

Astoria Cove

Draft Environmental Impact Statement (DEIS)

CEQR No. 13DCP127Q



Lead Agency:
City Planning Commission, City of New York
Carl Weisbrod, Chair

April 2014

Astoria Cove

Draft Environmental Impact Statement (DEIS)

Project Location: Community District 1
Borough of Queens

CEQR No: 13DCP127Q

Type of Action: Type 1

ULURP Nos: 130384MMQ
140322ZMQ
140323ZSQ
140324ZSQ
N140325ZAQ
N140326ZAQ
N140327ZAQ
N140328ZCQ
N140329ZRQ

Lead Agency: City Planning Commission, City of New York

Lead Agency Contact: Robert Dobruskin, Director
Department of City Planning—Environmental Assessment and
Review Division

Applicant: 2030 Astoria Developers, LLC

Prepared by: Philip Habib & Associates
With: Sandstone Environmental Associates, Inc.

Acceptance Date: April 18, 2013

The DEIS is available for review on the website of the Mayor's Office of Environmental Coordination: <http://www.nyc.gov/dcp>.

A public hearing on this Draft Environmental Impact Statement (DEIS) will be held at a date to be announced. Advance notice will be advertised stating 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.

TABLE OF CONTENTS

Executive Summary	S-1
Chapter 1: Project Description	1-1
A. Introduction.....	1-1
B. Existing Conditions.....	1-2
C. Purpose and Need for the Proposed Action.....	1-3
D. Description of the Proposed Action.....	1-4
Proposed Zoning Map Changes.....	1-4
Propose Zoning Text Amendments.....	1-5
Propose City Map Amendment.....	1-6
Large-Scale General Development (LSGD) Special Permits.....	1-6
Waterfront Special Permit.....	1-6
Waterfront Authorizations and Certifications.....	1-7
Additional Actions – Not Subject to City Planning Commission Approval.....	1-7
E. Reasonable Worst Case Development Scenarios (RWCDS).....	1-8
Future without the Proposed Actions (No-Action Condition).....	1-8
Future with the Proposed Actions (With-Action Condition).....	1-8
Reasonable Worst-Case Development Scenario for Analysis Purposes.....	1-10
F. Approvals Required.....	1-11
Uniform Land Use Review Procedure (ULURP).....	1-11
Environmental Review (CEQR).....	1-12
Chapter 2: Land Use, Zoning, and Public Policy	2-1
A. Introduction.....	2-1
B. Principal Conclusions.....	2-2
C. Methodology.....	2-2
Analysis Year.....	2-3
Study Area Definition.....	2-3
D. Development History.....	2-3
E. Preliminary Assessment.....	2-4
Land Use and Zoning.....	2-4
Public Policy.....	2-4
F. Detailed Assessment.....	2-11
Existing Conditions.....	2-11
Future without the Proposed Action (No-Action Condition).....	2-15
Future with the Proposed Action (With-Action Condition).....	2-16
G. Waterfront Revitalization Program.....	2-21
Chapter 3: Socioeconomic Conditions	3-1
A. Introduction.....	3-1
B. Principal Conclusions.....	3-1

	Direct Residential Displacement.....	3-1
	Indirect Residential Displacement.....	3-1
	Direct Business and Institutional Displacement.....	3-2
	Indirect Business and Institutional Displacement.....	3-3
	Adverse Effects on Specific Industries.....	3-3
C.	Methodology.....	3-3
	Determining Whether a Socioeconomic Assessment is Appropriate.....	3-4
	Analysis Format.....	3-6
	Study Area Definition.....	3-6
	Data Sources.....	3-7
D.	Preliminary Assessment.....	3-7
	Indirect Residential Displacement.....	3-7
	Indirect Business and Institutional Displacement.....	3-10
	Conclusion.....	3-14
E.	Detailed Assessment—Indirect Residential Displacement.....	3-14
	Existing Conditions.....	3-15
	Future without the Proposed Action (No-Action Condition).....	3-31
	Future with the Proposed Action (With-Action Condition).....	3-32
Chapter 4:	Community Facilities—Schools.....	4-1
A.	Introduction.....	4-1
B.	Principal Conclusions.....	4-1
	Public Schools.....	4-1
	Child Care Services.....	4-2
	Libraries.....	4-2
C.	Preliminary Screening.....	4-3
	Direct Effects.....	4-3
	Indirect Effects.....	4-3
D.	Indirect Effects on Public Schools.....	4-5
	Methodology.....	4-5
	Existing Conditions.....	4-6
	Future without the Proposed Action (No-Action Condition).....	4-8
	Future with the Proposed Action (With-Action Condition).....	4-10
E.	Indirect Effects on Publicly Funded Child Care.....	4-13
	Methodology.....	4-13
	Existing Conditions.....	4-14
	Future without the Proposed Action (No-Action Condition).....	4-14
	Future with the Proposed Action (With-Action Condition).....	4-15
F.	Indirect Effects on Libraries.....	4-16
	Methodology.....	4-16
	Existing Conditions.....	4-17
	Future without the Proposed Action (No-Action Condition).....	4-17
	Future with the Proposed Action (With-Action Condition).....	4-18

Chapter 5:	Open Space.....	5-1
	A. Introduction.....	5-1
	B. Principal Conclusions.....	5-1
	C. Open Space Study Area and Methodology.....	5-2
	Open Space Study Area.....	5-2
	Analysis Framework.....	5-3
	Impact Assessment.....	5-4
	D. Preliminary Assessment.....	5-4
	E. Detailed Analysis.....	5-5
	Existing Conditions.....	5-5
	Future without the Proposed Action (No-Action Condition).....	5-11
	Future with the Proposed Action (With-Action Condition).....	5-13
Chapter 6:	Shadows.....	6-1
	A. Introduction.....	6-1
	B. Principal Conclusions.....	6-1
	C. Methodology.....	6-1
	D. Future without the Proposed Action (No-Action Condition).....	6-2
	E. Future with the Proposed Action (With-Action Condition).....	6-2
	F. Preliminary Screening Assessment.....	6-2
	Tier 1 Screening Assessment.....	6-2
	Tier 2 Screening Assessment.....	6-2
	Tier 3 Screening Assessment.....	6-3
	G. Detailed Analysis of Shadow Impacts.....	6-3
	Resources of Concern.....	6-3
	Shadows Analysis.....	6-4
Chapter 7:	Historic and Cultural Resources.....	7-1
	A. Introduction.....	7-1
	B. Principal Conclusions.....	7-1
	Architectural Resources.....	7-1
	Archaeological Resources.....	7-1
	C. Methodology.....	7-1
	Architectural Resources.....	7-2
	Archaeological Resources.....	7-2
	D. History.....	7-3
	Prehistoric Periods.....	7-4
	Historic Period.....	7-5
	E. Existing Conditions.....	7-8
	Architectural Resources.....	7-8
	Archaeological Resources.....	7-8
	F. Future without the Proposed Action (No-Action Condition).....	7-9
	Architectural Resources.....	7-9
	Archaeological Resources.....	7-9
	G. Future with the Proposed Action (With-Action Condition).....	7-9

	Architectural Resources.....	7-9
	Archaeological Resources.....	7-10
Chapter 8:	Urban Design/Visual Resources.....	8-1
	A. Introduction.....	8-1
	B. Principal Conclusions.....	8-1
	Urban Design.....	8-1
	Visual Resources.....	8-2
	C. Methodology.....	8-2
	Study Area.....	8-3
	D. Preliminary Assessment.....	8-3
	E. Detailed Analysis.....	8-4
	Existing Conditions.....	8-4
	Future without the Proposed Action (No-Action Condition).....	8-8
	Future with the Proposed Action (With-Action Condition).....	8-9
Chapter 9:	Natural Resources.....	9-1
	A. Introduction.....	9-1
	B. Principal Conclusions.....	9-1
	C. Methodology.....	9-2
	Study Area.....	9-2
	Existing Conditions.....	9-2
	D. Regulatory Context.....	9-3
	Federal.....	9-3
	State.....	9-4
	Local.....	9-6
	E. Existing Conditions.....	9-6
	Groundwater.....	9-6
	Floodplains.....	9-6
	Wetlands.....	9-7
	Water Quality.....	9-7
	Aquatic Biota.....	9-8
	Terrestrial Ecological Communities and Vegetation.....	9-9
	Wildlife.....	9-9
	Threatened, Endangered, and Special Concern Species and Significant Habitat Areas.....	9-10
	F. Future without the Proposed Action (No-Action Condition).....	9-11
	Groundwater and Floodplain.....	9-11
	Water Quality and Aquatic Biota.....	9-11
	Terrestrial Ecological Communities, Vegetation, and Wildlife.....	9-12
	G. Future with the Proposed Action (With-Action Condition).....	9-12
	Groundwater.....	9-13
	Floodplains.....	9-13
	Wetlands and Aquatic Resources.....	9-14
	Terrestrial Ecological Communities and Vegetation.....	9-15

Wildlife.....	9-16
Threatened, Endangered, and Special Concern Species and Significant Habitat Areas.....	9-17
Chapter 10: Hazardous Materials¹.....	10-1
A. Introduction.....	10-1
B. Principal Conclusions.....	10-1
C. Methodology.....	10-2
D. Existing Conditions.....	10-2
Subsurface Conditions.....	10-2
Hazardous Materials Assessment.....	10-3
E. Future without the Proposed Action (No-Action Condition).....	10-4
F. Future with the Proposed Action (With-Action Condition).....	10-5
Chapter 11: Water and Sewer Infrastructure.....	11-1
A. Introduction.....	11-1
B. Principal Conclusions.....	11-1
Water Supply.....	11-1
Sanitary (Dry Weather) Flows.....	11-1
Stormwater (Wet Weather) Flows.....	11-2
C. Methodology.....	11-2
D. Existing Conditions.....	11-4
Water Supply.....	11-4
Wastewater.....	11-5
Stormwater and Drainage Management.....	11-7
Water Conservation and WPCP Load Reduction.....	11-8
E. Future without the Proposed Action (No-Action Condition).....	11-8
Water Supply.....	11-9
Wastewater.....	11-9
Stormwater and Drainage Management.....	11-9
F. Future with the Proposed Action (With-Action Condition).....	11-10
Water Supply.....	11-10
Wastewater.....	11-11
Stormwater and Drainage Management.....	11-11
Stormwater Best Management Practices.....	11-13
Street Mapping and Associated Infrastructure Improvements.....	11-14
Chapter 12: Energy.....	12-1
A. Introduction.....	12-1
B. Principal Conclusions.....	12-1
C. Existing Conditions.....	12-1
Energy Generation.....	12-1

¹ The Environmental Site Assessment (ESA) Phase II Work Plan is not included in the hard copy of the EIS; rather, it is available on a CD with the hard copy, as well as in the digital PDF of the EIS.

Project Site Energy Generation.....	12-2
D. Future without the Proposed Action (No-Action Condition).....	12-2
E. Future with the Proposed Action (With-Action Condition).....	12-3
Chapter 13: Transportation.....	13-1
A. Introduction.....	13-1
B. Principal Conclusions.....	13-1
Traffic.....	13-1
Transit.....	13-3
Pedestrians.....	13-3
Pedestrian and Vehicular Safety Evaluation.....	13-3
Parking.....	13-4
C. Preliminary Analysis Methodology.....	13-4
D. Level 1 Screening Assessment.....	13-4
Transportation Planning Factors.....	13-5
Travel Demand Forecast.....	13-9
E. Level 2 Screening Assessment.....	13-12
Traffic.....	13-12
Transit.....	13-13
Pedestrians.....	13-14
Pedestrian and Vehicular Safety Evaluation.....	13-15
F. Transportation Analyses Methodology.....	13-16
Traffic.....	13-16
Transit.....	13-17
Pedestrians.....	13-19
Pedestrian and Vehicular Safety Evaluation.....	13-22
Parking.....	13-22
G. Traffic.....	13-22
Existing Conditions.....	13-22
Future without the Proposed Action (No-Action Condition).....	13-29
Future with the Proposed Action (With-Action Condition).....	13-37
Alternate Traffic Impact Analysis without Halletts Point Development.....	13-39
H. Transit.....	13-56
Existing Condition.....	13-56
Future without the Proposed Action (No-Action Condition).....	13-59
Future with the Proposed Action (With-Action Condition).....	13-61
I. Pedestrians.....	13-64
Existing Conditions.....	13-64
Future without the Proposed Action (No-Action Condition).....	13-66
Future with the Proposed Action (With-Action Condition).....	13-66
J. Pedestrian and Vehicular Safety Evaluation.....	13-68
K. Parking.....	13-71
Existing Condition.....	13-71
Future without the Proposed Action (No-Action Condition).....	13-73
Future with the Proposed Action (With-Action Condition).....	13-73

Chapter 14: Air Quality	14-1
A. Introduction	14-1
B. Principal Conclusions	14-1
C. Standards and Criteria	14-2
National Ambient Air Quality Standards	14-2
New York City <i>De Minimis</i> Criteria	14-2
State Implementation Plan (SIP)	14-3
New York State Department of Environmental Conservation	14-4
D. Existing Conditions	14-4
Existing Air Quality	14-4
Background Concentrations	14-4
Project Site	14-5
E. Air Quality Analysis Methodology	14-5
Mobile Source Screen	14-5
Line Source Modeling with MOVES10b and CAL3QHCR	14-7
Parking Facilities	14-8
Stationary Source Screen	14-9
Stationary Source Modeling with AERMOD	14-9
F. Future without the Proposed Action (No-Action Condition)	14-11
Description of No-Action Development	14-11
Mobile Source Analysis	14-12
G. Future with the Proposed Action (With-Action Condition)	14-13
Description of the Proposed Action	14-13
Mobile Source Analysis	14-13
Parking Facilities	14-14
Stationary Source HVAC	14-15
Air Toxics	14-16
Air Quality (E) Designations	14-18
 Chapter 15: Greenhouse Gas Emissions and Climate Change	 15-1
A. Introduction	15-1
B. Principal Conclusions	15-2
C. Recognized Greenhouse Gases	15-3
Carbon Dioxide (CO ₂)	15-3
Methane (CH ₄)	15-3
Nitrous Oxide (N ₂ O)	15-3
Fluorinated Gases	15-3
D. Climate Change	15-4
E. Methodology	15-5
Greenhouse Gas Emissions	15-5
Climate Change	15-5
F. GHG Emissions	15-6
Operational Emissions	15-6
Mobile Source Emissions	15-6

	Construction Phase Emissions.....	15-7
	Emissions from Solid Waste Management.....	15-7
	Summary.....	15-7
	Consistency with the GHG Reduction Goal.....	15-7
	G. Climate Change.....	15-10
Chapter 16:	Noise.....	16-1
	A. Introduction.....	16-1
	B. Principal Conclusions.....	16-1
	C. Acoustical Fundamentals.....	16-2
	A-Weighted Sound Level (dBA).....	16-2
	Sound Level Descriptors.....	16-3
	D. Noise Standards and Criteria.....	16-4
	New York CEQR Noise Standards.....	16-4
	Impact Definition.....	16-5
	E. Existing Conditions.....	16-5
	Project Site.....	16-5
	Surrounding Area.....	16-6
	Sensitive Receptors.....	16-6
	F. Existing Noise Levels.....	16-7
	Selection of Noise Receptor Locations.....	16-7
	Noise Monitoring.....	16-7
	Equipment Used During Noise Monitoring.....	16-8
	Existing Noise Levels at Noise Receptor Locations.....	16-8
	G. Noise Prediction Methodology.....	16-8
	Proportional Modeling.....	16-9
	Traffic Noise Model (TNM).....	16-10
	H. Future without the Proposed Action (No-Action Condition).....	16-11
	I. Future with the Proposed Action (With-Action Condition).....	16-12
	Other Noise Concerns.....	16-13
	Noise Attenuation Measures for the Proposed Project.....	16-14
	Noise Levels at the Proposed Project’s Open Space.....	16-16
	Noise Levels at Existing Sensitive Receptors.....	16-16
Chapter 17:	Public Health.....	17-1
	A. Introduction.....	17-1
	B. Noise.....	17-1
	Assessment.....	17-1
	C. Construction Noise.....	17-2
	Assessment.....	17-3
Chapter 18:	Neighborhood Character.....	18-1
	D. Introduction.....	18-1
	E. Principal Conclusions.....	18-1
	F. Methodology.....	18-2

G.	Preliminary Assessment.....	18-2
Existing Neighborhood Character and Defining Features.....	18-2	
Future without the Proposed Action (No-Action Condition).....	18-3	
Future with the Proposed Action (With-Action Condition).....	18-4	
Chapter 19:	Construction Impacts.....	19-1
A.	Introduction.....	19-1
B.	Principal Conclusions.....	19-2
Land Use and Neighborhood Character.....	19-2	
Socioeconomic Conditions.....	19-2	
Community Facilities.....	19-2	
Open Space.....	19-3	
Historic and Cultural Resources.....	19-3	
Natural Resources.....	19-3	
Hazardous Materials.....	19-4	
Transportation.....	19-4	
Air Quality.....	19-6	
Noise.....	19-6	
Rodent Control.....	19-7	
C.	Construction Phasing and Activities.....	19-7
Construction Activities.....	19-9	
Number of Construction Workers and Material Deliveries.....	19-15	
D.	Future without the Proposed Action (No-Action Condition).....	19-16
E.	Future with the Proposed Action (With-Action Condition).....	19-16
Land Use and Neighborhood Character.....	19-17	
Socioeconomic Conditions.....	19-17	
Community Facilities.....	19-18	
Open Space.....	19-18	
Historic and Cultural Resources.....	19-19	
Natural Resources.....	19-19	
Hazardous Materials.....	19-21	
Transportation.....	19-21	
Air Quality.....	19-28	
Noise.....	19-32	
Rodent Control.....	19-40	
Chapter 20:	Mitigation.....	20-1
A.	Introduction.....	20-1
B.	Community Facilities.....	20-1
Public Elementary Schools.....	20-1	
Child Care Centers.....	20-2	
C.	Open Space.....	20-3
D.	Urban Design.....	20-4
Pedestrian Wind.....	20-4	
E.	Transportation.....	20-4

	Traffic.....	20-4
	Transit.....	20-35
F.	Noise.....	20-36
G.	Construction.....	20-37
	Transportation.....	20-37
	Noise.....	20-37
Chapter 21:	Alternatives.....	21-1
A.	Introduction.....	21-1
B.	Principal Conclusions.....	21-2
	No-Action Alternative.....	21-2
	Lower Density Alternative.....	21-3
	Ferry Alternative.....	21-3
	No Unmitigated Significant Adverse Impacts Alternative.....	21-4
C.	No-Action Alternative.....	21-4
	Description of the No-Action Alternative.....	21-4
	No-Action Alternative Compared with the Proposed Action.....	21-5
D.	Lower Density Alternative.....	21-10
	Description of the Lower Density Alternative.....	21-10
	Lower Density Alternative Compared with the Proposed Action.....	21-11
E.	Ferry Alternative.....	21-19
	Description of the Ferry Alternative.....	21-19
	Ferry Alternative Compared with the Proposed Action.....	21-20
F.	No Unmitigated Significant Adverse Impacts Alternative.....	21-27
	Description of the No Unmitigated Significant Adverse Impacts Alternative.....	21-27
	No Unmitigated Significant Adverse Impacts Alternative Compared with the Proposed Action.....	21-28
Chapter 22:	Unavoidable Adverse Impacts.....	22-1
A.	Introduction.....	22-1
B.	Community Facilities.....	22-1
	Public Elementary Schools.....	22-1
	Child Care.....	22-2
C.	Open Space.....	22-2
D.	Transportation.....	22-3
	Traffic.....	22-3
	Transit.....	22-4
E.	Noise.....	22-5
F.	Construction Impacts.....	22-5
	Transportation.....	22-5
	Noise.....	22-6
Chapter 23:	Growth-Inducing Aspects of the Proposed Action.....	23-1
Chapter 24:	Irreversible and Irretrievable Commitment of Resources.....	24-1

APPENDICES

Appendix A: Proposed Zoning Text

Appendix B: WRP Consistency Assessment Form

Appendix C: Community Facilities

Appendix D: Historic and Cultural Resources

Appendix E: Pedestrian Wind

Appendix F: Natural Resources

Appendix G: Hazardous Materials (CD)

Appendix H: Construction

Appendix I: Alternatives

LIST OF TABLES

S-1	Summary of Proposed Program.....	S-9
S-2	Net Change in Land Uses as a Result of the Proposed Project.....	S-10
S-3	Summary of Impact Locations.....	S-20
S-4	Comparison of Traffic Impact Mitigation under Future Scenario (1) and Future Scenario (2)..	S-24
1-1	Summary of Proposed Program.....	1-9
1-2	Net Change in Land Uses as a Result of the Proposed Project.....	1-10
2-1	Existing Uses Within the Rezoning Area.....	2-11
2-2	Land Uses within a Quarter Mile of the Rezoning Area.....	2-12
2-3	Secondary Study Area Existing Zoning Districts.....	2-14
2-4	Development Projects in the Future without the Proposed Actions.....	2-16
2-5	Incremental Project Site Development.....	2-18
2-6	Summary of Proposed Zoning Districts and Regulation.....	2-19
3-1	Directly Displaces Business Establishments and Associated Employment by Industry Sector, in the Future with the Proposed Action.....	3-5
3-2	Comparison of Average Household Income in the Study Area, Borough of Queens, and New York City.....	3-8
3-3	2000 and 2010 Population.....	3-9
3-4	Estimated Residential Population in the ½-Mile Study Area: No-Action and With-Action Conditions.....	3-10
3-5	2012 Estimated Employees in the ½-Mile Study Area, Queens, and New York City.....	3-11
3-6	Details for Industrial Sectors in Zip Code 11102.....	3-13
3-7	Residential Population—2000 and 2010.....	3-15
3-8	Household Characteristics—2000 and 2010.....	3-16
3-9	Income Characteristics—1999 and 2007-2011.....	3-17
3-10	Housing Characteristics—2000 and 2010.....	3-18
3-11	Median Home Value and Contract Rent—1999 and 2007-2011.....	3-19
3-12	A Comparison of Rental Rates for Two- and Three-Family Homes and Multi-Unit Apartment Buildings in Astoria.....	3-20
3-13	Estimated Unprotected Rental Housing Units in the ½-Mile Study Area.....	3-23
3-14	Estimated Population Potentially Vulnerable to Indirect Residential Displacement in the ½-Mile Study Area.....	3-24
3-15	Population and Housing Growth—Future without the Proposed Action.....	3-32
3-16	Population and Housing Growth—Future with the Proposed Action.....	3-33
4-1	Preliminary Screening Analysis Criteria.....	4-3
4-2	Existing Study Area Public Elementary School Enrollment, Capacity, and Utilization Figures for 2012-2013 Academic Year.....	4-6
4-3	Existing Study Area Public Intermediate School Enrollment, Capacity, and Utilization Figures for 2012-2013 Academic Year.....	4-7
4-4	2012-2013 High School Enrollment, Capacity, and Utilization Data in the Borough of Queens.	4-7
4-5	High Schools within a Mile Radius from the Project Site.....	4-8
4-6	Estimated Number of Students Introduced in the Study Area: 2023 Future without the Proposed Action.....	4-8

4-7	Estimated Public Elementary and Intermediate School Enrollment, Capacity, and Utilization in the Study Area: 2023 Future without the Proposed Action.....	4-10
4-8	Estimated Public High School Enrollment, Capacity, and Utilization in Queens: 2023 Future without the Proposed Action.....	4-10
4-9	Estimated Number of Elementary and Intermediate Students Introduced in the Study Area: 2023 Future with the Proposed Action.....	4-11
4-10	Estimated Public Elementary and Intermediate School Enrollment, Capacity, and Utilization in the Study Area: 2023 Future with the Proposed Action.....	4-11
4-11	Temporary Elementary School Impact Analysis.....	4-12
4-12	Future With-Action High School Enrollment, Capacity, and Utilization Data in Queens....	4-12
4-13	Publicly Funded Child Care and Head Start Facilities within the 1.5-Mile Study Area.....	4-14
4-14	Projected Number of Publicly Funded Child Care Pupils Generated by New Development in the 2023 Future without the Proposed Action.....	4-15
4-15	Projected Number of Public Child Care Pupils Generated by the Proposed Project in the Future with the Proposed Action.....	4-15
4-16	Comparison of Budget Capacity, Enrollment, Available Slots, and Percent Utilized for the 2023 Future with and without the Proposed Action.....	4-15
4-17	Public Libraries in the ¾-Mile Study Area.....	4-17
5-1	2010 Population in the Half-Mile Study Area.....	5-5
5-2	Percent Distribution of Age Groups in the Study Area (2010).....	5-6
5-3	Inventory of Existing Open Space and Recreational Facilities in the Study Area.....	5-8
5-4	Adequacy of Open Space Resources in the Study Area—Existing Conditions.....	5-11
5-5	2023 No-Action Study Area Population.....	5-12
5-6	Adequacy of Open Space Resources in the Study Area—No-Action Condition.....	5-13
5-7	Adequacy of Open Space Resources in the Study Area— With-Action Condition.....	5-15
5-8	No-Action to With-Action Change in Open Space Ratios.....	5-15
6-1	Duration of Shadows on Sunlight Sensitive Resources (Increment Compared to No-Action)..	6-4
11-1	Water Consumption and Wastewater Generation Rates.....	11-2
11-2	Summary of Sanitary and Storm Discharges and CSO Subcatchment Areas.....	11-4
11-3	Existing Water Consumption.....	11-5
11-4	Monthly Average Dry Weather Flows from the Bowery Bay WPCP.....	11-6
11-5	Existing Stormwater Runoff to the Bowery Bay WPCP.....	11-7
11-6	Existing Combined Stormwater Runoff and Wastewater Generation to the Bowery Bay WPCP.....	11-8
11-7	Water Consumption and Wastewater Generation in the Future without the Proposed Action..	11-9
11-8	Water Consumption and Wastewater Generation in the Future without and with the Proposed Action.....	11-11
11-9	Combined Stormwater Runoff and Wastewater Generation Flow Volume to the Combined Sewer System—Future With-Action Condition.....	11-13
11-10	Combined Stormwater Runoff and Wastewater Generation Flow Volumes to the Combined Sewer System—Existing vs. With-Action Condition.....	11-13
12-1	Existing Energy Consumption.....	12-2
12-2	No-Action Energy Consumption.....	12-3
12-3	With-Action Energy Consumption.....	12-3
13-1	Summary of Impact Locations.....	13-2

13-2	Astoria Cove Program.....	13-5
13-3	Transportation Planning Assumptions (FRESH Supermarket).....	13-6
13-4	Transportation Planning Assumptions (Generic Supermarket).....	13-7
13-5	Travel Demand Forecast Summary Comparison—RWCDS with FRESH Supermarket vs. RWCDS with Generic Supermarket.....	13-9
13-6	Travel Demand Forecast (FRESH Supermarket).....	13-10
13-7	Travel Demand Forecast (Generic Supermarket).....	13-11
13-8	Bus Line Haul Screening Analysis.....	13-14
13-9	Intersection Level of Service Criteria.....	13-16
13-10	LOS Criteria for Subway Station Elements.....	13-17
13-11	Significant Impact Thresholds for Stairways and Passageways.....	13-19
13-12	Pedestrian Crosswalk/Corner Area and Sidewalk Levels of Service Descriptions.....	13-20
13-13	Significant Impact Criteria for Sidewalks with Platooned Flow in a Non-CBD Location.....	13-21
13-14	Significant Impact Criteria for Corners and Crosswalks in a Non-CBD Location.....	13-21
13-15	Existing Lane Group Level of Service Summary.....	13-25
13-16	2012 Existing Conditions—Level of Service at Analyzed Intersections.....	13-26
13-17	No-Action Traffic Mitigation Measures.....	13-30
13-18	Lane Group Level of Service Summary Comparison—Existing vs. No-Action Conditions...	13-31
13-19	2023 No-Action Condition—Level of Service at Analyzed Intersections	13-32
13-20	Lane Group Level of Service Summary Comparison No-Action vs. With-Action.....	13-39
13-21	2023 Future With-Action Condition—Level of Service at Analyzed Intersections	13-40
13-22	Lane Group Level of Service Summary Comparison –Existing vs. Alternate No-Action....	13-44
13-23	Alternate 2023 No-Action Condition—Level of Service at Analyzed Intersections	13-45
13-24	Lane Group Level of Service Summary Comparison—Alternate No-Action vs. With-Action.....	13-50
13-25	Comparison of Impact Locations—Future with Halletts Point vs. Future without Halletts Point.....	13-51
13-26	Alternate 2023 Future With-Action Condition—Level of Service at Analyzed Intersections..	13-52
13-27	2012 Existing Subway Stair Analysis.....	13-57
13-28	Existing Subway Fare Array Analysis.....	13-57
13-29	Existing Subway Line Haul Conditions.....	13-58
13-30	2012 Existing Conditions Bus Line Haul Analysis.....	13-59
13-31	2023 No-Action Subway Stair Analysis.....	13-59
13-32	2023 No-Action Subway Fare Array Analysis.....	13-60
13-33	2023 No-Action Subway Line Haul Conditions.....	13-60
13-34	2023 No-Action Condition Bus Line Haul Analysis.....	13-61
13-35	2023 With-Action Subway Stair Analysis.....	13-62
13-36	2023 With-Action Subway Fare Array Analysis.....	13-62
13-37	2023 Subway Line Haul Analysis—No-Action Condition vs. With-Action Condition.....	13-64
13-38	2023 With-Action Condition Bus Line Haul Analysis.....	13-64
13-39	2012 Existing Conditions Sidewalk Analysis.....	13-65
13-40	2012 Existing Conditions Corner Analysis.....	13-65
13-41	2012 Existing Conditions Crosswalk Analysis.....	13-66
13-42	2023 No-Action Condition Sidewalk Analysis.....	13-67
13-43	2023 No-Action Condition Corner Analysis.....	13-67

13-44	2023 No-Action Condition Crosswalk Analysis.....	13-67
13-45	2023 With-Action Condition Sidewalk Analysis.....	13-69
13-46	2023 With-Action Condition Corner Analysis.....	13-70
13-47	2023 With-Action Condition Crosswalk Analysis.....	13-70
13-48	Summary Accident Data 2010-2012.....	13-70
13-49	Study Area Parking Regulations.....	13-72
13-50	Existing On-Street Parking Conditions.....	13-72
13-51	2023 No-Action On-Street Parking Conditions.....	13-73
13-52	Weekday Parking Accumulation.....	13-74
13-53	2023 With-Action On-Street Parking Conditions.....	13-74
14-1	National and New York State Ambient Air Quality Standards.....	14-3
14-2	Study Area Intersections with With-Action Traffic Increments > 170.....	14-6
14-3	Weekly Hourly Garage Parking Demand.....	14-8
14-4	Mobile Source CO (ppm)—2023 No-Action Condition.....	14-12
14-5	Mobile Source PM ₁₀ (µg/m ³)—2023 No-Action Condition.....	14-12
14-6	Mobile Source PM _{2.5} (µg/m ³)—2023 No-Action Condition.....	14-13
14-7	Mobile Source CO (ppm)—2023 With-Action Condition.....	14-14
14-8	Mobile Source PM ₁₀ (µg/m ³)—2023 With-Action Condition.....	14-14
14-9	Mobile Source PM _{2.5} (µg/m ³)—2023 With-Action Condition.....	14-14
14-10	CO Air Quality for Garage (ppm).....	14-15
14-11	HVAC Screen for Existing Buildings on the Project Site.....	14-16
14-12	Nitrogen Dioxide Concentrations (µg/m ³)—Proposed Project on Existing Buildings.....	14-17
14-13	PM _{2.5} Concentrations (µg/m ³)—Proposed Project on Existing Buildings.....	14-17
14-14	Industrial Sites within 400 Feet of the Proposed Action.....	14-18
15-1	Global Warming Potential for Primary Greenhouse Gases.....	15-4
15-2	NPCC Baseline Climate and Mean Annual Changes.....	15-4
15-3	Annual Operational Emissions.....	15-6
15-3	Mobile Source Emissions.....	15-7
15-4	Total Emissions.....	15-7
16-1	Common Noise Levels.....	16-3
16-2	Noise Exposure Guidelines for Use in City Environmental Impact Review.....	16-4
16-3	Required Attenuation Values to Achieve Acceptable Interior Noise Levels.....	16-5
16-4	Nearby Sensitive Receptors.....	16-7
16-5	Existing Noise Levels (in dBA).....	16-9
16-6	2023 No-Action Noise Levels.....	16-11
16-7	2023 With-Action Noise Levels.....	16-12
16-8	Required Attenuation at the Buildings Sites under CEQR Criteria.....	16-15
19-1	Astoria Cove Conceptual Construction Schedule.....	19-8
19-2	Construction Oversight in New York City.....	19-10
19-3	Average Number of Daily Workers and Trucks by Quarter.....	19-16
19-4	Construction Trip Generation (Autos and Trucks, in PCEs).....	19-23
19-5	Weekday Construction and Operational Vehicle Trip Generation during the Peak Construction Traffic Period.....	19-23
19-6	2022(Q4) No-Action, With-Action, and Mitigation Conditions Construction Traffic Levels of Service.....	19-25

19-7	2022(Q4) Operational and Construction Worker Parking Accumulation.....	19-27
19-8	Maximum Predicted Pollutant Concentrations at Adjacent Sidewalks, Residences, and Open Spaces from Building 2 Construction Site Sources ($\mu\text{g}/\text{m}^3$).....	19-31
19-9	Construction Equipment Noise Emission Levels at 50 Feet (L_{max} in dBA).....	19-34
19-10	Sensitive Receptor Groups and Distance to Construction Sites.....	19-36
19-11	Construction Equipment Noise Level Increments.....	19-38
20-1	Comparison of Traffic Impact Mitigation under Future Scenario(1) and Future Scenario(2)...	20-5
20-2	RWCDS With-Action Condition Mitigation Traffic Mitigation Levels of Service Comparison—Weekday AM Peak Hour.....	20-7
20-3	RWCDS With-Action Condition Mitigation Traffic Mitigation Levels of Service Comparison—Weekday Midday Peak Hour.....	20-11
20-4	RWCDS With-Action Condition Mitigation Traffic Mitigation Levels of Service Comparison—Weekday PM Peak Hour.....	20-14
20-5	Alternate With-Action Condition Mitigation Traffic Mitigation Levels of Service Comparison—Weekday AM Peak Hour.....	20-17
20-6	Alternate With-Action Condition Mitigation Traffic Mitigation Levels of Service Comparison—Weekday Midday Peak Hour.....	20-21
20-7	Alternate With-Action Condition Mitigation Traffic Mitigation Levels of Service Comparison—Weekday PM Peak Hour.....	20-24
20-8	2023 Mitigated Bus Line Haul Levels.....	20-36
21-1	Zoning District Comparison—Proposed Action vs. Lower Density Alternative.....	21-11
21-2	Lower Density Alternative Compared to Proposed Action.....	21-11
21-3	Comparison of Weekday Peak Hour Incremental Person Trips by Mode—Proposed Action vs. Lower Density Alternative.....	21-15
21-4	Comparison of Weekday Peak Hour Incremental Vehicle Trips by Mode—Proposed Action vs. Lower Density Alternative.....	21-15
21-5	Traffic Impact and Mitigation Summary—Lower Density Alternative vs. Proposed Action.....	21-16
21-6	Comparison of Weekday AM and PM Incremental Person Trips by Mode—Proposed Action vs. Ferry Alternative.....	21-25
21-7	Comparison of Weekday AM and PM Incremental Vehicle Trips by Mode—Proposed Action vs. Lower Density Alternative.....	21-25
22-1	Comparison of Unmitigated or Partially Mitigated Intersections under the RWCDS With-Action Conditions and the Alternate With-Action Condition.....	22-4

LIST OF FIGURES

Following

Page

S-1	Project Location Map.....	S-1
S-2	Project Location—Aerial Photo.....	S-1
S-3	Existing and Proposed Zoning Districts.....	S-2
S-4	Proposed Street Network Changes.....	S-5
S-5a	Requested Special Permits – Building 1.....	S-6
S-5b	Requested Special Permits – Building 2.....	S-6
S-5c	Requested Special Permits – Building 3.....	S-6
S-5d	Requested Special Permits – Buildings 4 & 5.....	S-6
S-6	Preliminary Site Plan.....	S-9
S-7	Illustrative Rendering—Waterfront Esplanade.....	S-9
S-8	Illustrative Rendering—8 th Street Mews.....	S-9
S-9	Proposed Massing.....	S-10
S-10	View of Proposed Project from the East River.....	S-10
1-1	Project Location Map.....	1-1
1-2	Project Location—Aerial Photo.....	1-1
1-3	Existing and Proposed Zoning Districts.....	1-2
1-4	Proposed Street Network Changes.....	1-6
1-5a	Requested Special Permits – Building 1.....	1-6
1-5b	Requested Special Permits – Building 2.....	1-6
1-5c	Requested Special Permits – Building 3.....	1-6
1-5d	Requested Special Permits – Buildings 4 & 5.....	1-6
1-6	Preliminary Site Plan.....	1-9
1-7	Illustrative Rendering—Waterfront Esplanade.....	1-10
1-8	Illustrative Rendering—8 th Street Mews.....	1-10
1-9	Proposed Massing.....	1-10
1-10	View of Proposed Project from the East River.....	1-10
2-1	Land Use, Zoning, & Public Policy Study Area.....	2-3
2-2	Coastal Zone Boundary Map.....	2-6
2-3	Land Use Map.....	2-11
2-4	Existing and Proposed Zoning Districts.....	2-13
2-5	No-Action Site Locations.....	2-15
2-6	Proposed Massing.....	2-17
2-7	Preliminary FEMA Flood Boundaries.....	2-23
2-8	Section Through Site 1.....	2-23
2-9	NPCC Floodplain Projections.....	2-24
3-1	Socioeconomic Conditions Study Area (Census Tracts within the ½-Mile Radius).....	3-7
4-1	Public Elementary and Intermediate Schools Serving the Project Site.....	4-5
4-2	Public High Schools within a Mile Radius of the Project Site.....	4-7
4-3	Public Day Care Centers and Head Start Facilities within a 1.5-Mile Radius.....	4-14

4-4	Public Libraries in the ¾-Mile Study Area.....	4-17
5-1	Open Space Study Area (Census Tracts Within the ½-Mile Radius.....)	5-3
5-2	Open Space Resources.....	5-7
5-3	Proposed Landscape Plan.....	5-14
6-1	Longest Shadow Study Area.....	6-2
6-2	Incremental Shadows on March 21/September 21.....	6-4
6-3	Incremental Shadows on May 6/August 6.....	6-4
6-4	Incremental Shadows on June 21.....	6-4
6-5	Incremental Shadows on December 21.....	6-4
7-1	Areas of Archaeological Sensitivity.....	7-3
7-2	Phase 1B Testing Plan.....	7-10
8-1	Aerial View.....	8-1
8-2	Birds Eye View of Project Area.....	8-1
8-3	Primary and Secondary Study Areas.....	8-3
8-4	Existing Building Density.....	8-4
8-5	Building Heights.....	8-4
8-6a	Existing Conditions—Project Site.....	8-4
8-6b	Existing Conditions—Project Site.....	8-4
8-6c	Existing Conditions—Northeastern Section of Secondary Study Area.....	8-4
8-6d	Existing Conditions— Southeastern Section of Secondary Study Area.....	8-4
8-6e	Existing Conditions— Southwestern Section of Secondary Study Area.....	8-4
8-6f	Existing Conditions— Northwestern Section of Secondary Study Area.....	8-4
8-7a	Photo Key—Primary Study Area.....	8-4
8-7b	Photo Key—Secondary Study Area.....	8-4
8-8	Preliminary Site Plan.....	8-9
8-9	Proposed Massing.....	8-9
8-10	8 th Street Mews.....	8-9
8-11	View of Proposed Project from the East River.....	8-10
8-12	Waterfront Esplanade.....	8-10
8-13a	View of the Project Site looking east from 4 th Street and 26 th Avenue—No-Action Condition.....	8-12
8-13b	Proposed View of the Project Site looking east from 4 th Street and 26 th Avenue.....	8-12
8-14a	View looking north from 8 th Street and 27 th Avenue—No-Action Condition.....	8-13
8-14b	Proposed View of the Project Site looking north from 8 th Street and 27 th Avenue.....	8-13
8-15a	View looking north from 9 th Street and 27 th Avenue—No-Action Condition.....	8-14
8-15b	Proposed View of the Project Site looking north from 9 th Street and 27 th Avenue.....	8-14
8-16a	View looking east from Whitey Ford Field—Existing/No-Action Condition.....	8-14
8-16b	Proposed View looking east from Whitey Ford Field.....	8-14
8-17a	View looking south from Astoria Park (Shore Blvd & Astoria Park)—No-Action Condition.....	8-14
8-17b	Proposed View looking south from Astoria Park (Shore Blvd & Astoria Park).....	8-14
8-18a	View south from Astoria Park Esplanade—No-Action Condition.....	8-14
8-18b	Proposed View south from Astoria Park Esplanade.....	8-14
8-19a	View looking southeast from East River Esplanade (at East 102 nd Street)—Existing/No-Action Condition.....	8-15
8-19b	Proposed View looking southeast from East River Esplanade (at East 102 nd Street).....	8-15
8-20a	View west from Carl Schurz Park—No-Action Condition.....	8-15

8-20b	Proposed view west from Carl Schurz Park.....	8-15
8-21a	View southeast from Randall's/Ward's Island—No-Action Condition.....	8-15
8-21b	Proposed view southeast from Randall's/Ward's Island.....	8-15
9-1	U.S. Federal Emergency Management Agency Flood Hazard Areas.....	9-7
9-2	National Wetlands Inventory—Mapped Wetlands.....	9-7
9-3a	Existing Conditions—Project Site.....	9-9
9-3b	Existing Conditions—Project Site.....	9-9
9-4	NYSDEC Tidal Wetland Adjacent Boundary.....	9-14
9-5	Proposed Planting Diagram.....	9-15
11-1	Existing and Proposed Sanitary Sewer System.....	11-3
11-2	Existing and Proposed Storm Sewer System.....	11-3
11-3	Bowery Bay Subcatchment Areas.....	11-3
11-4	DEP Water Mains.....	11-5
11-5	Stormwater Best Management Practices Concept Plan.....	11-13
13-1	Proposed Shuttle Bus Route.....	13-4
13-2	With-Action Increment Volumes—AM Peak Hour.....	13-12
13-3	With-Action Increment Volumes—Midday Peak Hour.....	13-12
13-4	With-Action Increment Volumes—PM Peak Hour.....	13-12
13-5	Traffic Analysis Locations.....	13-12
13-6	Study Area Subway Stations and Bus Routes.....	13-13
13-7	AM Peak Hour Pedestrian Increment.....	13-14
13-8	Midday Peak Hour Pedestrian Increment.....	13-14
13-9	PM Peak Hour Pedestrian Increment.....	13-14
13-10	Pedestrian Analysis Locations.....	13-15
13-11	Existing Volumes—AM Peak Hour.....	13-23
13-12	Existing Volumes—Midday Peak Hour.....	13-23
13-13	Existing Volumes—PM Peak Hour.....	13-23
13-14	No-Action Volumes—AM Peak Hour.....	13-31
13-15	No-Action Volumes—Midday Peak Hour.....	13-31
13-16	No-Action Volumes—PM Peak Hour.....	13-31
13-17	With-Action Volumes—AM Peak Hour.....	13-38
13-18	With-Action Volumes—Midday Peak Hour.....	13-38
13-19	With-Action Volumes—PM Peak Hour.....	13-38
13-20	Alternate No-Action Volumes—AM Peak Hour.....	13-39
13-21	Alternate No-Action Volumes—Midday Peak Hour.....	13-39
13-22	Alternate No-Action Volumes—PM Peak Hour.....	13-39
13-23	Alternate With-Action Volumes—AM Peak Hour.....	13-50
13-24	Alternate With-Action Volumes—Midday Peak Hour.....	13-50
13-25	Alternate With-Action Volumes—PM Peak Hour.....	13-50
13-26	30 th Avenue Subway Station Layout.....	13-56
13-27	Existing AM Peak Hour Pedestrian Volumes.....	13-64
13-28	Existing Midday Peak Hour Pedestrian Volumes.....	13-64
13-29	Existing PM Peak Hour Pedestrian Volumes.....	13-64
13-30	No-Action AM Peak Hour Pedestrian Volumes.....	13-66
13-31	No-Action Midday Peak Hour Pedestrian Volumes.....	13-66

13-32	No-Action PM Peak Hour Pedestrian Volumes.....	13-66
13-33	With-Action AM Peak Hour Pedestrian Volumes.....	13-66
13-34	With-Action Midday Peak Hour Pedestrian Volumes.....	13-66
13-35	With-Action PM Peak Hour Pedestrian Volumes.....	13-66
13-26	Area Parking Regulations.....	13-71
14-1	Preliminary Site Plan.....	14-15
16-1	Sensitive Receptors Near Project Site.....	16-6
16-2	Noise Monitoring Locations.....	16-6
19-1	Astoria Cove Anticipated Construction Phasing Schedule.....	19-7
19-2	2022 Construction No-Action Traffic Volume – AM (6AM-7AM)/PM (3PM-4PM) Peak Hour.....	19-24
19-3	Construction Increment Traffic Volume (Construction and Operational)– AM (6AM-7AM)/PM (3PM-4PM) Peak Hour.....	19-24
19-4	2022 Construction With-Action Traffic Volume – AM (6AM-7AM)/PM (3PM-4PM) Peak Hour.....	19-24
19-5	Noise Receptor Groups.....	19-35
20-1	Potential Canopy at Building 3’s Northeast Corner.....	20-4
20-2	RWCDS With-Action Condition Mitigation Measures.....	20-5
20-3	Alternate With-Action Condition Mitigation Measures.....	20-5
21-1	Lower Density Alternative—Illustrative Massing.....	21-10