilitate diversion from landfills. Under the No Action condition, the City would continue to expand recycling and organics diversions, including requiring all commercial businesses designated in Local Law (LL) 146 of 2013 (LL146/2013) to separate organics for beneficial use, such as composting or anaerobic digestion to produce biogas. Recycling and organic waste collection trucks have lower waste

[2] 2018 Routing Data collected between March 4, 2018 and March 17, 2018

[3] 2018 Routing Data including Diversion Program Impact

12.19.18



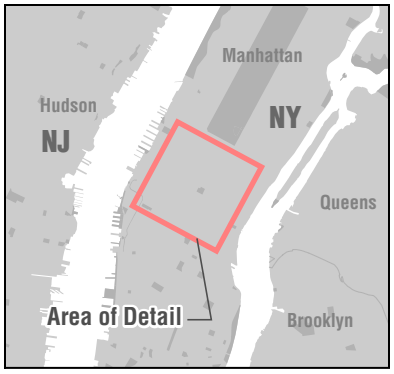
0 1,000 FEET

Case Study Area

NYCDOT Truck Routes

Local

Through



Midtown Manhattan CBD
NYCDOT-Designated Truck Routes

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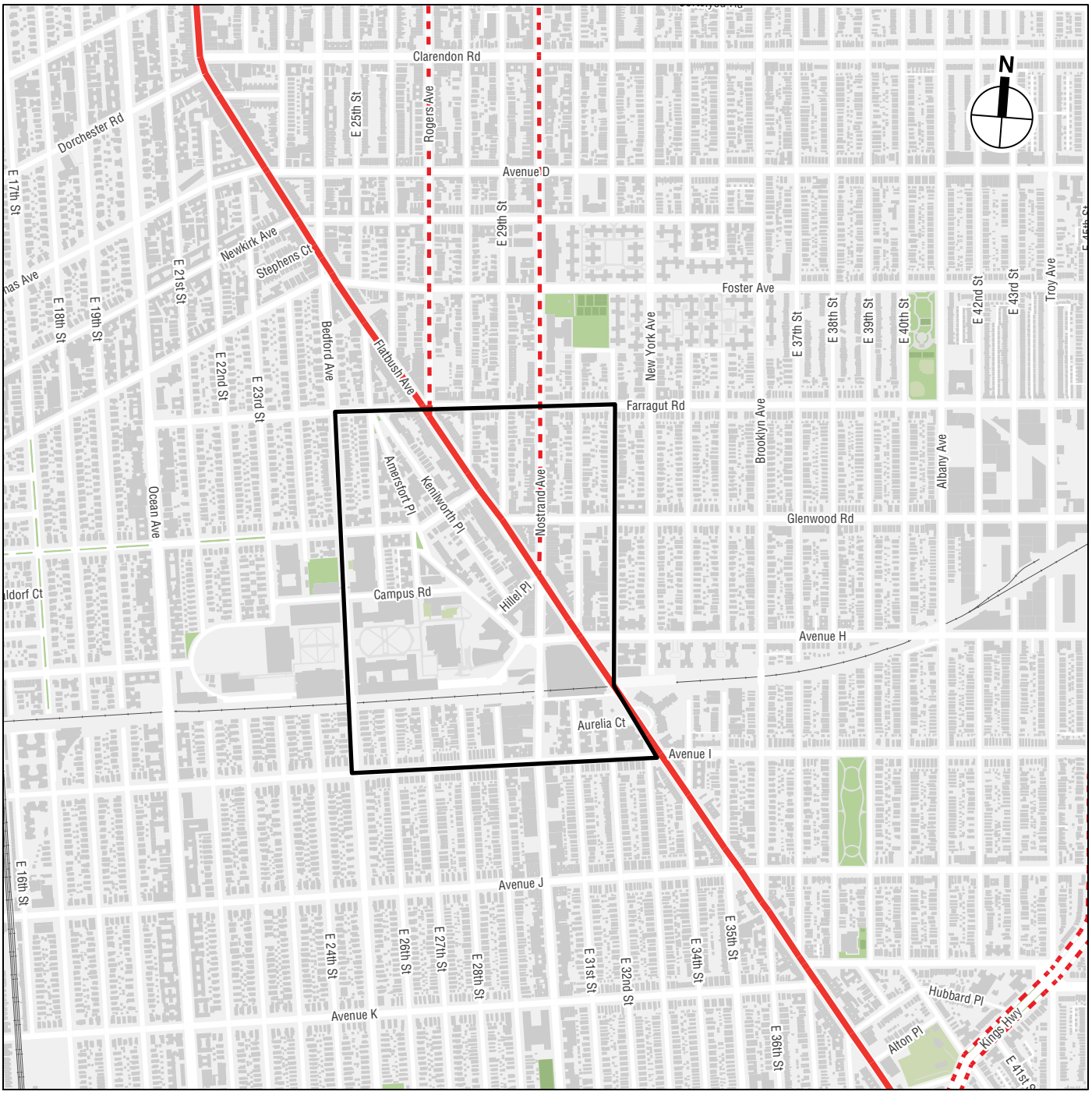


Flatbush Nostrand Junction Neighborhood Retail Corridor
NYCDOT-Designated Truck Routes

12.19.18

College Point Lower Density Retail
NYCDOT-Designated Truck Routes

density per volume than similar-sized putrescible waste collection trucks, and so an increase in the total number of commercial carter trucks would be expected as a result of the increased diversion to recycling and organics. This would result in a minor increase to VMT within New York City and region-wide for travel to transfer stations and garages in New Jersey, Long Island, and nearby upstate New York counties with the No Action condition.

FUTURE WITH THE PROPOSED ACTION

The Future with the Proposed Action (the "With Action" condition) evaluates the changes to conditions that would exist in the Analysis Year of 2024 with the implementation of the Proposed Action.

Under the Proposed Action, the number and type of customers and the pick-up times and frequency of pick-ups would be expected to remain the same as under the No Action condition.

Similarly, under the Proposed Action, on a regional level, commercial carter trucks would follow the NYCDOT-designated truck routes but overall the industry would have fewer trucks on the road, and thus drive fewer miles, with the efficiencies in routes and the limited number of carters.

As discussed in Chapter 4, "Solid Waste Management," one of the goals of the Proposed Action is to increase recycling and organics diversion. To help achieve this goal, carters would be required to provide recycling and organics collection in addition to refuse collection as standard services at a potentially lower cost. To do this, carters would be able to form consortiums or subcontract with other carters for these services. Recycling and organic waste collection trucks carry fewer tons due to lower waste density than similar-sized putrescible waste collection trucks. Thus a net increase in the total number of collection trucks for these commodities would be expected as a result of the increased diversion to recycling and organics. However, the Proposed Action would limit the number of carters within geographic zones, which would result in increased efficiency in waste collection routes, such that associated VMT and overall truck traffic would decrease.

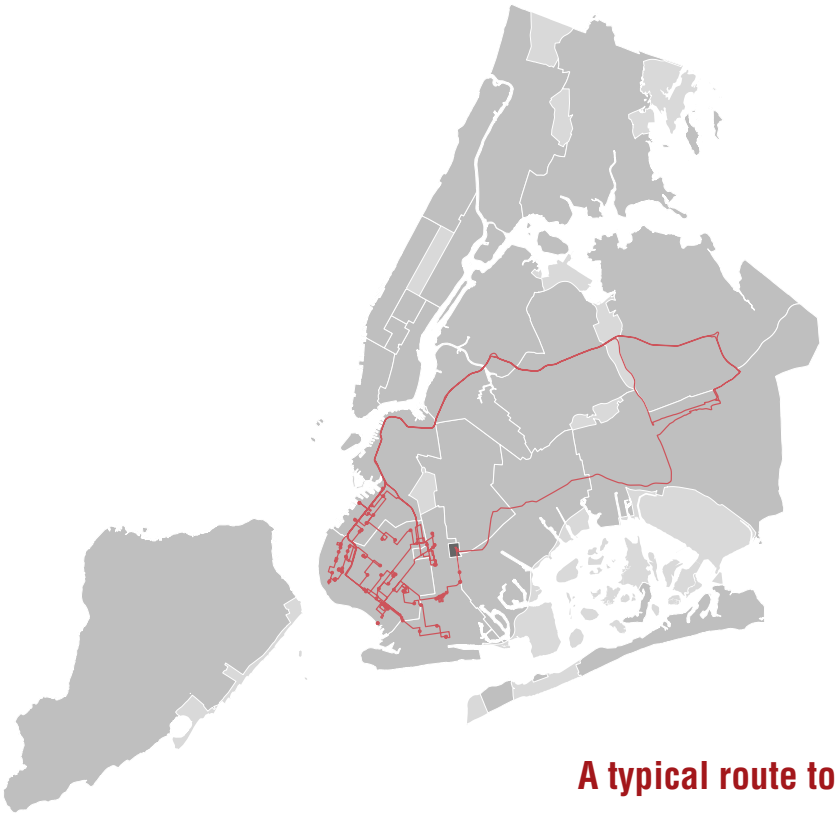
As discussed in Chapter 1, "Project Description," the increased efficiency coupled with the increased diversion to recycling and organics would result in an overall decrease of overlapping trucks along road segments which would result in decreased VMT within New York City and region-wide for travel to transfer stations and garages in New Jersey, Long Island, and nearby upstate New York counties with the Proposed Action (see **Figures 5-4 and 5-5**). Using 2018 Private Carter Routing Data,[4] the Proposed Action is anticipated to reduce citywide VMT by 50 percent from the No Action condition. This is comparable to the 63 percent VMT reduction presented in the CWZ Implementation Plan, which was based on 2014-2015 Private Carter Routing Data and compared to baseline conditions.[5] The 2018 data was collected to provide carters the opportunity to provide more up-to-date routing data. Carters were notified ahead of time that the data would be collected, and improved submission processes allowed carters to provide better quality data, accounting for this downward trend in VMT reduction. In addition, for this analysis, additional VMT necessary to service the expected diversion rates in the No Action condition and Proposed Action for recycling and organics were included, adding more truck routes in both the

[4] BIC, 2018, Private Carter Routing Data collected between March 4, 2018 and March 17, 2018, and was collected to provide carters the opportunity to provide more up-to-date routing data from the 2014-2015 data.

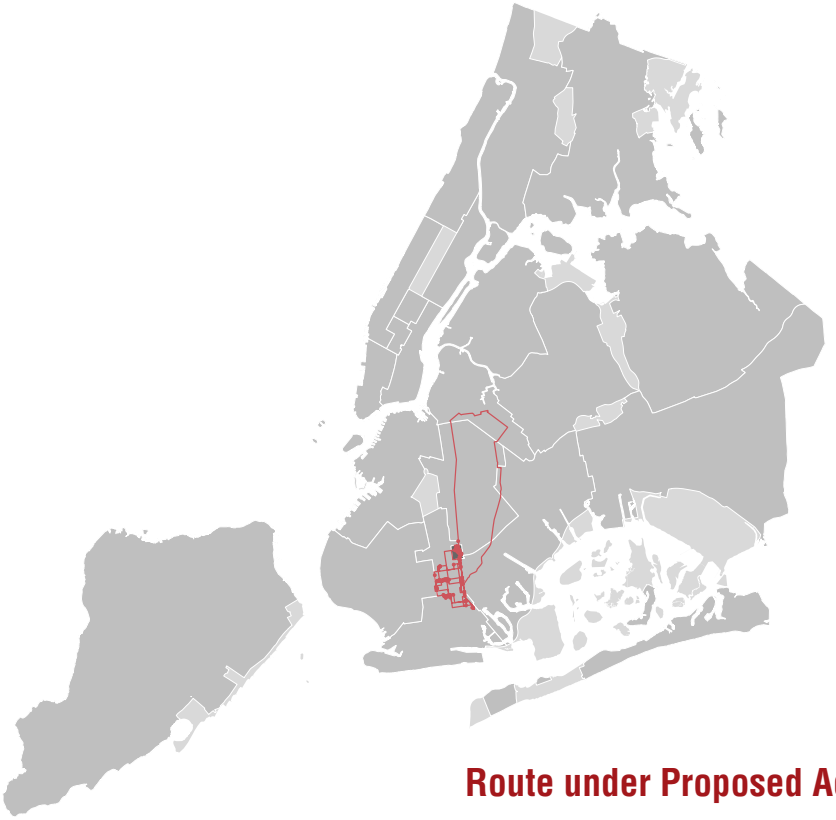
[5] The CWZ Implementation Plan used BIC, 2014-2015, Private Carter Routing Data for a 14-day period between July 6-12, 2014 and September 7-13, 2014.

These maps show a single refuse collection route. Today, a typical route traveled by one truck that services the Flatbush Nostrand Junction case study area may be 153 miles long.

Under the Proposed Action, a route containing the same number of customers but located within the CWZ zones is only 45 miles long.



A typical route today



Route under Proposed Action

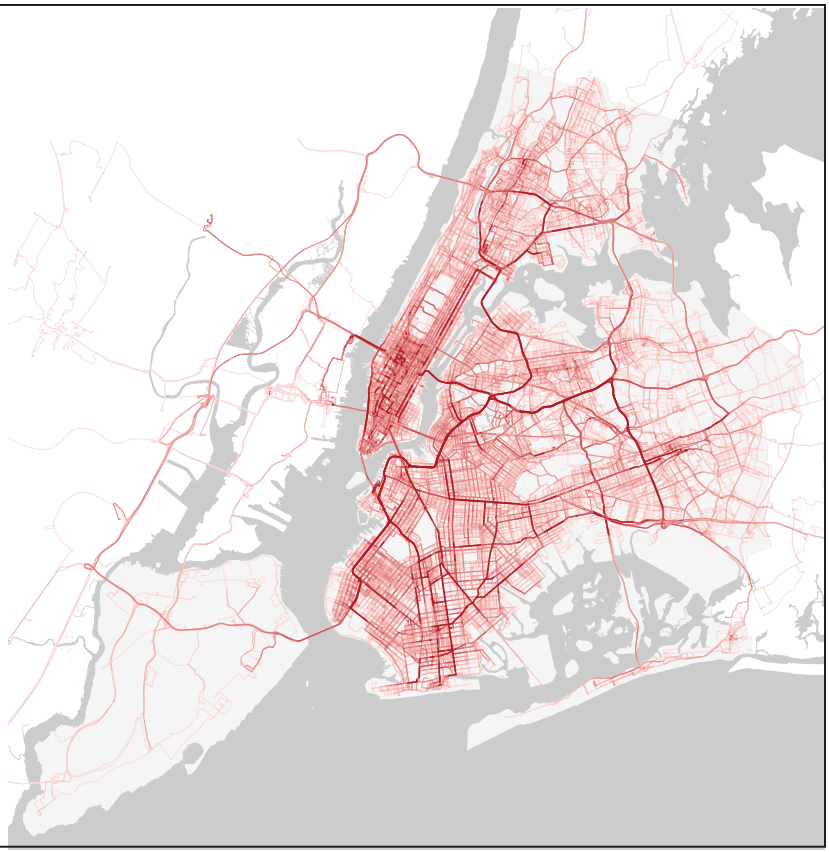
Efficiencies Gained from Existing Condition to Proposed Action in the Flatbush Nostrand Junction Case Study Area

Traffic today

Number of garbage trucks passing through each block daily

More than 50

5 or less

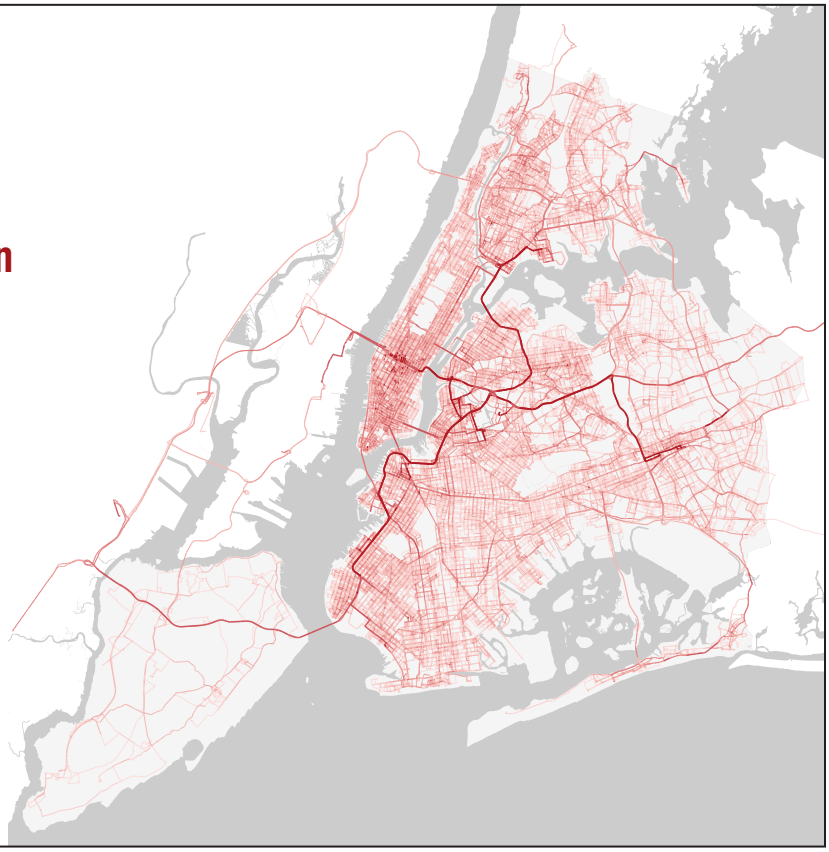


Traffic under proposed action

Number of garbage trucks passing through each block daily

More than 50

5 or less



Truck Traffic Associated with just one day of operation in the City's Private Waste Collection Industry

No Action and Proposed Action conditions, compared to the baseline existing condition.[6] With respect to the case study areas, the Proposed Action's reductions in VMT from the No Action condition range from approximately 47 to 60 percent (see **Table 5-1**).

Table 5-1
No Action and Proposed Action VMT (miles/day) per Case Study Area

Case Study Area	No Action VMT[1]	Proposed Action VMT[1]	Percent Reduction
Midtown Manhattan CBD	810	355	56%
Flatbush Nostrand Junction, Brooklyn	49	26	47%
College Point, Queens	499	200	60%

Notes:
[1] Simulation based on 2018 Routing Data collected between March 4, 2018 and March 17, 2018. .
Source:
2018 Routing Data simulated to reflect No Action and With Action conditions, including Diversion Program Impact.

C. SCREENING ANALYSIS

The Proposed Action is not anticipated to generate an increase in pedestrian or transit trips; therefore, the focus of the screening assessment is to determine if an intersection would experience an increase in 50 or more PCE in a peak hour. Under the *CEQR Technical Manual*, a commercial carter truck is the equivalent of 1.5 PCEs.

The *CEQR Technical Manual* recommends a two-tier screening procedure to determine if further transportation analyses are warranted. This methodology begins with the preparation of a trip generation analysis (Level 1 screening) to estimate the volume of trucks attributable to the Proposed Action. If the Proposed Action is expected to result in fewer than 50 incremental peak hour PCEs, further quantified analyses are not warranted. When this threshold is predicted to be exceeded, detailed truck assignments (Level 2 screening) are performed to estimate the incremental truck and to identify potential locations for further analyses. If the truck assignments show that the Proposed Action would generate 50 or more peak hour PCEs through an intersection, further quantified analyses may be warranted to evaluate the potential for significant adverse traffic impacts.

Within each of the neighborhood case study areas, the anticipated number of trucks generated by the Proposed Action were calculated and compared with the specified *CEQR Technical Manual* thresholds to determine whether additional screening and/or quantified analyses are warranted.

Table 5-2 provides the daily commercial carter truck numbers per case study area for the No Action and Proposed Action conditions. As shown, the number of daily commercial carter trucks under the No Action condition is approximately 174, 46, and 85, within the Midtown Manhattan CBD, the Flatbush Nostrand Junction, and the College Point case study areas, respectively. In order to provide a conservative estimate, 35 percent of the trucks between the peak period of 10:00 PM and 2:00 AM (or 14 percent of the total daily trucks) were assumed in and out at the same intersection in one overnight hour. Therefore, the predicted maximum number of truck at an intersection in the peak hour under the No Action condition would be approximately 24, 6, and 12

[6] As a result in the increase recycling and organic diversion under the No Action and Proposed Action conditions, there would be an increase in VMT. It is estimated there would be 4 percent more routes and 9.7 percent more routes under the No Action condition and Proposed Action, respectively.

within the Midtown Manhattan CBD, the Flatbush Nostrand Junction, and the College Point case study areas, respectively.

Table 5-2
No Action and Proposed Action Daily Carting Trucks per Case Study Area

Case Study Area	No Action Daily Trucks[1]	Proposed Action Daily Trucks	Percent Reduction
Midtown Manhattan CBD	174	104	40%
Flatbush Nostrand Junction, Brooklyn	46	24	48%
College Point, Queens	85	32	62%

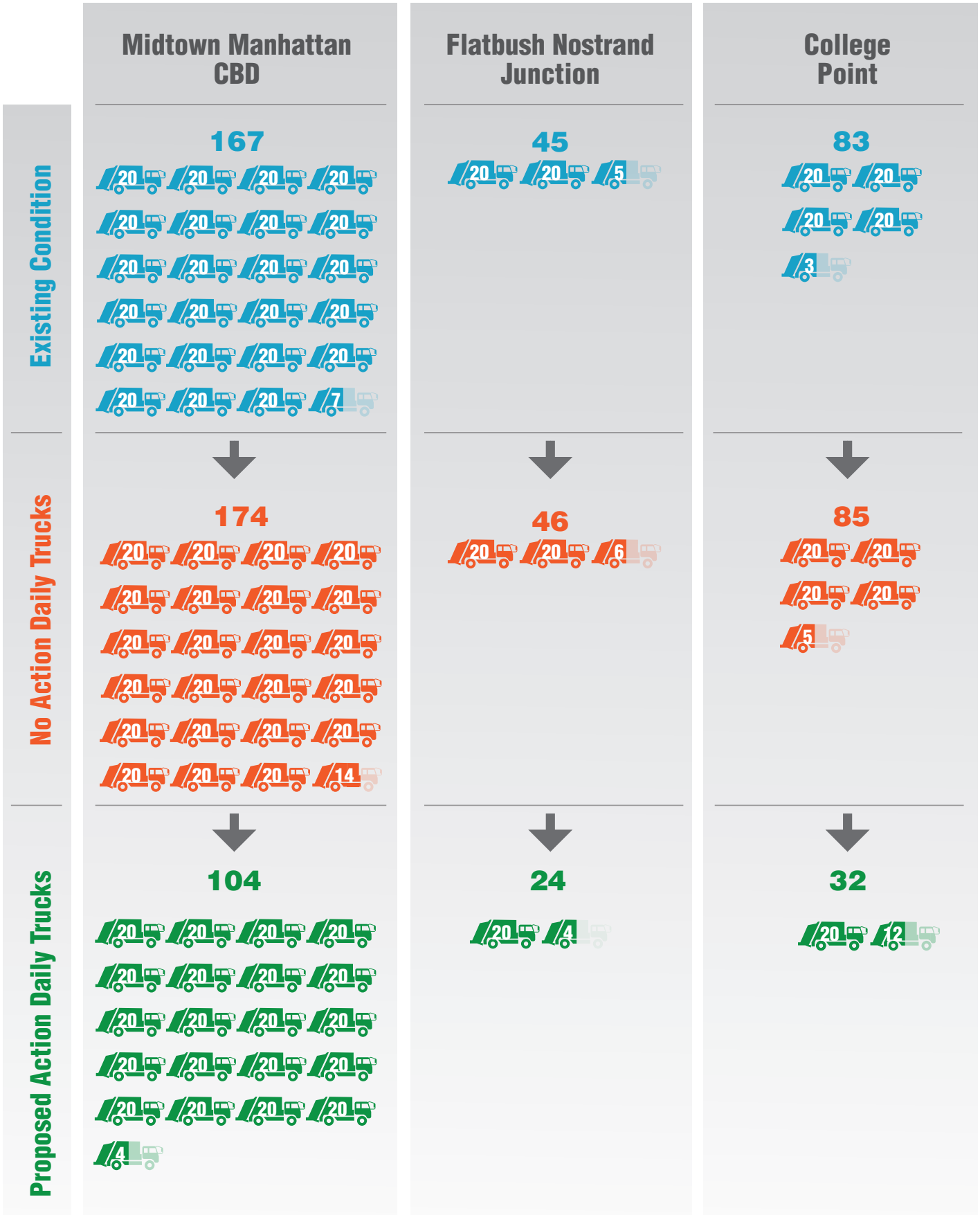
Notes:
[1] Simulation based on 2018 Routing Data collected between March 4, 2018 and March 17, 2018.
Source:
2018 Routing Data simulated to reflect No Action and With Action conditions, including Diversion Program Impact.

By minimizing carter route overlaps, the Proposed Action is predicted to decrease the number of trucks in the future by approximately 40 percent to 62 percent per case study area (refer to **Table 5-2**). **Figure 5-6** depicts the changes in the daily truck numbers within each case study area between the existing condition, the No Action condition accounting for the increases in diversion and the Proposed Action accounting for the route efficiencies under the CWZ Program.

There would be no predicted exceedance of the *CEQR Technical Manual* Level 1 traffic screening threshold to warrant further analysis. Additionally, the collection times, duration of collections, collection dates, and frequency of collections would not significantly change with the Proposed Action. Therefore, detailed traffic analyses are not warranted and the Proposed Action is not anticipated to result in any significant adverse transportation impacts.

D. CONCLUSION

In view of the foregoing, it can be concluded that the CWZ Program would not cause a significant adverse transportation impacts. ✷



Daily Changes in the Amount of Trucks in Case Study Areas

Chapter 6: Air Quality

A. INTRODUCTION

In accordance with the 2014 *City Environmental Quality Review (CEQR) Technical Manual*, this chapter assesses the potential for air quality impacts associated with the Proposed Action.

As described in Chapter 1, "Project Description," the City of New York is proposing to establish and implement a Commercial Waste Zone (CWZ) Program across the five boroughs of the City to improve the carting of refuse, recyclables, and organic waste from commercial businesses (the "CWZ Program" or "Proposed Action").

In order to examine the potential effects of the Proposed Action, a qualitative air quality assessment was conducted for the New York City region as well as at local intersections within the three representative neighborhood case study areas as described in Chapter 1, "Project Description. This screening assessment was conducted consistent with the methodologies outlined in the *CEQR Technical Manual*.

B. AIR QUALITY CONDITIONS

EXISTING CONDITION

As discussed in Chapter 1, "Project Description," a network of approximately 95 private carters with approximately 1,100 trucks collect waste from commercial waste customers within New York City[1]. Carters' collection activities are often dispersed and overlap throughout New York City. In some parts of the City, more than 50 private waste carters service a single neighborhood, resulting in up to dozens of private waste commercial collection carter trucks per individual commercial block on a single night. Existing inefficiencies from overlapping waste collection routes lead to an elevated amount of truck Vehicle Miles Traveled (VMT) both within New York City and region-wide for commercial carter trucks driving to and from transfer stations and garages in Long Island, upstate New York, and New Jersey.

Carters in New York City commonly use rear-loading diesel packer trucks and roll-on roll-off container trucks. In 2013, the City enacted Local Law (LL) 145 of 2013 (LL145/2013) that requires every commercial carter truck that is owned or operated by an entity licensed or registered by the Business Integrity Commission (BIC) and operating in New York City to be equipped with either a U.S. Environmental Protection Agency (EPA)-certified 2007 (or later) engine or utilize

[1] BIC, 2015, Private Carter Financial Statements

BIC, 2015, Private Carter Customer Register

BIC, 2017 Q2-Q4, Private Carter Customer Register

BIC, 2017, LL145/2013 Compliance Plan Reports

BIC, 2018, LL145/2013 Compliance Reports.

Best Available Retrofit Technology (BART), as defined by the New York City Department of Environmental Protection (DEP) by January 1, 2020. Trucks would reduce particulate matter (PM) emissions by up to 85 percent after implementation of complying technology and would limit engine emissions to 0.01 grams diesel PM per brake horsepower-hour.

As part of LL145/2013, the type of pollution control technology utilized on commercial carter trucks must be identified by either the truck owner or operator and documentation must be submitted to DEP. As of summer 2017, approximately one tenth of carters were fully compliant with the requirements of LL145/2013 and approximately one third of carters had fleets that were at least halfway compliant. The total number of compliant commercial carter trucks in the industry represented at least one third of the total applicable commercial waste trucks operating in the New York City region.[2]

NATIONAL AMBIENT AIR QUALITY STANDARD ATTAINMENT STATUS

As required by the Clean Air Act (CAA), primary and secondary National Ambient Air Quality Standards (NAAQS) have been established[3] for six major air pollutants: carbon monoxide (CO), nitrogen dioxide (NO_2), ozone, respirable PM (both $PM_{2.5}$ and PM_{10}), sulfur dioxide (SO_2), and lead. The CAA, as amended in 1990, defines non-attainment areas (NAA) as geographic regions that have been designated as not meeting one or more of the NAAQS.

Recent concentrations of all criteria pollutants at New York State Department of Environmental Conservation (NYSDEC) air quality monitoring stations within the New York City region show there were no monitored violations of the NAAQS for the pollutants at these sites in 2017 with the exception of ozone. Effective December 2015, EPA reduced the 2008 ozone NAAQS, lowering the primary and secondary NAAQS from 0.075 parts per million (ppm) to 0.070 ppm. EPA issued final area designations for the revised standard on April 30, 2018. Monitored ozone concentrations at two of three air quality monitoring stations (the Susan Wagner High School monitoring station in Staten Island, and the Queens College monitoring station in Queens) reported concentrations of ozone that would exceed the revised standard.

FUTURE WITHOUT THE PROPOSED ACTION

The Future without the Proposed Acton (the "No Action" condition) includes the commercial waste industry and any changes to the industry expected by the Analysis Year of 2024.

Under the No Action condition, carters would continue to operate as they do under the existing condition—the routes, frequency, durations and pick-up times would remain essentially the same.

However, as described in Chapter 2, "Land Use, Zoning, and Public Policy," existing regulations require commercial businesses to separately manage recyclables from refuse to facilitate diversion from landfills. Under the No Action condition, the City would continue to expand recycling and organics diversions, including requiring all commercial businesses designated in LL146 of 2013 (LL146/2013) to separate organics for beneficial use, such as composting or anaerobic digestion to produce biogas. Recycling and organic waste collection trucks have lower waste density per volume than standard putrescible waste collection trucks, and so an increase in the total number of commercial carter trucks would be expected as a result of the increased diversion to recycling

[2] BIC, 2017, LL145/2013 Compliance Plan Reports provided by carters at the request of BIC.

[3] EPA. National Ambient Air Quality Standards. 40 CFR part 50.

and organics. This would result in a minor increase to VMT and pollutant emissions within New York City and region-wide for travel to transfer stations and garages in New Jersey, Long Island, and nearby upstate New York counties with the No Action condition.

Furthermore, under the No Action condition, all operating carters are expected to be fully compliant with LL145/2013 by the 2024 Analysis. Therefore, although fleet-wide emissions associated with commercial carter trucks are anticipated to be reduced from existing levels, there may be a minor increase to pollutant emissions in the No Action condition due to the increased VMT associated with the expanded recycling and organic diversions.

FUTURE WITH THE PROPOSED ACTION

The Future with the Proposed Action (the "With Action" condition) evaluates the conditions that would exist in the Analysis Year of 2024 with the implementation of the Proposed Action.

Under the Proposed Action, the number and type of customers, pick-up times, and frequency of pick-ups would be expected to remain the same as under the No Action condition.

Similarly, as discussed in Chapter 5, "Transportation," under the Proposed Action, on a regional level, private carter waste collection trucks would follow New York City Department of Transportation (NYCDOT)-designated truck routes but overall would have fewer trucks due to the efficiencies in routes and the limited number of carters.

As discussed in Chapter 4, "Solid Waste Management," and Chapter 5, "Transportation," as a result of one of the goals of the Proposed Action—increase recycling and organics diversion—an increase in the total number of waste collection trucks would be expected as a result of the increased diversion to recycling and organics as a result of recycling and organic waste collection trucks carrying fewer tons due to lower waste density than similar putrescible waste collection trucks. However, the Proposed Action would limit the number of carters within geographic zones, which would result in increased efficiency in waste collection routes, such that truck VMT and overall truck traffic would decrease. The increased efficiency coupled with the increased diversion to recycling and organics would result in an overall decrease of trucks, which would result in decreased VMTs within New York City and region-wide for truck routes to and from transfer stations and garages in Long Island, upstate New York, and New Jersey and would reduce emission levels from commercial carter trucks.

Under the Proposed Action, all carters operating within the program would continue to be expected to be fully compliant with LL145/2013. With the expected reductions in VMTs from the CWZ Program, the fleet-wide emissions associated with commercial carter trucks would be reduced from levels in both the existing condition and No Action condition.

C. SCREENING-LEVEL ASSESSMENT

REGIONAL ASSESSMENT (MESOSCALE)

As discussed in Chapter 5, "Transportation," the Proposed Action would result in an overall decrease of overlapping commercial carter trucks, which decrease VMTs within New York City and region-wide for trucks driving to and from transfer stations and garages in Long Island, upstate New York, and New Jersey. Furthermore, the reduction in annual commercial carter trucks would result in reductions to VMTs on low speed roadways within New York City. Therefore, the decreased VMT is anticipated to result in reductions to emissions within the New York City region.

Additionally, the projected total VMT would generally be concentrated on designated truck routes between the pickup location and one of the City's transfer stations and primarily during the late night period between 10:00 PM and 2:00 AM, when background traffic is generally low. Therefore, the Proposed Action is not anticipated to significantly alter regional levels of congestion. Furthermore, potential air emissions reductions associated with improvements to regional traffic due to the decreased VMTs would likely be a direct consequence of the Proposed Action.

LOCAL ASSESSMENT (MICROSCALE)

The *CEQR Technical Manual* defines screening thresholds of maximum hourly incremental traffic generated by a proposed action. A screening threshold between 140 to 170 incremental peak hour vehicles at an individual intersection (dependent on the location of the study area within New York City) is used to assess the potential for air quality impacts from CO. Additionally, a PM emission screening threshold between 12 and 23 incremental peak hour commercial carter trucks or their equivalent (dependent on the roadway type) at an individual intersection is used to assess the potential for air quality impacts from PM as discussed in Chapter 17, Sections 210 and 311 of the *CEQR Technical Manual*.

As discussed in Chapter 1, "Project Description," three neighborhood case study areas were selected as representative areas for the Proposed Action. An assessment of the traffic conditions within these case study areas (see Chapter 5, "Transportation") determined that the maximum number of trucks at an individual intersection would decrease in the future by approximately 40 percent to 62 percent (dependent on the case study area). Additionally, the collection times, duration of collections, collection dates, and frequency of collections would not significantly change under the Proposed Action. As a result, the Proposed Action would not result in an exceedance of the screening levels for incremental peak hour trucks at intersections within any of the three case study areas; therefore, it can be concluded that there would be no potential for mobile source air impacts from the Proposed Action.

D. CONCLUSION

In view of the foregoing, it can be concluded that the CWZ Program would not cause a significant adverse air quality impacts. ✷

Chapter 7: Greenhouse Gas Emissions

A. INTRODUCTION

This chapter evaluates the greenhouse gas (GHG) emissions that would be associated with the Proposed Action.

As described in Chapter 1, "Project Description," the City of New York is proposing to establish and implement a Commercial Waste Zone (CWZ) Program across the five boroughs of the City to improve the carting of refuse, recyclables, and organic waste from commercial businesses (the "CWZ Program" or "Proposed Action").

As discussed in the 2014 *City Environmental Quality Review* (*CEQR) Technical Manual*, climate change is projected to have wide-ranging effects on the environment, including rising sea levels, increases in temperature, and changes in precipitation levels. Although this is occurring on a global scale, the environmental effects of climate change are also likely to be experienced at the local level. New York City's sustainable development policy, starting with *PlaNYC*: *A Greener, Greater New York (PlaNYC)*, and continued and enhanced in *One New York: The Plan for a Strong and Just City (OneNYC)*, established sustainability initiatives and goals for greatly reducing GHG emissions and for adapting to climate change in the City.

Per the *CEQR Technical Manual*, the citywide GHG reduction goal is currently the most appropriate standard by which to analyze a project under CEQR. The *CEQR Technical Manual* recommends that a GHG consistency assessment be undertaken for any action that fundamentally changes the City's solid waste management system by changing solid waste transport mode, distances, or disposal technologies. One of the goals of the CWZ Program is to reduce commercial carting trucks by improving the efficiency of the carting system and reducing the amount of overlapping truck collection routes. The CWZ Program would not change the mode of transport of commercial waste (for example from truck to rail or barge). Nor would the Proposed Action result in increased distances traveled by commercial waste from waste transfer stations to disposal facilities, such as landfills or waste-to-energy plants. Likewise, the CWZ Program would not require a change in the disposal technology for such waste. Therefore, the CWZ Program would result in a potential reduction to the distance commercial carter trucks travel within the New York City region and projected to reduce GHG emissions. A GHG consistency assessment is provided below.

B. GREENHOUSE GAS EMISSIONS

POLLUTANTS OF CONCERN

GHGs are those gaseous constituents of the atmosphere, both natural and anthropogenic, that absorb and emit radiation at specific wavelengths within the spectrum of infrared radiation emitted by the earth's surface, atmosphere, and clouds. The general warming of the earth's atmosphere caused by this phenomenon is known as the "greenhouse effect." Water vapor, carbon dioxide (CO_2), nitrous oxide (N_2O), methane, and ozone are the primary GHGs in the earth's atmosphere.

There are also a number of entirely anthropogenic GHGs in the atmosphere, such as halocarbons and other chlorine- and bromine-containing substances, which also damage the stratospheric ozone layer (and contribute to the "ozone hole"). Since these compounds are being replaced and phased out due to the 1987 Montreal Protocol, there is no need to address them in GHG assessments for most projects. Although ozone itself is also a major GHG, it does not need to be assessed as such at the project level since it is a rapidly reacting chemical and efforts are ongoing to reduce ozone concentrations as a criteria pollutant (see Chapter 6, "Air Quality"). Similarly, water vapor is of great importance to global climate change but is not directly of concern as an emitted pollutant since the negligible quantities emitted from anthropogenic sources are inconsequential.

CO_2 is the primary pollutant of concern from anthropogenic sources. Although not the GHG with the strongest effect per molecule, CO_2 is by far the most abundant and, therefore, the most influential GHG. CO_2 is emitted from any combustion process (both natural and anthropogenic); from some industrial processes such as the manufacture of cement, mineral production, metal production, and the use of petroleum-based products; from volcanic eruptions; and from the decay of organic matter. CO_2 is removed ("sequestered") from the lower atmosphere by natural processes such as photosynthesis and uptake by the oceans. CO_2 is included in any analysis of GHG emissions.

Methane and N_2O also play an important role since the removal processes for these compounds are limited and because they have a relatively high impact on global climate change as compared with an equal quantity of CO_2. Emissions of these compounds, therefore, are included in GHG emissions analyses when the potential for substantial emission of these gases exists.

The *CEQR Technical Manual* lists six GHGs that could potentially be included in the scope of a GHG analysis: CO_2, N_2O, methane, hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). CO_2, N_2O, and methane are the primary pollutants of concern from heavy-duty carting vehicles. There are no significant direct or indirect sources of HFCs, PFCs, or SF_6 associated with the CWZ Program.

To present a complete inventory of all GHGs, component emissions are added together and presented as CO_2e emissions—a unit representing the quantity of each GHG weighted by its effectiveness using CO_2 as a reference. This is achieved by multiplying the quantity of each GHG emitted by a factor called global warming potential (GWP). GWPs account for the lifetime and the radiative forcing[1] of each chemical over a period of 100 years (e.g., CO_2 has a much shorter atmospheric lifetime than SF_6, and, therefore, has a much lower GWP). The GWPs for the main GHGs discussed here are presented in **Table 7-1**.

[1] *Radiative forcing* is a measure of the influence a gas has in altering the balance of incoming and outgoing energy in the Earth-atmosphere system and is an index of the importance of the gas as a GHG.

Table 7-1
Global Warming Potential for Major GHG

Greenhouse Gas	100-year Horizon GWP
Carbon Dioxide (CO_2)	1
Methane (CH_4)	21
Nitrous Oxide (N_2O)	310
Hydrofluorocarbons (HFCs)	140 to 11,700
Perfluorocarbons (PFCs)	6,500 to 9,200
Sulfur Hexafluoride (SF_6)	23,900

Note:
The GWPs presented above are based on the Intergovernmental Panel on Climate Change's (IPCC) Second Assessment Report (SAR) to maintain consistency in GHG reporting. The IPCC has since published updated GWP values that reflect new information on atmospheric lifetimes of GHGs and an improved calculation of the radiative forcing of CO_2. In some instances, if combined emission factors were used from updated modeling tools, some slightly different GWP may have been used for this study. Since the emissions of GHGs other than CO_2 represent a very minor component of the emissions, these differences are negligible.
Source:
CEQR Technical Manual

POLICY, REGULATIONS, STANDARDS, AND BENCHMARKS FOR REDUCING GHG EMISSIONS

Because of the growing consensus that GHG emissions resulting from human activity have the potential to profoundly impact the earth's climate, countries around the world have undertaken efforts to reduce emissions by implementing both global and local measures addressing energy consumption and production, land use, and other sectors. Although the United States has not ratified the international agreements that set emissions targets for GHGs, in December 2015, the United States signed the international Paris Agreement[2] that pledges deep cuts in emissions, with a stated goal of reducing annual emissions to a level that would be between 26 and 28 percent lower than 2005 emissions by 2025.[3] On June 1, 2017, President Trump announced that "the United States will withdraw from the Paris Climate Accord."[4]

Regardless of the Paris Agreement, the United States Environmental Protection Agency (EPA) is required to regulate GHGs under the Clean Air Act and has begun preparing and implementing regulations. In coordination with the National Highway Traffic Safety Administration (NHTSA), EPA currently regulates GHG emissions from newly manufactured on-road vehicles. In addition, EPA regulates transportation fuels via the Renewable Fuel Standard program, which will phase in a requirement for the inclusion of renewable fuels increasing annually up to 36.0 billion gallons in 2022. In 2015, EPA also finalized rules to address GHG emissions from both new and existing power plants that would, for the first time, set national limits on the amount of carbon pollution that power plants can emit. The Clean Power Plan sets carbon pollution emission guidelines and

[2] Conference of the Parties, 21st Session. *Adoption of The Paris Agreement, decision -/CP.21*. Paris, December 12, 2015.

[3] United States of America. *Intended Nationally Determined Contributions (INDCs)* as submitted. March 31, 2015.

[4] Under the Agreement, countries are allowed to withdraw four years from the date the agreement entered into force—meaning the United States can officially withdraw on November 4, 2020. However, given the voluntary nature of the agreement, any action in the United States may or may not occur regardless of this status.

performance standards for existing, new, and modified and reconstructed electric utility generating units. On February 9, 2016, the Supreme Court stayed implementation of the Clean Power Plan pending judicial review. President Trump subsequently signed an executive order that calls for a review of the Clean Power Plan.

There are also regional and local efforts to reduce GHG emissions. In 2009, Governor David Paterson issued Executive Order No. 24, establishing a goal of reducing GHG emissions in New York State by 80 percent, compared with 1990 levels, by 2050, and creating a Climate Action Council tasked with preparing a climate action plan outlining the policies required to attain the GHG reduction goal; an interim draft plan was published in 2010.[5] New York State is now seeking to achieve some of the emission reduction goals via local and regional planning and projects through its Cleaner Greener Communities and Climate Smart Communities programs. New York State has also adopted the State of California's GHG vehicle standards (which are at least as strict as the federal standards).

The New York State Energy Plan outlines the State's energy goals and provides strategies and recommendations for meeting those goals. The latest version of the plan was published in June 2015. The latest plan outlines a vision for transforming the State's energy sector that would result in increased energy efficiency (both demand and supply), increased carbon-free power production, and cleaner transportation, in addition to achieving other goals not related to GHG emissions. The 2015 plan also establishes new targets: (1) reducing GHG emissions in New York State by 40 percent, compared with 1990 levels, by 2030; (2) providing 50 percent of electricity generation in New York State from renewable sources by 2030; and (3) increasing building energy efficiency gains by 600 trillion British thermal units (Btu) by 2030.

New York State has also developed regulations to cap and reduce CO_2 emissions from power plants to meet its commitment to the Regional Greenhouse Gas Initiative (RGGI). Under the RGGI agreement, the governors of nine northeastern and Mid-Atlantic States have committed to regulate the amount of CO_2 that power plants are allowed to emit, gradually reducing annual emissions to halve the 2009 levels by 2020. The RGGI states and Pennsylvania have also announced plans to reduce GHG emissions from transportation, through the use of biofuel, alternative fuel, and efficient vehicles.

Many local governments worldwide, including New York City, are participating in the Cities for Climate Protection™ campaign and have committed to adopting policies and implementing quantifiable measures to reduce local GHG emissions, improve air quality, and enhance urban livability and sustainability. New York City's long-term comprehensive plan for a sustainable and resilient New York City, which began as *PlaNYC* 2030 in 2007, and continues to evolve today as *OneNYC*, includes GHG emissions reduction goals, many specific initiatives that can result in emission reductions, and initiatives aimed at adapting to future climate change impacts. The City's goal to reduce citywide GHG emissions to 30 percent below 2005 levels by 2030 ("30 by 30") was codified by Local Law (LL) 22 of 2008, known as the New York City Climate Protection Act (the "GHG reduction goal").[6] The City has also announced a longer-term goal of reducing emissions to 80 percent below 2005 levels by 2050 ("80 by 50"), which was codified by LL66 of 2014, and has published a study evaluating the potential for achieving that goal.[7] More recently,

[5] New York State Climate Action Council. New York State Climate Action Plan Interim Report. November 2010.

[6] Administrative Code of the City of New York, §24-803.

[7] New York City Mayor's Office of Sustainability. *New York City's Roadmap to 80 x 50*. September, 2016

as part of *OneNYC*, the City has announced a more aggressive goal for reducing emissions from building energy use down to 30 percent below 2005 levels by 2025.

To achieve the 80 by 50 goal, the City is convening Technical Working Groups to analyze the GHG reduction pathways from the building, power, transportation, and solid waste sectors to develop action plans for these sectors. The members of the Technical Working Groups will develop and recommend the data analysis, interim metrics and indicators, voluntary actions, and potential mandates to effectively achieve the City's emissions reduction goal.

In 2017, the City published an assessment of key actions identified (climate action plan) to dramatically reduce GHG emissions in both the 2020 near-term and 2050 long-term.[8] This climate action plan assesses near-term actions for their impacts and benefits, such as improved local air quality, preservation of housing affordability, and increased access to transportation and resources. As part of this plan, the potential for enhanced curbside collection by implementing a zone-based system for commercial waste was identified as a potential action to reduce GHG emissions within the City.

In August 2016, DSNY, in partnership with Business Integrity Commission (BIC), released a feasibility study on the implementation of a CWZ program in New York City that would establish geographic zones for waste collection routes.[9] The study considered a conceptual zone-based system of 11 zones and concluded that a CWZ program would be beneficial in reducing inefficiencies in waste collection routes and would reduce carter truck miles traveled by roughly half. Additionally, the study found a corresponding reduction to GHG emissions associated with the reduction in carter truck miles traveled for the zone-based system under consideration.

FUTURE WITHOUT THE PROPOSED ACTION

Typically, GHG assessments only consider total GHG emissions with a Proposed Action and do not consider the difference or increment between the Future without the Proposed Action (the "No Action" condition) and Future with the Proposed Action (the "With Action" condition). However, per the *CEQR Technical Manual*, an assessment of GHG emissions associated with a Proposed Action that would affect solid waste management should consider a baseline (or No Action condition) for the assessment. The assessment assumes that under the baseline, the solid waste management facilities, waste transportation modes, and associated disposal facilities would continue to operate as they do under the existing condition (including the phased implementation of current policy.

One of the City's strategies to reduce GHG emissions is to increase recycling metal, glass, plastic (MGP), paper, cardboard, and, in some cases, food preparation waste (organics) and thereby divert such waste from landfills. As described in Chapter 2, "Land Use, Zoning, and Public Policy," existing regulations require commercial businesses to separately manage recyclables from refuse to facilitate diversion from landfills. Under the No Action condition, the City would continue to expand recycling and organics diversions, including requiring all commercial businesses designated in LL146 of 2013 (LL146/2013) to separate organics for composting or anaerobic digestion to produce biogas, a renewable fuel. Recycling and organic waste collection trucks carry fewer tons due to lower waste density than similar putrescible waste collection trucks. Thus a net

[8] New York City Mayor's Office of Sustainability. *1.5°C: Aligning New York City with the Paris Climate Agreement.* September, 2017.

[9] New York City Department of Sanitation, City of New York Business Integrity Commission. *Private Carter Study Executive Summary*. August 17, 2016. Retrieve from: https://www1.nyc.gov/assets/dsny/site/resources/reports/private-carter-study

increase in the total number of collection trucks for these commodities would be expected as a result of the increased diversion to recycling and organics. This would result in a minor increase to Vehicle Miles Traveled (VMT) and GHG emissions within New York City and region-wide for travel to transfer stations and garages in New Jersey, Long Island, and upstate New York with the No Action condition.

Furthermore, under the No Action condition, all operating carters are expected to be fully compliant with LL145/2013 in the 2024 Analysis Year. These requirements target reductions to particulate matter (PM) emissions; while PM is not included in the list of standard GHGs, recent studies have shown that black carbon—a constituent of PM—may play a role in climate change due to PM concentrations influencing the temperature of the earth. Particles of PM can be light-absorbing and, consequently, can contribute to the rise in global temperatures, although these effects would be minimal.

Therefore, although PM emissions from commercial carter trucks would be reduced, there may be a minor increase to GHG emissions in the No Action condition due to the increased VMT associated with the expanded recycling and organic diversions. However, GHG reductions are anticipated as recycled material and organic waste are utilized after collection (as raw materials or for the production of biogas) and with reduced landfill disposal, as landfills emit GHGs in substantial quantities, notably methane and CO_2. Therefore, the minor increase in GHG emissions due to the increase in VMT would be partially or fully offset by the expected increase in recycling and organics diversion which reduces GHG emissions.

FUTURE WITH THE PROPOSED ACTION

The With Action condition evaluates the conditions that would exist in the Analysis Year of 2024 with the implementation of the CWZ Program. Climate change is driven by the collective contributions of diverse individual sources of emissions to global atmospheric GHG concentrations. Identifying potential GHG emissions from a proposed action can help decision makers identify practicable opportunities to reduce GHG emissions and ensure consistency with policies aimed at reducing overall emissions. While the increments of criteria pollutants and toxic air emissions are assessed in the context of health-based standards and local impacts, there are no established thresholds for assessing the significance of a project's contribution to climate change. Nonetheless, prudent planning dictates that projects address GHG emissions by identifying GHG sources and practicable means to reduce them.

As discussed in Chapter 5, "Transportation," the CWZ Program would result in an overall decrease of truck trips and decreased VMT within New York City and region-wide for travel to transfer stations and garages in New Jersey, Long Island, and upstate New York. Furthermore, the reduction in overlapping commercial carter trucks would result in reductions to VMT on low speed roadways within New York City. Therefore, the decreased VMT and reduced truck fuel use is anticipated to result in corresponding reductions to GHG emissions when compared to baseline emissions.

One of the goals of the CWZ Program is to prioritize investments in clean, modern fleets that make up a reliable, resilient, and sustainable waste management system. Under the Proposed Action, all commercial carter trucks operating in the City are anticipated be in full compliance with the truck emissions reduction requirements of LL145/2013, similar to the No Action condition. The fleet-wide PM emissions associated with compliance with LL145/2013 coupled with commercial waste carting under the CWZ Program and its reductions in commercial carter truck VMT are anticipated to be further reduced from the baseline conditions. However, similar

to the No Action condition, the effect of reduced PM emissions on the rise in global temperatures and GHG emissions would be minimal.

In addition, the contracts awarded to selected carters would include incentives to provide improved environmental performance. Some of these improvements could include the conversion of commercial carter trucks to electric vehicles or the use of compressed natural gas, which is a cleaner fuel. These improvements in performance, if implemented, would further reduce GHG emissions with the CWZ Program.

As a result of the decreased VMT and the potential improvements to the commercial carter truck fleet, GHG emissions are expected to be reduced with the CWZ Program compared to baseline existing levels. For example, as a result of the anticipated 50 percent reduction in VMT from the No Action condition as stated in Chapter 5, "Transportation", GHG emissions have the potential to be reduced between 39 and 66 percent from baseline conditions, depending on county, roadway type (i.e., arterial, highway, or local roads), and travel speeds.

Therefore, the Proposed Action would be consistent with the City's 80 by 50 GHG reduction goals under *OneNYC*. ✷

Chapter 8: Noise

A. INTRODUCTION

This chapter assesses potential noise effects that could result from the Proposed Action. In accordance with the 2014 *City Environmental Quality Review (CEQR) Technical Manual*, a noise analysis determines whether a proposed project would result in increases in noise levels that could have a significant adverse impact on sensitive receptors or whether a proposed project would introduce a noise-sensitive receptor into an area with high levels of ambient noise.

As described in Chapter 1, "Project Description," the City of New York is proposing to establish and implement a Commercial Waste Zone (CWZ) Program across the five boroughs of the City to improve the carting of refuse, recyclables, and organic waste from commercial businesses (the "CWZ Program" or "Proposed Action").

The Proposed Action does not involve new stationary sources of noise, nor introduce any new noise receptors; therefore, the noise analysis is focused on whether the Proposed Action would result in increases in noise levels at existing receptors from changes to mobile noise from commercial carter trucks.

B. SCREENING ASSESSMENT

The *CEQR Technical Manual* indicates that an initial impact screening analysis can be used to determine whether a project would have the potential to result in a significant noise impact based on its physical characteristics. A project may not require a noise analysis if it does not either generate mobile or stationary sources of noise or introduce a noise receptor into an area of existing high ambient noise levels.

The Proposed Action would reduce inefficiencies in commercial waste collection routes, resulting in a reduction in truck traffic. As discussed in Chapter 5, "Transportation," within the neighborhood case study areas, the Proposed Action would result in traffic reductions between approximately 40 and 62 percent. As a result, the Proposed Action would not cause any roadway segments to experience an increase in maximum hourly truck volume. Also, as discussed in Chapter 5, "Transportation," the Proposed Action would not require changes in operations that would affect collection times, duration of collections, collection dates, frequency of collections, or number of nighttime collections. Consequently, the Proposed Action would not generate any increase in noise from mobile sources.

Commercial carter trucks are stationary when compacting refuse and, therefore, would, also be considered a stationary noise source. The compacting cycle from all commercial carter trucks are regulated by Subchapter 5, §24-225 of the New York City Noise Control Code to a consistent level of noise emission. Consequently, the Proposed Action would not generate any increase in noise from stationary sources.

Since the Proposed Action would not result in additional mobile or stationary source noise at any noise receptors, a more detailed noise analysis is not warranted according to *CEQR Technical Manual* guidance, and the Proposed Action would not have the potential to result in a significant adverse noise impact.

C. CONCLUSION

In view of the foregoing, it can be concluded that the CWZ Program would not cause a significant adverse noise impacts. ✷

Chapter 9: Alternatives

A. INTRODUCTION

In accordance with the 2014 *City Environmental Quality Review (CEQR) Technical Manual*, this chapter presents and analyzes alternatives to the CWZ Program.

As described in Chapter 1, "Project Description," the City of New York is proposing to establish and implement a Commercial Waste Zone (CWZ) Program across the five boroughs of the City to improve the carting of refuse, recyclables, and organic waste from commercial businesses (the "CWZ Program" or "Proposed Action").

Alternatives selected for consideration are generally those which are feasible and have the potential to reduce, eliminate, or avoid adverse impacts of a CWZ Program while meeting some or all of the goals and objectives of the action.

Although the Draft Generic Environmental Impact Statement (DGEIS) has not identified a significant adverse impact from the Proposed Action with respect to any CEQR environmental category, nevertheless, this chapter considers two alternatives to the CWZ Program:

- A No Action Alternative, which is mandated to be considered by CEQR and the State Environmental Quality Review Act (SEQRA), and is intended to provide the lead and involved agencies with an assessment of the environmental conditions that would exist if the CWZ Program were not implemented, and thus serves as a baseline against which the impacts of the Proposed Action may be assessed.
- An Exclusive Zone Alternative, in which one carter obtains the right to operate alone or exclusively in a zone.

B. NO ACTION ALTERNATIVE

The No Action Alternative, which is the same as the No Action condition, predicts the environmental conditions that would exist if the CWZ Program were not implemented. Under the No Action Alternative, the commercial waste industry would remain essentially unchanged, with the exception of any regulatory changes to the industry already expected by the Analysis Year of 2024. This analysis considers a static snapshot in time, but population growth and business economic cycles are expected, which would affect commercial waste generation and commercial waste operations.

LAND USE, ZONING, AND PUBLIC POLICY

As with the CWZ Program, the No Action Alternative would not result in any significant adverse impacts to public policy.

As discussed in Chapter 2, "Land Use, Zoning, and Public Policy," the commercial waste industry is regulated largely by Titles 16 and 16A of the New York City Administrative Code and Titles 16 and 17 of the Rules of the City of New York. These laws and regulations would continue to

regulate the industry, and carters would need to comply with applicable policies; however, as at present, there would be a lack of effective enforcement mechanisms for private carters to comply with these regulations.

Local Law (LL) 145 of 2013 (LL145/2013) requires diesel commercial carting truck with engines older than Model Year 2007 to be upgraded by January 1, 2020 to reduce their exhaust emissions either by installing a newer engine, from 2007 or later, or by retrofitting the engine with pre-approved Best Available Retrofit Technology (BART) emission controls, such as diesel particulate traps. Under the No Action Alternative, all operating carters are expected to be fully compliant with LL145/2013 by the 2024 Analysis Year, similar to the CWZ Program.

LL 56 of 2015 (LL56/2015) requires that all commercial carting vehicles be equipped with side guards by January 1, 2024. Accordingly, 100 percent compliance with LL56/2015 is expected under the No Action Alternative, the same as under the CWZ Program.

LL152 of 2018 (LL152/2018) requires the reduction of permitted capacity at putrescible and non-putrescible solid waste transfer stations in four overburdened community districts in New York City. Under the No Action Alternative, such reductions will have occurred at the identified transfer stations and some waste that would be displaced from these facilities would be handled instead by other transfer stations.

Existing regulations require commercial businesses to recycle metal, glass, plastic (MGP), paper, cardboard, and, in some cases, food preparation waste (organics) and, thereby, divert such waste from landfills; however, enforcement and tracking compliance rates are difficult. LL146/2013 requires the New York City Department of Sanitation (DSNY) to assess, at least annually, the available regional capacity to process organic waste and to designate certain categories of businesses that must separate this material for a beneficial use, such as composting or anaerobic digestion to produce biogas. As with the CWZ Program, under the No Action Alternative, businesses would continue to comply with LL146/2013, and carters would collect the organic waste. It is estimated that 30 percent of commercial waste would be collected as recyclables (i.e., cardboard, paper, and MGP) and an additional 3 percent would be collected as organics throughout the City under the No Action Alternative.[1] This reflects a slight increase from existing conditions in which an estimated 24 percent of commercial waste is collected as recyclables and 1 percent is collected as organics throughout the City, but is less than the estimate collection rate of recyclable and organics under the Proposed Action.

2006 SOLID WASTE MANAGEMENT PLAN

As with the CWZ Program, continued implementation of the City's Solid Waste Management Plan (SWMP) would occur under the No Action Alternative. As discussed in Chapter 2, "Land Use, Zoning and Public Policy," the goals of the SWMP are being achieved through the reconstruction of marine transfer stations and the reduction of solid waste processed in certain overburdened districts of Brooklyn, the Bronx, and Queens.

[1] Collection rate is the amount of designated recyclables or organic material collected in the system.

ONE NEW YORK: THE PLAN FOR A STRONG AND JUST CITY (ONENYC)

Under the No Action Alternative, the City would continue to encourage sustainability and recycling as with the CWZ Program. However, there would be no added enforcement mechanisms for the City to meet the goals set forth under the plan, similar to existing conditions.

WATERFRONT REVITALIZATION PROGRAM

Under the No Action Alternative, there would be no changes to the commercial waste industry to warrant review with respect to the New York City Waterfront Revitalization Program (WRP) policies.

SOCIOECONOMICS

COMMERCIAL WASTE CARTERS

Recycling and Organics Collection Requirements

In the No Action Alternative, it is estimated that 30 percent of commercial waste would be collected as recyclables (i.e., cardboard, paper, and MGP) and 4 percent of commercial waste would be collected as organics throughout the City under the No Action Alternative.[2] This reflects a slight increase from existing conditions in which an estimated 24 percent of commercial waste is collected as recyclables and 1 percent is collected as organics throughout the City.[3] This improved diversion is anticipated to come about due to the introduction of single-stream recycling, increased enforcement, and other policies and programs as discussed in Chapter 2, "Land Use, Zoning, and Public Policy."[4] However, this is less than the estimated collection rate of recyclables and organics under the Proposed Action.[5]

In order to reach the diversion rate anticipated in the No Action Alternative, carters would need to run an estimated 4 percent more collection routes and employ 4 percent more field employees

[2] Collection rate refers to the percentage of designated recyclables and organics in the system.

[3] Current waste stream capture rates are estimated through comparison of DSNY, 2018, Transfer Station and Recycling Processor Reports and DSNY, 2018, Private Operator Disposal System (PODS) Database with total waste streams based on a waste characterization model derived from Census industry employment in New York City and waste intensities from *CalRecycle, Sept. 2015, 2014 Generator-Based Characterization of Commercial Sector Disposal and Diversion in California*. It is estimated that increased enforcement and other City policies between the current year and the 2024 Analysis Year can increase capture rates by 15 percent for each waste stream compared to current conditions. It is assumed that at maximum no waste stream will reach a capture rate over 95 percent. With organics, the only organics material considered in the analysis is the organic material from the category of businesses covered by LL146/2013. The overall impact of increased enforcement is a potential increase in diversion by 9 percent in the No Action Alternative from existing conditions.

[4] The City estimates that approximately 250,000 tons of organic material is generated by the businesses specified in LL146/2013 if all businesses were designated and it included front and back-of-the-house material. Currently, the City has designated a portion of the businesses specified in LL146/2013 and only back-of-the-house material, which amounts to a small amount of the organic material available in the waste stream. The No Action Alternative contemplates full designation of all businesses specified in LL146/2013 and includes both front and back-of-house material.

[5] Increased diversion of organic and recyclable material in the No Action Alternative is not anticipated to result in additional revenues to commercial carters.

to service the additional collection routes.[6] It is expected that in order to service the increased collection routes an estimated 39 additional trucks and approximately 72 additional employees would be required.

Further, additional operational expenses and administrative costs would increase the cost of operation associated with diversion in the No Action Alternative. As seen in **Table 9-1**, in total, it is anticipated that the increase in the rate of diversion in the No Action Alternative would cost approximately $15 million across the industry in the Analysis Year including the $1.2 million necessary to acquire the additional trucks required to complete the additional diversion routes in the No Action Alternative.

Table 9-1
Cost Associated with 4-Percent Increase in the Rate of Diversion in the No Action Alternative

Expense	Cost
Disposal Costs	$- [1]
Operating Payroll	*$6,017,190*
Sales, General & Administration Payroll	*$2,047,547*
Total Payroll	$8,064,737
Truck and Equipment	$3,017,211
Other Expenses	$3,008,912
Total	**$15,256,894**

Notes:
[1] It is assumed that the cost of disposing of commercial waste would remain constant as the total amount of waste collected remains constant in the No Action Alternative.
[2] The costs of trucks and equipment includes the expense associated with acquiring additional trucks to service expanded diversion routes in the No Action Alternative.
Sources:
Analysis of BIC, 2015, Private Carter Financial Statements
BIC, 2018, Private Carter Dump Tickets
Waste Characterization Model based on Census industry employment in New York City and waste intensities from CalRecycle, Sept. 2015, 2014 Generator-Based Characterization of Commercial Sector Disposal and Diversion in California

Local Law 145 of 2013

LL145/2013 requires commercial carters to modify all diesel waste collection truck engines older than Model Year 2007 to reduce their emissions. Non-compliant vehicles must have new engines installed or have engines retrofit with pre-approved BART emissions controls by 2020. While compliance with LL145/2013 is not fully reported, a majority of commercial carters have filed Compliance Plan Reports with BIC in 2017 providing insight into the industry's existing level of compliance and future plans for compliance by the 2020 deadline.[7]

[6] An estimated 4 percent increase in routes is attributed to differences in load weights of putrescible, recyclables, and organics loads. Recyclable and organic routes carry less material per drop-off than putrescible routes based on BIC, 2018, Private Carter Dump Tickets. Thus, to service 9 percent more material as recyclables or organics instead of putrescible, an estimated 4 percent additional collection routes are needed.

[7] BIC, 2017, LL145/2013 Compliance Plan Reports provided by carters at the request of BIC.

Approximately 64 carters that fall under the scope of the CWZ Program submitted compliance data in 2017. As of summer 2017, approximately one third of the trucks that were reported to BIC were in compliance with LL145/2013.[8]

Based on reporting by commercial carters to BIC and the additional vehicles introduced as a result of increased diversion in the No Action Alternative discussed above, approximately 1,014 commercial carting trucks would be accounted for within New York City in the scope of this analysis. Based on carter reporting, as shown in **Table 9-2** under LL145/2013, the 975 existing trucks are expected to become compliant utilizing the following compliance methods at the following rates: approximately 35 percent (341 trucks) are already compliant with LL145/2013; 22 percent (215 trucks) are anticipated to be replaced with new compliant trucks; 21 percent (205 trucks) would be retrofitted with BART; 16 percent (156 trucks) would be retrofitted with new engines; and 6 percent (63 trucks) would be removed from service. For the 39 added trucks due to the increased rate of diversion, it is assumed that they would be purchased new and therefore would be compliant with LL145/2013 (see **Table 9-2**).

Table 9-2
LL145/2013 Reported Compliance and Anticipated Cost

Compliance Method	Unit Replacement Cost	Count of Fleet	Retrofit Rate[1,2]	Total LL145/ 2013 Cost	Annual LL145/ 2013 Cost[3]
Compliant	$-	341	35%	$-	$-
Replaced	$297,036	215	22%	$63,714,222	$6,371,422
BART	$13,500	205	21%	$2,764,125	$276,413
New Engines	$4,075	156	16%	$635,700	$63,570
Removed from Service	$(2,964)[4]	59	6%	$(173,394)	$(173,394)
Additional Diversion Trucks	$-	39	-	$-	$-
Total		**1,014**		**$66,940,653**	**$6,538,011**

Notes:
[1] The retrofit rate is based on the LL145 of 2013 Carter Compliance Plan Reports and assesses the rate of LL145 of 2013 compliance of the existing truck fleet (975 trucks), and does not include trucks introduced as a result of increased diversion in the No Action Alternative.
[2] Due to rounding, the retrofit rate may not total 100 percent.
[3] Due to the high cost of acquiring additional equipment, it is assumed that these costs would be distributed over a period of 10 years.
[4] Vehicles removed from service are assumed to be sold for scrap at the identified rate
Sources:
BIC, 2017, LL145 of 2013 Carter Compliance Plan Reports
BIC, 2018, LL145 of 2013 Carter Compliance Reports

Based on the reported compliance methods anticipated to be used by commercial carters to retrofit or replace vehicles per LL145/2013, the total anticipated costs for full fleet compliance is approximately $67 million or if equipment acquisition costs are distributed over the course of 10 years, approximately $6.5 million per annum.[9]

[8] BIC, 2017 LL145/2013 Compliance Plan Reports provided by carters by request of BIC.

[9] BIC, 2017, LL145 of 2013 Carter Compliance Plan Reports.

Local Law 56 of 2015

LL56/2015 requires commercial waste collection trucks be equipped with side guards by 2020 in an effort to decrease the number of serious or fatal injuries that occur as a result of a result of pedestrians or cyclists being run over by the front or rear axles of carting trucks during a side impact collisions. Unlike LL145/2013 where carters have provided information related to their intent to comply with the law, the number of vehicles already in compliance with LL56/2015 is unknown. Therefore, it is assumed that under the No Action Alternative, to be compliant with LL56/2015, the entire commercial carting fleet will have to be equipped with side guards. The purchase and installation of side guards is estimated at approximately $3,000 per vehicle, and these costs are anticipated to be distributed over 8 years.[10] The total cost of bringing the commercial carting fleet into compliance with LL56/2013 would require the retrofitting of the entire 1,014 vehicle fleet at a cost of approximately $3 million which totals approximately $380,346 per annum over the course of 8 years.

No Action Alternative Incremental Costs

In total, in the No Action Alternative, the commercial carting industry is expected to increase operational costs as a result of increased diversion by 4 percent, retrofitting of trucks to comply with new emissions requirements, and installation of side guards on all commercial carter trucks. As seen in **Table 9-3** these expenses are expected to total approximately $22 million per year assuming that costs associated with LL145/2013 are distributed over the course of 10 years and the costs associated with LL56/2015 over 8 years. Again, in addition to the costs associated with these policies in the No Action Alternative, carters are expected to acquire an additional 39 trucks, and employ approximately 72 additional staff to account for the increased routes as a result of the increased rate in diversion.

Table 9-3
Additional Carter Expenses in the No Action Alternative

No Action Policy	Annual Expense
LL 145/2013	$6,538,011[1]
LL 56/2015	$380,346 [2]
Diversion Operations	$15,256,894
Total Additional Expense	**$22,175,250**

Notes:
[1] The costs of LL145/2013 are anticipated to be distributed over the course of 10 years. This 10-year span is meant to account for the 3 years between the LL145/2013 Compliance Plan Report year (2017) and the final compliance date according to legislation (2020) plus an additional 7 years from the date of last truck purchase due to the normal depreciable life of a truck, which is 7 years.
[2] The costs of LL56/2015 are anticipated to be distributed over the course of 8 years. This 8-year span is meant to account for the duration between the initiation of the policy (2015) and the final compliance date according to legislation (2023).
Sources:
BIC, 2017, LL145 of 2013 Carter Compliance Plan Reports
BIC, 2018, LL145 of 2013 Carter Compliance Reports

In total, as seen in **Table 9-4**, as a result of the additional annual expenses commercial carters will incur in the No Action Alternative, the cost of providing commercial carting services in the No

[10] New York City Office of the Mayor, Feb. 9, 2015, "City Begins Installing Truck Sideguard to Protect Pedestrians and Cyclists"

Action Alternative is anticipated to rise by approximately 4 percent ($22 million), from approximately $553 million to $575 million.

Table 9-4
Change in Commercial Carter Expenses

Expense Category	Total Expense		No Action Alternative Increment	
	Proposed Action	No Action Alternative	Cost	Percent Change
Disposal Costs	$203,270,074	$203,270,074	$-[1]	0%
Operating Payroll	*$146,236,570*	*$155,467,428*	*$9,230,858*	*6%*
Sales, General & Administration Payroll	*$60,643,397*	*$52,902,923*	*$(7,740,474)*	*-13%*
Total Payroll	$206,879,967	$208,370,351	$1,490,384	1%
Truck and Equipment	$62,768,606	$86,040,720	$23,272,115	37%
Other Expenses	$88,348,613	$77,741,918	$(10,606,695)	-12%
Total	**$561,267,260**	**$575,423,064**	**$14,155,804**	2%

Notes:
[1] It is assumed that the cost of disposing of all commercial waste will remain constant as the total amount of waste collected (including putrescible, recyclable and organic) remains constant in the Proposed Action; therefore the cost of disposal is not anticipated to increase as a result of the increased rate of diversion as a result of the proposed action.

Sources:
BIC, 2015, Private Carter Financial Statements
BIC, 2017, LL145/2013 Carter Compliance Plan Reports
BIC, 2018, LL145/2013 Carter Compliance Reports

In total, as seen in **Table 9-4**, as a result of the additional annual expenses commercial carters would incur in the No Action Alternative, the cost of providing commercial carting services in the No Action Alternative is anticipated to be approximately $14 million (2 percent) greater than under the CWZ Program as the No Action Alternative would not include the operational efficiencies associated with a zoned system, and therefore, in the No Action Alternative, carters would have additional operational expenses, need additional trucks to provide the same waste collection services and increased payroll related to staffing a greater number of employees to service the additional routes necessary to collect commercial waste.

Secondary Employment Market

In the No Action Alternative, it is anticipated that diversion would increase by approximately 9 percent over the existing rate of diversion. In response to this increased rate of diversion in the No Action Alternative, the secondary recycling market would require additional sorting capacity, and therefore is expected to require additional workers to manage and sort the additional diverted waste. The NYSDOL Quarterly Census of Employment and Wages reports approximately 400 employees working in materials recovery facilities in New York City.[11] With a net increase in diversion rate of 9 percent over the existing condition, it is anticipated that approximately 139 additional jobs could be generated in the secondary market under the No Action Alternative. This would result in approximately 139 fewer new jobs within the secondary sorting market in the No Action Alternative as compared to the CWZ Program.

[11] DSNY, 2016, Private Carting Study

In comparison to the CWZ Program, the expenses associated with operation of the commercial carting industry would be higher under the No Action Alternative. This is because the No Action Alternative would not include the operational efficiencies associated with a zoned system, and therefore, in the No Action Alternative, carters would need additional trucks and staffing as compared to the CWZ Program in order to collect an equal amount of waste.

COMMERCIAL WASTE CUSTOMERS

Under the No Action Alternative, it is anticipated that for a business, overall, the cost of commercial carting services would be higher than the cost under the CWZ Program. As seen in **Table 9-4**, the expenses associated with commercial carting services in the No Action Alternative would be approximately 2 percent higher than expenses under the CWZ Program. This results in an approximately $14 million increase to carter operating expenses in the No Action Alternative due as carters would have additional operational expenses, need additional trucks to provide the same waste collection services and increase payroll related to staffing a greater number of employees to service the additional routes necessary. As a result of this increase to operational expenses, carters are anticipated to increase the fee for commercial carting services in order to recoup the expenses associated with policies to be implemented in the No Action Alternative.

Further, in the No Action Alternative, the price for commercial waste collection services within New York City would continue to be regulated by the BIC rate cap, as opposed to through the bidding system outlined in the CWZ Program. As seen in **Table 9-5**, it is anticipated that the BIC rate cap would increase to $15.88 per 100 lbs. in the No Action Alternative.[12] Further as the BIC rate cap would increase by 5.25 percent every two years it is assumed that in the No Action Alternative the median rate for commercial carting services within New York would also increase at this rate, as compared to the existing condition.

Table 9-5
No Action Alternative Anticipated BIC Rate Cap

Study Area	Existing Condition	No Action Alternative[1]
New York City BIC Rate Cap	$13.62	$15.88
New York City Median Rate	$10.00	$11.66
Midtown Manhattan CBD Median Rate	$8.90	$10.38
Flatbush Nostrand Junction Median Rate	$11.30	$13.17
College Point Median Rate	$10.80	$12.59

Notes:
1. The No Action Alternative rate cap is anticipated to increase by 5.25 percent every 2 years between 2018 and 2024. In total, this amounts to a 17 percent increase in the rate cap between the existing condition and No Action Alternative.

Sources:
NYC Rules, 2018, Adopted Rules-http://rules.cityofnewyork.us/tags/trade-waste-0
BIC, 2017 Q2-Q4, Private Carter Customer Register

As a result of the approximately 17 percent increase in the median rate charge for commercial carting services in the No Action Alternative, it is anticipated that the rate charged to customers for commercial waste collection in the No Action Alternative would increase as compared to the existing condition and the CWZ Program.

[12] Based on assumptions provided by DSNY/BIC.

Under the No Action Alternative, commercial businesses which rely on the commercial carting industry to collect and dispose of waste would experience an increase in the rate charged for commercial waste collection as compared to the CWZ Program. This is due to the increase in carter operating expenses which would need to be offset by increased carter revenues. As documented in Chapter 3 "Socioeconomic Conditions," under the CWZ Program businesses would likely see a reduction in the cost of carting services as compared to the No Action Alternative as the overall expense of commercial carting would be reduced, allowing carting prices to be more competitive. Further, businesses, regardless of industry sector or location, would likely receive improved services including free waste assessments and access to a dedicated call center at a competitive rate as a result of the CWZ Program, services which would not be offered under the No Action Alternative.

SOLID WASTE MANAGEMENT

As with the CWZ Program, the No Action Alternative would not result in any significant adverse impacts to solid waste management.

Under the No Action Alternative, the City would continue to expand recycling and organics diversion, and all commercial businesses designated under LL146/2013 would be required to separate organics for a beneficial use, like composting or digestion. It is estimated that 30 percent of commercial waste would be collected as recyclables (i.e., cardboard, paper, and MGP) and 3 percent of commercial waste would be collected as organics throughout the City under the No Action Alternative, which would be less than the anticipated collection rate under the CWZ Program.

LL152/2018 reduces the permitted capacity at putrescible and non-putrescible solid waste transfer stations in four overburdened community districts in New York City and would continue under the No Action Alternative, as it would under the CWZ Program.

As discussed above in "Land Use, Zoning and Public Policy," continued implementation of the SWMP would also occur under the No Action Alternative.

TRANSPORTATION

As with the CWZ Program, the No Action Alternative would not result in any significant adverse impacts to transportation. As per the *CEQR Technical Manual*, some growth in background traffic is expected citywide by the Analysis Year of 2024 under both the No Action Alternative and Proposed Action. However, this growth would not be expected to result in significant traffic congestion during waste carting peak hours, as most commercial carting takes place at times that are not peak hours for background traffic.

Under the No Action Alternative, carters would continue to operate the same as under the existing condition—the routes, frequency, durations and pick-up times would remain approximately the same.

As described in Chapter 2, "Land Use, Zoning and Public Policy," under the No Action Alternative, the City would continue to expand recycling and organics diversion, including requiring all commercial businesses designated in LL146/2013 to separate organics for composting or digestion. Collection trucks carting recyclables or organic waste do not carry the same density of waste as similar-sized putrescible refuse collection trucks, thus a net increase in the total number of waste collection trucks would be expected as a result of the increased diversion to recycling and organics. This would result in a minor increase to Vehicle Miles Traveled (VMT) within New York City and region-wide for travel to transfer stations and garages in New Jersey, Long Island, and nearby upstate New York counties with the No Action Alternative. However,

these minor increases in VMT are not expected to result in significant adverse impacts to transportation under the No Action Alternative. **Table 9-6** provides the anticipated VMT across each of the case study areas for the No Action Alternative as compared to the CWZ Program.

Table 9-6
No Action and Proposed Action VMT (miles/day) per Case Study Area

Case Study Area	No Action Alternative VMT[1]	Proposed Action VMT[1]	Percent Reduction from No Action Alternative
Midtown Manhattan CBD	810	355	56%
Flatbush Nostrand Junction, Brooklyn	49	26	47%
College Point, Queens	499	200	60%

Notes:
[1] Simulation based on 2018 Routing Data collected between March 4, 2018 and March 17, 2018. .
Source:
2018 Routing Data simulated to reflect No Action Alternative and Proposed Action, including Diversion Program Impact.

Table 9-7 provides the daily waste carting trucks per case study area for the No Action Alternative as compared to the CWZ Program. As shown, the number of daily carting trucks under the No Action Alternative is approximately 174, 46, and 85, within the Midtown Manhattan Central Business District (CBD), the Flatbush Nostrand Junction, and the College Point case study areas, respectively. Compared to the No Action Alternative, the Proposed Action is predicted to decrease the number of trucks in the future by approximately 40 percent to 62 percent per case study area (see **Table 9-7**).

Table 9-7
No Action Alternative and Proposed Action
Daily Carter Trucks per Case Study Area

Case Study Area	No Action Alternative Daily Trucks[1,2]	Proposed Action Daily Trucks	Percent Reduction
Midtown Manhattan CBD	174	104	40%
Flatbush Nostrand Junction, Brooklyn	46	24	48%
College Point, Queens	85	32	62%

Notes:
[1] Simulation based on 2018 Routing data collected between March 4, 2018 and March 17, 2018. All data for baseline condition in study areas is the MAX of weekday data.
Source:
2018 Routing Data simulated to reflect No Action Alternative and Proposed Action, including Diversion Program Impact.

AIR QUALITY

As with the CWZ Program, the No Action Alternative would not result in any significant adverse impacts to air quality.

As indicated above in "Transportation," under the No Action Alterative, carters would continue to operate as they do under the existing condition: the routes, frequency, durations and pick-up times would remain approximately the same.

As a result of the increased diversion to recycling and organics, under the No Action Alternative, there would be an increase in the total number of commercial waste collection trucks and a minor increase in VMTs, within New York City and region-wide for travel to transfer stations and garages in New Jersey, Long Island, and upstate New York. Furthermore, under the No Action Alternative, all operating carters are expected to be fully compliant with LL145/2013 by the 2024 Analysis Year. Therefore, although fleet-wide emissions associated with commercial carter trucks are anticipated to be reduced from existing levels, this reduction may be partially offset by a minor increase to pollutant emissions in the No Action Alternative due to the increased VMT associated with the expanded recycling and organic diversions. Overall, ambient air quality (particulate matter [PM] and Ozone) has been improving in recent years; no significant deterioration is predicted by the analysis year of 2024 in the No Action Alternative.

Therefore, overall, background growth in traffic under the No Action Alternative is not expected to result in significant adverse impacts to air quality.

GREENHOUSE GAS EMISSIONS

As with the CWZ Program, the No Action Alternative would not result in any significant adverse impacts to greenhouse gas (GHG) emissions.

As described above in "Transportation," as a result of the increased diversion to recycling and organics, there would be an increase in the total number of commercial waste collection trucks and a minor increase in VMTs within New York City and region-wide for travel to transfer stations and garages in New Jersey, Long Island, and upstate New York with the No Action Alternative. Furthermore, as described above in "Air Quality," under the No Action Alternative, all operating carters that indicate progress towards compliance with LL145/2013 are expected to be fully compliant with LL145/2013 by the 2024 Analysis Year.

The requirements of LL145/2013 target reductions to PM emissions. While PM is not included in the list of standard GHGs, recent studies have shown that black carbon—a constituent of PM—may play a role in climate change due to PM concentrations influencing the temperature of the earth. Particles of PM can be light absorbing and, consequently, can contribute to the rise in global temperatures, although these effects would be minimal.

Therefore, although PM emissions from commercial waste vehicles would be reduced, there may be a minor increase to GHG emissions in the No Action Alternative due to the increased VMT associated with the expanded recycling and organics diversion. However, this minor increase would be more than offset by the reduction in GHG emissions from reduced landfill disposal due to expanded recycling and organics diversion, as landfills emit GHGs in substantial quantities, notably methane and CO_2. The increased diversion from landfills along with the improved vehicle fleets is not expected to result in significant adverse impacts with respect to GHG emissions under the No Action Alternative.

NOISE

As with the CWZ Program, the No Action Alternative would not result in any significant adverse impacts to noise.

The No Action Alternative would not introduce any new noise receptors. As described above in "Transportation," as a result of the increased diversion of recyclables and organics, there would be an increase in the total number of commercial collection trucks under the No Action Alternative. However, as described in "Transportation," the carters would continue to follow the same routes,

and pick-up times would remain approximately the same. The increase in truck traffic from this incremental diversion would be dispersed across the city and would be minor and, consequently, would not result in a doubling of traffic passenger car equivalents (PCEs) in the peak hour, which would be necessary to cause a significant increase in noise levels (i.e., a 3 A-weighted decibels [dBA] or greater increase according to *CEQR Technical Manual* noise impact criteria) at a sensitive receptor. As such, as with the CWZ Program, the background growth in traffic under the No Action Alternative would not cause significant adverse noise impacts from mobile sources.

As carter vehicles are regulated with respect to noise, compacting refuse at a given location would not result in a change in the level of stationary noise generated during collections. Therefore, under the No Action Alternative noise from stationary sources is not projected to increase or result in any significant adverse noise impacts to sensitive receptors.

C. EXCLUSIVE ZONE ALTERNATIVE

Under the Exclusive Zone Alternative, each CWZ would have a single carter awarded the exclusive right to provide collection services for that zone, as compared with three to five carters per zone under the CWZ Program. The goals of the Exclusive Zone Alternative would be the same as the CWZ Program, as described in Chapter 1, "Project Description." Under the Exclusive Zone Alternative, the same 20 zone configuration as shown in Figure 1-1 as the CWZ Program would be utilized for this evaluation.

As described in Chapter 1, "Project Description," during the design of the CWZ Program, exclusive zones were removed from consideration given concerns about anticipated price increases as a function of reduced competition, carter solvency within a restrictive market, and the ability to meet the needs of the customer. However, an analysis of the potential impacts of the Exclusive Zone Alternative is provided below.

LAND USE, ZONING, AND PUBLIC POLICY

As with the CWZ Program, the Exclusive Zone Alternative would not result in any significant adverse impacts to land use, zoning, or public policy. The Exclusive Zone Alternative would not replace existing laws and regulations discussed in Chapter 2, "Land Use, Zoning, and Public Policy." Rather, similar to the CWZ Program, the Exclusive Zone Alternative would require the carter to comply with the laws and regulations to obtain a service contract, including LL145/2013 (clean diesel) and LL56/2015 (sideguard requirement). Further, DSNY and BIC would have the mechanism to enforce these regulations if a carter fails to comply.

As with the CWZ Program, under the Exclusive Zone Alternative, the reductions of permitted capacity at putrescible and non-putrescible solid waste transfer stations in four overburdened community districts in New York City would occur in compliance with LL152/2018.

In addition, as with the CWZ Program, under the Exclusive Zone Alternative, businesses would continue to comply with the commercial organics requirements of LL146/2013, and carters would collect organics waste.

The Exclusive Zone Alternative would support the goals of public policies as discussed in Chapter 2, "Land Use, Zoning, and Public Policy", including the SWMP, *OneNYC*, and the New York City WRP as with the CWZ Program.

SOCIOECONOMICS

As with the CWZ Program, the Exclusive Zone Alternative would not result in significant adverse impacts on the viability of the commercial carting industry, or businesses that rely on the commercial carting industry. It is anticipated that under the Exclusive Zone Alternative, additional efficiencies as a result of a single carter operating within each zone would decrease the overall cost of commercial carting operations within the City as compared to the CWZ Program. However, the elimination of competition within commercial waste zones has the potential to increase the costs of commercial carting services on customers and could lead to a reduction in customer service and satisfaction due to the single-service provider monopoly created by an exclusive zone system. Furthermore, implementing the Exclusive Zone Alternative has the potential to be a substantial logistical challenge, as few carters have the capacity to exclusively service a single zone, a larger number of customers would be required to change service providers in the transition period, and potential future service disruptions could result if the single carter fails to provide the necessary services.

COMMERCIAL WASTE CARTERS

It is anticipated that the Exclusive Zone Alternative could result in a reduction in the cost associated with commercial waste carting operations to a level even greater than under the CWZ Program as efficiencies including highly efficient routing and an overall reduction of routes would decrease the carting industries operational expenses. Under the Exclusive Zone Alternative, zone route efficiencies (ZRE) would increase efficiencies in payroll by 2 percentage points and efficiencies in routing by 6 percentage points over the Proposed Action. As shown in **Table 9-8** these efficiencies would reduce carter expenses by approximately $8.7 million more than the CWZ Program would, a 2 percent total savings in the operational expenses associated with commercial waste collection services.

Table 9-8
Carter Operational Expenses in the Exclusive Zone Alternative

Expense Category	Proposed Action	Exclusive Zone Alternative	Change Between the Proposed Action and Exclusive Zone Alternative	
			Count	Percent
Disposal Costs	$203,270,074	$203,270,074	$-[1]	0%
Operating Payroll	*$146,236,570*	*$147,812,758*	*$1,576,188*	*1%*
Sales, General & Administration Payroll	*$60,643,397*	*$55,788,347*	*$(4,855,050)*	*-8%*
Total Payroll	$206,879,967	$203,601,106	$(3,278,862)	-2%
Truck and Equipment	$62,768,606	$57,290,121	$(5,478,484)	-9%
Other Expenses	$88,348,613	$88,321,161	$(27,452)	0%
Total	$561,267,260	$552,482,462	$(8,784,798)	-2%

Notes:
[1] It is assumed that the cost of disposing of all commercial waste will remain constant as the total amount of waste collected (including putrescible, recyclable and organic) remains constant in the Proposed Action; therefore the cost of disposal is not anticipated to increase as a result of the increased rate of diversion as a result of the proposed action.
Sources:
Business Integrity Commission, 2015, Private Carter Financial Statements
Previous Analyses as Indicated in this & Chapter 3, "Socioeconomic Conditions".

The largest operational savings under the Exclusive Zone Alternative is a $5.5 million reduction in the cost of trucks and equipment. As seen in **Table 9-9** under the Exclusive Zone Alternative the

carting industry would require approximately 674 trucks to haul commercial waste, this is a 9 percent (65 trucks) decrease over the CWZ Program. Furthermore, under the Exclusive Zone Alternative routing efficiencies would result in the reduction of 39 additional field employees as compared to the CWZ Program, a 2 percent reduction in total employment as compared to the CWZ Program. As there would be no competition for customers under the Exclusive Zone Alternative, staff in sales roles would likely be reduced or shifted to other positions within a carting businesses in order for the carter to take on the expanded operation necessary to collect all waste from an exclusive zone.

Table 9-9
Changes to Carting Trucks and Employment as a Result of the Exclusive Zone Alternative

Units	Proposed Action	Exclusive Zone Alternative	Change Between Proposed Action and Exclusive Zone Alternative	
			Count	Percent
Trucks	739	674	-65	-9%
Field Employees	1,751	1,712	-39	-2%
Office Employees	880	880	0	0%
Total Employment	2,631	2,592	-39	-1%

Sources:
BIC, 2015, Private Carter Financial Statements
NYSDOL, 2015-2017, Occupational Wages for New York City Region
Previous Analyses as Indicated in this Chapter.

COMMERCIAL WASTE CUSTOMERS

It is anticipated that the Exclusive Zone Alternative could result in commercial businesses experiencing increased costs for commercial carting services. While carting operations would likely be more efficient within an exclusive zone system, the lack of competition associated with this alternative would eliminate the need for commercial carters to provide the lowest price of service to be competitive with other carters within zones, as is found in the CWZ Program. As customers have no choice but to utilize the exclusive carter, businesses would not be able to select services from different carters, reducing the competitive character of the market. Due to the reduction of carter operational expenses in the Exclusive Zone Alternative customers could receive carting services at a lower price in the Exclusive Zone alternative than under the CWZ Program. However, customers may experience a decrease in the quality of waste collection services as carters would not be as incentivized to maintain a high level of service in order to retain customers, as they would be under the CWZ Program. Furthermore, as zones are exclusive, if a carter were unable to operate effectively and ceased operations, carting customers would have little or no redundancy in commercial waste collection as they would not be able to contract readily with another carter this would likely result in service disruptions for businesses, and the possibility that DSNY would be obligated to and provide emergency collection services to ensure that commercial waste continued to be collected.

SOLID WASTE MANAGEMENT

As with the CWZ Program, the Exclusive Zone Alternative would not result in any significant adverse impacts to solid waste management.

Similar to the CWZ Program, the Exclusive Zone Alternative would not be expected to increase the overall volume of waste being produced or collected but would result in a redistribution of the

type of waste collected and changes in the carter collecting the waste. As indicated above, with only a single carter operating within each CWZ in the Exclusive Zone Alternative, customers may experience a decrease in the quality of waste collection services and potential disruptions should a carter be unable to operate effectively and cease operations.

Under the Exclusive Zone Alternative, relevant regulations and management plans would continue to aim to achieve their goals. The City would continue to expand recycling and organics diversion, and all commercial businesses designated in LL146/2013 would be required to separate organics for composting or digestion. In addition, as with the CWZ Program, continued implementation of the SWMP would occur under the Exclusive Zone Alternative.

TRANSPORTATION

As with the CWZ Program, the Exclusive Zone Alternative would not result in any significant adverse impacts to transportation.

Similar to the CWZ Program, under the Exclusive Zone Alternative the number and type of customers and the pick-up times and frequency of pick-ups would be expected to remain roughly the same with existing condition and the No Action Alternative. Similarly, on a regional level, commercial carter trucks would continue to follow NYCDOT-designated truck routes.

As described in Chapter 5, "Transportation," under the CWZ Program, and similarly under the Exclusive Zone Alternative, as a result of the increased diversion of recyclables and organics and associated carting routes carrying fewer tons per truck, there would be an increase in the total number of commercial carter trucks and a minor increase in VMTs within New York City and region-wide for travel to transfer stations and garages in New Jersey, Long Island, and upstate New York. However, similar to the CWZ Program, the Exclusive Zone Alternative would limit the number of carters within geographic zones, which would result in increased efficiency in waste collection routes, such that truck VMTs and overall truck traffic would decrease. The increased efficiency coupled with the increased diversion to recycling and organics would result in an overall decrease of overlapping trucks along road segments, which would result in decreased VMT within New York City and region-wide for truck routes to and from transfer stations and garages in Long Island, upstate New York, and New Jersey. The Exclusive Zone Alternative is anticipated to reduce citywide commercial waste carter VMT an additional 8 percent from the Proposed Action. **Table 9-10** provides the anticipated VMT across each of the case study areas for the Exclusive Zone Alternative as compared to the CWZ Program.

Table 9-10
Proposed Action and Exclusive Zone Alternative VMT (miles/day) per Case Study Area

Case Study Area	Proposed Action VMT[1]	Exclusive Zone Alternative VMT[1]	Percent Reduction
Midtown Manhattan CBD	355	170	52%
Flatbush Nostrand Junction, Brooklyn	26	18	30%
College Point, Queens	200	171	15%

Notes:
[1] Simulation based on 2018 Routing Data collected between March 4, 2018 and March 17, 2018.
Source:
2018 Routing Data simulated to reflect No Action Alternative and Proposed Action, including Diversion Program Impact.

Table 9-11 provides the daily trucks per case study area for the Proposed Action and the Exclusive Zone Alternative. As shown, the number of daily commercial carting trucks under the Exclusive Zone Alternative is approximately 87, 18, and 36, within the Midtown Manhattan CBD, the Flatbush Nostrand Junction, and the College Point case study areas, respectively. The Exclusive Zone Alternative would result in fewer daily trucks than under the CWZ Program within the Midtown Manhattan CBD and Flatbush Nostrand Junction case study areas, but slightly more trucks within the College Point case study area.[13]

Table 9-11
Proposed Action and Exclusive Zone Alternative Daily Carting Trucks per Case Study Area

Case Study Area	Proposed Action Daily Trucks[1]	Exclusive Zone Alternative Daily Trucks[1]	Percent Reduction
Midtown Manhattan CBD	104	87	16%
Flatbush Nostrand Junction, Brooklyn	24	18	25%
College Point, Queens	32	36	-13%

Notes:
[1] Simulation based on BIC, 2018, Private Carter Routing Data collected between March 4, 2018 and March 17, 2018.
Source:
BIC, 2018, Private Carter Routing Data simulated to reflect No Action Alternative and Proposed Action, including Diversion Program Impact.

Similar to the CWZ Program, under the Exclusive Zone Alternative there would not be a predicted exceedance of the *CEQR Technical Manual* Level 1 traffic screening threshold of an increase in 50 or more PCE in a peak hour within an intersection. Under the *CEQR Technical Manual*, a commercial carter truck is the equivalent of 1.5 PCEs. Therefore, detailed traffic analyses are not warranted and the Exclusive Zone Alternative is not anticipated to result in any significant adverse transportation impacts.

AIR QUALITY

As with the CWZ Program, the Exclusive Zone Alternative would not result in any significant adverse impacts to air quality.

As described above in "Transportation," the Exclusive Zone Alternative would result in an overall decrease in trucks and a decrease in the VMT within New York City and region-wide for truck routes to and from transfer stations and garages in Long Island, upstate New York, and New Jersey

[13] Model simulations using BIC, 2018, Private Carter Routing Data randomly assigned truck routes to transfer stations based proportionally on the locations of the most commonly used transfer stations for routes ending in the zone. Similar to the methodology used to simulate VMT within the existing, No Action, and Proposed Action conditions, multiple iterations of the model were performed, and the average number of trucks are presented. The slight increase in trucks presented within the College Point study area is an average of multiple model runs, with some runs showing fewer trucks and some runs showing greater trucks. This could be due to the location of the Tully Environmental Willets Point Transfer Station and the major highway (Interstate 678) within the study area allowing additional trucks to pass through this area so that even with a single carter operating within the zone covered by the case study area, carters from other zones may pass through the zone to access the transfer station and/or utilize the highway (refer to **Table 9-9**).

as compared to the CWZ Program; therefore, there would be a reduction in emissions from commercial carter trucks.

As with the CWZ Program, under the Exclusive Zone Alternative, all carters operating within the program would be expected to be fully compliant with LL145/2013. Therefore, fleet-wide emissions associated with commercial carter trucks are anticipated to be reduced from existing levels.

Furthermore, commercial carter trucks used for the collection of recycling and organics would also be in full compliance with requirements set forth in LL145/2013. Therefore, similar to the CWZ Program, fleet-wide emissions associated with commercial carter trucks under the Exclusive Zone Alternative would be reduced from levels under existing conditions.

Therefore, the Exclusive Zone Alternative would not result in any significant adverse impacts to air quality.

GREENHOUSE GAS EMISSIONS

As with the CWZ Program, the Exclusive Zone Alternative would not result in any significant adverse impacts to GHG emissions.

As described above in "Transportation," similar to the CWZ Program, under the Exclusive Zone Alternative, there would be an overall decrease of trucks and a decrease in the VMT within New York City and region-wide for truck routes to and from transfer stations and garages in Long Island, upstate New York, and New Jersey as compared to the CWZ Program; therefore, there would be a reduction in GHG emissions from carter vehicles.

One of the goals of the CWZ Program is to prioritize investments in clean, modern fleets that make up a reliable, resilient, and sustainable waste management system. As with the CWZ Program, under the Exclusive Zone Alternative, all commercial carter trucks operating in the City are anticipated be in full compliance with the requirements of LL145/2013. Therefore, the fleet-wide PM emissions associated with commercial waste carting are anticipated to be further reduced from existing conditions.

In addition, the contracts awarded to selected carters would include incentives to provide improved environmental performance. Some of these improvements could include the conversion of commercial carter trucks to electric vehicles or the use of compressed natural gas, which is a cleaner fuel with lower GHG emissions than diesel fuel. As with the CWZ Program, these improvements in performance, if implemented, would further reduce GHG emissions.

Therefore, the Exclusive Zone Alternative would not result in any significant adverse impacts to GHGs.

NOISE

As with the CWZ Program, the Exclusive Zone Alternative would not result in any significant adverse impacts to noise.

As discussed above in "Transportation," similar to the CWZ Program, the Exclusive Zone Alternative would limit the number of carters within geographic zones, which would result in increased efficiency in waste collection routes, such that truck VMT and overall truck traffic would decrease. Therefore, the Exclusive Zone Alternative would not generate any increase in noise from mobile sources.

Further, as commercial carter trucks are regulated with respect to noise, compacting refuse at a given location would not result in a change in the level of stationary noise generated during collections. Therefore, the Exclusive Zone Alternative would not generate any increase in noise from stationary sources and is not expected to result in any significant adverse impacts to noise. ✷

Chapter 10: CWZ Transition Period

A. INTRODUCTION

As described in Chapter 1, "Project Description," the City of New York is proposing to establish and implement a Commercial Waste Zone (CWZ) Program across the five boroughs of the City to improve the carting of refuse, recyclables, and organic waste from commercial businesses (the "CWZ Program" or "Proposed Action").

The Proposed Action is a generic action that would occur throughout the City and does not involve construction. Therefore, no construction period environmental analysis is warranted. Instead, this chapter provides an overview of the anticipated transition period from the existing open market commercial carting system to the CWZ Program and discusses how this transition period may affect certain technical areas analyzed for the CWZ Program's operational period, such as air quality, noise, and traffic. Further, as other cities around the United States have adopted similar programs to the program that the City intends to implement with the Proposed Action, the City has been able to review the transition and implementation of these other cities' programs, determine best practices, and apply the lessons learned from these peer cities to the implementation of the CWZ Program. These best practices and lessons learned have been incorporated into the planning, transition, and implementation of the CWZ Program in New York City and are discussed below. This chapter first discusses the transition process and then includes a discussion of the potential effects of this transition on applicable City Environmental Quality Review (CEQR) technical areas.

B. ANTICIPATED TRANSITION PROCESS

As described in Chapter 1, "Project Description," the CWZ Program would likely be implemented in multiple steps. The transition would begin with a period for competitive solicitation of contracts through a Request for Proposal (RFP) in late 2019 to 2020. Upon review of the proposals submitted and selection of the carters for the CWZ Program, a two-year transition period from 2021 to 2023 would begin to transition customers gradually to the awarded carters in order to successfully accommodate the needs of all customers and allow carters to appropriately scale up to service new customers. Full implementation of the CWZ Program is expected by the Analysis Year of 2024.

The two-year transition period is longer than transition periods seen for commercial waste zone systems implemented in other cities. This is due to the size of the New York City commercial waste market in comparison to other cities and to allow a longer period of time for carters to adjust to new customers and service requirements. Customer transition may occur in multiple phases, with certain zones transitioning prior to other zones.

COMPETITIVE SOLICITATION PERIOD

Workshops would be setup prior to the release of the RFPs in order to assist carters in understanding the requirements of the CWZ Program, including the RFP and contracting process

to allow carters to properly prepare proposals for submission. This step was based, in part, on the review of the transition in other cities.

The New York City Department of Sanitation (DSNY) is expected to initiate the competitive solicitation by the end of 2019. The RFP would be released for all zones and would include specific details on the CWZ Program goals, methods for implementation, and other requirements and would account for any additional stakeholder or public feedback in the development of the RFP. In addition, DSNY would take steps to create RFP documents that are expected to allow carters to bid with price certainty, such as conducting a waste generation study to improve upon previous desktop models.

Once DSNY releases the RFP, carters would prepare and submit competitive proposals. DSNY would accept proposals from qualified carters, groups of carters that form a consortium for a particular zone, or brokers that can manage multiple carters to meet the goals of the CWZ Program as stated in the RFP, such as demonstrating route efficiencies.

Proposals would be evaluated on criteria outlined in the RFP that would determine which carters provide the best overall value consistent with program goals and service requirements. A specified evaluation team comprised of City employees from DSNY and the Business Integrity Commission (BIC) would evaluate each proposal based on designated criteria to determine an overall weighted score for each proposal, with pricing accounting for at least 40 percent of the overall weighted score. Contracts would be subject to negotiation with DSNY.

DSNY would award contracts to at most 3 to 5 carters per zone. Individual carters may be awarded up to 15 zones. In total, it is anticipated that DSNY would award a potential total of 68 contracts for waste collection across New York City. The evaluation and contracting process is expected to last approximately one year, and DSNY would evaluate and award all zones simultaneously.

CARTER TRANSITION PERIOD

Immediately preceding the transition period, carters would be restricted from entering new service agreements that extend beyond the transition deadline. Any carters that are not awarded a contract for a zone may continue to service customers in that zone until the end of the transition period. These carters would continue to follow applicable BIC regulations during the transition period, including the citywide rate cap. Carters that are not selected for a zone would be prohibited from continuing to provide service to customers after the end of the transition period and may be subject to civil and/or criminal penalties for violating regulations.

The CWZ Program transition may take place in multiple phases, with a set number of zones “going live” during each successive phase, with the timing and phasing determined at a later date.

During the transition period, carters would attend recurring progress meetings with the City to review the status of the transition, evaluate issues that arise, and resolve problems. Each carter would appoint a designated project manager to serve as a primary point of contact with the City. It is expected that the City would require each carter to create a transition schedule for its awarded zone with key milestones and to prepare key plans including but not limited to:

- Staffing and Training
- Technology Implementation
- Communication and Public Outreach
- Customer Service Platforms

- Vehicle and Equipment Procurement
- Sales and Billing Set-Up
- Customer Transition (i.e., existing and new) and Hand-off
- Health and Safety

Several additional activities are expected to occur after the selection of carters from the contract award process. These may include but are not limited to customer outreach and transition, contract transition, equipment transition, labor transition, establishing new collection routes, free waste assessments, establishing hotlines/call centers for customer inquiries, data reporting, and city operational and administrative preparations. In addition, compliance with existing legislation impacting the commercial waste industry, such as recycling and organics separation and mandatory sideguard installation requirements, would still be required.

Upon receiving notice of winning bids, carters would be expected to begin transitioning customers. This may include customer outreach and notification, establishing written service agreements with customers, and transitioning equipment. During the transition, DSNY would pay particular attention to the impact on carters and customers that have specialized equipment or are high volume waste producing locations with compactors and containers. Carters would be required to purchase equipment for non-awarded carters or switch out equipment from non-awarded carters with their own equipment with the new customers. Based on experiences in other cities, DSNY would anticipate gaps in this process and would take steps to mitigate this issue and may serve as a backup if equipment is not properly removed.

Labor transition is expected during the transition period to shift employees from carters that did not win awards to awarded carters. In 2018, during the suspension and subsequent loss of the operating license of a major carter located in the Bronx, a combination of City and labor union efforts was able to relocate employees from that carter to other companies and industries in a timely and efficient manner. The City will take lessons learned from this process to aid in the labor transition process anticipated during the transition to the CWZ Program.

As a function of the CWZ Program requirements, carters that win zones may be required to provide certain minimum added services, including but not limited to free waste assessments for customers that request them and hotlines/call centers for customer inquiries. Free waste assessments would be provided by a third party and paid for by the contracting carter. These waste assessments are intended to assist customers in establishing fair rates for waste collection services as well as identifying key waste streams and ways to improve recycling and organics collection. Carters may be required to have hotlines/call centers that are active during carter operating hours in case of customer inquiries and complaints. Carters may also be required to report hotline/call center metrics to the City to ensure that inquiries are addressed in a timely and appropriate manner.

Carters may be required to report additional data to DSNY and BIC during and after the transition process to monitor the effectiveness of the transition and adherence of carters to contract requirements as well as federal, state, and local laws. Carters may be expected to report metrics, including, but not limited to, existing and future staffing, existing equipment and new equipment purchase details, call center metrics, customer register, route information, financial information, waste collection prices charged to customers, disposal and recycling metrics, results of third-party waste assessments, technology upgrades, and success stories.

CUSTOMER TRANSITION PERIOD

Customer transition would occur during a set period of time following contract award. DSNY anticipates that the customer transition process would last up to two years in order to successfully accommodate the needs of all customers and allow carters to appropriately scale up to service new customers. Customer transition would begin in 2021.

The City would notify all customers of the selected carters for their zone and customers' rights and responsibilities under the CWZ Program. Once the transition period begins, customers may only make new service agreements with selected carters for their zone. DSNY would assign a carter to any customers that do not choose an awarded carter by the end of the transition period.

Experience with CWZ implementation in peer cities has shown that some customers may be abandoned by former carters before customer transition is complete in each zone if those carters do not win any zones. This can result in missed service pickups until service with a new carter can be established. Abandoned customers located within an active CWZ Program zone under transition would be automatically assigned to a carter for interim service. DSNY would serve as a provider of last resort during the transition.

CITY SUPPORT DURING TRANSITION PERIOD

In conjunction with the competitive solicitation and carter and customer transition process, DSNY would establish a new Division of Commercial Waste to administer the CWZ Program in conjunction with BIC and to consolidate commercial waste outreach, enforcement, and regulatory function in the agency under a single chain of command. This division would oversee the solicitation and transition processes and ensure that the City achieves its stated program goals and requirements.

The division would also ensure compliance with contractual obligations after implementation related to reporting, recordkeeping, pricing, customer service, billing, disputes, health and safety, labor, etc. as outlined in the contracts. The division would be comprised of staff in a variety of roles and titles, potentially including Sanitation Police Officers in various enforcement functions.

The division would review reports and data from carters to ensure full program compliance. This may include environmental compliance related to emissions, routing, and fleet performance, proper waste management practices, fair labor practices, and regulatory compliance, among others. The division would also resolve customer billing disputes that are not resolved independently by carters and customers. The team would also monitor pricing and compliance with rate caps to ensure fair, transparent pricing across all zones.

The division would be responsible for addressing and resolving customer complaints received from 311. The City will be the secondary point of contact if customers are unable to resolve issues directly with the carters.

C. POTENTIAL IMPACTS OF TRANSITION PERIOD

Based on the anticipated limited impact of the transition period of the Proposed Action, the following CEQR technical areas are expected to be screened out of any need for detailed discussion: community facilities; open space; shadows; historic and cultural resources; urban design and visual resources; natural resources; hazardous materials; water and sewer infrastructure; and energy.

LAND USE, ZONING, AND PUBLIC POLICY

The transition period would not result in changes to land use or zoning. Local laws affecting the commercial waste carting industry would remain in place and be enforced. These include Local Law (LL) 145 of 2013 (LL145/2013) (truck engine emission upgrade requirements), LL146 of 2013 (LL146/2013) (mandatory organics separation for select businesses), LL56 of 2015 (LL56/2015) (mandatory sideguard requirements), and LL152 of 2018 (LL152/2018) (transfer station capacity reduction requirements).

At all times, including before release of RFPs and during and after the competitive solicitation process, carters would be subject to regular review and investigation by BIC. Materials submitted as part of a bid in response to an RFP may be subject to background checks and investigation to verify carters are not in violation of existing Federal, State, and local laws and have not committed serious health and safety violations within three years prior to the submission of bids. In the event of serious violations found by BIC, a carter's bid may be invalidated. BIC's background checks and investigations would extend to carters bidding from outside New York City. Carters bidding from outside New York City must first apply for and be approved through BIC for a license to operate in New York City.

As carters would be expected to comply with all existing regulations during the transition period, and DSNY and BIC would have the mechanism to enforce these regulations if carters fail to comply, significant adverse impacts to land use, zoning, and public policy during the transition period are not expected.

SOCIOECONOMIC CONDITIONS

COMMERCIAL WASTE CARTERS

It is anticipated that during the transition period, carters awarded contracts would have additional operational expenses and administrative costs to cover activities required by the CWZ Program. This includes but is not limited to customer outreach and transition, contract transition, equipment transition, labor transition, establishing new collection routes, free waste assessments, establishing hotlines/call centers for customer inquiries, data reporting, and City operational and administrative preparations.

As discussed above, carters that are not selected for a zone would be prohibited from continuing to provide service to commercial waste customers after the end of the transition period. Existing New York City carters, in anticipation of a competitive bidding process, may choose to consolidate companies or remove themselves from the market. As a result, during the transition period, it is also expected that there would be some transition of the labor force to shift employees from carters that did not win awards to awarded carters. As stated above, DSNY would provide aid during this labor transition process.

While the transition period and Proposed Action may have the potential to reduce the total number of commercial carters operating within the City, carters not awarded a zone may transition into the collection of waste streams excluded from the CWZ Program, such as construction and demolition (C&D) debris, engage in other agreements such as subcontracts to support contracted carters, concentrate on carting opportunities in the metropolitan area outside of New York City, or may leave the industry.

COMMERCIAL WASTE CUSTOMER

As documented above, a specified evaluation team comprised of City employees from DSNY and BIC will evaluate each proposal based on designated criteria to determine an overall weighted score for each proposal where pricing will account for at least 40 percent of the overall weighted score. The BIC carting rate cap would not apply to contracts under the CWZ Program. During the transition period, businesses may experience increased cost of carting services to account for the increased operational costs to commercial carters discussed above; however, the competitive nature of the procurement process and the non-exclusive nature of zones, where multiple carters will compete for customers, are anticipated to limit the rate charged to customers.

Customer transition would occur during a set period of time following contract award. The City would notify all customers within a zone of the selected carters and provide a summary of the customers' rights and responsibilities under the CWZ Program. Once the transition period begins, customers may only make new service agreements with selected carters for their zone. DSNY would assign a carter to any customers that do not choose an awarded carter by the end of the transition period.

Based upon the experience of other cities, it is expected that the City will find through this process that a number of commercial customers do not use licensed carters at all. In Los Angeles, for example, approximately 12 percent more customers were found to exist citywide during the program transition than anticipated from pre-program analysis of data such as customer rolls.[1] In a recent New York City Department of Investigation review of retail food stores or restaurant locations in New York City, it was found that approximately 10 to 20 percent of businesses were not registered for commercial waste collection or registered as a self-carter. The implication is that these businesses may be unlawfully using DSNY to remove their commercial waste for free by placing their waste with adjacent residential waste. As such, any carting cost increment to such customers from adhering to the law under the CWZ Program, including during the transition period, would not constitute an adverse socioeconomic impact for environmental review purposes. During the transition period, the waste from these businesses is expected to be collected by commercial carters under the CWZ Program, and DSNY would be working to understand accurate customer counts within zones for the RFP.

While both commercial waste carters and customers would experience changes over the course of the transition period, significant adverse impacts to the socioeconomic conditions of commercial waste carters or their customers are not expected during the transition period.

SOLID WASTE AND SANITATION SERVICES

DSNY is expected to undertake an updated commercial waste generation study for the City in order to accurately understand the quantity and characteristics of commercial refuse, recyclables, and organics to refine the requirements of the CWZ Program before issuing the RFPs.

Similar to the Proposed Action, during the transition period, there would be no significant change in the overall volume of commercial refuse, recyclables, and organics being produced or collected There would be some shifts in carting routes and adjustments in collections to handle an expected increase in recyclables due to improved compliance with recycling rules. As both carters and customers would be required to comply with any existing laws regarding recycling and organics as well as comply with any new or revised laws or regulations enacted during the transition period, there would be an expected increase in recycling and organics diversion, but this would not

[1] LA Sanitation, 2018, Progress Report: recycLA Transition

decrease the overall volume of total collections of all three types. Carters that are awarded contracts under the Proposed Action would be required to collect all waste, including refuse, recycling, and organics during the transition period.

During the transition period, DSNY would work with customers to ensure service pickups are not missed. Abandoned customers located within an active CWZ Program zone under transition would be automatically assigned to a carter for interim service. DSNY may also serve as a provider of last resort during the transition, thereby minimizing the potential for missed pickups. Providing this service is not anticipated to affect DSNY's residential collections as pickup for missed commercial waste collection would be performed separately by standby vehicles or at different times from residential waste collection.

Implementation of the Solid Waste Management Plan (SWMP) would continue through the transition period.

Therefore, significant adverse impacts to solid waste and sanitation services during the transition period are not expected.

TRANSPORTATION

During the transition period, carters will likely need to establish new routes to conform to zone boundaries. Such intermediate routes operated during the transition period may not achieve the full CWZ Program transportation efficiencies estimated to occur by the Analysis Year. Further, as stated above, any carters that are not awarded a contract for a zone may continue to service customers in that zone until the end of the transition period. The combination of the carters continuing to service customers through the transition period with the new intermediate routes operated during the transition period would have the potential to result in a temporary increase in the number of commercial waste collection trucks and a minor increase to Vehicle Miles Traveled (VMT) within New York City and region-wide for travel to transfer stations and garages in New Jersey, Long Island, and nearby upstate New York counties. However, these minor increases in trucks and VMT during the transition period would gradually be offset by reductions in VMT as the CWZ Program is rolled out, and are not expected to result in significant adverse impacts to transportation. These temporary increases would be eliminated after transition ends. Therefore, significant adverse impacts to transportation during the transition period are not expected.

AIR QUALITY

As indicated above in "Transportation," as a result of carters continuing to service customers during the transition period and intermediate routes established by carters awarded contracts under the CWZ Program, at the same time that new CWZ routes are reducing VMTs and truck trips, there would be the potential for a temporary increase in the total number of commercial waste collection trucks and a minor increase in VMTs within New York City and region-wide for travel to transfer stations and garages in New Jersey, Long Island, and upstate New York. The minor increases in trucks would have the potential to increase air emissions during the transition period. However, the potential increase in trucks and VMT would be temporary in nature and would be offset by reductions in VMT from the CWZ Program, and thus are not expected to result in a significant increase to regional pollutant emissions during the transition period.

Furthermore, all carters awarded a contract under the CWZ Program would be expected to be compliant with LL145/2013 during the transition period.

Therefore, overall, the transition period would not be expected to result in significant adverse impacts to air quality.

GREENHOUSE GAS EMISSIONS AND CLIMATE CHANGE

As indicated above in "Transportation," as a result of carters continuing to service customers during the transition period and intermediate routes established by carters awarded contracts under the CWZ Program, at the same time that new CWZ routes are reducing VMTs and truck trips, there would be the potential for a temporary increase in the total number of commercial waste collection trucks and a minor increase in VMTs within New York City. However, these minor increases in trucks and VMT would be temporary in nature and would be offset by reductions in VMT from the CWZ Program, and thus are not expected to result in a significant increase to GHG emissions during the transition period, and would be offset by the anticipated reduction in the Future with the Proposed Action (the "With Action" condition). Therefore, the Proposed Action during the transition period would be consistent with the City's 80 by 50 GHG reduction goals under *One New York: The Plan for a Strong and Just City (OneNYC)*.

NOISE

The transition period would not introduce any new noise receptors. As indicated above in "Transportation," as a result of carters continuing to service customers during the transition and intermediate routes established by carters awarded contracts under the CWZ Program, at the same time that new CWZ routes are reducing VMTs and truck trips there would be the potential for a temporary increase in the total number of commercial carter trucks on certain street segments. This increase in trucks would be temporary and gradually offset by reductions in each zone's truck traffic from implementation of the CWZ program and, consequently, would not result in a doubling of passenger car equivalents, the screening level to avoid causing a significant increase in noise levels (i.e., a 3 A-weighted decibel [dBA] or greater increase according to 2014 *CEQR Technical Manual* noise impact criteria). As such, there would not be adverse noise impacts from mobile sources during the transition period.

As commercial carter trucks are regulated with respect to noise emissions, compacting refuse at a given location would not result in a change in the level of stationary noise generated during collections. Therefore, the transition period would not generate an increase in noise from stationary sources and would not be expected to result in any significant adverse impacts to noise.

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Chapter 11: Unavoidable Adverse Impacts

A. INTRODUCTION

This chapter summarizes unavoidable significant adverse impacts resulting from the proposed project. According to the 2014 *City Environmental Quality Review (CEQR) Technical Manual*, unavoidable significant adverse impacts are those that would occur if a proposed project or action is implemented regardless of the mitigation employed, or if mitigation is impossible.

As described in Chapter 1, "Project Description," the City of New York is proposing to establish and implement a Commercial Waste Zone (CWZ) Program across the five boroughs in the City to improve the carting of refuse, recyclables, and organic waste from commercial businesses (the "CWZ Program" or "Proposed Action").

As discussed throughout this DGEIS, unavoidable significant adverse impacts resulting from the CWZ Program have not been identified in any of the technical areas. ✷

Chapter 12: Growth-Inducing Aspects of the Proposed Action

The term "growth-inducing aspects" generally refers to the potential for a proposed project to trigger additional development in areas outside the project site that would otherwise not have such development without the proposed project. The 2014 *City Environmental Quality Review (CEQR) Technical Manual* indicates that an analysis of the growth-inducing aspects of a proposed project is appropriate when the project:

- Adds substantial new land use, new residents, or new employment that could induce additional development of a similar kind or of support uses, such as retail establishments to serve new residential uses; and/or
- Introduces or greatly expands infrastructure capacity.

As described in Chapter 1, "Project Description," the City of New York is proposing to establish and implement a Commercial Waste Zone (CWZ) Program across the five boroughs in the City to improve the carting of refuse, recyclables, and organic waste from commercial businesses (the "CWZ Program" or "Proposed Action").

The Proposed Action would not add substantial new land uses, new residents, or employment that could induce additional development, nor will the Proposed Action introduce or expand infrastructure capacity. Therefore, an evaluation of growth-inducing aspects of the Proposed Action is not warranted. ✷

Chapter 13: Irreversible and Irretrievable Commitments of Resources

In accordance with the 2014 *City Environmental Quality Review (CEQR) Technical Manual*, this chapter summarizes the Proposed Action and its impacts on the loss of environmental resources, both in the immediate future and in the long term. Resources include both human-made and natural resources.

As described in Chapter 1, "Project Description," the City of New York is proposing to establish and implement a Commercial Waste Zone (CWZ) Program across the five boroughs in the City to improve the carting of refuse, recyclables, and organic waste from commercial businesses (the "CWZ Program" or "Proposed Action").

The Proposed Action would not involve construction of new buildings or infrastructure on land. As such, the Proposed Action would not constitute a long-term commitment of resources typically associated with construction projects, including the materials used in construction; energy in the form of fuel and electricity consumed during construction and operation of the projects; and the human effort (i.e., time and labor) required to develop, construct, and operate various components of the projects. Further, the Proposed Action would not constitute a long-term commitment of land resources.

The Proposed Action's commitment of resources consists principally of the use of fuel consumed by the commercial carter trucks for the collection of refuse, recyclables and organics throughout the City under the CWZ Program. This commitment is expected to be higher during the transition period but will be reduced by the Proposed Action overall as a result of more efficient truck routes after full implementation. This use of fuel would happen to an even greater extent without implementation of the Proposed Action. The temporary minor increase is therefore considered irretrievably committed because its reuse for some purpose would be highly unlikely. However, the Proposed Action would result in a net reduction in the use of fuel, compared to the No Action condition, and thus a net reduction in the irreversible and irretrievable commitment of resources.

The short term, minor increase in commitment of fuel resources during the transition period is weighed against the Proposed Action's goals of creating a safer and more efficient collection system that would provide high-quality, low-cost service while advancing the City's sustainability and recycling goals. The CWZ Program would improve customer service, safety, and labor standards; promote fairness and transparency; and reduce adverse environmental impacts from commercial carting trucks upon traffic, pedestrians, air quality, and noise levels. In addition, the CWZ Program would help further the environmental sustainability efforts of *One New York: The Plan for a Strong and Just City* (*OneNYC*) and reduce the environmental and community impacts of the commercial waste system, a goal of the City's Solid Waste Management Plan (SWMP). ✷

Appendix A
Regulation Tables

Table 1
Existing Laws & Regulations

Source of Law	Effective Date	Summary
Local Law 42 of 1996	Effective 6/03/1996	The City Council passed Local Law 42 of 1996, creating the Trade Waste Commission (TWC) to oversee and regulate the commercial waste industry. In 2001, via charter revision, the TWC was combined with the Markets Division at Small Business Service and the Gambling Commission and renamed Business Integrity Commission (BIC).
New York City Administrative Code: Title 16A: Commercial Waste Removal		
Chapter 1: Trade Waste Removal 16-501 through 16-526	In Effect	These laws define BIC's responsibilities such as licensing, registration and regulation of businesses that remove, collect or dispose of trade waste and trade waste brokers. BIC's responsibilities include: a) Issuing and establishing standards for the issuance, suspension and revocation of licenses and registrations that authorize the operation of businesses engaged in the collection, removal or disposal of waste within the city and trade waste broker businesses; b) Establishing maximum and minimum rates for the collection, removal, or disposal of such waste; c) Investigating carters should it be warranted; d) Establishing standards for service and for the regulation and conduct of businesses , including but not limited to requirements governing the level of service to be provided, contracts for trade waste removal, billing form and procedures, the maintenance and inspection of records, the maintenance of appropriate insurance, and compliance with safety and health measures; e) Appointing employees to staff; f) Providing education programs to educate customers on waste classification and rights in contractual agreements; and g) Establishing fees for executing provisions.
The New York City Administrative Code: Title 16: Sanitation		
Chapter 1: Department of Sanitation and Chapter 3: Solid Waste Recycling	In Effect	This law requires commercial establishments to provide for the removal of waste by a business licensed by BIC or allows them to obtain permission to remove their own waste. This regulation also: • Requires signage indicating the carter that services the business and the time their waste gets picked up. • Prevents the discard of commercial refuse or liquid waste in public litter baskets. • Allows the Commissioner of DSNY to adopt and implement rules related to recycling requirements. • Describes carter responsibilities under recycling rules. • Requires businesses to source-separate their waste to minimize contamination of designated recyclables and maximize marketability.

Table 1
Existing Laws & Regulations

Source of Law	Effective Date	Summary
		• Allows BIC to adopt and implement rules requiring carters to properly collect and recycle source-separated materials. • Required DSNY to undertake the New York City Commercial Solid Waste Study and Analysis of commercial recycling in the city no later than January 1, 2012. This commercial recycling study focused on the putrescible portion of the commercial waste stream.
Citywide Recycling Program, § 16-306.1 Organic Waste, as amended	Effective 7/01/2015, last amended 3/27/2018	Under Local Law 146 of 2013, this law requires certain New York City businesses to separate their organic waste. The current list of covered establishments, last amended March 2018, includes the following: 1) Food manufacturers with a floor area of at least 25,000 square feet; 2) Food wholesalers with a floor area of at least 20,000 square feet; 3) Retail food stores with a floor area of at least 25,000 square feet, or any retail food store that is part of a chain of three or more retail food stores that have a combined floor area space of at least 10,000 square feet and that operate under common ownership or control and receive waste collection from the same private carter; 4) Arenas or stadiums with a seating capacity of at least 15,000 people; 5) Food service establishments that are part of a chain of two or more food service establishments that have a combined floor area of at least 8,000 square feet and under same ownership/control; are individual outlets of a parent business, and do business under the same corporate name; 6) Food service establishments with a floor area of at least 7,000 square feet, provided that the requirements of subparagraph (i) of paragraph 1 of subdivision c of this section shall not apply to any such location when the building or premises containing such location is in compliance with such requirement pursuant to paragraph seven of this definition; 7) Food service establishments with a total combined floor area of at least 8,000 square feet and where the owner of the building or premises, or its agent, arranges or contracts with a private carter for the removal of waste from food service establishments having no less than eight thousand square feet of such building or premises, provided that any such food service establishments shall comply with the requirements of subparagraphs (ii), (iii) and (iv) of paragraph 1 of subdivision c of this section, but such requirements shall not apply to the owner or agent of any such building or premises; 8) Food preparation establishments with a floor area of at least 6,000 square feet; 9) Catering establishments at events with the anticipated attendance is greater than 100 people; 10) Food service establishments located within and providing food to one or more hotels totaling at least 100 sleeping rooms; and 11) Sponsors of a temporary public event. In addition, the regulation requires the Commissioner of DSNY to annually evaluate the regional capacity and cost to process organics. Any transfer station that receives source separated organic waste pursuant to this section shall deliver or have delivered such organic waste directly to a facility that accepts organic waste for purposes of composting, aerobic or anaerobic digestion, or any other method of processing organic waste that the department approves by rule. This does not apply to waste that cannot be processed at an organic waste

Table 1
Existing Laws & Regulations

Source of Law	Effective Date	Summary
		processing facility. Lastly, this regulation allows DSNY, BIC, the Department of Health and Mental Hygiene, and the Department of Consumer affairs to promulgate any rules necessary to implement the separation requirements.
Recycling of Private Carter, Collected Waste	Effective 3/01/2018	This regulation defines designated recyclable materials for commercial waste, provides source separation, set-out, and collection requirements, and allows the Commissioner of DSNY to conduct inspections to ensure compliance. Recyclable materials are required to be placed in transparent bags and or labelled bins, certain designated paper must be tied and bundled securely, and waste streams cannot be commingled. In addition, this regulation sets out requirements for businesses who choose to transport their own designated recyclable materials to a central holding location.
Specifications for Trucks and Vehicles Conveying Rubbish through the Streets	In Effect	This regulation provides specifications for waste collection vehicles. (Do you need citations throughout?)
Title 17: Business Integrity Commission: Chapter 1: Trade Waste This title of regulations provides definitions for BIC. Defines rate caps for waste collection. Describes licensing requirements for carters and brokers. Lists license application requirements. Provides terms for license application rejection. Details investigation, license revocation or suspension, penalties, liabilities, enforcement, hearing procedures, and other processes related to incidences of improper carter and broker conduct.		
Compliance with Applicable Local Law and Regulation	In Effect	This regulation requires that carters comply with all the laws, rules, and regulations of federal, state and local governmental authorities having jurisdiction over any of their activities, including, but not limited to, rules and regulations of the Department of Environmental Protection, the Department of Health, DSNY and the Department of Transportation concerning the vehicle specifications, sanitary requirements, handling, transport, receipt, transfer or disposal of trade waste, regulated medical waste or waste containing asbestos or other hazardous, toxic or dangerous material.
Rates	Modification Effective 8/09/2018	This regulation provides rules in connection with carter billing, including: • Carters cannot demand, charge, exact, or accept rates for the collection, removal, disposal, or recycling of trade waste greater than the following maximum rates: (1) $20.76 per cubic yard and (2) $13.62 per 100 pounds. . These rates do not apply to construction debris and carters can charge less than these maximum rates. • In the event that a written contract or other agreement between a carter and a customer uses a “flat” billing method, whether based on weight or on volume, a customer has the right to have this rate determined by a survey provided at no charge by the carter. • Carters who charge on the basis of the weight of a customer's waste will need to use scales that are accurate and calibrated. • Carters who use third party services to weigh a customer's waste must insure that the scales used by them are accurate and properly calibrated.

Table 1
Existing Laws & Regulations

Source of Law	Effective Date	Summary
		• The weight of a customer's waste is be determined by subtracting the weight of the container the waste is in from the weight of the trash itself.
Operations	Effective 8/06/2016	This regulation provides requirements for carter operations, including how material should be disposed of, where material can be disposed of, and how to clean vehicle containers.
Labeling of Containers	Effective 8/06/2016	This regulation provides requirements for container labeling, labeling volume capacity of each container, container owner name, and whether organics are being disposed within a specific container.
Recycling Requirements for Licensees	Effective 8/06/2016	This regulation provides recycling requirements for carters, including requirements that source-separated materials cannot be commingled and rules for handling organic material.
Record Keeping	Effective 4/5/2018	This regulation outlines carter requirements for record keeping. Carters are required to maintain records concerning their business which include bills and purchase invoices, deposit slips, copies of checks received from payers, bank statements, cancelled checks, tax returns (copies of Federal, State, and local returns with all supporting schedules), waste surveys, rate schedules, documents concerning mergers, acquisitions, subcontracts and asset sales, lists of collection routes and schedules, and submissions to and notices from the Commission. This regulation also states that carters need to maintain records of cash payments and prohibits carters from making checks payable to cash. In addition, a carter must maintain a complete and accurate set of books of account reflecting the operation of its business.
Agreements and Contracts with Customers, Service to Customers	Effective 4/5/2018	This regulation allows for agreements between a carter and its customer to be made in oral form. In addition, this regulation states that carters can discontinue service to any customer, or raise the rates charged to a customer, after having provided at least 14 days written notice.
Other Regulations		
Local Law 152 of 2018, also called the Waste Equity Law	Effective 8/16/2018	Local Law 152 of 2018 amends the administrative code of the City of New York to reduce the permitted capacity at putrescible and non-putrescible solid waste transfer stations in certain overburdened community districts in New York City.
New York City Minimum Wage	In Effect until 12/30/2018	The New York State minimum wage increased on December 31, 2017. In New York City, is the minimum wage is $12.00 per hour for businesses with 10 or fewer employees, and $13.00 per hour for businesses with 11 or more employees. There are different hourly rates for workers in the fast food industry and those who receive tips. These rates remain in effect until December 30, 2018.
Local Law 145 of 2013	Effective 1/01/2020	This law requires that beginning January 1, 2020, any heavy duty trade waste hauling vehicle must utilize best available retrofit technology or be equipped with an engine certified to the applicable 2007 EPA standards for particulate matter. A Heavy duty trade waste hauling vehicle" means any diesel-fuel powered vehicle with a gross weight of over sixteen thousand pounds that is owned or operated by an entity that requires a BIC license and that is operated in New York city for collection and/or removal of trade waste.
Local Law 56 of 2017	Effective 1/01/2024	This law requires that all trade waste hauling vehicle be equipped with side guards by January 1, 2024.

Table 1
Existing Laws & Regulations

Source of Law	Effective Date	Summary
Solid Waste Management Plan (SWMP)	Approved 10/27/2006	The City is required to adopt a SWMP for at least a 10-year period under New York State Environmental Conservation Law. The current plan is in effect through 2025, at which point a new plan will be evaluated and developed. The SWMP seeks to improve environmental and public health effects of waste collection through the reduction in truck transport. To reach this goal, the SWMP provides for the shift from a long-haul trucking-oriented system for DSNY-managed waste, by which such waste is transported to landfills and waste-to-energy plants outside the City by trucks, to a system of transporting such waste from marine and rail transfer stations located throughout the five boroughs. Full implementation of the SWMP is anticipated to reduce the City's annual GHG emissions by 34,000 tons and annual local and long-haul waste truck travel by 60 million miles. Overall, the SWMP has two major goals: 1) the gradual elimination of long-haul truck transport of DSNY-managed municipal solid waste and 2) the improvement of neighborhood equity with respect to waste management by reducing the intensity of waste transfer activity in certain affected neighborhoods and reducing related truck traffic.
BIC Rulemaking New Section 1-12	Adopted 10/9/2018	These rule amendments are designed to improve the safety of the general public: • Requiring licensees to increase the limits on commercial general liability, business automobile liability and employers' liability insurance, as well as require registrants to increase the limit on business automobile liability insurance. • Requiring licensees and registrants to notify BIC of their drivers' Vehicle and Traffic Law violations and drivers' license suspensions and revocations, crashes that involve a vehicle used in the licensee's or registrant's business, and to notify BIC of certain adverse actions by government authorities. • Requiring licensees and registrants to maintain written policies and procedures regarding compliance with federal, state and local laws, rules and regulations. • Requiring licensees and registrants to maintain Report of Motor Vehicle Accident (MV-104) forms and other forms related to crashes and adverse determinations by government authorities.

Table 2
Existing Guidance Documents

Guidance	Effective Date	Summary
BIC Safety Manual	Issued 2/01/2018	The BIC Safety manual is a guidance document for use by private carters to craft their health and safety programs. The BIC Safety Manual contains guidelines addressing areas of worker readiness, hazards in the workplace, pre-trip planning and inspection, review of traffic laws, driving hazards, driving tips to avoid collisions, tips on safe stops and proper lifting, what to do in an emergency, and how to keep workers and carters accountable to guidelines that they choose to adopt.

Appendix B
Waterfront Revitalization Program

FOR INTERNAL USE ONLY	WRP No. _____
Date Received: _____	DOS No. _____

NEW YORK CITY WATERFRONT REVITALIZATION PROGRAM
Consistency Assessment Form

Proposed actions that are subject to CEQR, ULURP or other local, state or federal discretionary review procedures, and that are within New York City's Coastal Zone, must be reviewed and assessed for their consistency with the *New York City Waterfront Revitalization Program (WRP)* which has been approved as part of the State's Coastal Management Program.

This form is intended to assist an applicant in certifying that the proposed activity is consistent with the WRP. It should be completed when the local, state, or federal application is prepared. The completed form and accompanying information will be used by the New York State Department of State, the New York City Department of City Planning, or other city or state agencies in their review of the applicant's certification of consistency.

A. APPLICANT INFORMATION

Name of Applicant: New York City Department of Sanitation

Name of Applicant Representative: Steven N. Brautigam, Assistant Commissioner, Legal Affairs

Address: 125 Worth Street, Room 706, New York, NY 10013

Telephone: 646-885-4685 Email: sbrautig@dsny.nyc.gov

Project site owner (if different than above): Not Applicable

B. PROPOSED ACTIVITY

If more space is needed, include as an attachment.

1. Brief description of activity

The City of New York is proposing to establish and implement a commercial waste zone (CWZ) program across the five boroughs of New York City (the Proposed Action). The CWZ program will convert the current open market to a zoned system for commercial waste collection.

2. Purpose of activity

The CWZ program is intended to reduce the existing overlap of commercial carting routes and enhance efficiency, worker and pedestrian safety, transparency in contracting, and customer service. It will also further the City's recycling and sustainability goals and reduce truck traffic and associated air, noise and greenhouse gas emissions

C. PROJECT LOCATION

Borough: Citywide Tax Block/Lot(s): Not Applicable

Street Address: Not Applicable

Name of water body (if located on the waterfront): _____

D. REQUIRED ACTIONS OR APPROVALS

Check all that apply.

City Actions/Approvals/Funding

City Planning Commission ☐ Yes ☑ No

- ☐ City Map Amendment
- ☐ Zoning Map Amendment
- ☐ Zoning Text Amendment
- ☐ Site Selection – Public Facility
- ☐ Housing Plan & Project
- ☐ Special Permit
  (if appropriate, specify type: ☐ Modification ☐ Renewal ☐ other) Expiration Date: _____
- ☐ Zoning Certification
- ☐ Zoning Authorizations
- ☐ Acquisition – Real Property
- ☐ Disposition – Real Property
- ☐ Other, explain: _____
- ☐ Concession
- ☐ UDAAP
- ☐ Revocable Consent
- ☐ Franchise

Board of Standards and Appeals ☐ Yes ☑ No

- ☐ Variance (use)
- ☐ Variance (bulk)
- ☐ Special Permit
  (if appropriate, specify type: ☐ Modification ☐ Renewal ☐ other) Expiration Date: _____

Other City Approvals

- ☑ Legislation
- ☑ Rulemaking
- ☐ Construction of Public Facilities
- ☐ 384 (b) (4) Approval
- ☑ Other, explain: DSNY Approval of Commercial Waste Zone Master Contracts
- ☐ Funding for Construction, specify: _____
- ☐ Policy or Plan, specify: _____
- ☐ Funding of Program, specify: _____
- ☐ Permits, specify: _____

State Actions/Approvals/Funding

- ☐ State permit or license, specify Agency: _____ Permit type and number: _____
- ☐ Funding for Construction, specify: _____
- ☐ Funding of a Program, specify: _____
- ☐ Other, explain: _____

Federal Actions/Approvals/Funding

- ☐ Federal permit or license, specify Agency: _____ Permit type and number: _____
- ☐ Funding for Construction, specify: _____
- ☐ Funding of a Program, specify: _____
- ☐ Other, explain: _____

Is this being reviewed in conjunction with a Joint Application for Permits? ☐ Yes ☑ No

E. LOCATION QUESTIONS

1. Does the project require a waterfront site? ☐ Yes ☑ No
2. Would the action result in a physical alteration to a waterfront site, including land along the shoreline, land under water or coastal waters? ☐ Yes ☑ No
3. Is the project located on publicly owned land or receiving public assistance? ☐ Yes ☑ No
4. Is the project located within a FEMA 1% annual chance floodplain? *(6.2)* ☑ Yes ☐ No
5. Is the project located within a FEMA 0.2% annual chance floodplain? *(6.2)* ☑ Yes ☐ No
6. Is the project located adjacent to or within a special area designation? *See Maps – Part III of the NYC WRP. If so, check appropriate boxes below and evaluate policies noted in parentheses as part of WRP Policy Assessment (Section F).* ☑ Yes ☐ No

   ☑ Significant Maritime and Industrial Area (SMIA) (*2.1*)

   ☑ Special Natural Waterfront Area (SNWA) (*4.1*)

   ☑ Priority Maritime Activity Zone (PMAZ) (*3.5*)

   ☑ Recognized Ecological Complex (REC) (*4.4*)

   ☑ West Shore Ecologically Sensitive Maritime and Industrial Area (ESMIA) (*2.2, 4.2*)

F. WRP POLICY ASSESSMENT

Review the project or action for consistency with the WRP policies. For each policy, check Promote, Hinder *or* Not Applicable (N/A). *For more information about consistency review process and determination, see* ***Part I*** *of the NYC Waterfront Revitalization Program. When assessing each policy, review the full policy language, including all sub-policies, contained within* ***Part II*** *of the WRP. The relevance of each applicable policy may vary depending upon the project type and where it is located (i.e. if it is located within one of the special area designations).*

For those policies checked Promote *or* Hinder, *provide a written statement on a separate page that assesses the effects of the proposed activity on the relevant policies or standards. If the project or action promotes a policy, explain how the action would be consistent with the goals of the policy. If it hinders a policy, consideration should be given toward any practical means of altering or modifying the project to eliminate the hindrance. Policies that would be advanced by the project should be balanced against those that would be hindered by the project. If reasonable modifications to eliminate the hindrance are not possible, consideration should be given as to whether the hindrance is of such a degree as to be substantial, and if so, those adverse effects should be mitigated to the extent practicable.*

		Promote	Hinder	N/A
1	**Support and facilitate commercial and residential redevelopment in areas well-suited to such development.**	☐	☐	☑
1.1	Encourage commercial and residential redevelopment in appropriate Coastal Zone areas.	☐	☐	☑
1.2	Encourage non-industrial development with uses and design features that enliven the waterfront and attract the public.	☐	☐	☑
1.3	Encourage redevelopment in the Coastal Zone where public facilities and infrastructure are adequate or will be developed.	☐	☐	☑
1.4	In areas adjacent to SMIAs, ensure new residential development maximizes compatibility with existing adjacent maritime and industrial uses.	☐	☐	☑
1.5	Integrate consideration of climate change and sea level rise into the planning and design of waterfront residential and commercial development, pursuant to WRP Policy 6.2.	☐	☐	☑

		Promote	Hinder	N/A
2	**Support water-dependent and industrial uses in New York City coastal areas that are well-suited to their continued operation.**	☐	☐	☑
2.1	Promote water-dependent and industrial uses in Significant Maritime and Industrial Areas.	☐	☐	☑
2.2	Encourage a compatible relationship between working waterfront uses, upland development and natural resources within the Ecologically Sensitive Maritime and Industrial Area.	☐	☐	☑
2.3	Encourage working waterfront uses at appropriate sites outside the Significant Maritime and Industrial Areas or Ecologically Sensitive Maritime Industrial Area.	☐	☐	☑
2.4	Provide infrastructure improvements necessary to support working waterfront uses.	☐	☐	☑
2.5	Incorporate consideration of climate change and sea level rise into the planning and design of waterfront industrial development and infrastructure, pursuant to WRP Policy 6.2.	☐	☐	☑
3	**Promote use of New York City's waterways for commercial and recreational boating and water-dependent transportation.**	☐	☐	☑
3.1.	Support and encourage in-water recreational activities in suitable locations.	☐	☐	☑
3.2	Support and encourage recreational, educational and commercial boating in New York City's maritime centers.	☐	☐	☑
3.3	Minimize conflicts between recreational boating and commercial ship operations.	☐	☐	☑
3.4	Minimize impact of commercial and recreational boating activities on the aquatic environment and surrounding land and water uses.	☐	☐	☑
3.5	In Priority Marine Activity Zones, support the ongoing maintenance of maritime infrastructure for water-dependent uses.	☐	☐	☑
4	**Protect and restore the quality and function of ecological systems within the New York City coastal area.**	☐	☐	☑
4.1	Protect and restore the ecological quality and component habitats and resources within the Special Natural Waterfront Areas.	☐	☐	☑
4.2	Protect and restore the ecological quality and component habitats and resources within the Ecologically Sensitive Maritime and Industrial Area.	☐	☐	☑
4.3	Protect designated Significant Coastal Fish and Wildlife Habitats.	☐	☐	☑
4.4	Identify, remediate and restore ecological functions within Recognized Ecological Complexes.	☐	☐	☑
4.5	Protect and restore tidal and freshwater wetlands.	☐	☐	☑
4.6	In addition to wetlands, seek opportunities to create a mosaic of habitats with high ecological value and function that provide environmental and societal benefits. Restoration should strive to incorporate multiple habitat characteristics to achieve the greatest ecological benefit at a single location.	☐	☐	☑
4.7	Protect vulnerable plant, fish and wildlife species, and rare ecological communities. Design and develop land and water uses to maximize their integration or compatibility with the identified ecological community.	☐	☐	☑
4.8	Maintain and protect living aquatic resources.	☐	☐	☑

		Promote	Hinder	N/A
5	**Protect and improve water quality in the New York City coastal area.**	☐	☐	☑
5.1	Manage direct or indirect discharges to waterbodies.	☐	☐	☑
5.2	Protect the quality of New York City's waters by managing activities that generate nonpoint source pollution.	☐	☐	☑
5.3	Protect water quality when excavating or placing fill in navigable waters and in or near marshes, estuaries, tidal marshes, and wetlands.	☐	☐	☑
5.4	Protect the quality and quantity of groundwater, streams, and the sources of water for wetlands.	☐	☐	☑
5.5	Protect and improve water quality through cost-effective grey-infrastructure and in-water ecological strategies.	☐	☐	☑
6	**Minimize loss of life, structures, infrastructure, and natural resources caused by flooding and erosion, and increase resilience to future conditions created by climate change.**	☐	☐	☑
6.1	Minimize losses from flooding and erosion by employing non-structural and structural management measures appropriate to the site, the use of the property to be protected, and the surrounding area.	☐	☐	☑
6.2	Integrate consideration of the latest New York City projections of climate change and sea level rise (as published in *New York City Panel on Climate Change 2015 Report, Chapter 2: Sea Level Rise and Coastal Storms*) into the planning and design of projects in the city's Coastal Zone.	☐	☐	☑
6.3	Direct public funding for flood prevention or erosion control measures to those locations where the investment will yield significant public benefit.	☐	☐	☑
6.4	Protect and preserve non-renewable sources of sand for beach nourishment.	☐	☐	☑
7	**Minimize environmental degradation and negative impacts on public health from solid waste, toxic pollutants, hazardous materials, and industrial materials that may pose risks to the environment and public health and safety.**	☑	☐	☐
7.1	Manage solid waste material, hazardous wastes, toxic pollutants, substances hazardous to the environment, and the unenclosed storage of industrial materials to protect public health, control pollution and prevent degradation of coastal ecosystems.	☐	☐	☑
7.2	Prevent and remediate discharge of petroleum products.	☐	☐	☑
7.3	Transport solid waste and hazardous materials and site solid and hazardous waste facilities in a manner that minimizes potential degradation of coastal resources.	☑	☐	☐
8	**Provide public access to, from, and along New York City's coastal waters.**	☐	☐	☑
8.1	Preserve, protect, maintain, and enhance physical, visual and recreational access to the waterfront.	☐	☐	☑
8.2	Incorporate public access into new public and private development where compatible with proposed land use and coastal location.	☐	☐	☑
8.3	Provide visual access to the waterfront where physically practical.	☐	☐	☑
8.4	Preserve and develop waterfront open space and recreation on publicly owned land at suitable locations.	☐	☐	☑

		Promote	Hinder	N/A
8.5	Preserve the public interest in and use of lands and waters held in public trust by the State and City.	☐	☐	☑
8.6	Design waterfront public spaces to encourage the waterfront's identity and encourage stewardship.	☐	☐	☑
9	**Protect scenic resources that contribute to the visual quality of the New York City coastal area.**	☐	☐	☑
9.1	Protect and improve visual quality associated with New York City's urban context and the historic and working waterfront.	☐	☐	☑
9.2	Protect and enhance scenic values associated with natural resources.	☐	☐	☑
10	**Protect, preserve, and enhance resources significant to the historical, archaeological, architectural, and cultural legacy of the New York City coastal area.**	☐	☐	☑
10.1	Retain and preserve historic resources, and enhance resources significant to the coastal culture of New York City.	☐	☐	☑
10.2	Protect and preserve archaeological resources and artifacts.	☐	☐	☑

G. CERTIFICATION

The applicant or agent must certify that the proposed activity is consistent with New York City's approved Local Waterfront Revitalization Program, pursuant to New York State's Coastal Management Program. If this certification cannot be made, the proposed activity shall not be undertaken. If this certification can be made, complete this Section.

"The proposed activity complies with New York State's approved Coastal Management Program as expressed in New York City's approved Local Waterfront Revitalization Program, pursuant to New York State's Coastal Management Program, and will be conducted in a manner consistent with such program."

Applicant/Agent's Name: Department of Sanitation, Steven N. Brautigam

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Telephone: 646-885-4685 Email: sbrautig@dsny.nyc.gov

Applicant/Agent's Signature: Steven Brautigam

Date: 11/5/2018

Submission Requirements

For all actions requiring City Planning Commission approval, materials should be submitted to the Department of City Planning.

For local actions not requiring City Planning Commission review, the applicant or agent shall submit materials to the Lead Agency responsible for environmental review. A copy should also be sent to the Department of City Planning.

For State actions or funding, the Lead Agency responsible for environmental review should transmit its WRP consistency assessment to the Department of City Planning.

For Federal direct actions, funding, or permits applications, including Joint Applicants for Permits, the applicant or agent shall also submit a copy of this completed form along with his/her application to the NYS Department of State Office of Planning and Development and other relevant state and federal agencies. A copy of the application should be provided to the NYC Department of City Planning.

The Department of City Planning is also available for consultation and advisement regarding WRP consistency procedural matters.

New York City Department of City Planning
Waterfront and Open Space Division
120 Broadway, 31st Floor
New York, New York 10271
212-720-3696
wrp@planning.nyc.gov
www.nyc.gov/wrp

New York State Department of State
Office of Planning and Development
Suite 1010
One Commerce Place, 99 Washington Avenue
Albany, New York 12231-0001
518-474-6000
www.dos.ny.gov/opd/programs/consistency

Applicant Checklist

- ☑ Copy of original signed NYC Consistency Assessment Form
- ☑ Attachment with consistency assessment statements for all relevant policies
- ☐ For Joint Applications for Permits, one (1) copy of the complete application package
- ☐ Environmental Review documents
- ☐ Drawings (plans, sections, elevations), surveys, photographs, maps, or other information or materials which would support the certification of consistency and are not included in other documents submitted. All drawings should be clearly labeled and at a scale that is legible.
- ☐ Policy 6.2 Flood Elevation worksheet, if applicable. For guidance on applicability, refer to the WRP Policy 6.2 Guidance document available at www.nyc.gov/wrp

A. INTRODUCTION

The City of New York is proposing to establish and implement a commercial waste zone (CWZ) Program across the five boroughs of the City consisting of 20 zones with 3 to 5 private carters operating per zone (the "Proposed Action").

The Proposed Action would be implemented throughout the City, including in areas within the City's Coastal Zone Boundary and, therefore, the Proposed Action is subject to review for consistency with the policies of the Waterfront Revitalization Program (WRP). The WRP includes policies designed to maximize the benefits derived from economic development, environmental preservation, and public use of the waterfront, while minimizing the conflicts among those objectives. The WRP Consistency Assessment Form lists the WRP policies and indicates whether the Proposed Action would promote or hinder a particular policy, or if that policy would not be applicable. This section provides additional information for the policies that have been checked "promote" or "hinder" in the WRP Consistency Assessment Form.

B. CONSISTENCY OF THE PROPOSED ACTION WITH WATERFRONT REVITALIZATION PROGRAM POLICIES

Policy 7: Minimize environmental degradation and negative impacts on public health from solid waste, toxic pollutants, hazardous materials, and industrial materials that may pose risks to the environment and public health and safety.

> *Policy 7.3: Transport solid waste and hazardous materials and site solid and hazardous waste facilities in a manner that minimizes potential degradation of coastal resources.*

DSNY is proposing to enact a CWZ Program to convert the current open market to a zoned system for commercial waste collection. The CWZ Program is intended to reduce the existing overlap of commercial carting routes and enhance efficiency, worker and pedestrian safety, transparency in contracting, and customer service. It will also further the City's recycling and sustainability goals and reduce truck traffic and associated air, noise and greenhouse gas emissions. Currently, New York City's commercial waste system is an open market, regulatory-based system in which private service providers, licensed and overseen by the Business Integrity Commission (BIC), collect waste and recyclables from commercial businesses and compete for contracts with each business. The Proposed Action would establish a CWZ Program that would create geographic zones with a limited number of service providers licensed to operate within each zone. Environmental impacts from commercial waste carting will be reduced. Therefore, the Proposed Action would promote Policy 7.3. ✷