INDUSTRY CITY

Draft Environmental Impact Statement

lead agency:
City Planning Commission

chair:
Marisa Lago

prepared by:
AKRF and VHB

lead agency contact:
Olga Abinader, Director
Environmental Assessment and Review Division
NYC Department of City Planning

CEQR No. 18DCP034K

ULURP Nos. 160146 MMK
190296 ZMK
190297 ZSK
190298 ZRK

October 2019

Industry City
DRAFT ENVIRONMENTAL IMPACT STATEMENT (DEIS)

Project Location:	Community District 7, Borough of Brooklyn
CEQR No.	18DCP034K
Type of Action:	Type I
ULURP Nos.	160146 MMK 190296 ZMK 190297 ZSK 190298 ZRK
Lead Agency:	City Planning Commission, City of New York Marisa Lago, Chair
Lead Agency Contact:	Olga Abinader Director, Environmental Assessment and Review Division New York City Department of City Planning 120 Broadway, 31st Floor New York, NY 10007
Project Applicants:	1-10 Bush Terminal Owner LP 19-20 Bush Terminal Owner LP
Prepared by:	AKRF, Inc. VHB
Acceptance Date:	October 2019

Table of Contents

Executive Summary **S-1**

Chapter 1: Project Description **1-1**
A. Introduction 1-1
B. Background 1-2
C. Project Description 1-3
Description of the Area Affected by the Proposed Actions 1-3
Project Area 1-4
Rezoning Area 1-6
Outparcels 1-7
D. Purpose and Need 1-7
Creating an Innovation Economy District 1-7
Required Zoning Modifications 1-9
E. Required Approvals and Review Procedures 1-10
Zoning Text Amendment 1-10
Special Permit Use Regulations 1-11
Special Permit Bulk Regulations 1-11
Special Permit Other Regulations 1-11
Zoning Map Amendment 1-11
Special Permit 1-12
Modification of Underlying Bulk Regulations 1-13
Modification of Underlying Use Regulations 1-14
Establish Controls for Co-Location of Certain Uses 1-14
Supplement and/or Modify Other Regulations 1-15
Public Access Area Requirement 1-15
Change to the City Map 1-15
F. Analysis Framework 1-16
No Action Scenario 1-16
With Action Scenarios 1-17
Reasonable Worst Case Development Scenarios (RWCDS) 1-18
G. Review Processes 1-24
Uniform Land Use Review Procedure (ULURP) 1-24
New York City Environmental Quality Review (CEQR) 1-25

Chapter 2: Land Use, Zoning, and Public Policy **2-1**
A. Introduction 2-1
Principal Conclusions 2-1
B. Methodology 2-2
C. Existing Conditions 2-2
Land Use 2-2

Zoning....2-6
Public Policy....2-9
D. The Future without the Proposed Actions....2-14
Land Use....2-14
Zoning....2-15
Public Policy....2-16
E. The Future with the Proposed Actions....2-18
Land Use....2-18
Zoning....2-20
Public Policy....2-27

Chapter 3: Socioeconomic Conditions....3-1
A. Introduction....3-1
Principal Conclusions....3-1
B. Methodology....3-5
Background....3-5
Analysis Format....3-5
Project Area....3-6
Study Areas....3-6
Data Sources....3-6
Screening Assessment....3-7
C. Preliminary Assessment....3-10
Direct Business Displacement....3-10
Indirect Business Displacement due to Increased Rents....3-16
Indirect Business Displacement due to Retail Market Saturation....3-17
Adverse Effects on Specific Industries....3-26
D. Detailed Indirect Business Displacement Analysis....3-26
Existing Conditions....3-27
The Future without the Proposed Actions....3-31
The Future with the Proposed Actions....3-32

Chapter 4: Open Space....4-1
A. Introduction....4-1
Principal Conclusions....4-1
B. Methodology....4-2
Study Area....4-2
Study Area Population....4-3
Inventory of Open Space Resources....4-3
Adequacy of Open Space Resources....4-3
C. Existing Conditions....4-4
Study Area Non-Residential Population....4-4
Study Area Open Space Resources....4-4
Adequacy of Open Space Resources....4-6
D. The Future without the Proposed Actions....4-8
Study Area Non-Residential Population....4-8
Study Area Open Space Resources....4-8
Adequacy of Open Space Resources....4-9
E. The Future with the Proposed Actions....4-9

Study Area Non-Residential Population 4-9
Study Area Open Space Resources 4-10
Adequacy of Open Space Resources 4-10
F. Conclusion 4-12

Chapter 5: Shadows 5-1
A. Introduction 5-1
Principal Conclusions 5-1
B. Definitions and Methodology 5-2
Definitions 5-2
Methodology 5-3
C. Preliminary Screening Assessment 5-3
Tier 1 Screening Assessment 5-4
Tier 2 Screening Assessment 5-4
Tier 3 Screening Assessment 5-5
D. Detailed Analysis 5-5
Analysis Results 5-6
Affected Resources 5-6

Chapter 6: Historic and Cultural Resources 6-1
A. Introduction 6-1
Principal Conclusions 6-1
B. Methodology 6-4
Archaeological Resources 6-4
Architectural Resources 6-4
Criteria and Regulations 6-5
C. Existing Conditions 6-6
Architectural Resources 6-6
D. The Future without the Proposed Actions 6-10
Architectural Resources 6-10
E. The Future with the Proposed Actions 6-11
Baseline Scenario 6-11
Overbuild Scenario 6-16

Chapter 7: Urban Design and Visual Resources 7-1
A. Introduction 7-1
Principal Conclusions 7-1
B. Methodology 7-1
C. Existing Conditions 7-4
Project Area 7-4
Study Area 7-8
D. The Future without the Proposed Actions 7-13
Project Area 7-13
Study Area 7-14
E. The Future with the Proposed Actions 7-15
Baseline Scenario 7-15
Overbuild Scenario 7-18

Chapter 8: Hazardous Materials 8-1
A. Introduction 8-1
Principal Conclusions 8-2
B. Methodology 8-2
Sanborn Fire Insurance Map Review 8-2
Database Review 8-2
Site Reconnaissance 8-4
C. Existing Conditions 8-4
Topography and Hydrogeology 8-4
Regulatory Database Records 8-4
Overview of Historical Uses 8-5
D. The Future without the Proposed Actions 8-8
E. The Future with the Proposed Actions 8-8
F. Conclusion 8-10

Chapter 9: Water and Sewer Infrastructure 9-1
A. Introduction 9-1
Principal Conclusions 9-1
B. Methodology 9-2
C. Existing Conditions 9-3
Water Supply System 9-3
Conveyance System 9-3
Sanitary Flows 9-4
Stormwater Flows 9-4
D. The Future without the Proposed Actions 9-5
Conveyance System 9-6
Sanitary Flows 9-6
Stormwater Flows 9-7
E. The Future with the Proposed Actions 9-7
Water Supply 9-7
Conveyance System 9-8
Sanitary Flows 9-8
Stormwater Flows 9-9

Chapter 10: Energy 10-1
A. Introduction 10-1
Principal Conclusions 10-1
B. Methodology 10-1
C. Existing Conditions 10-2
Energy Generation and Distribution 10-2
Recent Energy Conservation Directives 10-2
Existing Demand 10-3
D. The Future without the Proposed Actions 10-4
E. The Future with the Proposed Actions 10-4

Chapter 11: Transportation 11-1
A. Introduction 11-1
Principal Conclusions 11-1

B. Methodology 11-2
Level 1 Screening Assessment 11-3
Level 2 Screening Assessment 11-13
Detailed Analysis Methodologies 11-17
Gowanus Expressway 11-19
Parking 11-21
Subway Transit 11-21
C. Existing Conditions (Year 2016) 11-28
Traffic Street Network 11-28
Gowanus Expressway 11-33
Parking 11-35
Subway Transit 11-36
Bus Transit 11-38
Pedestrians 11-39
Vehicular and Pedestrian Safety 11-42
D. The Future without the Proposed Actions 11-44
Traffic Street Network 11-46
Gowanus Expressway 11-51
Parking 11-55
Subway Transit 11-55
Bus Transit 11-57
Pedestrians 11-58
E. The Future with the Proposed Actions 11-62
Roadway Improvements 11-62
Traffic Street Network 11-62
Gowanus Expressway 11-72
Parking 11-75
Subway Transit 11-79
Bus Transit 11-81
Pedestrians 11-82

Chapter 12: Natural Resources 12-1
A. Introduction 12-1
Principal Conclusions 12-1
B. Methodology 12-2
Study Area 12-2
Regulatory Context 12-2
C. Existing Conditions 12-4
Floodplains 12-4
Groundwater 12-5
Terrestrial Resources 12-5
Threatened, Endangered, and Special Concern Species and Significant Natural Communities 12-6
D. The Future without the Proposed Project 12-7
E. The Future with the Proposed Project 12-7
Floodplains 12-7
Groundwater 12-8
Terrestrial Resources 12-8

Threatened, Endangered, and Special Concern Species and Significant Natural Communities....12-9
F. References....12-9

Chapter 13: Air Quality....13-1
A. Introduction....13-1
Principal Conclusions....13-2
B. Pollutants for Analysis....13-3
Carbon Monoxide....13-3
Nitrogen Oxides, VOCs, and Ozone....13-3
Lead....13-4
Respirable Particulate Matter—PM_{10} and $PM_{2.5}$....13-4
Sulfur Dioxide....13-5
Air Toxics....13-5
C. Air Quality Standards, Regulations, and Benchmarks....13-5
National and State Air Quality Standards....13-5
NAAQS Attainment Status and State Implementation Plans....13-7
Determining the Significance of Air Quality Impacts....13-8
D. Methodology for Predicting Pollutant Concentrations....13-9
Reasonable Worst Case Development Scenarios....13-9
Mobile Sources....13-9
Stationary Sources....13-14
E. Existing Conditions....13-27
F. The Future without the Proposed Actions....13-27
Mobile Sources....13-27
Stationary Sources....13-28
G. The Future with the Proposed Actions....13-28
Mobile Sources....13-28
Stationary Sources....13-33

Chapter 14: Greenhouse Gas Emissions and Climate Change....14-1
A. Introduction....14-1
Principal Conclusions....14-1
B. Greenhouse Gas Emissions....14-2
Pollutants of Concern....14-2
Policy, Regulations, Standards, and Benchmarks for Reducing GHG Emissions....14-3
Methodology....14-5
Projected GHG Emissions....14-8
Elements That Would Reduce GHG Emissions....14-10
C. Resilience to Climate Change....14-12
Policy to Improve Climate Change Resilience....14-12
Projected Climate Conditions....14-12
Resilience of the Proposed Project to Climate Change....14-13
Conclusions....14-14

Chapter 15: Noise....15-1
A. Introduction....15-1
Principal Conclusions....15-1

B. Acoustical Fundamentals 15-1
A-Weighted Sound Level (dBA) 15-2
Noise Descriptors Used in Impact Assessment 15-2
C. Noise Standards and Criteria 15-3
Impact Definition 15-3
New York CEQR Technical Manual Noise Standards 15-3
D. Existing Noise Levels 15-5
Selection of Noise Receptor Locations 15-5
Noise Survey Procedures 15-5
Noise Survey Results 15-6
Stationary Noise Source—32nd Street Transformers 15-10
E. Noise Prediction Methodology 15-10
General Methodology 15-10
Proportional Modeling 15-11
Façade Noise Attenuation Requirements 15-11
Innovation Economy Demising Partition Noise Attenuation Requirements 15-12
F. The Future Without the Proposed Actions 15-13
G. The Future With the Proposed Actions 15-14
Mobile Source Noise 15-14
H. Noise Exposure at Newly Introduced Noise Receptors 15-16
Window/Wall Attenuation Analysis Results 15-16
Interior/Demising Partition Attenuation Analysis Results 15-18
I. Mechanical Equipment 15-19

Chapter 16: Public Health 16-1
A. Introduction 16-1
Principal Conclusions 16-1
B. Methodology 16-1
C. Public Health Assessment 16-2
Chronic Exposure to High Levels of Noise 16-2
Prolonged Exposure to Noise Levels Above 85 dBA 16-3
Unpredictable Exposure to Short-Term High Noise Levels 16-3

Chapter 17: Neighborhood Character 17-1
A. Introduction 17-1
Principal Conclusions 17-1
B. Methodology 17-2
C. Preliminary Assessment 17-2
Defining Features 17-2
Potential to Affect the Defining Features of the Neighborhood 17-4
D. Conclusion of Preliminary Assessment 17-10

Chapter 18: Construction 18-1
A. Introduction 18-1
Principal Conclusions 18-2
B. Governmental Coordination and Oversight 18-4
C. Conceptual Construction Phasing and Schedule 18-5
D. Construction Description 18-6

General Construction Stages—Renovation and Re-tenant Activities 18-7
General Construction Stages—New Building Construction 18-7
General Construction Practices 18-8
Number of Construction Workers and Material Deliveries 18-9
E. The Future without the Proposed Actions (No Action Condition) 18-10
F. The Future with the Proposed Actions (With Action Condition) 18-10
Transportation 18-11
Air Quality 18-23
Noise 18-28
Vibration 18-41
Other Technical Areas 18-43

Chapter 19: Alternatives 19-1
A. Introduction 19-1
Principal Conclusions 19-1
B. No Action Alternative 19-2
Land Use, Zoning, and Public Policy 19-3
Socioeconomic Conditions 19-3
Open Space 19-4
Shadows 19-4
Historic and Cultural Resources 19-4
Urban Design and Visual Resources 19-5
Natural Resources 19-5
Hazardous Materials 19-5
Water and Sewer Infrastructure 19-6
Energy 19-6
Transportation 19-6
Air Quality 19-7
Greenhouse Gas Emissions and Climate Change 19-7
Noise 19-8
Public Health 19-8
Neighborhood Character 19-8
Construction 19-8
C. No Unmitigated Impacts Alternative 19-9
Historic and Cultural Resources 19-9
Transportation 19-11

Chapter 20: Mitigation 20-1
A. Introduction 20-1
B. Principal Conclusions 20-1
Historic and Cultural Resources 20-1
Transportation 20-2
Air Quality 20-5
Noise 20-5
Construction Noise 20-5
C. Historic and Cultural Resources 20-5
D. Transportation 20-6
Traffic 20-6

Subway Transit 20-20
Bus Transit 20-20
Pedestrians 20-21
E. Air Quality 20-28
F. Noise 20-28
G. Construction Noise 20-29

Chapter 21: Growth-Inducing Aspects of the Proposed Actions 21-1
A. Introduction 21-1

Chapter 22: Irreversible and Irretrievable Commitments of Resources 22-1
A. Introduction 22-1

Chapter 23: Unavoidable Adverse Impacts 23-1
A. Introduction 23-1
B. Historic and Cultural Resources 23-1
C. Transportation 23-2
Traffic 23-2
Transit 23-2
Pedestrians 23-3

APPENDICES

Appendix A-1 Waterfront Revitalization Program
Appendix A-2 Conceptual Analysis
Appendix A-3 Special Industry City District (SICD)
Appendix B No Build Tables
Appendix C Historic and Cultural Resources
Appendix D Hazardous Materials
Appendix E Natural Resources
Appendix F Air Quality
Appendix G Construction

List of Tables

S-1 With Action Scenario—Proposed Zoning Change S-5

S-2 Existing Condition vs. No Action Condition S-15

S-3 With Action Condition: Baseline Scenario S-18

S-4 With Action Condition Density-Dependent Scenario for Density-Dependent Technical Analysis Areas S-20

S-5 With Action Condition Overbuild Scenario for Bulk Dependent Technical Analysis Areas S-21

S-6 With Action Condition Scenario Comparison S-22

1-1 List of Block and Lots in the Directly Affected Area 1-4

1-2 Outparcels 1-7

1-3 Existing Condition vs. No Action Condition 1-17

1-4 With Action Condition: Baseline Scenario 1-20

1-5 With Action Condition Density-Dependent Scenario for Density-Dependent Technical Analysis Areas 1-22

1-6 With Action Condition Overbuild Scenario for Bulk Dependent Technical Analysis Areas 1-23

1-7 With Action Condition Scenario Comparison 1-24

2-1 Zoning Districts in the Primary and Secondary Study Areas 2-8

2-2 Development Projects in the Study Areas 2-15

2-3 With Action Scenario—Proposed Zoning Change 2-23

3-1 2015 Private Employment in ½-Mile Study Area, Brooklyn, and New York City 3-11

3-2 2015 Private Businesses in ½-Mile Study Area, Brooklyn, and New York City 3-12

3-3 Private Businesses and Employment Potentially Displaced by the Proposed Project under the Density-Dependent Scenario 3-13

3-4 Estimated Annual Retail Sales in the Three-Mile Primary Trade Area, 2017 3-20

3-5 Estimated Annual Retail Demand in the Three-Mile Primary Trade Area, 2017 3-21

3-6 Annual Household Retail Expenditures and Total Retail Sales, Three-Mile Primary Trade Area, Existing Condition 3-22

3-7 Household Retail Expenditures and Total Retail Sales, Three-Mile Primary Trade Area, No Action Condition 3-23

3-8 Estimated Sales at Stores Introduced under the Proposed Project, Density-Dependent RWCDS....3-24
3-9 Comparison of Estimated Retail Capture Rates in the Three-Mile Primary Trade Area: Existing, No Action, and With Action Conditions....3-25
3-10 Hotels in Socioeconomic Study Area....3-30
4-1 Existing Non-Residential Population within the Study Area....4-4
4-2 Inventory of Publicly Accessible Open Space in the Study Area....4-5
4-3 Existing Conditions: Adequacy of Open Space Resources....4-6
4-4 Additional Open Space Resources Considered....4-7
4-5 No Action Condition: Population from Additional Projects in the Study Area....4-9
4-6 No Action Condition: Adequacy of Open Space Resources....4-9
4-7 Density-Dependent Scenario: Adequacy of Open Space Resources....4-11
4-8 Passive Open Space Ratios Summary....4-11
5-1 Tier 1 Longest Shadow Study Areas....5-4
5-2 Incremental Shadow Durations....5-6
6-1 Bush Terminal Historic District Buildings in the Project Area and Study Area....6-2
6-2 Baseline Scenario Potential Impacts: Bush Terminal Historic District....6-12
6-3 Overbuild Scenario Potential Impacts: Bush Terminal Historic District....6-17
8-1 Historical Uses of the Project Area....8-5
8-2 (E) Designation Listing....8-10
9-1 Project Area Water Consumption and Sewage Generation Existing Conditions....9-5
9-2 Existing Surface Coverage....9-5
9-3 Project Area Water Consumption and Sewage Generation No Action Condition....9-6
9-4 Industry City Development Surface Coverage No Action Condition....9-7
9-5 Industry City Water Consumption and Sewage Generation....9-8
9-6 Industry City Development Surface Coverage With Action Condition....9-9
9-7 DEP Volume Matrix: Existing and Build Volume Comparison....9-10
10-1 Estimated Energy Consumption Existing Conditions....10-3
10-2 Projected Energy Demand No Action Condition....10-4
10-3 Projected Energy Demand With Action Condition (Density-Dependent Scenario)....10-5
11-1 Program Comparison....11-4
11-2 Weekday Travel Demand Assumptions....11-5
11-3 Saturday Travel Demand Assumptions....11-6

11-4 Trip Generation Summary – Vehicle Trips 11-10
11-5 Trip Generation Summary – Person Trips 11-12
11-6 Net Incremental Peak Hour Local Bus Trips by Route 11-16
11-7 Pedestrian Analysis Locations 11-17
11-8 LOS Criteria for Signalized Intersections 11-18
11-9 LOS Criteria for Unsignalized Intersections 11-19
11-10 LOS Definitions for Freeway Segment Analysis 11-20
11-11 LOS Criteria for Subway Station Elements 11-22
11-12 Significant Impact Guidance for Stairs and Passageways 11-22
11-13 LOS Criteria for Pedestrian Elements 11-24
11-14 Significant Impact Criteria for Sidewalks 11-26
11-15 Significant Impact Criteria for Corners and Crosswalks 11-27
11-16a Existing Traffic LOS Summary – Overall Intersections 11-30
11-16b Existing Traffic LOS Summary – Traffic Movements 11-30
11-17 2016 Existing Condition 11-31
11-18 Existing Highway LOS Summary 11-35
11-19 Inventory of Existing Industry City Parking Facilities 11-36
11-20 Existing Subway Station LOS – Stairways 11-37
11-21 Existing Subway Station LOS – Fare Control Area 11-38
11-22 Existing Conditions Subway Line-Haul Analysis 11-38
11-23 Existing Conditions Local Bus Analysis 11-39
11-24 2016 Existing Pedestrian LOS Summary 11-40
11-25 2016 Existing Pedestrian LOS – Sidewalks 11-41
11-26 2016 Existing Pedestrian LOS – Crosswalks 11-42
11-27 2016 Existing Pedestrian LOS – Corners 11-42
11-28 Vehicle and Pedestrian Crash Summary 11-43
11-29 No Action Development Projects 11-44
11-30a 2016 Existing vs. 2027 No Action Traffic Levels of Service – Overall Intersections 11-48
11-30b 2016 Existing vs. 2027 No Action Traffic Levels of Service – Traffic Movements 11-48
11-31 2027 No Action Condition 11-53
11-32 Inventory of No Action Industry City Parking Facilities 11-55
11-33 2027 No Action Subway Station Levels of Service – Stairways 11-56

11-34 2027 No Action Subway Station Levels of Service – Fare Control Area 11-56
11-35 2027 No Action Conditions Subway Line-Haul Analysis 11-57
11-36 No Action Conditions Local Bus Analysis 11-58
11-37 2027 No Action Pedestrian Levels of Service Summary 11-59
11-38 2027 No Action Pedestrian Levels of Service – Sidewalks 11-60
11-39 2027 No Action Pedestrian Levels of Service – Crosswalks 11-61
11-40 2027 No Action Pedestrian Levels of Service – Corners 11-61
11-41a 2027 No Action vs. 2027 With Action Traffic Levels of Service – Overall Intersections 11-65
11-41b 2027 No Action vs. 2027 With Action Traffic Levels of Service – Traffic Movements 11-66
11-42 No Action vs. With Action Traffic Levels of Service Comparison – Weekday Am Peak Hour 11-67
11-43 2027 No Action vs. 2027 With Action Highway Levels of Service Summary 11-73
11-44a Proposed Project Generated Parking Demand – Weekday 11-77
11-44b Proposed Project Generated Parking Demand – Saturday 11-78
11-45 Inventory of With Action Industry City Parking Facilities 11-79
11-46 2027 With Action Subway Station Levels of Service – Stairways 11-80
11-47 2027 With Action Subway Station Levels of Service – Fare Control Area 11-80
11-48 2027 With Action Conditions Subway Line-Haul Analysis 11-81
11-49 With Action Conditions Local Bus Analysis 11-82
11-50 2027 No Action vs. 2027 With Action Pedestrian Levels of Service Summary 11-85
11-51 2027 With Action Pedestrian Levels of Service – Sidewalks 11-86
11-52 2027 With Action Pedestrian Levels of Service – Crosswalks 11-87
11-53 2027 With Action Pedestrian Levels of Service – Corners 11-88
13-1 National Ambient Air Quality Standards (NAAQS) 13-6
13-2 Maximum Background Pollutant Concentration for Mobile Source Analysis 13-12
13-3 Mobile Source Analysis Sites 13-12
13-4 Boiler Stack Parameters and Emission Rates Finger Buildings and 39th Street Buildings 13-15
13-5 Boiler Stack Parameters and Emission Rates Proposed Buildings 13-16
13-6 Maximum Background Pollutant Concentrations for Heating and Hot Water System Analysis 13-18
13-7 Typical Composition of VOC Emissions from Auto Spray Paint Booths 13-19

13-8 Existing Industry City Businesses, UGs, and Air Permit Information 13-21
13-9 Proposed SICD Industrial Use Categories Analyzed..... 13-22
13-10 Industrial Source Analysis Emissions Profile..... 13-24
13-11 Representative Monitored Ambient Air Quality Data..... 13-27
13-12 Maximum Predicted 8-Hour Average CO No Action Concentrations 13-28
13-13 Maximum Predicted 24-Hour Average PM_{10} No Action Concentrations ($\mu g/m^3$) 13-29
13-14 Maximum Predicted 8-Hour CO With Action Concentrations (ppm)..... 13-29
13-15 Maximum Predicted 24-Hour Average PM_{10} With Action Concentration ($\mu g/m^3$)... 13-29
13-16 Maximum Predicted 24-Hour Average $PM_{2.5}$ Incremental Concentration ($\mu g/m^3$)... 13-30
13-17 Maximum Predicted Annual Average $PM_{2.5}$ Incremental Concentration ($\mu g/m^3$)..... 13-30
13-18 Maximum Predicted 8-Hour Average CO Concentrations from the Elevated Gowanus Expressway on the Proposed Project..... 13-31
13-19 Maximum Predicted 24-Hour Average $PM_{2.5}$ Concentrations from the Elevated Gowanus Expressway on the Proposed Project..... 13-32
13-20 Maximum Predicted Annual Average $PM_{2.5}$ Concentrations from the Elevated Gowanus Expressway on the Proposed Project..... 13-32
13-21 Maximum Modeled Pollutant Concentrations from Heating and Hot Water Systems Off-Site Receptors ($\mu g/m^3$)..... 13-33
13-22 Maximum Modeled Pollutant Concentrations from Heating and Hot Water Systems on the Proposed Actions ($\mu g/m^3$)..... 13-33
13 23 Maximum Predicted Pollutant Concentration Increments ($\mu g/m^3$)..... 13-36
13-24 Maximum Modeled Pollutant Concentrations ($\mu g/m^3$)..... 13-37
14-1 Global Warming Potential (GWP) for Major GHGs 14-3
14-2 Vehicle Miles Traveled Per Year – Proposed Project..... 14-6
14-3 Annual Building Operational Emissions – Proposed Project 14-8
14-4 Annual Mobile Source Emissions – Proposed Project (Metric Tons CO_2e, 2027)..... 14-9
14-5 GHG Emissions from Construction (Metric Tons CO_2e) 14-9
14-6 Summary of Annual GHG Emissions (Metric Tons CO_2e)..... 14-9
15-1 Common Noise Levels..... 15-2
15-2 Noise Exposure Guidelines for Use in City Environmental Impact Review..... 15-4
15-3 Required Attenuation Values to Achieve Acceptable Interior Noise Levels..... 15-5
15-4 Noise Receptor Locations..... 15-5
15-5 Noise Survey Timing and Duration..... 15-6
15-6 Noise Survey Results Summary (in dBA) 15-6

15-7 Location A – 24-Hour Noise Survey Results Summary (in dBA) 15-7
15-8 Location B – 24-Hour Noise Survey Results Summary (in dBA) 15-7
15-9 Location B-1 – 24-Hour Noise Profile Summary (in dBA) 15-8
15-10 Location C – 24-Hour Noise Survey Results Summary (in dBA) 15-8
15-11 Location C-1 – 24-Hour Noise Profile Summary (in dBA) 15-9
15-12 Location D – 24-Hour Noise Survey Summary 15-9
15-13 City of New York Noise Performance Standards for M3 Manufacturing District 15-12
15-14 Measured Sound Pressure Levels at the Fodera Guitar Workshop (dBA) 15-13
15-15 2027 No Action Condition Noise Levels (in dBA) 15-14
15-16 2027 With Action Condition Mobile Source Noise Levels (in dBA) 15-15
15-17 Building Attenuation Requirements (in dBA) 15-17
18-1 Summary of Primary Agency Construction Oversight 18-5
18-2 Average Incremental Number of Daily Construction Workers and Trucks by Year and Quarter 18-10
18-3 Peak Construction Vehicle Trip Projects – Second Quarter of 2022 18-12
18-4 Comparison of Vehicle Trips – Construction Phase vs. With Action Conditions 18-12
18-5 Traffic Levels of Service 2016 Existing Condition 18-14
18-6 Traffic Levels of Service 2022 No Action Condition 18-16
18-7 No Action vs. Construction Traffic Levels of Service Comparison: Weekday AM Peak Hour 18-19
18-8 No Action vs. Construction Traffic Levels of Service Comparison: Weekday PM Peak Hour 18-21
18-9 Modeled Construction Equipment Sources 18-25
18-10 Maximum Pollutant Concentrations from the Proposed Actions 18-28
18-11 Construction Noise Analysis Periods 18-33
18-12 Typical Construction Equipment Noise Emission Levels (dBA) 18-35
18-13 Noise Receptor Locations by Location and Associated Land Use 18-36
18-14 Noise Survey Results in dBA 18-37
18-15 Construction Noise Analysis Results in dBA 18-37
18-16 Vibration Source Levels for Construction Equipment 18-42
18-17 (E) Designation Listing 18-47
20-1 Traffic Impact Mitigation Summary 20-7
20-2 Summary of Impacted Traffic Movements 20-7

20-3 No Action vs. With Action vs. With Action w/ Improvements Traffic Levels of Service Comparison – Weekday AM Peak Hour 20-9

20-4 No Action vs. With Action vs. With Action w/ Improvements Traffic Levels of Service Comparison – Weekday Midday Peak Hour 20-10

20-5 No Action vs. With Action vs. With Action w/ Improvements Traffic Levels of Service Comparison – Weekday PM Peak Hour 20-11

20-6 No Action vs. With Action vs. With Action w/ Improvements Traffic Levels of Service Comparison – Saturday Peak Hour 20-12

20-7 With Action-With-Mitigation Local Bus Analysis 20-21

20-8 Sidewalk Impact Mitigation Summary 20-22

20-9 Crosswalk Impact Mitigation Summary 20-23

20-10 Corner Impact Mitigation Summary 20-25

List of Figures

Following page:

S-1 Project Location S-2
S-2 Land Use Study Areas S-2
S-3 Proposed Zoning S-4
S-4 No Action Site Plan S-14
S-5 No Action Parking Diagram S-16
S-6a With Action Site Plans Finger Buildings Ground Floor S-16
S-6b With Action Site Plans Finger Buildings Second Floor S-16
S-6c With Action Site Plans Finger Buildings Typical Upper Floor S-16
S-6d With Action Site Plans 39th Street Buildings Ground Floor S-16
S-6e With Action Site Plans 39th Street Buildings Second Floor S-16
S-6f With Action Site Plans 39th Street Buildings Typical Upper Floor S-16
S-7 With Action Parking Diagram S-16
S-8 Baseline Scenario Finger Buildings Axonometric View (Looking Northeast) S-18
S-9 Baseline Scenario 39th Street Buildings Axonometric View (Looking Southeast) S-18
S-10 Density Dependent Scenario Finger Buildings Axonometric View S-20
S-11 Density Dependent Scenario 39th Street Buildings Axonometric View S-20
S-12 Baseline Scenario Finger Buildings Axonometric View (Looking Northeast) S-22
S-13 Baseline Scenario 39th Street Buildings Axonometric View (Looking Southeast) S-22
1-1 Project Location 1-2
1-2 Directly Affected Area 1-4
1-3 Existing Zoning 1-6
1-4 Proposed Zoning 1-6
1-5 No Action Site Plan 1-16
1-6 No Action Parking Diagram 1-18
1-7a With Action Site Plans Finger Buildings Ground Floor 1-18
1-7b With Action Site Plans Finger Buildings Second Floor 1-18
1-7c With Action Site Plans Finger Buildings Typical Upper Floor 1-18

1-7d With Action Site Plans 39th Street Buildings Ground Floor 1-18
1-7e With Action Site Plans 39th Street Buildings Second Floor 1-18
1-7f With Action Site Plans 39th Street Buildings Typical Upper Floor 1-18
1-8 With Action Parking Diagram 1-18
1-9 Baseline Scenario Finger Buildings Axonometric View (Looking Northeast) 1-20
1-10 Baseline Scenario 39th Street Buildings Axonometric View (Looking Southeast) 1-20
1-11 Density Dependent Scenario Finger Buildings Axonometric View 1-22
1-12 Density Dependent Scenario 39th Street Buildings Axonometric View 1-22
1-13 Baseline Scenario Finger Buildings Axonometric View (Looking Northeast) 1-24
1-14 Baseline Scenario 39th Street Buildings Axonometric View (Looking Southeast) 1-24
2-1 Land Use Study Areas 2-2
2-2 Existing Land Use 2-4
2-3 Existing Zoning 2-6
2-4 Coastal Zone Boundary 2-10
2-5 Significant Maritime and Industrial Area (SMIA) 2-10
2-6 South Brooklyn Industrial Business Zone (IBZ) 2-12
2-7 No Build Projects 2-14
2-8 Proposed Zoning 2-24
3-1 Socioeconomic Study Area 3-6
3-2 Primary Trade Area 3-6
4-1 Open Space Study Area 4-2
4-2 Potential Public Access Area 4-10
5-1 Tier 1 and Tier 2 Assessments 5-4
5-2 Tier 3 Assessment 5-6
5-3 Detailed Shadow Analysis D'Emic Playground March 21/September 21 5-6
5-4 Detailed Shadow Analysis D'Emic Playground May 6/August 6 5-6
5-5 Detailed Shadow Analysis D'Emic Playground June 21 5-6
5-6 Detailed Shadow Analysis Upper New York Bay March 21/September 21 5-6
5-7 Detailed Shadow Analysis Upper New York Bay May 6/August 6 5-6
5-8 Detailed Shadow Analysis Upper New York Bay June 21 5-6
5-9 Detailed Shadow Analysis Upper New York Bay December 21 5-6
6-1 Architectural Resources 6-6

6-2 Project Area Lots and Proposed Developments 6-6
6-3 Proposed Developments 6-6
6-4 Study Area—S/NR-Eligible Bush Terminal Historic District 6-6
6-5 Study Area—S/NR-Eligible Bush Terminal Historic District 6-6
6-6 Study Area—S/NR-Eligible Bush Terminal Historic District 6-6
6-7 Project Area—S/NR-Eligible Bush Terminal Historic District 6-6
6-8 Project Area—S/NR-Eligible Bush Terminal Historic District 6-6
6-9 Project Area—S/NR-Eligible Bush Terminal Historic District 6-6
6-10 Project Area—S/NR-Eligible Bush Terminal Historic District 6-6
6-11 Project Area—S/NR-Eligible Bush Terminal Historic District 6-6
6-12 Project Area—S/NR-Eligible Bush Terminal Historic District 6-6
6-13 Project Area—S/NR-Eligible Bush Terminal Historic District 6-6
6-14 Project Area—S/NR-Eligible Bush Terminal Historic District 6-6
6-15 Project Area—S/NR-Eligible Bush Terminal Historic District 6-6
6-16 Project Area—S/NR-Eligible Bush Terminal Historic District 6-6
6-17 Project Area—S/NR-Eligible Bush Terminal Historic District 6-6
6-18 Project Area—S/NR-Eligible Bush Terminal Historic District 6-6
6-19 Project Area—S/NR-Eligible Bush Terminal Historic District 6-6
6-20 Project Area and Study Area—S/NR-Eligible Bush Terminal Historic District 6-6
6-21 Study Area—Known Architectural Resources 6-8
6-22 Study Area—Known Architectural Resources 6-8
6-23 Study Area—Known Architectural Resources 6-10
6-24 Study Area—Known Architectural Resources 6-10
6-25 Study Area—Known Architectural Resources 6-10
7-1 Urban Design and Visual Resources Map 7-4
7-2a Project Area Lots and Proposed Development Baseline Scenario 7-4
7-2b Project Area Lots and Proposed Development Overbuild Scenario 7-4
7-3 Proposed Developments 7-4
7-4 Existing Conditions 7-4
7-5 Project Area Built FAR 7-4
7-6 Project Area Building Heights 7-4
7-7 Existing Conditions Photos—Project Area 7-6
7-8 Existing Conditions Photos—Project Area 7-6

7-9 Existing Conditions Photos—Project Area 7-6
7-10 Existing Conditions Photos—Project Area 7-6
7-11 Existing Conditions Photos—Project Area 7-6
7-12 Existing Conditions Photos—Project Area 7-6
7-13 Existing Conditions Photos—Project Area 7-8
7-14 Study Area Built FAR 7-8
7-15 Study Area Building Heights 7-8
7-16 Existing Conditions Photos—Study Area 7-10
7-17 Existing Conditions Photos—Study Area 7-10
7-18 Existing Conditions Photos—Study Area 7-10
7-19 Existing Conditions Photos—Study Area 7-12
7-20 Existing Conditions Photos—Study Area 7-12
7-21 Areas in Sunset Park Where Statue of Liberty is Visible 7-12
7-22 Visual Resources from Sunset Park Proposed Building 21 (View 1) 7-12
7-23 Visual Resources from Sunset Park Proposed Building 21 (View 2) 7-12
7-24 Visual Resources from Sunset Park Proposed Maximum Envelope Overbuild (View 1) 7-12
7-25 Visual Resources from Sunset Park Proposed Maximum Envelope Overbuild (View 2) 7-12
7-26 Visual Resources from Sunset Park 75’ Maximum 5th Avenue Building Height (View 1) 7-12
7-27 Visual Resources from Sunset Park 75’ Maximum 5th Avenue Building Height (View 2) 7-12
7-28 Baseline Scenario Finger Buildings Axonometric View (Looking Northeast) 7-16
7-29 Baseline Scenario 39th Street Buildings Axonometric View (Looking Southeast) 7-16
7-30 Baseline and Overbuild Scenarios Illustrative Building 11 Permissible Area 7-16
7-31 Baseline and Overbuild Scenarios Illustrative Building 11 Plans and Section 7-16
7-32 Baseline and Overbuild Scenarios Illustrative Building 11 Elevations 7-16
7-33 Baseline Scenario Illustrative Building from Southwest of Building 11 7-16
7-34 Baseline Scenario Illustrative Building 21 Permissible Area 7-16
7-35 Baseline and Overbuild Scenarios Illustrative Building 11 Plans and Section 7-16
7-36 Baseline and Overbuild Scenarios Illustrative Building 21 Plans 7-16
7-37 Baseline Scenario Illustrative Building 21 Elevations 7-16
7-38 Baseline Scenario Illustrative View from North of Building 21 7-16

7-39 Baseline Scenario Illustrative View from Northwest of Building 21 7-16
7-40 Baseline Scenario Illustrative Gateway Building Permissible Area 7-16
7-41 Baseline Scenario Illustrative Gateway Building Plans and Section 7-16
7-42 Baseline Scenario Illustrative Gateway Building Elevations 7-16
7-43 Baseline Scenario Illustrative View from South of Gateway Building 7-16
7-44 Overbuild Scenario Finger Buildings Axonometric View (Looking Northeast) 7-16
7-45 Overbuild Scenario 39th Street Buildings Axonometric View (Looking Southeast) .. 7-16
7-46 Overbuild Scenario Illustrative View from Southwest of Building 2 7-16
7-47 Overbuild Scenario Illustrative View South Along 2nd Avenue 7-16
7-48 Overbuild Scenario Illustrative View of Rooftop Additions on Finger Buildings 7-16
11-1 Project Location 11-4
11-2 Project Generated Vehicle Trips Weekday AM Peak Hour 11-14
11-3 Project Generated Vehicle Trips Weekday Midday Peak Hour 11-14
11-4 Project Generated Vehicle Trips Weekday PM Peak Hour 11-14
11-5 Project Generated Vehicle Trips Saturday Peak Hour 11-14
11-6 Traffic Analysis Locations 11-14
11-7 Subway and Bus Transit Study Area 11-16
11-8 Project Generated Pedestrian Increment Weekday AM Peak Hour 11-16
11-9 Project Generated Pedestrian Increment Weekday Midday Peak Hour 11-16
11-10 Project Generated Pedestrian Increment Weekday PM Peak Hour 11-16
11-11 Project Generated Pedestrian Increment Saturday Peak Hour 11-16
11-12 Pedestrian Study Locations 11-16
11-13 2016 Existing Traffic Volumes Weekday AM Peak Hour 11-30
11-14 2016 Existing Traffic Volumes Weekday Midday Peak Hour 11-30
11-15 2016 Existing Traffic Volumes Weekday PM Peak Hour 11-30
11-16 2016 Existing Traffic Volumes Saturday Peak Hour 11-30
11-17 2016 Existing Pedestrian Volumes Weekday AM Peak Hour 11-40
11-18 2016 Existing Pedestrian Volumes Weekday Midday Peak Hour 11-40
11-19 2016 Existing Pedestrian Volumes Weekday PM Peak Hour 11-40
11-20 2016 Existing Pedestrian Volumes Saturday Peak Hour 11-40
11-21 No Action Development Projects 11-44
11-22 2027 No Action Traffic Volumes Weekday AM Peak Hour 11-48
11-23 2027 No Action Traffic Volumes Weekday Midday Peak Hour 11-48

11-24 2027 No Action Traffic Volumes Weekday PM Peak Hour 11-48
11-25 2027 No Action Traffic Volumes Saturday Peak Hour 11-48
11-26 2027 No Action Pedestrian Volumes Weekday AM Peak Hour 11-58
11-27 2027 No Action Pedestrian Volumes Weekday Midday Peak Hour 11-58
11-28 2027 No Action Pedestrian Volumes Weekday PM Peak Hour 11-58
11-29 2027 No Action Pedestrian Volumes Saturday Peak Hour 11-58
11-30 2027 With Action Traffic Volumes Weekday AM Peak Hour 11-66
11-31 2027 With Action Traffic Volumes Weekday Midday Peak Hour 11-66
11-32 2027 With Action Traffic Volumes Weekday PM Peak Hour 11-66
11-33 2027 With Action Traffic Volumes Saturday Peak Hour 11-66
11-34 2027 With Action Pedestrian Volumes Weekday AM Peak Hour 11-82
11-35 2027 With Action Pedestrian Volumes Weekday Midday Peak Hour 11-82
11-36 2027 With Action Pedestrian Volumes Weekday PM Peak Hour 11-82
11-37 2027 With Action Pedestrian Volumes Saturday Peak Hour 11-82
12-1 Flood Hazard Areas – Preliminary FIRM 12-4
15-1 Noise Receptor Locations Map 15-6
15-2 Transformer Noise Measurement Graph 15-10
18-1 Conceptual Construction Schedule for Assessment of Construction Impacts 18-6
18-2 Construction Noise Receptor Locations 18-32

✶