East Harlem Rezoning

Draft Environmental Impact Statement (DEIS)



CEQR No.
17 DCP048M

ULURP Nos.:

East Harlem Rezoning	Sendero Verde – East 111th Street
170358 ZMM	170361 ZMM
N170359 ZRM	N170362 ZRM
170360 HAM	170363 HAM
	170364 PQM
	170365 ZSM
	170366 ZSM
	170367 ZSM
	N170368 ZCM

Lead Agency:
City Planning Commission, City of New York
Marisa Lago, Chair

April 21, 2017

East Harlem Rezoning
DRAFT ENVIRONMENTAL IMPACT STATEMENT (DEIS)
April 21, 2017

CEQR No.:	17DCP048M
ULURP Nos.	East Harlem Rezoning 170358 ZMM N170359 ZRM 170360 HAM Sendero Verde - East 111th Street 170361 ZMM N170362 ZRM 170363 HAM 170364 PQM 170365 ZSM 170366 ZSM 170367 ZSM N170368 ZCM
Project Location:	Manhattan, New York Community District 11
Lead Agency:	City Planning Commission, City of New York Marisa Lago, Chair
Lead Agency Contact:	Olga Abinader, Deputy Director Environmental Assessment and Review Division NYC Department of City Planning 120 Broadway, 31st floor New York, NY 10271-3100 (212) 720-3493
Prepared for:	New York City Department of City Planning Edith Hsu Chen Manhattan Office Glen A. Price III, Director Studies Implementation New York City Department of City Planning
Prepared by:	AKRF, Inc. Philip Habib & Associates

A public hearing on the Draft Environmental Impact Statement (DEIS) will be held at a later date to be announced. Advance notice will be given of the time and place of the hearing. Written comments on the DEIS are requested and will be received and considered by the Lead Agency until the 10th calendar day following the close of the public hearing.

The DEIS is available on the website of the New York City Department of City Planning: http://www1.nyc.gov/site/planning/applicants/eis-documents.page

Table of Contents

Executive Summary **S-1**

1: Project Description **1-1**
A. Introduction 1-1
B. Required Approvals and Review Procedures 1-2
C. Background to the Proposed Actions 1-4
D. Existing Zoning 1-9
E. Purpose and Need for the Proposed Actions 1-13
F. Description of the Proposed Actions 1-17
Proposed Zoning Districts 1-17
Proposed Zoning Text Amendments 1-24
Urban Renewal Plan Amendments 1-26
WRP Review Process and Determination 1-27
Actions to Support the Sendero Verde Development Alternative 1-27
G. Analysis Framework 1-29
Reasonable Worst-Case Development Scenario (RWCDS) 1-29
The Future Without the Proposed Actions (No Action Condition) 1-32
The Future With the Proposed Actions (With Action Condition) 1-33

2: Land Use, Zoning, and Public Policy **2-1**
A. Introduction 2-1
Principal Conclusions 2-2
B. Methodology 2-3
Study Areas 2-3
C. Existing Conditions 2-3
Land Use 2-3
Zoning 2-12
Public Policy 2-18
D. The Future Without the Proposed Actions 2-23
Land Use 2-23
Zoning 2-24
Public Policy 2-30
E. The Future With the Proposed Actions 2-30
Land Use 2-30
Zoning 2-31
Public Policy 2-41
F. Assessment 2-42
Land Use and Zoning 2-42

Public Policy 2-45

3: Socioeconomic Conditions 3-1
A. Introduction 3-1
Principal Conclusions 3-2
B. Methodology 3-5
Determining Whether a Socioeconomic Assessment Is Appropriate 3-6
Analysis Format 3-8
Study Area Definition 3-8
Data Sources 3-9
C. Preliminary Assessment 3-10
Direct Business Displacement 3-10
Indirect Residential Displacement 3-18
Indirect Business Displacement 3-25
Adverse Effects On Specific Industries 3-28

4: Community Facilities and Services 4-1
A. Introduction 4-1
Principal Conclusions 4-1
B. Preliminary Screening 4-3
Direct Effects 4-3
Indirect Effects 4-3
C. Potential Indirect Effects on Public Elementary, Intermediate, and High Schools 4-4
Methodology 4-4
Existing Conditions 4-5
The Future Without the Proposed Actions 4-8
The Future With the Proposed Actions 4-10
D. Potential Indirect Effects on Public Libraries 4-12
Methodology 4-12
Existing Conditions 4-13
The Future Without the Proposed Actions 4-14
The Future With the Proposed Actions 4-15
E. Potential Indirect Effects on Child Care Centers 4-16
Methodology 4-16
Existing Conditions 4-18
The Future Without the Proposed Actions 4-18
The Future With the Proposed Actions 4-18
F. Health Care Facilities 4-21
Methodology 4-21
Existing Conditions 4-21
G. Police and Fire Services 4-26
Methodology 4-26
Existing Conditions 4-26

5: Open Space 5-1
A. Introduction 5-1
Principal Conclusions 5-2
B. Methodology 5-2

Direct Effects 5-2
Indirect Effects 5-3
C. Existing Conditions 5-6
Study Area Population 5-6
Inventory of Publicly Accessible Open Space 5-9
Assessment of Open Space Adequacy 5-21
D. The Future Without the Proposed Actions 5-24
Study Area Population 5-24
Open Space Resources 5-24
Assessment of Open Space Adequacy 5-25
E. The Future With the Proposed Actions 5-27
Direct Effects 5-27
Indirect Effects 5-27

6: Shadows 6-1
A. Introduction 6-1
Principal Conclusions 6-1
B. Definitions and Methodology 6-2
Definitions 6-2
Methodology 6-3
C. Preliminary Screening Assessment 6-3
Tier 1 Screening Assessment 6-4
Tier 2 Screening Assessment 6-4
Tier 3 Screening Assessment 6-5
D. Detailed Shadow Analysis 6-7
Analysis Results 6-7
E. Open Space Resources 6-11
F. Historic Resources 6-58
G. Conclusions 6-63

7: Historic and Cultural Resources 7-1
A. Introduction 7-1
B. Principal Conclusions 7-1
Archaeological Resources 7-1
Architectural Resources 7-3
C. Development Background 7-4
D. Methodology 7-6
Archaeological Resources 7-6
Architectural Resources 7-7
E. Existing Conditions 7-9
Archaeological Resources 7-9
Architectural Resources 7-10
F. The Future Without the Proposed Actions 7-20
Archaeological Resources 7-20
Architectural Resources 7-21
G. The Future With the Proposed Actions 7-29
Overview 7-29
Archaeological Resources 7-29

Architectural Resources 7-30

8: Urban Design and Visual Resources 8-1
A. Introduction 8-1
Principal Conclusions 8-2
B. Methodology 8-3
C. Existing Conditions 8-5
Primary Study Area 8-5
Secondary Study Area 8-14
D. The Future Without the Proposed Actions 8-18
Primary Study Area 8-18
Secondary Study Area 8-19
E. The Future With the Proposed Actions 8-20
Primary Study Area 8-20
Secondary Study Area 8-23
Urban Design 8-23
View Corridors and Visual Resources 8-23

9: Natural Resources 9-1
A. Introduction 9-1
Principal Conclusions 9-1
B. Methodology 9-2
Study Area 9-2
Regulatory Context 9-2
C. Existing Conditions 9-4
Floodplains 9-4
Groundwater 9-5
Terrestrial Resources 9-5
Threatened, Endangered, and Special Concern Species and Significant Natural Communities 9-7
D. The Future Without the Proposed Actions 9-8
E. The Future With the Proposed Actions 9-8
Floodplains 9-8
Groundwater 9-9
Terrestrial Resources 9-9
Threatened, Endangered, and Special Concern Species and Significant Natural Communities 9-10
F. References 9-10

10: Hazardous Materials 10-1
A. Introduction 10-1
Principal Conclusions 10-1
B. Methodology 10-2
Sanborn Fire Insurance Map Review 10-2
Database Review 10-2
Site Reconnaissance 10-3
C. Existing Conditions 10-4
Topography and Hydrogeology 10-4

Regulatory and Database Records 10-4
Overview of Historical Uses 10-4
D. The Future Without the Proposed Actions 10-5
E. The Future With the Proposed Actions 10-5
F. Conclusion 10-13

11: Water and Sewer Infrastructure 11-1
A. Introduction 11-1
Principal Conclusions 11-1
B. Methodology 11-2
C. Existing Conditions 11-3
Water Supply 11-3
Wastewater Treatment 11-4
Stormwater and Drainage Management 11-5
D. The Future Without the Proposed Actions 11-6
Water Supply 11-7
Infrastructure Improvements 11-7
Wastewater Treatment 11-7
Stormwater and Drainage Management 11-7
E. The Future With the Proposed Actions 11-8
Water Supply 11-8
Wastewater Treatment 11-9
Stormwater and Drainage Management 11-10
Stormwater Best Management Practices 11-13

12: Solid Waste and Sanitation Services 12-1
A. Introduction 12-1
B. Principal Conclusions 12-1
C. Methodology 12-2
D. Existing Conditions 12-2
Description of Current Solid Waste Sanitation Services 12-2
Solid Waste Generation on Projected Development Sites 12-4
E. The Future Without the Proposed Actions 12-5
F. The Future With the Proposed Actions 12-6

13: Energy 13-1
A. Introduction 13-1
B. Principal Conclusions 13-1
C. Methodology 13-2
D. Existing Conditions 13-2
Energy Supply and Transmission 13-2
Recent Energy Conservation Directives 13-3
Existing Demand 13-4
E. The Future Without the Proposed Actions 13-4
F. The Future With the Proposed Actions 13-5

14: Transportation 14-1
A. Introduction 14-1
B. Principal Conclusions 14-2
Traffic 14-3
Transit 14-4
Vehicular and Pedestrian Safety 14-7
Parking 14-8
C. Preliminary Analysis Methodology 14-9
D. Level 1 Screening Assessment 14-9
Background 14-10
Transportation Planning Factors 14-10
Travel Demand Forecast 14-10
E. Level 2 Screening Assessment 14-18
Vehicular Traffic 14-18
Transit 14-18
Pedestrians 14-21
Parking 14-23
F. Transportation Analyses Methodologies 14-23
Traffic 14-23
Transit 14-25
Pedestrians 14-27
Vehicular and Pedestrian Safety Evaluation 14-29
Parking 14-31
G. Traffic 14-32
Existing Conditions 14-32
The Future Without the Proposed Actions 14-36
The Future With the Proposed Actions 14-39
Future With Action Traffic Growth 14-39
H. Transit 14-48
Existing Conditions 14-48
The Future Without the Proposed Actions 14-54
The Future With the Proposed Actions 14-60
I. Pedestrians 14-66
Existing Conditions 14-66
The Future Without the Proposed Actions 14-71
The Future With the Proposed Actions 14-77
J. Vehicular and Pedestrian Safety Evaluation 14-82
Recent Dot Initiatives 14-82
K. Parking 14-88
Existing Conditions 14-88
The Future Without the Proposed Actions 14-91
The Future With the Proposed Actions 14-93

15: Air Quality 15-1
A. Introduction 15-1
Principal Conclusions 15-1
B. Pollutants for Analysis 15-2
Carbon Monoxide 15-2

Nitrogen Oxides, VOCs, and Ozone 15-3
Lead 15-3
Respirable Particulate Matter—PM_{10} and $PM_{2.5}$ 15-3
Sulfur Dioxide 15-4
Noncriteria Pollutants 15-4
C. Air Quality Regulations, Standards, and Benchmarks 15-5
National and State Air Quality Standards 15-5
NAAQS Attainment Status and State Implementation Plans 15-7
Determining the Significance of Air Quality Impacts 15-8
D. Methodology 15-10
Mobile Sources 15-10
Stationary Sources 15-10
E. Existing Conditions 15-19
F. The Future Without the Proposed Actions 15-21
G. The Future With the Proposed Actions 15-21
Mobile Sources 15-21
Stationary Sources 15-21

16: Greenhouse Gas Emissions 16-1
A. Introduction 16-1
Principal Conclusions 16-1
B. Greenhouse Gas Emissions 16-2
Pollutants of Concern 16-2
Policy, Regulations, Standards, and Benchmarks for Reducing GHG Emissions 16-4
Methodology 16-6
Projected GHG Emissions 16-8
Consistency With the Citywide GHG Reduction Goals 16-10
C. Resilience to Climate Change 16-11
Development of Policy to Improve Climate Change Resilience 16-12
Resilience of the Proposed Project to Climate Change 16-14

17: Noise 17-1
A. Introduction 17-1
Principal Conclusions 17-1
B. Acoustical Fundamentals 17-1
C. Noise Standards and Criteria 17-3
D. Existing Noise Levels 17-4
Selection of Noise Receptor Locations 17-4
Noise Monitoring 17-5
Equipment Used During Noise Monitoring 17-6
Existing Noise Levels at Noise Receptor Locations 17-6
E. Noise Prediction Methodology 17-6
General Methodology 17-6
Building Reflections 17-9
F. The Future Without the Proposed Actions 17-9
G. The Future With the Proposed Actions 17-11
H. Noise Attenuation Measures 17-13
I. Mechanical Equipment 17-15

18: Public Health 18-1
A. Introduction 18-1
B. Principal Conclusions 18-1
C. Public Health Assessment—Construction Noise 18-1

19: Neighborhood Character 19-1
A. Introduction 19-1
Principal Conclusions 19-2
B. Methodology 19-2
Study Area 19-2
C. Preliminary Assessment 19-3
Defining Features 19-3
Assessment of the Potential to Affect the Defining Features of the Neighborhood 19-9

20: Construction 20-1
A. Introduction 20-1
Principal Conclusions 20-1
B. Governmental Coordination and Oversight 20-4
C. Conceptual Construction Phasing and Schedule 20-5
D. Construction Description 20-6
General Construction Stages 20-7
General Construction Practices 20-8
Number of Construction Workers and Material Deliveries 20-9
E. The Future Without the Proposed Actions 20-10
F. The Future With the Proposed Actions 20-10
Transportation 20-10
Air Quality 20-19
Noise and Vibration 20-25
Other Technical Areas 20-49

21: Mitigation 21-1
A. Introduction 21-1
B. Principal Conclusions 21-1
C. Shadows 21-5
El Catano Garden 21-6
Eugene McCabe Field 21-6
Jackie Robinson Garden 21-7
D. Historic and Cultural Resources 21-8
Architectural Resources 21-8
Archaeological Resources 21-9
E. Transportation 21-10
Traffic 21-10
Transit 21-15
Pedestrians 21-17
F. Construction Noise 21-19
Noise Reduction Measures 21-20

22: Alternatives 22-1
A. Introduction 22-1
B. Principal Conclusions 22-1
C. No Action Alternative 22-5
Land Use, Zoning, and Public Policy 22-6
Socioeconomic Conditions 22-6
Community Facilities and Services 22-8
Open Space 22-8
Shadows 22-8
Historic and Cultural Resources 22-8
Urban Design and Visual Resources 22-10
Natural Resources 22-10
Hazardous Materials 22-11
Water and Sewer Infrastructure 22-11
Solid Waste and Sanitation Services 22-11
Energy 22-11
Transportation 22-11
Air Quality 22-14
Greenhouse Gas Emissions and Climate Change 22-14
Noise 22-14
Public Health 22-15
Neighborhood Character 22-15
Construction 22-15
D. No Unmitigated Significant Adverse Impacts Alternative 22-16
Shadows 22-16
Historic and Cultural Resources 22-17
Transportation 22-19
Construction 22-20
E. Lower Density Alternative 22-21
Land Use, Zoning, and Public Policy 22-23
Socioeconomic Conditions 22-24
Community Facilities and Services 22-25
Open Space 22-25
Shadows 22-25
Historic and Cultural Resources 22-26
Urban Design and Visual Resources 22-26
Natural Resources 22-26
Hazardous Materials 22-27
Water and Sewer Infrastructure 22-27
Solid Waste and Sanitation Services 22-27
Energy 22-27
Transportation 22-27
Air Quality 22-31
Greenhouse Gas Emissions and Climate Change 22-32
Noise 22-32
Public Health 22-33
Neighborhood Character 22-33
Construction 22-33

Mitigation Measures Required for the Lower Density Alternative 22-34
F. Sendero Verde Development Alternative 22-37
Disposition and UDAAP Designation 22-41
Zoning Map Amendment 22-41
Zoning Text Amendment 22-41
CPC Special Permits 22-41
CPC Certification 22-42
Land Use, Zoning, and Public Policy 22-42
Socioeconomic Conditions 22-47
Community Facilities 22-49
Open Space 22-52
Shadows 22-55
Historic and Cultural Resources 22-59
Urban Design and Visual Resources 22-60
Natural Resources 22-61
Hazardous Materials 22-62
Water and Sewer Infrastructure 22-63
Solid Waste and Sanitation Services 22-66
Energy 22-66
Transportation 22-67
Air Quality 22-89
Greenhouse Gas Emissions and Climate Change 22-90
Noise 22-95
Public Health 22-95
Neighborhood Character 22-96
Construction 22-96
Mitigation Measures Required for the Sendero Verde Development Alternative 22-107

23: Unavoidable Adverse Impacts 23-1
A. Introduction 23-1
B. Shadows 23-1
El Catano Garden 23-1
Eugene McCabe Garden 23-2
Jackie Robinson Garden 23-3
C. Historic and Cultural Resources 23-3
Architectural Resources 23-4
Archaeological Resources 23-4
D. Transportation 23-5
Traffic 23-5
Transit 23-6
Pedestrians 23-7
E. Construction 23-7
Historic and Cultural Resources 23-7
Noise 23-9

24: Growth-Inducing Aspects of the Proposed Actions 24-1

25: Irreversible and Irretrievable Commitment of Resources 25-1

26: Conceptual Analysis 26-1
A. Introduction 26-1
Principal Conclusions 26-1
Hotel Special Permit 26-2
Methodology and Analysis Framework 26-2
Environmental Assessment 26-4

Appendices

A-1 Proposed Text Amendments
A-2 Amendments to the Milbank Frawley Circle-East Urban Renewal Plan
A-3 Detailed Reasonable Worst Case Development Scenario (RWCDS) Analysis
A-4 List of Blocks and Lots Included in the Rezoning Area
B-1 No Build Projects List
B-2 New York City Waterfront Revitalization Program (WRP) Consistency Assessment Form (CAF) and WRP Policy Assessment
C-1 Historic and Cultural Resources: Phase 1A Report
C-2 Historic and Cultural Resources: Agency Correspondence
D Hazardous Materials: EHR Database and Sanborns, Reports 1 and 2 (available electronically only)
E-1 Transportation Planning Factors and Travel Demand Forecast Memorandum
E-2 Level of Service Tables and Parking Regulations
F Proposed Air Quality E Designations
G Noise Project Development Sites Attenuation Requirements
H Construction
I-1 Sendero Verde RWCDS Analysis
I-2 Sendero Verde WRP Analysis

List of Tables

S-1a 2027 RWCDS No Action and With Action Land Uses S-32
S-1b 2027 RWCDS No Action and With Action Land Uses S-34
S-2 Number of Impacted Intersections and Lane Groups by Peak Hour S-47
S-3 Summary of Significantly Impacted Intersections S-48
S-4 Summary of Significant Subway Station Impacts S-49
S-5 Summary of Significant Local Bus Impacts S-50
S-6 Summary of Significant Pedestrian Impacts S-51
S-7 High Crash Locations S-52
S-8 Summary of Lane Groups/Intersections with Significant Adverse Traffic Impacts S-60
S-9 Lane Groups with Unmitigated Significant Adverse Traffic Impacts S-61
1-1a 2027 RWCDS No Action and With Action Land Uses 1-33
1-1b 2027 RWCDS No Action and With Action Land Uses 1-35
2-1 Existing Land Uses within the Primary Study Area 2-5
2-2 Existing Land Uses within North of 125th Street Subarea 2-6
2-3 Existing Land Uses within the Between East 125th Street and East 116th Street Subarea 2-7
2-4 Existing Land Uses within the South of 116th Street Subarea 2-9
2-5 Existing Land Uses within the Secondary Study Area 2-10
2-6 Existing Zoning Districts within the Secondary Study Area 2-17
2-7 Development Projects in the Future Without the Proposed Actions 2-25
2-8 2027 RWCDS No Action and With Action Condition Land Uses 2-31
2-9 Proposed Primary Study Area Zoning Districts 2-32
3-1 2014 Private Employment in Socioeconomic Study Area, Manhattan, and New York City 3-12
3-2 2014 Private Businesses in Socioeconomic Study Area, Manhattan, and New York City 3-14
3-3 Private Businesses, Employment Potentially Displaced by the Proposed Actions 3-15
3-4 Household Income Characteristics (2000, 2011–2015 ACS) 3-19
3-5 NYCHA Developments in the Study Area 3-20
3-6 Average and Median Gross Rent (2000, 2011–2015 ACS) 3-21
3-7 Average Asking Rents in the Study Area 3-21
3-8 2016 New York City Area Median Income (AMI) 3-22
3-9 2016 New York City Affordable Monthly Rents by AMI 3-23
3-10 Study Area Population Estimates and Projections 3-23
3-11 Projected Incremental Population by 2027 under RWCDS 3-24

3-12 Existing Land Uses and Incremental Land Uses under the Proposed Actions RWCDS 3-26
4-1 Preliminary Screening Analysis Criteria: Manhattan 4-3
4-2 Study Area Elementary Schools 4-6
4-3 Study Area Intermediate Schools 4-7
4-4 Study Area High Schools 4-8
4-5 Projected Estimated Number of New Students Introduced by Development in the Future Without the Proposed Actions 4-8
4-6 Estimated Student Generation in the Future With the Proposed Actions 4-10
4-7 Estimated Public School Enrollment, Capacity, and Utilization: Future With the Proposed Actions 4-11
4-8 Public Libraries Serving the Study Area 4-13
4-9 Public Libraries Serving the Study Area 4-14
4-10 Future with the Proposed Actions: Catchment Area Population 4-16
4-11 Publicly Funded Child Care Facilities Serving the Study Area 4-19
4-12 Estimated Public Child Care Facility Enrollment, Capacity, and Utilization 4-20
4-13 Hospitals Serving the Project Area 4-21
4-14 Outpatient Facilities Serving the Project Area 4-22
4-15 Police Precincts Serving the Project Area 4-27
4-16 Fire Companies Serving the Project Area 4-27
5-1 Study Area Residential and Non-Residential Populations 5-6
5-2 Study Area Residential and Non-Residential Populations 5-7
5-3 Study Area Residential Population Age Breakdown 5-8
5-4 Open Space Resources within the Non-Residential and Residential Open Space Study Area 5-11
5-5 Adequacy of Open Space Resources: Existing Conditions 5-21
5-6 Adequacy of Open Space Resources: No Action Condition 5-25
5-7 With Action Open Space Study Area Population 5-28
5-8 Adequacy of Open Space Resources: With Action Condition 5-29
5-9 NYCHA Housing Developments 5-31
5-10 Open Space Ratio Summary 5-33
6-1 Tier 3 Assessment: Sunlight-Sensitive Resources 6-6
6-2 Incremental Shadow Durations 6-9
7-1 Architectural Resources 7-10
7-2 Impacts to Architectural Resources 7-23
10-1 Assessment of Projected and Potential Development Sites 10-6
11-1 Existing Water Consumption 11-4
11-2 Existing Wastewater Generation on the Projected Development Sites by Subcatchment Area 11-5
11-3 Existing Surface Coverage 11-6
11-4 No Action Condition Water Consumption 11-7
11-5 With Action Condition Water Consumption 11-9

11-6 With Action Condition Wastewater Generation on the Projected Development Sites by Subcatchment Area 11-9
11-7 With Action Condition Surface Coverage 11-11
11-8 DEP Flow Volume Matrix: Existing and With Action Volume Comparison 11-12
12-1 Existing Solid Waste Generation on Projected Development Sites 12-4
12-2 No Action Solid Waste Generation on Projected Development Sites 12-5
12-3 With Action Solid Waste Generation on Projected Development Sites 12-6
12-4 Comparison of Weekly Solid Waste Generation on Projected Development Sites (Existing, No Action, With Action Conditions) 12-7
13-1 Existing Annual Energy Consumption for the Projected Development Sites 13-4
13-2 No Action Annual Energy Consumption for the Projected Development Sites 13-5
13-3 With Action Annual Energy Consumption for the Projected Development Sites 13-6
14-1 2027 RWCDS No Action and With Action Land Uses Action Condition) 14-2
14-2 Number of Impacted Intersections and Lane Groups by Peak Hour 14-3
14-3 Summary of Significantly Impacted Intersections 14-4
14-4 Summary of Significant Subway Station Impacts 14-5
14-5 Summary of Significant Local Bus Impacts 14-6
14-6 Summary of Significant Pedestrian Impacts 14-7
14-7 High Crash Locations 14-8
14-8 Transportation Planning Factors 14-11
14-9 RWCDS Travel Demand Forecast 14-14
14-10 RWCDS Net Incremental Vehicle Trips by Projected Development Site 14-17
14-11 Summary of Net Incremental Peak Hour Trips Generated under the RWCDS 14-17
14-12 RWCDS Net Incremental Peak Hour Subway Trips by Station 14-19
14-13 RWCDS Net Incremental Peak Hour Subway Trips by Route 14-22
14-14 Intersection Level of Service 14-24
14-15 Level of Service Criteria for Subway Station Elements 14-26
14-16 Significant Impact Thresholds for Stairway and Passageways 14-27
14-17 Pedestrian Crosswalk/Corner Area and Sidewalk Levels of Service Descriptions 14-28
14-18 Significant Impact Criteria for Sidewalks with Platooned Flow in a CBD Location 14-30
14-19 Significant Impact Criteria for Corners and Crosswalks in a CBD Location 14-31
14-20 Congested Lane Groups at Analyzed Intersections under Existing Conditions 14-36
14-21 Congested Lane Groups at Analyzed Intersections under No Action Conditions—Weekday AM Peak Hour 14-39
14-22 Congested Lane Groups at Analyzed Intersections under No Action Conditions—Weekday Midday Peak Hour 14-40
14-23 Congested Lane Groups at Analyzed Intersections under No Action Conditions—Weekday PM Peak Hour 14-41
14-24 Congested Lane Groups at Analyzed Intersections under No Action Conditions—Weekday Saturday Peak Hour 14-42
14-25 Congested Lane Groups at Analyzed Intersections under With Action Conditions—Weekday AM Peak Hour 14-43

14-26 Congested Lane Groups at Analyzed Intersections under With Action Conditions—Weekday Midday Peak Hour 14-45
14-27 Congested Lane Groups at Analyzed Intersections under With Action Conditions—Weekday PM Peak Hour 14-46
14-28 Congested Lane Groups at Analyzed Intersections under With Action Conditions—Weekday Saturday Peak Hour 14-47
14-29 Existing Conditions Subway Station Stair Analysis 14-51
14-30 Existing Conditions Subway Station Fare Array Analysis 14-52
14-31 Existing Conditions Subway Line Haul Analysis 14-52
14-32 Existing Conditions Local Bus Analysis 14-53
14-33 No Action Stair Analysis at Analyzed Subway Stations 14-56
14-34 No Action Fare Array Analysis at Analyzed Subway Stations 14-57
14-35 No Action Subway Line Haul Analysis 14-58
14-36 No Action Local Bus Analysis 14-60
14-37 With Action Stair Analysis at Analyzed Subway Stations 14-62
14-38 With Action Fare Array Analysis at Analyzed Subway Stations 14-63
14-39 With Action Subway Line Haul Analysis 14-65
14-40 With Action Local Bus Analysis 14-65
14-41 Existing Sidewalk Conditions 14-68
14-42 Existing Crosswalk Conditions 14-69
14-43 Existing Corner Conditions 14-70
14-44 No Action Sidewalk Conditions 14-73
14-45 No Action Crosswalk Conditions 14-74
14-46 No Action Corner Conditions 14-75
14-47 No Action Sidewalk Conditions with Second Avenue Subway Phase II 14-76
14-48 No Action Crosswalk Conditions with Second Avenue Subway Phase II 14-76
14-49 No Action Corner Conditions with Second Avenue Subway Phase II 14-76
14-50 With Action Sidewalk Conditions 14-78
14-51 With Action Crosswalk Conditions 14-79
14-52 With Action Corner Conditions 14-80
14-53 With Action Sidewalk Conditions with Second Avenue Subway Phase II 14-81
14-54 With Action Crosswalk Conditions with Second Avenue Subway Phase II 14-82
14-55 With Action Corner Conditions with Second Avenue Subway Phase II 14-82
14-56 Summary of Motor Vehicle Crash Data 2012-2014 14-86
14-57 Existing Off-Street Public Parking Facilities in the Study Area 14-90
14-58 Existing On-Street Public Parking Facilities in the Study Area 14-91
14-59 No Action Off-Street Public Parking Capacity, Demand, and Utilization within ¼ Mile of Projected Development Sites 14-93
14-60 No Action On-Street Parking Capacity, Demand, and Utilization within ¼ Mile of Projected Development Sites 14-94
14-61 With Action RWCDS Net Incremental Weekday Hourly Parking Demand by Land Use 14-95

14-62 With Action Off-Street Public Parking Capacity, Demand, and Utilization within ¼ Mile of Projected Development Sites 14-96
14-63 With Action On-Street Parking Capacity, Demand, and Utilization within ¼ Mile of Projected Development Sites 14-98
15-1 National Ambient Air Quality Standards (NAAQS) 15-6
15-2 Industrial Source Analysis: Relevant NYSDEC Air Guideline Concentrations 15-9
15-3 Maximum Background Pollutant Concentrations 15-13
15-4 Cluster Analysis Sites 15-14
15-5a Stack Parameters and Emission Rates from Franklin Plaza Apartments 15-18
15-5b Stack Parameters and Emission Rates from Taino Towers 15-18
15-5c Stack Parameters and Emission Rates from 1199 Housing Corp 15-19
15-6 Representative Monitored Ambient Air Quality Data 15-20
15-7 Heating and Hot Water System Analysis Summary 15-23
15-8 Heating and Hot Water System Analysis—Results for Projected Development Sites 15-24
15-9 Heating and Hot Water System Analysis—Results for Potential Development Sites 15-28
15-10 Maximum Screening Pollutant Concentrations ($\mu g/m^3$) 15-29
15-11 Maximum Pollutant Concentrations ($\mu g/m^3$) 15-29
15-12 Maximum Modeled Impacts on Projected and Potential Sites from Industrial Sources 15-30
15-13 Estimated Maximum Hazard Index 15-31
15-14a Maximum Modeled Pollutant Concentrations on Projected and Potential Development Sites ($\mu g/m^3$)—Franklin Plaza Apartments 15-31
15-14b Maximum Modeled Pollutant Concentrations on Projected and Potential Development Sites ($\mu g/m^3$)—Taino Towers 15-32
15-14c Maximum Modeled Pollutant Concentrations on Projected and Potential Development Sites ($\mu g/m^3$)—1199 Housing Corporation 15-32
15-14d Maximum Modeled Pollutant Concentrations on Projected Development Sites 65, 66, and 67 ($\mu g/m^3$)—Franklin Plaza Apartments and 1199 Housing Corporation 15-33
16-1 Global Warming Potential (GWP) for Major GHGs 16-4
16-2 Vehicle Miles Traveled Per Year—RWCDS 16-8
16-3 Annual Building Operational Emissions—RWCDS 16-9
16-4 Annual Mobile Source Emissions—RWCDS (Metric Tons CO_2e, 2027) 16-9
16-5 Summary of Annual GHG Emissions—RWCDS (Metric Tons CO_2e) 16-10
17-1 Common Noise Levels 17-2
17-2 Noise Exposure Guidelines for Use in City Environmental Impact Review 17-3
17-3 Required Attenuation Values to Achieve Acceptable Interior Noise Levels 17-4
17-4 HUD Exterior Noise Standards 17-4
17-5 Noise Receptor Locations 17-5
17-6 Existing Noise Levels (in dBA) 17-7
17-7 2027 No Action Condition Noise Levels (in dBA) 17-10
17-8 2027 With Action Condition Noise Levels (in dBA) 17-12

17-9 Required Attenuation at Noise Measurement Locations (in dBA) 17-14
20-1 Summary of Primary Agency Construction Oversight 20-5
20-2 Average Incremental Number of Daily Construction Workers and Trucks by Year and Quarter 20-10
20-3 2021(Second Quarter) Peak Incremental Construction Vehicle Trip Projections (in PCEs) 20-12
20-4 Comparison of 2021 Peak Incremental Construction Vehicle Trips with 2027 Operational Vehicle Trips (in PCEs) 20-12
20-5 2025 (First Quarter) Peak Incremental Construction Vehicle Trip Projections (in PCEs) 20-14
20-6 2025 Incremental Peak Hour Construction and Operational Traffic Volumes (in PCEs) 20-14
20-7 Comparison of 2025 Peak Incremental Construction Vehicle Trips with 2027 Operational Vehicle Trips (in PCEs) 20-15
20-8 2021 (Second Quarter) and 2025 (First Quarter) Construction Worker Parking Accumulation 20-18
20-9 Pollutants for Analysis and Averaging Periods 20-19
20-10 Maximum Predicted Pollutant Concentrations from Construction Site Sources—2019 Peak Analysis Period ($\mu g/m^3$) 20-24
20-11 Typical Construction Equipment Noise Emission Levels (dBA) 20-30
20-12 Sites 4a and 9 Noise Receptor Locations 20-31
20-13 Projected Development Site 16 Noise Receptor Locations 20-33
20-14 Projected Development Site 4a Construction Noise Analysis Results in dBA 20-36
20-15 Projected Development Site 4a Demolition, Excavation, and Foundation Noise Levels 20-37
20-16 Projected Development Site 4a Superstructure and Exteriors Noise Levels 20-38
20-17 Projected Development Site 4a Interior Fit-Out Noise Levels 20-38
20-18 Projected Development Site 9 Construction Noise Analysis Results in dBA 20-39
20-19 Projected Development Site 9 Demolition, Excavation, and Foundation Noise Levels 20-41
20-20 Projected Development Site 9 Superstructure and Exteriors Noise Levels 20-42
20-21 Projected Development Site 9 Interior Fit-Out Noise Levels 20-42
20-22 Projected Development Site 16 Construction Noise Analysis Results in dBA 20-43
20-23 Projected Development Site 16 Demolition, Excavation, and Foundation Noise Levels 20-45
20-24 Projected Development Site 16 Superstructure and Exteriors Noise Levels 20-45
20-25 Projected Development Site 16 Interior Fit-Out Noise Levels 20-46
20-26 Vibration Source Levels for Construction Equipment 20-48
21-1 Summary of Lane Groups/Intersections with Significant Adverse Traffic Impact 21-3
21-2 Lane Groups with Unmitigated Significant Adverse Traffic Impacts 21-4
21-3 Proposed Traffic Mitigation Measures 21-12
21-4 Action-With-Mitigation Conditions at Impacts Lane Groups Weekday AM Peak Hour 21-13

21-5 Action-With-Mitigation Conditions at Impacted Lane Groups Weekday Midday Peak Hour 21-13
21-6 Action-With-Mitigation Conditions at Impacted Lane Groups Weekday PM Peak Hour 21-14
21-7 Action-With-Mitigation Conditions At Impacted Lane Groups Saturday Peak Hour 21-14
21-8 Summary of Significant Subway Station Impacts 21-16
21-9 Action-With-Mitigation Local Bus Analysis 21-17
21-10 Summary of Significant Pedestrian Impacts 21-18
21-11 Action-With-Mitigation Sidewalk Conditions 21-18
22-1 No Action Alternative—Direct Effects 22-9
22-2 Comparison of Zoning Changes Under the Lower Density Alternatives 22-21
22-3 Comparison of RWCDS for Projected Development Sites—With Action vs. Lower Density Alternatives 22-22
22-4 Comparison of Total RWCDS for Projected Development Sites under With Action Conditions vs. Lower Density Alternative 22-23
22-5 Comparison of Incremental Peak Hour Person Trips by Mode Proposed Actions vs. Lower Density Alternative 22-28
22-6 Comparison of Incremental Peak Hour Vehicle Trips by Mode Proposed Actions vs. Lower Density Alternative 22-28
22-7 Comparison of Incremental Peak Hour Pedestrian Trips Proposed Actions vs. Lower Density Alternative 22-29
22-8 Sendero Verde Development Alternative—No Action and With Action Land Uses 22-39
22-9 Estimated Student Generation in the Future with the Sendero Verde Development Alternative 22-48
22-10 Estimated Public School Enrollment, Capacity, and Utilization: Future with the Sendero Verde Development Alternative 22-49
22-11 Estimated Public Child Care Facility Enrollment, Capacity, and Utilization 22-51
22-12 Sendero Verde Development Alternative Incremental Shadow Durations 22-56
22-13 With Action Condition Water Consumption—Sendero Verde Development (Project Development Site 70) 22-63
22-14 Sendero Verde Development Alternative—Existing Surface Coverage 22-64
22-15 Sendero Verde Development Alternative—With Action Surface Coverage 22-64
22-16 DEP Flow Volume Matrix: Sendero Verde Development Alternative Existing and With Action Volume Comparison 22-64
22-17 Comparison of Incremental Peak Hour Person Trips by Mode Proposed Actions vs. Sendero Verde Development Alternative 22-66
22-18 Comparison of Incremental Peak Hour Vehicle Trips by Mode Proposed Actions vs. Sendero Verde Development Alternative 22-67
22-19 Congested Lane Groups at Analyzed Intersections under the Sendero Verde Development Alternative—Weekday AM Peak Hour 22-68
22-20 Congested Lane Groups at Analyzed Intersections under the Sendero Verde Development Alternative—Weekday Midday Peak Hour 22-69

22-21 Congested Lane Groups at Analyzed Intersections under the Sendero Verde Development Alternative—Weekday PM Peak Hour....22-70
22-22 Congested Lane Groups at Analyzed Intersections under the Sendero Verde Development Alternative—Saturday Peak Hour....22-71
22-23 Comparison of the Numbers of Lane Groups/Intersections with Significant Adverse Impacts—Proposed Actions vs. Sendero Verde Development Alternative....22-72
22-24 Comparison of Incremental Peak Hour Subway Trips by Station Proposed Actions vs. Sendero Verde Development Alternative....22-73
22-25 Comparison of Stair Conditions at the 110th Street (6) Subway Station Proposed Actions vs. Sendero Verde Development Alternative....22-73
22-26 Comparison of Fare Array Conditions at the 110th Street (6) Subway Station Proposed Actions vs. Sendero Verde Development Alternative....22-74
22-27 Comparison of Subway Station Stair Impacts Proposed Actions vs. Sendero Verde Development Alternative....22-74
22-28 Comparison of Subway Line Haul Conditions Proposed Actions vs. Sendero Verde Development Alternative....22-76
22-29 Comparison of Incremental Peak Hour Bus Trips by Route Proposed Actions vs. Sendero Verde Development Alternative....22-77
22-30 Comparison of Peak Hour Conditions on M101 LTD Bus Service Proposed Actions vs. Sendero Verde Development Alternative....22-77
22-31 Comparison of Significant Adverse Bus Impacts Proposed Actions vs. Sendero Verge Development Alternative....22-77
22-32 Comparison of Incremental Peak Hour Pedestrian Trips Proposed Actions vs. Sendero Verde Development Alternative....22-79
22-33 With Action Sidewalk Conditions—Sendero Verde Development Alternative....22-79
22-34 With Action Crosswalk Conditions—Sendero Verde Development Alternative....22-80
22-35 With Action Corner Conditions—Sendero Verde Development Alternative....22-81
22-36 Sendero Verde Development Alternative Net Incremental Weekday Hourly Parking Demand by Land Use....22-83
22-37 Sendero Verde Development Alternative Off-Street Public Parking Capacity, Demand and Utilization within ¼ Mile of Projected Development Sites....22-86
22-38 Sendero Verde Development Alternative On-Street Parking Capacity, Demand and Utilization within ¼ Mile of Projected Development Sites....22-87
22-39 Annual Building Operational Emissions Site 70 under the Sendero Verde Development Alternative....22-90
22-40 Vehicle Miles Traveled Per Year Site 70 under the Sendero Verde Development Alternative....22-90
22-41 Annual Mobile Source Emissions Site 70 under the Sendero Verde Development Alternative (Metric Tons CO_2e, 2027)....22-90
22-42 Summary of Annual GHG Emissions, 2027 Site 70 Under the Sendero Verde Development Alternative (Metric Tons CO_2e)....22-91
22-43 Summary of Annual GHG Emissions, 2027 Sendero Verde Development Alternative Total (Metric Tons CO_2e)....22-91
22-44 Required Attenuation at Project Development Site 70 (in dBA)....22-94

22-45 Average Incremental Number of Daily Construction Workers and Trucks by Year and Quarter 22-96
22-46 Comparison of Peak Incremental Construction Vehicle Trips under the Sendero Verde Alternative and Proposed Actions 22-97
22-47 Comparison of 2021 Peak Incremental Construction Vehicle Trips with 2027 Operational Vehicle Trips Sendero Verde Alternative 22-98
22-48 Comparison of 2025 Incremental Vehicle Trips Sendero Verde Development Alternative vs. the Proposed Actions 22-99
22-49 Comparison of 2025 Incremental Vehicle Trips with 2027 Incremental Vehicle Trips Sendero Verde Alternative 22-101
22-50 2021 and 2025 Construction Worker Parking Accumulation Sendero Verde Development Alternative 22-103
22-51 Proposed Traffic Mitigation Measures 22-110
22-52 Action-With-Mitigation Conditions at Impacted Lane Groups—Sendero Verde Development Alternative Weekday AM Peak Hour 22-112
22-53 Action-With-Mitigation Conditions at Impacted Lane Groups—Sendero Verde Development Alternative Weekday Midday Peak Hour 22-113
22-54 Action-With-Mitigation Conditions at Impacted Lane Groups—Sendero Verde Development Alternative Weekday PM Peak Hour 22-114
22-55 Action-With-Mitigation Conditions At Impacted Lane Groups—Sendero Verde Development Alternative Saturday Peak Hour 22-115
26-1 Conceptual Analysis Trip Generation Summary 26-12

List of Figures

Following page:

S-1a	Project Location—Aerial View	S-1
S-1b	Ecological Communities at the Project Site	S-1
S-2	Existing Zoning	S-9
S-3	Proposed Zoning	S-17
S-3a	Proposed Zoning Changes: North of East 125th Street	S-17
S-3b	Proposed Zoning Changes: Between East 116th Street and East 125th Street	S-17
S-3c	Proposed Zoning Changes: South of 116th Street	S-17
S-3d	Special Districts	S-17
S-3e	Mandatory Inclusionary Housing Area	S-17
S-4	Projected and Potential Development Sites	S-30
1-1a	Project Location—Aerial View	1-1
1-1b	Ecological Communities at the Project Site	1-1
1-2	Existing Zoning	1-10
1-3	Proposed Zoning	1-18
1-3a	Proposed Zoning Changes: North of East 125th Street	1-18
1-3b	Proposed Zoning Changes: Between East 116th Street and East 125th Street	1-18
1-3c	Proposed Zoning Changes: South of 116th Street	1-18
1-3d	Special Districts	1-18
1-3e	Mandatory Inclusionary Housing Area	1-25
1-4	Projected and Potential Development Sites	1-31
2-1	Land Use Study Areas	2-3
2-2	North of 125th Street Subarea	2-5
2-2a	North of 125th Street Subarea	2-5
2-2b	North of 125th Street Subarea	2-5
2-3	Between East 125th Street and East 116th Street Subarea	2-7
2-3a	Between East 125th Street and East 116th Street Subarea	2-7
2-3b	Between East 125th Street and East 116th Street Subarea	2-7
2-4	South of 116th Street Subarea	2-9
2-4a	South of 116th Street Subarea	2-9
2-4b	South of 116th Street Subarea	2-9
2-5	Existing Zoning	2-12
2-6	Milbank-Frawley Circle-East Urban Renewal Area	2-18
2-7	Harlem-East Harlem Urban Renewal Area	2-18
2-8	125th Street Business Improvement District	2-19

2-9 Upper Manhattan Empowerment Zone 2-23
2-10 Coastal Zone....2-23
2-11 No Build Projects....2-23
2-12 Proposed Zoning....2-29
2-13 Proposed Mandatory Inclusionary Housing Area....2-40
3-1 Socioeconomic Study Area and Subareas 3-8
3-2 Average Household Income 3-18
3-3 Median Household Income....3-18
3-4 NYCHA Housing Locations....3-19
4-1 Public Schools Serving the Study Area....4-4
4-2 Public Libraries Serving the Study Area 4-13
4-3 Publicly Funded Child Care Centers 4-18
4-4 Health Care Facilities 4-21
4-5 Police Precincts....4-26
4-6 Fire Engine Companies 4-27
5-1 Open Space Study Area....5-3
5-2 Open Space Study Area Resources....5-9
5-2a Open Space Resources: North of 125th Street Subarea....5-9
5-2b Open Space Resources: Between East 125th Street and East 116th Street Subarea....5-9
5-2c Open Space Resources: South of 116th Street Subarea....5-9
6-1 Tier 2 Assessment....6-63
6-2 Tier 2 Assessment....6-63
6-3 Tier 3 Assessment....6-63
6-4 Tier 3 Assessment....6-63
6-5 Alice Kornegay Triangle—Detailed Analysis - March 21 6-63
6-6 Alice Kornegay Triangle—Detailed Analysis - May 6 6-63
6-7 Alice Kornegay Triangle—Detailed Analysis - June 21 6-63
6-8 Carver Community Garden—Detailed Analysis - March 21 6-63
6-9 Carver Community Garden—Detailed Analysis - May 6 6-63
6-10 Carver Community Garden—Detailed Analysis - June 21 6-63
6-11 Clinton Houses Recreation Areas—Detailed Analysis - December 21....6-63
6-12 Corozal Family Garden—Detailed Analysis - March 21 6-63
6-13 Corozal Family Garden—Detailed Analysis - May 6 6-63
6-14 Corozal Family Garden—Detailed Analysis - June 21 6-63
6-15 Corozal Family Garden—Detailed Analysis - December 21 6-63
6-16 Diamante Garden—Detailed Analysis - June 21....6-63
6-17 Diamante Garden—Detailed Analysis - December 21....6-63
6-18 Dr. Ronald E. McNair Playground—Detailed Analysis - March 21 6-63
6-19 Dr. Ronald E. McNair Playground—Detailed Analysis - May 6 6-63
6-20 Dr. Ronald E. McNair Playground—Detailed Analysis - June 21 6-63
6-21 Dr. Ronald E. McNair Playground—Detailed Analysis - December 21 6-63
6-22 Dream Street Park—Detailed Analysis - May 6....6-63

6-23 Dream Street Park—Detailed Analysis - June 21 6-63
6-24 Dream Street Park—Detailed Analysis - December 21 6-63
6-25 East 120th Street & Second Avenue Greenstreet—Detailed Analysis - March 21 6-63
6-26 East 120th Street & Second Avenue Greenstreet—Detailed Analysis - May 6 6-63
6-27 East 120th Street & Second Avenue Greenstreet—Detailed Analysis - June 21 6-63
6-28 East 124th Street & Second Avenue Greenstreet—Detailed Analysis - May 6 6-63
6-29 East 124th Street & Second Avenue Greenstreet—Detailed Analysis - June 21 6-63
6-30 El Catano Garden—Detailed Analysis - March 21 6-63
6-31 El Catano Garden—Detailed Analysis - May 6 6-63
6-32 El Catano Garden—Detailed Analysis - June 21 6-63
6-33 El Catano Garden—Detailed Analysis - December 21 6-63
6-34 El Gallo Community Garden—Detailed Analysis - May 6 6-63
6-35 El Sitio Feliz—Detailed Analysis - March 21 6-63
6-36 El Sitio Feliz—Detailed Analysis - May 6 6-63
6-37 El Sitio Feliz—Detailed Analysis - June 21 6-63
6-38 Eugene McCabe Field—Detailed Analysis - March 21 6-63
6-39 Eugene McCabe Field—Detailed Analysis - May 6 6-63
6-40 Eugene McCabe Field—Detailed Analysis - June 21 6-63
6-41 Eugene McCabe Field—Detailed Analysis - December 21 6-63
6-42 Family Community Garden—Detailed Analysis - March 21 6-63
6-43 Family Community Garden—Detailed Analysis - May 6 6-63
6-44 Harlem Art Park—Detailed Analysis - March 21 6-63
6-45 Harlem Art Park—Detailed Analysis - June 21 6-63
6-46 Harlem Art Park—Detailed Analysis - December 21 6-63
6-47 Harlem River Drive Park—Detailed Analysis - June 21 6-63
6-48 Harlem River Drive Park—Detailed Analysis - June 21 6-63
6-49 Herb Garden—Detailed Analysis - March 21 6-63
6-50 Herb Garden—Detailed Analysis - May 6 6-63
6-51 Herb Garden—Detailed Analysis - June 21 6-63
6-52 Herb Garden—Detailed Analysis - December 21 6-63
6-53 Jackie Robinson Garden—Detailed Analysis - March 21 6-63
6-54 Jackie Robinson Garden—Detailed Analysis - May 6 6-63
6-55 Jackie Robinson Garden—Detailed Analysis - June 21 6-63
6-56 Jackie Robinson Garden—Detailed Analysis - December 21 6-63
6-57 Jackie Robinson Houses Recreation Area—Detailed Analysis - March 21 6-63
6-58 Jackie Robinson Houses Recreation Area—Detailed Analysis - May 6 6-63
6-59 Jackie Robinson Houses Recreation Area—Detailed Analysis - June 21 6-63
6-60 James Weldon Johnson Playground—Detailed Analysis - March 21 6-63
6-61 James Weldon Johnson Playground—Detailed Analysis - May 6 6-63
6-62 James Weldon Johnson Playground—Detailed Analysis - June 21 6-63
6-63 James Weldon Johnson Playground—Detailed Analysis - December 21 6-63

6-64 Jefferson Houses Recreation Areas—Detailed Analysis - March 21 6-63
6-65 Jefferson Houses Recreation Areas—Detailed Analysis - May 6 6-63
6-66 Jefferson Houses Recreation Areas—Detailed Analysis - June 21 6-63
6-67 Jefferson Houses Recreation Areas—Detailed Analysis - December 21 6-63
6-68 Johnson Houses Recreation Areas—Detailed Analysis - March 21 6-63
6-69 Johnson Houses Recreation Areas—Detailed Analysis - May 6 6-63
6-70 Johnson Houses Recreation Areas—Detailed Analysis - December 21 6-63
6-71 La Casita Community Garden—Detailed Analysis - March 21 6-63
6-72 La Casita Community Garden—Detailed Analysis - May 6 6-63
6-73 La Casita Community Garden—Detailed Analysis - June 21 6-63
6-74 La Cuevita Community Garden—Detailed Analysis - March 21 6-63
6-75 La Cuevita Community Garden—Detailed Analysis - May 6 6-63
6-76 La Cuevita Community Garden—Detailed Analysis - March 21 6-63
6-77 Life Spire Garden—Detailed Analysis - March 21 6-63
6-78 Life Spire Garden—Detailed Analysis - June 21 6-63
6-79 Life Spire Garden—Detailed Analysis - December 21 6-63
6-80 Lydia's Magic Garden—Detailed Analysis - March 21 6-63
6-81 Lydia's Magic Garden—Detailed Analysis - May 6 6-63
6-82 Lydia's Magic Garden—Detailed Analysis - June 21 6-63
6-83 Marcus Garvey Park—Detailed Analysis - March 21 6-63
6-84 Marcus Garvey Park—Detailed Analysis - May 6 6-63
6-85 Marcus Garvey Park—Detailed Analysis - June 21 6-63
6-86 Marcus Garvey Park—Detailed Analysis - December 21 6-63
6-87 Neighbors of Vega Baja—Detailed Analysis - June 21 6-63
6-88 P.S. 155 Playground—Detailed Analysis - June 21 6-63
6-89 Papo's Garden—Detailed Analysis - March 21 6-63
6-90 Papo's Garden—Detailed Analysis - May 6 6-63
6-91 Papo's Garden—Detailed Analysis - June 21 6-63
6-92 Peaceful Valley Community Garden—Detailed Analysis - March 21 6-63
6-93 Peaceful Valley Community Garden—Detailed Analysis - May 6 6-63
6-94 Peaceful Valley Community Garden—Detailed Analysis - June 21 6-63
6-95 Poor Richards Playground—Detailed Analysis - March 21 6-63
6-96 Poor Richards Playground—Detailed Analysis - May 6 6-63
6-97 Poor Richards Playground—Detailed Analysis - June 21 6-63
6-98 Poor Richards Playground—Detailed Analysis - December 21 6-63
6-99 Taft Houses Recreation Areas—Detailed Analysis - June 21 6-63
6-100 Triboro Plaza—Detailed Analysis - May 6 6-63
6-101 Triboro Plaza—Detailed Analysis - June 21 6-63
6-102 UPACA Recreation Areas—Detailed Analysis - March 21 6-63
6-103 UPACA Recreation Areas—Detailed Analysis - May 6 6-63
6-104 UPACA Recreation Areas—Detailed Analysis - June 21 6-63
6-105 Wagner Houses Pool—Detailed Analysis - May 6 6-63

6-106 Wagner Houses Pool—Detailed Analysis - June 21 6-63
6-107 Wagner Houses Recreation Areas—Detailed Analysis - May 6 6-63
6-108 Wagner Houses Recreation Areas—Detailed Analysis - June 21 6-63
6-109 Wagner Playground—Detailed Analysis - March 21 6-63
6-110 Wagner Playground—Detailed Analysis - May 6 6-63
6-111 Wagner Playground—Detailed Analysis - June 21 6-63
6-112 White Playground—Detailed Analysis - March 21 6-63
6-113 White Playground—Detailed Analysis - May 6 6-63
6-114 White Playground—Detailed Analysis - June 21 6-63
6-115 White Playground—Detailed Analysis - December 21 6-63
6-116 First Sharon Baptist Church, View North: December 21 6-58
6-117 NYPL - Aguilar Branch, View Southwest: Late Spring and Summer 6-60
6-118 P.S. 72, View North: May 6/August 6 6-60
6-119 St. Paul's Roman Catholic Church, View North: December 21 6-62
7-1 Known Architectural Resources Location Map 7-33
7-2 Known Resources—Photographs 7-33
7-3 Known Resources—Photographs 7-33
7-4 Known Resources—Photographs 7-33
7-5 Known Resources—Photographs 7-33
7-6 Known Resources—Photographs 7-33
7-7 Known Resources—Photographs 7-33
7-8 Known Resources—Photographs 7-33
7-9 Known Resources—Photographs 7-33
7-10 Known Resources—Photographs 7-33
7-11 Known Resources—Photographs 7-33
7-12 Known Resources—Photographs 7-33
7-13 Known Resources—Photographs 7-33
7-14 Known Resources—Photographs 7-33
7-15 Known Resources—Photographs 7-33
7-16 Known Resources—Photographs 7-33
7-17 Known Resources—Photographs 7-33
7-18 Known Resources—Photographs 7-33
7-19 Known Resources—Photographs 7-33
7-20 Known Resources—Photographs 7-33
7-21 Known Resources—Photographs 7-33
7-22 Known Resources—Photographs 7-33
7-23 Known Resources—Photographs 7-33
7-24 Known Resources—Photographs 7-33
7-25 Known Resources—Photographs 7-33
7-26 Known Resources—Photographs 7-33
7-27 Known Resources—Photographs 7-33
7-28 Known Resources—Photographs 7-33

7-29 Known Resources—Photographs 7-33
7-30 Known Resources—Photographs 7-33
7-31 Known Resources—Photographs 7-33
7-32 Phase 2B Rendering 7-33
7-33 Known Resources—Photographs 7-33
7-34 Known Resources—Photographs 7-33
7-35 Known Resources—Photographs 7-33
7-36 Known Resources—Photographs 7-33
7-37 Known Resources—Photographs 7-33
7-38 Known Resources—Photographs 7-33
7-39 Known Resources—Photographs 7-33
7-40 Known Resources—Photographs 7-33
7-41 Potential Architectural Resources Location Map 7-33
7-42 Potential Resources—Photographs 7-33
7-43 Potential Resources—Photographs 7-33
7-44 Potential Resources—Photographs 7-33
7-45 Potential Resources—Photographs 7-33
7-46 Potential Resources—Photographs 7-33
7-47 Potential Resources—Photographs 7-33
7-48 Potential Resources—Photographs 7-33
7-49 Potential Resources—Photographs 7-33
7-50 Potential Resources—Photographs 7-33
7-51 Resources Adjacent to Development Sites North of 125th Street 7-33
8-1a Urban Design and Visual Resources Reference Map 8-1
8-1b Urban Design and Visual Resources Reference Map 8-1
8-1c Urban Design and Visual Resources Reference Map 8-1
8-2 Urban Design and Visual Resources Aerial Map 8-1
8-3 Projected and Potential Development Sites 8-5
8-4.1a Primary Study Area Built FAR—North of 125th Street Subarea 8-5
8-4.1b Secondary Study Area Built FAR—North of 125th Street Subarea 8-5
8-4.2a Primary Study Area Built FAR—Between 125th Street and East 116th Street Subarea 8-5
8-4.2b Secondary Study Area Built FAR—Between 125th Street and East 116th Street Subarea 8-5
8-4.3a Primary Study Area Built FAR—South of 116th Street Subarea 8-5
8-4.3b Secondary Study Area Built FAR—South of 116th Street Subarea 8-5
8-5.1a Primary Study Area Building Heights—North of 125th Street Subarea 8-5
8-5.1b Secondary Study Area Building Heights—North of 125th Street Subarea 8-5
8-5.2a Primary Study Area Building Heights—Between 125th Street and East 116th Street Subarea 8-5
8-5.2b Secondary Study Area Building Heights—Between 125th Street and East 116th Street Subarea 8-5

8-5.3a Primary Study Area Building Heights—South of 116th Street Subarea 8-5
8-5.3b Secondary Study Area Building Heights—South of 116th Street Subarea..... 8-5
8-6 Existing Conditions—Primary Study Area..... 8-5
8-7 Existing Conditions—Project Area..... 8-6
8-8 Existing Conditions—Primary Study Area..... 8-7
8-9 Existing Conditions—Primary Study Area..... 8-8
8-10 Existing Conditions—Primary Study Area..... 8-9
8-11 Existing Conditions—Primary Study Area..... 8-10
8-12 Existing Conditions—Primary Study Area..... 8-10
8-13 Existing Conditions—Primary Study Area..... 8-11
8-14 Existing Conditions—Primary Study Area..... 8-12
8-15 Existing Conditions—Primary Study Area..... 8-12
8-16 Existing Conditions—Primary Study Area..... 8-12
8-17 Existing Conditions—Primary Study Area..... 8-13
8-18 Existing Conditions—Primary Study Area..... 8-13
8-19 Existing Conditions—Secondary Study Area..... 8-14
8-20 Existing Conditions—Secondary Study Area..... 8-14
8-21 Existing Conditions—Secondary Study Area..... 8-15
8-22 Existing Conditions—Secondary Study Area..... 8-16
8-23 Existing Conditions—Secondary Study Area..... 8-17
8-24 Key to Massing Diagrams..... 8-18
8-25 Comparison Massing—Second Avenue at East 106th Street Facing South 8-18
8-26 Comparison Massing—East 106th Street at Second Avenue Facing South 8-18
8-27 Comparison Massing—Third Avenue at East 106th Street Facing North 8-18
8-28 Comparison Massing—East 106th Street at Park Avenue Facing East 8-18
8-29 Comparison Massing—Third Avenue at East 112th Street Facing North Current Condition..... 8-18
8-30 Comparison Massing—East 116th Street at Park Avenue Facing East 8-18
8-31 Comparison Massing—Second Avenue at East 121st Street Facing South..... 8-18
8-32 Comparison Massing—Third Avenue at East 125th Street Facing South 8-18
8-33 Comparison Massing—Park Avenue at East 132nd Street Facing South..... 8-20
8-34 Illustrative Rendering of Park Avenue at East 125th Street Facing North 8-20
8-35 Illustrative Rendering of Park Avenue at Metro-North Platform 8-20
8-36 Illustrative Rendering of Park Avenue at East 121st Street Facing South..... 8-20
8-37 Illustrative Rendering of Park Avenue at East 119th Street Facing North 8-20
8-38 Illustrative Rendering of Lexington Avenue at East 107th Street Facing North 8-20
8-39 Illustrative Rendering of East 116th at Third Avenue Facing West 8-20
8-40 Illustrative Rendering of East 116th at Lexington Avenue Facing West..... 8-20
8-41 Illustrative Rendering of Third Avenue at East 109th Street Facing North..... 8-20
9-1 FEMA Preliminary Flood Hazard Areas..... 9-5
11-1 Wards Island WWTP Subcatchment Areas 11-5
14-1 Traffic Study Area and Analyzed Intersections..... 14-18

14-2 Project Area Subway and Commuter Rail Stations 14-19
14-3 Project Area Bus Routes 14-20
14-4 Pedestrian Analysis Locations 14-21
14-5 Project Area Bicycle Routes 14-35
14-6 Existing AM Peak Hour Traffic Volumes 14-35
14-7 Existing Midday Peak Hour Traffic Volumes 14-35
14-8 Existing PM Peak Hour Traffic Volumes 14-35
14-9 Existing Saturday Peak Hour Traffic Volumes 14-35
14-10 No Action AM Peak Hour Traffic Volumes 14-36
14-11 No Action Midday Peak Hour Traffic Volumes 14-36
14-12 No Action PM Peak Hour Traffic Volumes 14-36
14-13 No Action Saturday Peak Hour Traffic Volumes 14-36
14-14 AM Peak Hour Project Increment Traffic Volumes 14-42
14-15 Midday Peak Hour Project Increment Traffic Volumes 14-42
14-16 PM Peak Hour Project Increment Traffic Volumes 14-42
14-17 Saturday Peak Hour Project Increment Traffic Volumes 14-42
14-18 With Action AM Peak Hour Traffic Volumes 14-42
14-18 With Action Midday Peak Hour Traffic Volumes 14-42
14-20 With Action PM Peak Hour Traffic Volumes 14-42
14-21 With Action Saturday Peak Hour Traffic Volumes 14-42
14-22 103rd Street (6) Subway Station 14-47
14-23 110th Street (6) Subway Station 14-47
14-24 116th Street (6) Subway Station 14-47
14-25 125th Street (4,5,6) Subway Station 14-48
14-26 Existing Study Area Off-Street Public Parking Facilities 14-87
15-1 HVAC Cluster Locations 15-14
17-1 Noise Monitoring Receptor Locations 17-4
19-1 Neighborhood Character Study Area 19-3
20-1 Assumed Construction Schedule for Assessment of Construction Impact 20-6
20-2 CadnA Receptor Locations for Projected Development Sites 4a and 9 20-32
20-3 CadnA Receptor Locations for Projected Development Site 16 20-32
20-4 Construction Noise Impact Locations 20-47
22-1 Reasonable Worst Case Development Scenario: Lower Density Alternative 22-21
22-2 Reasonable Worst Case Development Scenario: Sendero Verde Alternative 22-37
22-3 Tax Map—Sendero Verde Alternative 22-38
22-4 Sendero Verde Alternative—Site Plan 22-39
22-4a Sendero Verde Alternative—Building A, West Elevation 22-39
22-4b Sendero Verde Alternative—Building B, North Elevation 22-39
22-4c Sendero Verde Alternative—Building C, South Elevation 22-39
22-5 Sendero Verde Alternative—Proposed Zoning Changes 22-44
22-6 Sendero Verde Alternative—Detailed Analysis - May 6 22-55
22-7 Sendero Verde Alternative—Detailed Analysis - June 21 22-55

22-8 Sendero Verde Alternative—Detailed Analysis - May 6 22-55
22-9 Sendero Verde Alternative—Detailed Analysis - May 6 22-55
22-10 Sendero Verde Alternative—Detailed Analysis - December 21 22-55
22-11 Sendero Verde Alternative—Detailed Analysis - March 21 22-55
22-12 Sendero Verde Alternative—Detailed Analysis - June 21 22-55
22-13 Sendero Verde Alternative—Detailed Analysis - May 6 22-55
22-14 Sendero Verde Alternative—Detailed Analysis - December 21 22-55
22-15 Sendero Verde Alternative—View from East 112th Street Facing Southwest 22-59
22-16 AM Peak Hour Project Increment Traffic Volumes—Sendero Verde Alternative. 22-67
22-17 MD Peak Hour Project Increment Traffic Volumes—Sendero Verde Alternative. 22-67
22-18 PM Peak Hour Project Increment Traffic Volumes—Sendero Verde Alternative . 22-67
22-19 Saturday Peak Hour Project Increment Traffic Volumes —Sendero Verde Alternative 22-67
22-20 With Action AM Peak Hour Project Increment Traffic Volumes —Sendero Verde Alternative 22-67
22-21 With Action MD Peak Hour Project Increment Traffic Volumes —Sendero Verde Alternative 22-67
22-22 With Action PM Peak Hour Project Increment Traffic Volumes —Sendero Verde Alternative 22-67
22-23 With Action Saturday Peak Hour Project Increment Traffic Volumes —Sendero Verde Alternative 22-67
22-24 Project Area Subway Stations 22-72
22-25 Project Area Bus Routes 22-75
22-26 Pedestrian Analysis Locations 22-78
22-27 Sendero Verde Development Alternative—Conceptual Construction Schedule 22-96
22-28 Sendero Verde Development Alternative—Construction Noise Impacts 22-104
26-1 December 21st Analysis Day—8:15 AM 26-3
26-2 Comparison Massing—126th Street at Park Avenue Facing North 26-9
26-3 Comparison Massing—127th Street at Park Avenue Facing South 26-9

✷