WEST HARLEM REZONING

Final Environmental Impact Statement (EIS)

CEQR No. 12DCP070M

ULURP Nos.: 120309 ZMM, N120310 ZRM

Lead Agency:
City Planning Commission, City of New York
Amanda M. Burden, FAICP, Chair

August 24, 2012

West Harlem Rezoning

Final Environmental Impact Statement

August 24, 2012

CEQR No.: 12DCP070M
ULURP Nos.: 120309 ZMM, N120310 ZRM
Project Location: New York, New York

LEAD AGENCY:
City Planning Commission, City of New York
Amanda M. Burden, FAICP, Chair

LEAD AGENCY CONTACT:
Robert Dobruskin, Director
Environmental Assessment and Review Division
New York City Department of City Planning
22 Reade Street, Room 4E
New York, New York, 10007
(212) 720-3423

Prepared by: Philip Habib & Associates
With: PB Americas, Inc.
Fleming-Lee Shue, Inc.

PREPARED FOR:
The New York City Department of City Planning
Glen A. Price III, Director
Studies Implementation

Edith Hsu-Chen, Director
Manhattan Office

TABLE OF CONTENTS

Foreword……..……..Foreword-1

Executive Summary……...…ES-1

Chapter 1: Project Description……1-1
A. Introduction……....1-1
B. Background and Existing Conditions……..……..1-2
Designated Historic Districts……1-3
C. Purpose and Need for the Proposed Action……...1-4
D. Description of the Proposed Action……...1-7
Proposed Zoning Map Changes……1-7
Propose Zoning Text Amendments……..1-10
E-Designations……1-11
E. Reasonable Worst Case Development Scenarios (RWCDS)……...1-12
Development Site Criteria……1-12
Definition of Projected and Potential Development……1-15
The Future Without the Proposed Actions (No-Action)……...……...1-15
The Future With the Proposed Action (With-Action)……..……...……1-16
F. Approvals Required……1-17
Uniform Land Use Review Procedure (ULURP)……1-18
Environmental Review (CEQR)……..1-18

Chapter 2: Land Use, Zoning, and Public Policy……2-1
A. Introduction……2-1
B. Principal Conclusions……2-2
C. Methodology……..2-2
Study Area Definition……2-3
D. Preliminary Assessment……2-3
Land Use and Zoning……2-3
Public Policy……..2-3
E. Detailed Assessment……2-13
Existing Conditions……..2-13
The Future Without the Proposed Action (No-Action)……...2-28
The Future With the Proposed Action (With-Action)……2-32

Chapter 3: Socioeconomic Conditions……3-1
A. Introduction……3-1
B. Principal Conclusions……3-1
Direct Residential Displacement……....3-1
Direct Business and Institutional Displacement……3-2
Indirect Residential Displacement……3-2
Indirect Business and Industrial Displacement……..3-2
Adverse Effects on Specific Industries……..3-3

C. Methodology……..3-3
Analysis Format…….3-4
Study Area Definition……3-4
Data Sources……..3-5
D. Preliminary Assessment…….3-6
Direct Residential Displacement……3-6
Direct Business and Institutional Displacement……3-6
Indirect Residential Displacement……...3-12
Indirect Business Displacement……...3-16
Adverse Effect on a Specific Industry…….3-19

Chapter 4: Community Facilities—Schools…….4-1
A. Introduction……4-1
B. Principal Conclusions……4-1
C. Methodology……..4-2
D. Indirect Effects on Public Schools…….4-3
Existing Conditions……4-3
The Future Without the Proposed Action (No-Action)…….4-5
The Future With the Proposed Action (With-Action)……..4-7

Chapter 5: Open Space……..5-1
A. Introduction……5-1
B. Principal Conclusions……5-2
C. Open Space Study Area and Methodology……5-3
Open Space Study Area…….5-4
Analysis Framework……..5-4
D. Preliminary Assessment…….5-6
E. Detailed Analysis……...5-6
Existing Conditions……5-6
The Future Without the Proposed Action (No-Action)…….……..5-21
The Future With the Proposed Action (With-Action)…….……5-24

Chapter 6: Shadows……...6-1
A. Introduction……6-1
B. Principal Conclusions……6-1
C. Methodology……..6-2
D. Preliminary Screening Assessment……6-2
E. Resources of Concern……6-3
Open Space Resources……...6-3
Historic Resources……6-6
F. Detailed Shadows Analysis……...……...6-10
The Future Without the Proposed Action (No-Action)…….……..6-10
The Future With the Proposed Action (With-Action)…….……6-11

Chapter 7: Historic and Cultural Resources……...7-1

A. Introduction……7-1
B. Principal Conclusions……7-1
C. Development Background……..7-3
D. Archaeological Resources……..7-4
E. Architectural Resources……7-4
Existing Conditions……7-4
The Future Without the Proposed Action (No-Action)……...7-14
The Future With the Proposed Action (With-Action)…….7-17

Chapter 8: Urban Design/Visual Resources……8-1
A. Introduction……8-1
B. Principal Conclusions……8-2
C. Methodology……..8-2
Determining Whether an Urban Design Analysis is Necessary……8-2
Study Area……..8-3
D. Preliminary Assessment…….8-5
E. Detailed Analysis……...8-5
Existing Conditions……8-5
F. The Future Without the Proposed Action (No-Action)…...……8-19
G. The Future With the Proposed Action (With-Action)…….8-20

Chapter 9: Hazardous Materials…….……9-1
A. Introduction……9-1
B. Principal Conclusions……9-1
C. Methodology……..9-2
Regulatory Databases…….9-2
Historic Sanborn Fire Insurance Maps……...9-3
City Directories……..9-3
Limitations…….9-4
D. Existing Conditions...…….9-4
E. The Future Without the Proposed Action (No-Action)…….9-4
F. The Future With the Proposed Action (With-Action)……...9-5

Chapter 10: Water and Sewer Infrastructure……10-1
A. Introduction……..10-1
B. Principal Conclusions……..10-1
Water Supply……10-1
Sanitary Sewage……...10-1
Stormwater Drainage and Management……...10-1
C. Existing Conditions……..10-2
Water Supply……10-2
Wastewater Treatment…….10-3
Stormwater and Drainage Management……..10-5
Water Conservation and WPCP Load Reduction……10-7
D. The Future Without the Proposed Action (No-Action)……...10-7

Water Supply……10-8
Wastewater Treatment……10-8
Stormwater Drainage and Management……...10-9
E. The Future With the Proposed Action (With-Action)……10-9
Water Supply……10-9
Wastewater Treatment……...10-10
Stormwater Drainage and Management……10-10
Stormwater Best Management Practices……10-13

Chapter 11: Transportation……..11-1
A. Introduction……..11-1
B. Principal Conclusions……..11-2
Traffic……...11-2
Transit……..11-3
Pedestrians……...11-3
Vehicular and Pedestrian Safety Evaluation……11-4
Parking……11-4
C. Preliminary Analysis Methodology……11-4
D. Level 1 Screening Assessment……11-5
Background……..11-5
Transportation Planning Factors……..11-5
Travel Demand Forecast……..11-8
E. Level 2 Screening Assessment……...11-11
Traffic……11-13
Transit……11-14
Pedestrians……11-16
Parking……...11-17
F. Transportation Analyses Methodologies……...11-18
Traffic……11-18
Transit……11-19
Pedestrians……11-21
Pedestrian and Vehicular Safety Evaluation……..11-24
Parking……...11-25
G. Traffic……11-25
Existing Conditions……11-25
The Future Without the Proposed Action (No-Action)……11-28
The Future With the Proposed Action (With-Action)..……11-35
H. Transit……11-40
Existing Condition……11-40
The Future Without the Proposed Action (No-Action)……11-44
The Future With the Proposed Action (With-Action)……..…..11-47
I. Pedestrians……11-47
Existing Conditions……11-47
The Future Without the Proposed Action (No-Action)……11-48
The Future With the Proposed Action (With-Action)…….……..11-48

J. Vehicular and Pedestrian Safety Evaluation……..11-58
K. Parking……...11-60
Existing Condition…….11-60
The Future Without the Proposed Action (No-Action)…….……11-63
The Future With the Proposed Action (With-Action)……...11-63

Chapter 12: Air Quality…….12-1
A. Introduction……..12-1
B. Principal Conclusions……..12-1
C. Pollutants of Concern……...12-2
Criteria Pollutants……12-2
Criteria Pollutants for Analysis……....12-3
Air Toxic Pollutants…….12-3
D. Mobile Source Analysis……...12-3
Impacts Near Congested Intersections…….12-3
Garage Analysis……...12-5
E. Analysis of Heating System Emissions……...12-6
Emission Sources Considered……..12-6
Initial Site Groupings……...12-7
Methodology Used for Each Development Site……..12-7
Screening Analysis of Development Sites……...12-7
Detailed Analysis of Projected and Potential Developments…….12-14
Cluster Analysis…….12-25
Impacts From Nearby Existing Combustion Emission Sources…….……...12-26
F. Health Risk Assessment of Toxic Air Emissions from Existing Industrial Sources……...12-26
Data Sources……..12-26
Health Risk Assessment Methodology……..12-27
Dispersion Analyses……...12-29
Emission Data and Stack Parameters…….12-29
Industrial Facilities and Air Toxic Emissions Evaluated……...12-29
Results of the Cancer Risk and Hazard Index Evaluation…….12-31
Summary of Health Risk Results……...12-34
Air Quality (E) Designations…….12-35
Air Quality E-Designations for Development Sites—HVAC Restrictions……...12-35

Chapter 13: Greenhouse Gas Emissions……...13-1
A. Introduction……..13-1
B. Principal Conclusions……..13-1
C. Pollutants of Concern……...13-2
Carbon Dioxide (CO_2)…….13-2
Methane (CH_4)…….……13-2
Nitrous Oxide (N_20)…….……13-2
Fluorinated Gases…….13-2
D. Methodology……13-3

E. GHG Emissions……13-4
Operational Emissions……13-4
Mobile Source Emissions……13-4
Construction Phase Emissions……13-5
Emissions from Solid Waste Management……..13-5
F. Projects GHG Emissions From the Proposed Action……..13-5
G. Consistency With the GHG Reduction Goal……...13-6

Chapter 14: Noise……...14-1
A. Introduction……..14-1
B. Principal Conclusions……..14-1
C. Acoustical Fundamentals……14-1
A-Weighted Sound Level (dBA)……14-2
Community Response to Changes in Noise Levels……14-2
Effects of Distance on Sound……...14-3
Sound Level Descriptors……..14-4
D. Noise Standards and Criteria……14-4
New York CEQR Noise Standards……..14-4
Impact Definition……14-4
E. Noise Prediction Methodology……14-6
F. Existing Noise Levels……..14-6
Selection of Noise Receptor Locations……14-6
Noise Monitoring……14-7
Noise Monitoring Equipment..……14-7
Existing Noise Levels at Receptor Locations……..14-7
G. The Future Without the Proposed Action (No-Action)…….……14-10
H. The Future With the Proposed Action (With-Action)…….……..14-11
Noise Attenuation Measures……..14-12
I. Mechanical Equipment……..14-14

Chapter 15: Public Health……15-1

Chapter 16: Neighborhood Character……16-1
A. Introduction……..16-1
B. Principal Conclusions……..16-1
C. Methodology……16-2
Study Area……16-2
D. Preliminary Assessment……...16-2
Existing Neighborhood Character and Defining Features……...16-2
Assessment of Proposed Action's Potential Effects on Neighborhood Character...16-6

Chapter 17: Construction……..17-1
A. Introduction……..17-1
B. Principal Conclusions……..17-2
C. Regulatory Framework……17-3

Governmental Coordination and Oversight……17-3
Hours of Work……17-3
D. Conceptual Construction Schedule and Activities……...17-4
Construction Sequencing……17-4
Typical Construction Activities……...17-5
Estimate of Construction workers……17-6
Estimate of Construction Period Trucks……..17-6
Determining Peak Year for Cumulative Construction and Operational Effects…..17-7
E. Preliminary Assessment……...17-7
Transportation……..17-7
Air Quality……17-15
Noise……..17-20
Other Technical Areas……...17-22

Chapter 18: Mitigation……..18-1
A. Introduction……..18-1
B. Principal Conclusions……..18-1
Historic and Cultural Resources……..18-1
Shadows……...18-1
Transportation……..18-1
Construction……18-2
C. Historic and Cultural Resources……..18-3
D. Shadows……...18-4
E. Transportation……..18-4
Traffic……...18-4
Implementation of Mitigation Measures……..18-9
Effects of Traffic Mitigation on Pedestrian Conditions……...18-9
Effects of Traffic Mitigation on Parking Conditions……...18-9
F. Construction……...18-10
Historic and Cultural Resources……18-10
Traffic…….18-10

Chapter 19: Alternatives……..19-1
A. Introduction……..19-1
B. Principal Conclusions……..19-1
No-Action Alternative……..19-1
No Unmitigated Significant Adverse Impact Alternative……19-2
Lesser Density Alternative……...19-2
C. No-Action Alternative……..19-3
Land Use, Zoning, and Public Policy……..19-3
Socioeconomic Conditions……..19-4
Community Facilities……...19-5
Open Space……..19-6
Shadows……...19-7
Historic and Cultural Resources……..19-7

Urban Design and Visual Resources……....19-8
Hazardous Materials……19-8
Water and Sewer Infrastructure……...19-8
Transportation……..19-9
Air Quality……...19-9
Greenhouse Gas Emissions……19-10
Noise……..19-10
Public Health……..19-10
Neighborhood Character……19-10
Construction……...19-10
Conclusions……19-11
D. No Unmitigated Significant Adverse Impact Alternative……...……...19-11
E. Lower Density Alternative…….....……..19-12
Land Use, Zoning, and Public Policy……19-15
Socioeconomic Conditions……19-16
Community Facilities……19-17
Open Space……19-17
Shadows……19-18
Historic and Cultural Resources……19-19
Urban Design and Visual Resources……..19-20
Hazardous Materials……..19-20
Water and Sewer Infrastructure……19-20
Transportation……19-21
Air Quality……19-21
Greenhouse Gas Emissions……....19-22
Noise……..19-22
Public Health……..19-22
Neighborhood Character……19-22
Construction……...19-23
Conclusions……19-23

Chapter 20: Unavoidable Adverse Impacts..……...20-1
A. Introduction……..20-1
B. Shadows……...20-1
C. Historic and Cultural Resources...……...20-1
Architectural Resources….……..20-1
Construction Impacts……...20-3

Chapter 21: Growth-Inducing Aspects of the Proposed Action..…….....21-1

Chapter 22: Irreversible and Irretrievable Commitment of Resources……...22-1

Chapter 23: Response to Comments……23-1
A. Introduction……..23-1
B. DEIS Comments and Responses…….....23-1

C. Comments and Responses on Draft Scope of Work……..23-18

APPENDICES

Appendix A: Proposed Zoning Text

Appendix B: List of Blocks and Lots Affected By Proposed Rezoning & - Description of Each RWCDS Projected Development Site Under Existing, No-Action, and With-Action Conditions

Appendix C: LPC Review Letters

Appendix D: BMP Concept Plan

Appendix E: Transportation Planning Factors Memorandum & *125th Street Rezoning and Related Actions FEIS* Traffic Mitigation Memos

Appendix F: Noise Back-Up

Appendix G: Written Comments Received on the DEIS

LIST OF TABLES

ES-1 Summary of Proposed Zoning Changes……ES-4
ES-2 RWCDS and Population Summary for Development Scenarios 1 to 4, Compared to No-Action Conditions……...ES-9
ES-3 2021 Future With the Proposed Action: Open Space Ratios Summary……...ES-13
ES-4 Building Attenuation Requirements for Projected Development Sites Requiring (E) Designations……..ES-26
ES-5 Recommended Traffic Mitigation Measures……ES-30
ES-6 Comparison of Peak Project-Generated Traffic Volumes in 2016 and 2021 for the West 126th Street/West 128th Street Cluster……ES-31
1-1 Summary of Proposed Zoning Districts and Regulations……...1-10
1-2 RWCDS and Population Summary for Development Scenarios 1 to 4, Compared to No-Action Conditions……1-17
1-3a RWCDS Projected Development Sites……1-21
1-3b RWCDS Projected Development Sites……1-22
1-3c RWCDS Projected Development Sites……1-23
1-3d RWCDS Projected Development Sites……1-24
1-4a RWCDS Potential Development Sites……1-25
1-4b RWCDS Potential Development Sites……1-26
1-4c RWCDS Potential Development Sites……1-27
1-4d RWCDS Potential Development Sites……1-28
2-1 Existing Land Uses Within Primary Study Area……2-14
2-2 Primary Study Area Existing Zoning Designations……2-26
2-3 Secondary Study Area Zoning Districts……..2-27
2-4 Development Projects in the Future Without the Proposed Actions……...2-30
2-5 No-Action to With-Action Increment for Projected Development Sites……2-33
2-6 Summary of Proposed Zoning Districts……..2-38
3-1 Projected Development Sites Containing Existing Residential & Supportive Housing Units…..3-6
3-2 Employees in 2010 in the Secondary Study Area, Manhattan, and New York City……3-7
3-3 Classification of Business Establishments/Institutional Uses Currently Located on the Projected Development Sites……3-9
3-4 Business/Institutional Uses Subject to Direct Displacement under the Proposed Action by Projected Development Site……3-10
3-5 Population Income Characteristics in the Secondary Study Area, Borough of Manhattan, and New York City……3-13
3-6 Housing Unit Characteristics in the Secondary Study Area, Manhattan, and New York City...3-13
3-7 Housing Cost Characteristics the Secondary Study Area, Manhattan, and New York City.....3-14
3-8 Median Sale Price for All Apartments (includes all Condominiums and Cooperatives)……3-14
3-9 Average Rent Summary for Apartments in 2011……3-14
3-10 Estimated Population in the Future with the Proposed Action……3-15
4-1 Existing Study Area Public Elementary School Enrollment, Capacity, and Utilization Figures for 2010-2011 Academic Year……4-4

4-2 Existing Study Area Public Intermediate School Enrollment, Capacity, and Utilization Figures for 2010-2011 Academic Year……4-5
4-3 Estimated Number of Students Introduced in the Study Area: 2021 Future Without the Proposed Action……4-6
4-4 Estimated Public Elementary and Intermediate School Enrollment, Capacity, and Utilization in the Study Area: 2021 Future Without the Proposed Action……..4-7
4-5 Estimated Number of Students Introduced in the Study Area: 2021 Future With the Proposed Action……4-7
4-6 Estimated Public Elementary and Intermediate School Enrollment, Capacity, and Utilization in the Study Area: 2021 Future With the Proposed Action……...4-8
5-1 RWCDS and Population Summary for Development Scenarios 1 to 4, Compared to No-Action Conditions……..5-2
5-2 Existing Worker Population in Open Space Study Areas……5-7
5-3 2010 Residential Population and Age Distribution in the Nonresidential and Residential Open Space Study Areas……5-9
5-4 Summary of 2010 Open Space User Groups Within the Two Study Areas……5-10
5-5 Inventory of Existing Open Space and Recreational Facilities……...5-12
5-6 Existing Conditions: Adequacy of Open Space Resources……5-20
5-7 Development Projects Anticipated to be Completed in the No-Action Within the Defined Open Space Study Areas……...5-22
5-8 No-Action Conditions: Adequacy of Open Space Resources……5-23
5-9 With-Action Conditions: Adequacy of Open Space Resources……...5-25
5-10 2021 Future With the Proposed Action: Open Space Ratios Summary……..5-28
6-1a Resources of Concern within Defined Shadow Radius—Open Spaces……6-4
6-1b Resources of Concern within Defined Shadow Radius—Historic Resources……...6-8
6-2 Shadow Duration on Resources of Concern……6-12
7-1 Designated Architectural Resources in Proposed Rezoning Area……7-6
7-2 Eligible Architectural Resources in Proposed Rezoning Area……7-14
7-3 RWCDS Projected and Potential Development Sited Located Within or In Proximity to Historic Resources……7-19
7-4 Assessment of Proposed Action's Potential Effects on Designated and Eligible Resources in Study Area……...7-20
8-1 Visual Resources and Open Spaces in Broadway-Riverside Drive Sub-area……...8-7
8-2 Visual Resources and Open Spaces in Sugar Hill and Hamilton Heights North Sub-area……...8-9
8-3 Visual Resources and Open Spaces in Hamilton Heights South Sub-area…….....8-12
9-1 Summary of Environmental Issued for Projected and Potential Development Sites……9-8
10-1 Water Consumption and Wastewater Generation Rates……..10-3
10-2 Existing Water Consumption and Wastewater Generation Due to Land Uses on the Projected Development Sites……...10-3
10-3 Monthly Average Dry Weather Flows for the North River WPCP and the Wards Island WPCP……..10-5
10-4 Existing Stormwater Runoff……10-6
10-5 Existing Combined Stormwater Runoff and Wastewater Generation……10-7
10-6 No-Action Water Consumption and Wastewater Generation Due to Land Uses on the Projected Development Sites……...10-8

10-7 Water Consumption and Wastewater Generation in the Future Without and With the Proposed Action……10-10
10-8 Surface Types on the Projected Development Sites—Future With-Action Condition…….10-11
10-9 Combined Stormwater Runoff and Wastewater Generation Flow Volumes to Combined Sewer System in the Proposed Rezoning Area—Future With-Action Condition……10-11
10-10 Incremental Increased in Combined Stormwater Runoff and Wastewater Generation Flow Volumes to Combined Sewer System in the Proposed Rezoning Area……10-12
11-1 Total Net Change in Land Uses on Projected Development Sites Under RWCDS 1-4……..11-6
11-2 Transportation Planning Factors……..11-7
11-3 Net Change in Community Facility Uses on Projected Development Sites Under the RWCDS……...11-8
11-4 Comparison of Travel Demand Under RWCDS 1-4……..11-9
11-5 Travel Demand Forecast for RWCDS 3……11-12
11-6 Net Incremental Person Trips Generated by Projected Development Site Clusters Under RWCDS 3…….11-13
11-7 Net Incremental Vehicle Trips Generated by Projected Development Site Clusters Under RWCDS 3……..11-13
11-8 Net Incremental Transit Trips Generated by Projected Development Sites Under RWCDS 3.11-15
11-9 Projected Increment Subway Trip Assignment by Station Under RWCDS 3—Cluster 1……11-15
11-10 Net Incremental Pedestrian and Transit Trips Generated by Projected Development Sites Under RWCDS 3……..11-17
11-11 Intersection Level of Service Criteria……11-19
11-12 Level of Service Criteria for Subway Station Elements……11-20
11-13 Significant Impact Thresholds for Stairways and Passageways……11-21
11-14 Pedestrian Crosswalk/Corner Area and Sidewalk Levels of Service Descriptions……...11-22
11-15 Significant Impact Criteria for Sidewalks with Platooned Flow in a Non-CBD Location…...11-23
11-16 Significant Impact Criteria for Corners and Crosswalks in a Non-CBD Location……...11-24
11-17 Existing Intersection Level of Service Summary……..11-27
11-18 Existing Conditions Level of Service Analysis…….11-29
11-19 Discrete Developments Included in the No-Action Transportation Analysis……...11-30
11-20 Intersection Level of Service Summary Comparison Existing vs. No-Action Conditions…...11-32
11-21 No-Action Level of Service Analysis……11-33
11-22 Intersection Level of Service Summary Comparison No-Action vs. With-Action Conditions……..11-36
11-23 With-Action Level of Service Analysis…….11-37
11-24 Existing Conditions Stair Analysis at the 125th Street (IND) Subway Station……..11-41
11-25 Existing Conditions Fare Control Area Analysis at the 125th Street (IND) Subway Station…11-41
11-26 No-Action Conditions Stair Analysis at the 125th Street (IND) Subway Station……..11-45
11-27 No-Action Conditions Fare Control Area Analysis at the 125th Street (IND) Subway Station……11-45
11-28 With-Action Conditions Stair Analysis at the 125th Street (IND) Subway Station……...11-46
11-29 With-Action Conditions Fare Control Area Analysis at the 125th Street (IND) Subway Station……11-46
11-30 Existing Conditions Sidewalk Analysis……11-49
11-31 Existing Conditions Corner Analysis……11-50

11-32 Existing Conditions Crosswalk Analysis……..11-51
11-33 No-Action Condition Sidewalk Analysis……..11-52
11-34 No-Action Condition Corner Analysis……..11-53
11-35 No-Action Condition Crosswalk Analysis……11-54
11-36 With-Action Condition Sidewalk Analysis……...11-55
11-37 With-Action Condition Corner Analysis……...11-56
11-38 With-Action Condition Crosswalk Analysis……11-57
11-39 Summary Motor Vehicle Accident Data 2008-2010……11-59
11-40 Existing Utilization at Off-Street Public Parking Facilities Within ½-Mile of Cluster 1……..11-61
11-41 Curbside Parking Regulations Within ¼-Mile of RWCDS 3—Cluster 1……11-62
11-42 Summary of No-Action Off-Street Public Parking Conditions Within ½-Mile of Cluster 1…11-64
11-43 Weekday Hourly Parking Accumulation for Projected Development on RWDS3 Cluster 1...11-65
11-44 Summary of With-Action Off-Street Public Parking Conditions Within ½-Mile of Cluster 1.11-66
12-1 Applicable National and State Ambient Air Quality Standards……..12-2
12-2 Maximum Estimated Existing (2011) 8-Hour CO Level……12-4
12-3 Maximum Estimated Future (2021) 8-Hour CO Levels With and Without the Proposed Action……..12-5
12-4 Projected Development under RWCDS and Level of Analysis Required……..12-8
12-5 Potential Developments under RWCDS and Level of Analysis Required……12-10
12-6 Group 1 Developments That Passed CEQR Screening Analysis for Building-on-Building Impacts……...12-12
12-7 Group 1 Developments That Did Not Pass CEQR Screening Analysis for Building-on-Building Impacts……...12-13
12-8 Impacts on Existing Land Uses from the Group 1 Developments Using CEQR Nomographs……...12-15
12-9 Group 1 Developments That Passed The Detailed Analysis for Building-on-Building Impacts with Fuel Oil……..12-18
12-10 Group 1 Developments That Passed The Detailed Analysis for Building-on-Building Impacts with Natural Gas……12-19
12-11 Group 2 Developments with Fuel Oil Systems That Passed the Detailed Analysis for Building-on-Building Impacts……12-20
12-12 Group 2 Developments that did Not Pass 10-foot Threshold Distance with Fuel Oil for Building-on-Building Impacts and Required Stack Setback Distances Beyond the Building Code Minimum (Site 40 Conversion Scenario……...12-21
12-13 Required Stack Setback Distances Beyond the Building Code Minimum (Site 40 New Development Scenario……...12-22
12-14 Group 2 Developments That Passed the Detailed Analysis for Impacts on Existing Buildings with Fuel Oil……..12-23
12-15 Group 2 Development Sites that Did Not Pass 10-foot Threshold Distance with Fuel Oil for Impacts on Existing Land Uses and Required Stack Setback Distances Beyond the Building Code Minimum……...12-23
12-16 Minimum Stack Setback Requirements for Group 2 Developments……12-24
12-17 Cluster Analysis Results with Fuel Oil……..12-25
12-18 Existing Active Industrial Source Permit Information……..12-32

12-19 Cancer Risk (CR) and Chronic Non-Cancer Quotients (HQ) and Total Hazard Index (HI) of the Toxic Pollutants……12-33
12-20 Acute Quotients (AHQ) and Total Hazard Index (AHI) of the Toxic Pollutants……..12-34
13-1 Global Warming Potential for Primary Greenhouse Gases…….13-3
13-2 Operational Emissions…….13-4
13-3 Mobile Source Emissions……13-5
13-4 Total Emissions……...13-5
14-1 Common Noise Levels……14-2
14-2 Average Ability to Perceive Changes in Noise Levels...…….14-3
14-3 Average Ability to Perceive Changes in Noise Levels……14-3
14-4 Noise Exposure Guidelines for Use in City Environmental Impact Review……...14-5
14-5 Required Attenuation Values To Achieve Acceptable Interior Noise Levels…….14-5
14-6 Noise Receptor Locations……14-7
14-7 Existing Noise Levels (dBA)……...14-8
14-8 2012 No-Build Noise Levels…….....14-10
14-9 2021 Build Noise Levels……...…14-11
14-10 Minimum Attenuation Requirements for Receptor Sites……..14-13
14-11 Building Attenuation Requirements for Projected Development Sites…….14-14
17-1 Construction Oversight in New York City……..17-3
17-2 Estimated Total Number of Construction Workers and Construction Trucks On-Site Per Day (19 Projected Development Sites With New Construction……17-6
17-3 2014 Peak Construction Vehicle Trip Projections……..17-9
17-4 2016 Peak Construction Vehicle Trip Projections……17-11
17-5 2016 Peak Hour Construction and Operational Traffic Volumes…….17-12
17-6 Comparison of Peak Project-Generated Traffic Volumes in 2016 and 2021 For the West 126th Street/West 128th Street Cluster…….17-13
17-7 2016 Peak Hour Construction and Operational Transit and Walk Trips……...17-16
18-1 Recommended Traffic Mitigation Measures……...18-5
18-2 Action-with-Mitigation Level of Service Analysis…….18-6
19-1 Comparison of 2021 No-Action Alternative and Proposed Action Open Space Ratios…….19-7
19-2 Intersection Level of Service Summary Comparison No-Action Alternative vs. Proposed Action……..19-9
19-3 Comparison of Zoning under Existing Conditions, the Proposed Action, and the Lower Density Alternative on West 145th Street between Broadway and Amsterdam Avenue……19-13
19-4 Summary of Lower Density Alternative RWCDS Scenarios 1 to 4……..19-14
19-5 Comparison of the No-Action to With-Action Increments of the Four RWCDSs for the Proposed Action and Lower Density Alternative……..19-15
19-6 Comparison of the Lower Density Alternative and the Proposed Action Open Space Ratios..19-18

LIST OF FIGURES

		Following Page
ES-1	Proposed Rezoning Area	ES-1
ES-2	Existing Zoning	ES-1
ES-3	Proposed Zoning	ES-4
ES-4	RWCDS Projected and Potential Development Sites	ES-7
1-1	Project Location—Aerial View	1-1
1-2	Proposed Rezoning Area	1-1
1-3	Existing Zoning	1-2
1-4	Historic Districts within Proposed Rezoning Area	1-4
1-5	Proposed Zoning	1-7
1-6a	Building Envelope Controls for Proposed Zoning Districts—R6A, R7A, R8A, and R8A with Inclusionary Housing	1-7
1-6b	Building Envelope Controls for Proposed Zoning Districts—C6-3X and MX (M1-5/R7-2)	1-7
1-6	RWCDS Projected and Potential Development Sites	1-15
2-1	Land Use and Zoning Study Area (Primary and Secondary)	2-3
2-2	Coastal Zone Boundary Map	2-7
2-3	Upper Manhattan Empowerment Zone	2-7
2-4	Bradhurst Urban Renewal Area	2-8
2-5a	Existing Land Use—Primary Study Area	2-13
2-5b	Existing Land Use—Secondary Study Area	2-13
2-6	Existing Zoning	2-24
2-7	No-Build Sites	2-28
2-8	Proposed Zoning	2-36
3-1	Socioeconomic Conditions Study Area	3-4
4-1	Elementary and Intermediate Schools in Study Area	4-2
5-1	Areas Well Served by Open Space	5-1
5-2	Open Space Study Area	5-4
5-3	Open Space Resources	5-11
6-1	Open Space and Historic Resources within Maximum Shadow Radius (Tiers 1 and 2)	6-2
6-2a	Shadows on Open Spaces—Jackie Robinson Park and Greenstreet/Maher Circle	6-21
6-2b	Shadows on Open Spaces—Jackie Robinson Park and Greenstreet/Maher Circle	6-21
6-2c	Shadows on Open Spaces—Jackie Robinson Park and Greenstreet/Maher Circle	6-21
6-2d	Shadows on Open Spaces—Jackie Robinson Park and Greenstreet/Maher Circle	6-21
6-2e	Shadows on Open Spaces—Jackie Robinson Park and Greenstreet/Maher Circle	6-21
6-3a	Shadows on Open Spaces—Highbridge Park	6-21
6-3b	Shadows on Open Spaces—Highbridge Park	6-21
6-4	Shadows on Open Spaces—Riverside North Park	6-21
6-5a	Shadows on Open Spaces—Broadway Malls	6-21
6-5b	Shadows on Open Spaces—Broadway Malls	6-21
6-5c	Shadows on Open Spaces—Broadway Malls	6-21

6-5d Shadows on Open Spaces—Broadway Malls…….6-21
6-5e Shadows on Open Spaces—Broadway Malls…….6-21
6-6a Shadows on Open Spaces—Serenity Gardens...…….6-21
6-6b Shadows on Open Spaces—Serenity Gardens...…….6-21
6-7 Shadows on Open Spaces—Sheltering Arms Park…….6-21
6-8 Shadows on Open Spaces—General Grant House I……...…….6-21
6-9 Shadows on Open Spaces—St. Mary's Church and St. Joseph's RC Church…...…….6-21
6-10a Aerial Photo of Open Space Resources Affected by Incremental Shadows…...…….6-21
6-10b Aerial Photo of Open Space Resources Affected by Incremental Shadows…...…….6-21
6-10c Aerial Photo of Open Space Resources Affected by Incremental Shadows…...…….6-21
6-10d Aerial Photo of Open Space Resources Affected by Incremental Shadows…...…….6-21
6-11 Views of Open Historic Resources Affected by Incremental Shadows……....…….6-21
7-1 Historic Resources Study Area……..7-1
7-2 Designated Historic Districts Within Study Area……..7-5
7-3 Designated Individual Landmarks Within Study Area……..7-5
7-4a Examples of Buildings within LPC-Designated and S/NR-Listed Historic Districts in the Study Area……...7-7
7-4b Examples of Buildings within LPC-Designated and S/NR-Listed Historic Districts in the Study Area……...7-7
7-4c Examples of Buildings within LPC-Designated and S/NR-Listed Historic Districts in the Study Area……...7-7
7-5a Designated Historic Resources in the Study Area…….7-9
7-5b Site Photos—Projected Development Sites……..…….7-9
7-5c Site Photos—Projected Development Sites……..…….7-9
7-5d Site Photos—Projected Development Sites……..…….7-9
7-5e Site Photos—Projected Development Sites……..…….7-9
7-5f Site Photos—Projected Development Sites……..…….7-9
7-6 Eligible Historic Resources Within Study Area……..7-13
7-7 Photos of Eligible Bernheimer & Schwartz Pilsner Brewing Company (a.k.a. Yuengling) Complex……...7-13
8-1a Urban Design and Visual Resources Primary Study Area—Aerial View….……8-3
8-1b Primary and Secondary Study Areas…….8-3
8-2 Existing Density (FAR) in Primary and Secondary Study Areas……..8-5
8-3 Existing Building Heights (Primary and Secondary Study Area)…….8-5
8-4a Photo Key Map……..8-5
8-4b Views of the Primary Study Area—Broadway-Riverside Drive Sub-area……...8-6
8-4c Views of the Primary Study Area—Sugar Hill & Hamilton Heights North Sub-area……..8-8
8-4d Views of the Primary Study Area—Hamilton Heights South Sub-area……..8-11
8-4e Views of the Primary Study Area—145th Street Corridor……...8-13
8-4f Views of the Primary Study Area—Manufacturing District…….....8-14
8-4g Views of the Secondary Study Area…….……...8-15
8-4h Views of the Secondary Study Area (continued)…….……...8-18
8-5 Existing and Proposed Zoning…….8-21
8-6a Comparison of Building Envelope Controls—Existing R8 vs. Proposed R6A and C6-3X Zoning Districts……8-22

8-6b Comparison of Building Envelope Controls—Existing R7-2 vs. Proposed R6A, R7-A, and CR8-A IH Zoning Districts……..……8-22
8-6c Comparison of Building Envelope Controls—Existing M1-1 vs. Proposed MX (M1-5/R7-2) Zoning Districts……...……8-22
8-7a Massing Diagrams for Proposed Action—145th Street Corridor (Bird's Eye View)……..8-24
8-7b Illustrative 3D Representation of With-Action Street Level Views Compared to Existing Condition…….8-24
10-1 Affected Subcatchment Areas…….10-4
11-1 RWCDS Projected and Potential Development Sites……..11-1
11-2 Project Increment Peak Hour Traffic Volumes Under RWCDS 3……11-14
11-3 Rezoning Area Subway and Bus Service……..11-14
11-4 Peak Hour Project Increment Sidewalk and Crosswalk Volumes for RWCDS 3—Cluster 1..11-17
11-5 Pedestrian Analysis Locations……...11-17
11-6 Existing Weekday AM Peak Hour Traffic Volumes…….11-26
11-7 Existing Weekday Midday Peak Hour Traffic Volumes……..…….11-26
11-8 Existing Weekday PM Peak Hour Traffic Volumes…….…….11-26
11-9 Existing Saturday Midday Peak Hour Traffic Volumes……...…….11-26
11-10 No-Action Weekday AM Peak Hour Traffic Volumes…….11-31
11-11 No-Action Weekday Midday Peak Hour Traffic Volumes……...……11-31
11-12 No-Action Weekday PM Peak Hour Traffic Volumes……..11-31
11-13 No-Action Saturday Midday Peak Hour Traffic Volumes……...…….11-31
11-14 With-Action Weekday AM Peak Hour Traffic Volumes……..11-35
11-15 With-Action Weekday Midday Peak Hour Traffic Volumes……..……..11-35
11-16 With-Action Weekday PM Peak Hour Traffic Volumes…….……..11-35
11-17 With-Action Saturday Midday Peak Hour Traffic Volumes……...……..11-35
11-18 Subway Stations in Proximity to RWCDS 3—Cluster 1……..11-40
11-19 Off-Street Public Parking Facilities Within ½-Mile of RWCDS 3—Cluster 1…….11-60
11-20 Curbside Parking Regulations Within ¼-Mile of RWCDS 3—Cluster 1…….11-60
14-1 Noise Receptor Locations……..14-9*
16-1 Neighborhood Character Study Area……..16-2
17-1 Assumed Construction Schedule for Assessment of Construction Impacts……17-5
17-2 RWCDS Projected Development Sites—New Construction Site Clusters…….17-5
19-1 Bird's Eye View of Projected Development Site 40 In Relation to St. Mary's Protestant Episcopal Church……...19-12
19-2 Proposed Zoning Under the No Unmitigated Significant Adverse Impacts Alternative……..19-12
19-3 Proposed Zoning Under the Lower Density Alternative……...19-12
19-4 RWCDS Projected and Potential Development Sites—Lower Density Alternative…….19-13

*Denotes that the figure is on the specified page