RHEINGOLD DEVELOPMENT REZONING

DRAFT SCOPE OF WORK
for the
ENVIRONMENTAL IMPACT STATEMENT

CEQR No. 09DCP002K
ULURP Nos. 110179ZRK, 080322ZMK, 070250MMK

Lead Agency:
NYC Department of City Planning

Prepared for:
Forrest Lots, LLC

Prepared by:
Philip Habib & Associates

July 27, 2012

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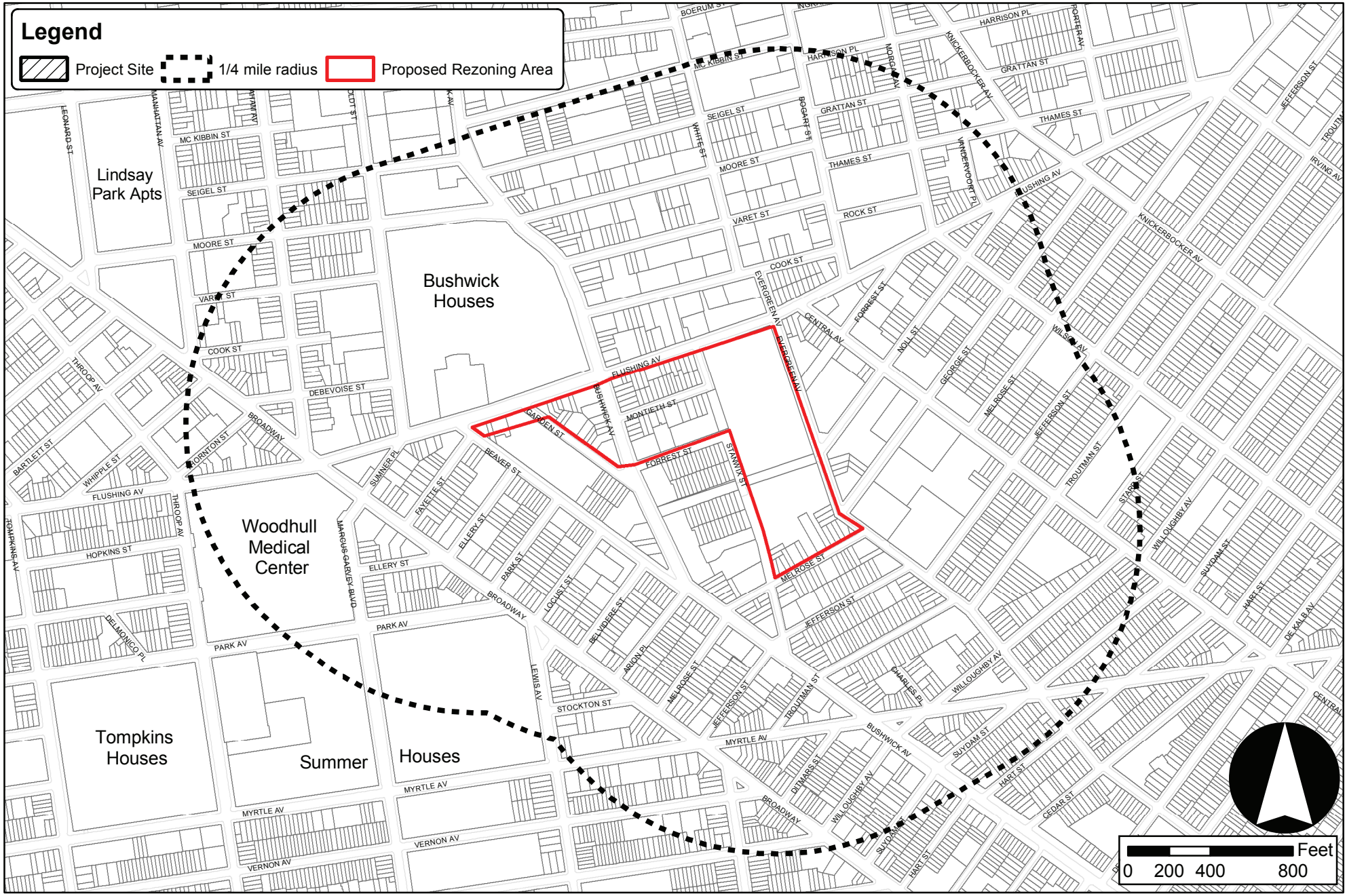
A. INTRODUCTION

This draft scope of work outlines the technical areas to be analyzed in the preparation of an Environmental Impact Statement (EIS) for the Rheingold Development project. The New York City Department of City Planning (DCP), acting on behalf of the New York City Planning Commission (CPC), as lead agency for New York City Environmental Quality Review (CEQR), has determined that the project will require the preparation of an Environmental Impact Statement (EIS).

The applicant, Forrest Lots, LLC, is requesting zoning map and text amendments, and amendments to the City Map (collectively, the "Proposed Action") to facilitate residential and mixed-use development on five full blocks and a portion of one block in the Bushwick neighborhood of Brooklyn, Community District 4. The area affected by the Proposed Action comprises approximately 623,080 square feet (sf), and is bounded by Flushing Avenue on the north, Evergreen Avenue on the east, Melrose Avenue on the south, and Stanwix, Beaver, Garden Streets to the west (see Figure 1). Currently the area is zoned M1-1 and M3-1, which allow for high and low-performance manufacturing uses, respectively.

The Proposed Action would rezone the current M1-1 and M3-1 districts to R6A, R7A and M1-2 districts, map C2-4 commercial overlays, make the Inclusionary Housing Program (IH) zoning regulations applicable in the proposed R6A and R7A districts, and would map two streets that are currently unmapped. The R6A and R7A proposed zoning districts along with the proposed C2-4 commercial overlays would allow residential and commercial development where they are prohibited today, while bringing into conformance pre-existing residential uses. The M1-2 district, as noted elsewhere, would provide a buffer between the heavier manufacturing uses and the proposed residential uses and would also reflect the existing built conditions. M1-2 districts also allow for certain commercial and community facility uses by special permit from the City Planning Commission. The mapping of two unmapped streets, Stanwix Street and Noll Street, would restore the street grid and establish pedestrian and vehicular connections through the proposed residential development.

The Proposed Action would facilitate a proposal by the applicant to develop ten residential buildings with ground floor local retail on four development sites, which would introduce approximately 881 dwelling units, of which 214 would be affordable (per the Inclusionary Housing Program), and 32,273 zsf of local retail.



Rheingold Development Rezoning

Figure 1

Rezoning Area

However, for conservative analysis purposes, the EIS will consider the reasonable worst-case development scenario (RWCDS) for the four applicant controlled projected development sites. Therefore, under the RWCDS, the applicant's sites would result in a net increase of 54,182 zsf of local retail and 977 dwelling units, 20 percent (195 dwelling units)of which are expected to be affordable to low-to moderate-income households, per the Inclusionary Housing Program.

The EIS also considers that there may be four additional projected developments besides the applicant's proposed development within the proposed rezoning area that could occur as a result of the proposed rezoning. These projected development sites are located on Blocks 3152, 3137, and 3138 and could result in up to 99 DUs and 27,609 zsf of ground floor retail. The eight projected development sites are expected to be built by the analysis build year 2016. Additionally, three potential development sites being rezoned were identified as being less likely to be developed. The other lots in the proposed rezoning area are not expected to be redeveloped as a result of the Proposed Action.

The total incremental difference between the future with the Proposed Action (With-Action) and the future without the Proposed Action (No-Action) development scenarios (build year 2016) for all eight projected development sites is:

- An increase of 1,076 dwelling units, of which 215 would be affordable under the Inclusionary Housing program;
- An increase of 74,194 zoning square feet of commercial retail space;
- A decrease of 79,915 zoning square feet of manufacturing space; and
- A decrease of 53,895 square feet of open storage/vehicle parking space.
- A decrease of 129,513 square feet of vacant land.

This document provides a description of and the need and purpose for the Proposed Action, the resulting projected and potential development, and includes task categories for all technical areas to be analyzed in the EIS.

B. REQUIRED APPROVALS AND REVIEW PROCEDURES

The Proposed Action encompasses several discretionary actions that are subject to review under the Uniform Land Use Review Procedure (ULURP) and the City Environmental Quality Review (CEQR) process. The discretionary actions include:

(1) Zoning map amendments to
   - Replace the existing M1-1 zoning district within the proposed rezoning area with R6A and R7A zoning districts;
   - Replace the existing M3-1 zoning district within the proposed rezoning with an M1-2 zoning district; and
   - Map new C2-4 commercial overlays along portions of Bushwick Avenue, Flushing Avenue, and Evergreen Avenue to a depth of 100 feet (portions of Flushing Avenue east of Bushwick Avenue would be mapped to a depth of 87 feet).

(2) A zoning text amendment to modify Section 23-922 of the New York City Zoning Resolution

to make appropriate R6A and R7A zoning districts "inclusionary housing designated areas" to apply the Inclusionary Housing Program to the proposed R6A and R7A districts.

(3) City Map amendments to
- Map an un-built segment of Stanwix Street which would extend between Montieth Street and Forrest Street; and
- Map an un-built segment of Noll Street which would extend between Evergreen Avenue and Stanwix Street.

City Environmental Quality Review (CEQR) and Scoping

The Proposed Action triggers ULURP and requires environmental review under the City Environmental Quality Review (CEQR) procedures. An Environmental Assessment Statement (EAS) was completed and The New York City Department of City Planning (NYCDCP), acting as lead agency on behalf of the City Planning Commission, has determined that the Proposed Action would have the potential for significant adverse impacts, thus requiring that an Environmental Impact Statement (EIS) be prepared.

The CEQR scoping process is intended to focus the EIS on those issues that are most pertinent to the Proposed Action. The process at the same time allows other agencies and the public a voice in framing the scope of the EIS. This scoping document sets forth the analyses and methodologies which will be utilized to prepare the EIS. During the period for scoping, those interested in reviewing the draft scope may do so and give their comments to the lead agency. The public, interested agencies, Brooklyn Community Board 4, and elected officials, are invited to comment on the draft scope, either in writing or orally, at a public scoping meeting. Comments received during the draft scope's public hearing and written comments received up to 10 days after the hearing, will be considered and incorporated as appropriate into a final scope of work. The lead agency will oversee preparation of a final EIS scope, which incorporates all relevant comments made on the draft scope and revises the extent or methodologies of the studies, as appropriate, in response to comments made during scoping. The draft EIS (DEIS) will be prepared in accordance with the final Scope of Work for an EIS.

Once the lead agency is satisfied that the DEIS is complete, the document will be made available for public review and comment. The DEIS will accompany the Uniform Land Use Review Procedure (ULURP) application through the public hearings at the Community Board and City Planning Commission (CPC). A public hearing will be held on the DEIS in conjunction with the CPC hearing on the ULURP applications to afford all interested parties the opportunity to submit oral and written comments. The record will remain open for 10 days after the public hearing to allow additional written comments on the DEIS. At the close of the public review period, a Final EIS (FEIS) will be prepared that will incorporate all substantive comments made on the DEIS, along with any revisions to the technical analysis necessary to respond to those comments. The FEIS will then be used by the decision makers to evaluate CEQR findings, which address project impacts and proposed mitigation measures, before deciding whether to approve the requested discretionary actions.

C. DESCRIPTION OF PROPOSED ACTION

Existing Conditions

The decline of the New York City industrial/manufacturing sector during the past three decades has resulted in many vacant or underutilized properties in this area of Brooklyn. While the industrial sector has declined, residential populations in adjacent communities have substantially increased, leading to greater housing demand.

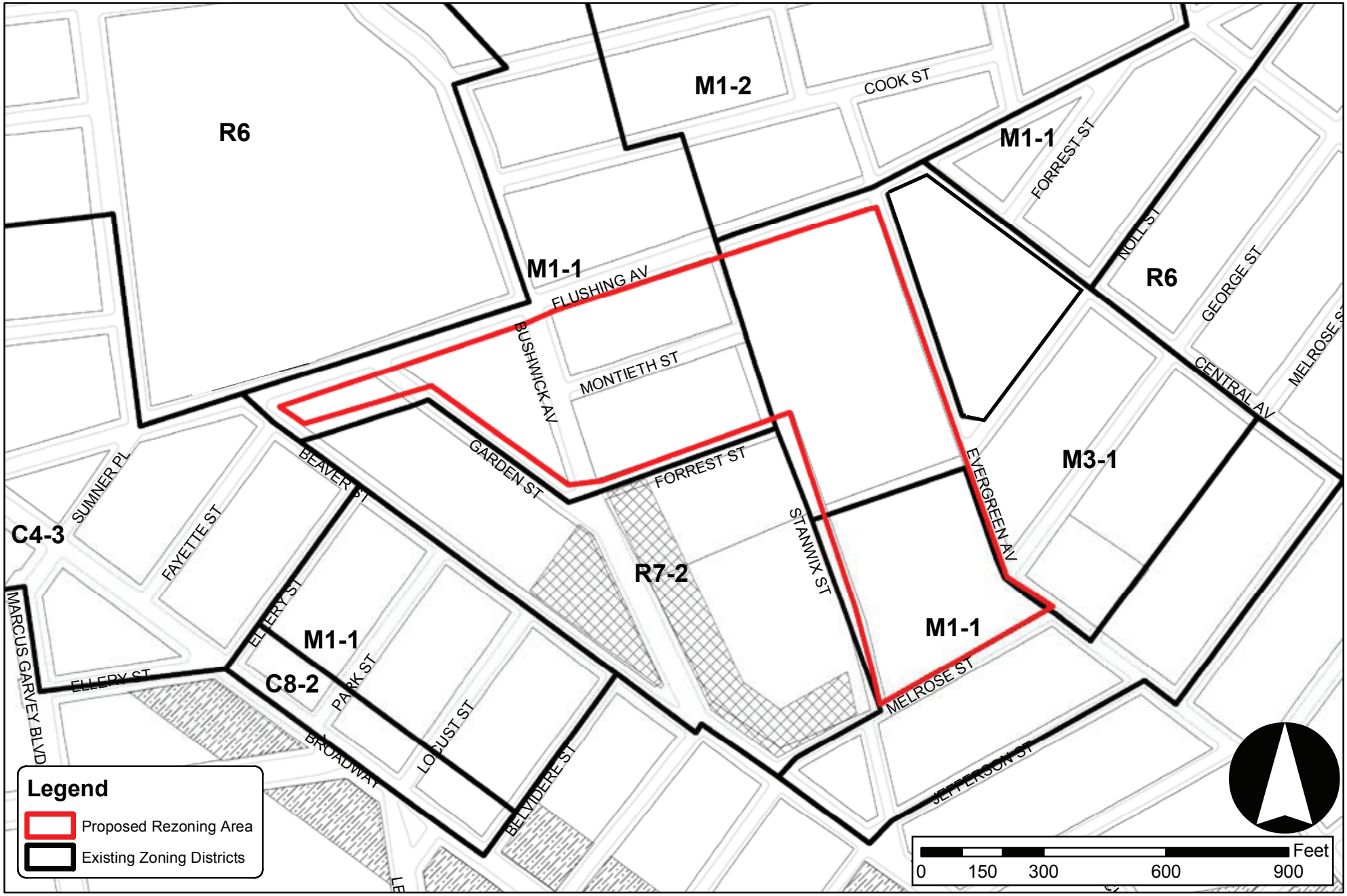
These trends of growth and subsequent decline of the industrial sector are evident in the historic uses of the proposed rezoning area. Historic Sanborn maps indicate that in 1898 a portion of projected development site 2 was occupied by the Claus Lipsius Brewery. The rest of the projected and potential development sites were occupied by residential buildings. Later, in 1908, a factory occupied projected development site 3, although the area remained dominated by breweries and residential uses. Also in the early 1900's, Block 3140, currently occupied by the 2-story warehouse at 930 Flushing Avenue, used to house the S. Liebmans Sons Brewery in three separate blocks. More recently, in 1995, the warehouse at 80 Evergreen Avenue on Block 3152 was used for beer storage and shipping, this was the last brewery related use in the area, the warehouse has since been retrofitted for wholesale business use.

The proposed rezoning area is located in Bushwick, in the western section of Brooklyn Community District 4. This area of Bushwick has been undergoing a transformation in recent years as a number of former industrial, commercial, and vacant properties have been redeveloped with residential uses. These include the former Rheingold Brewery site, located directly south and west of the proposed rezoning area, which has been redeveloped with townhouses and apartments. These housing units on the former Rheingold property were developed under the New York City Housing Partnership program and many of the units are affordable housing for low and moderate income households. Other new infill residential development in the area includes the Melrose Apartments, a 6-story residential building recently constructed on Central Avenue between George and Noll streets at 51 Central Avenue.

As shown in Figure 1, the proposed rezoning area is bounded by Flushing Avenue, Evergreen Avenue, Melrose Avenue, Stanwix Street, Forrest Street, Garden Street, and Beaver Street. It includes approximately 6 blocks, which encompass a total of approximately 623,080 sf. Table 1 provides a list of all the blocks and lots included within the proposed rezoning area.

Figure 2 shows the existing zoning within the proposed zoning area. The proposed rezoning area is zoned for high performance and low-performing manufacturing and industrial uses. West of Stanwix Street, the rezoning area is zoned M1-1. Another M1-1 district is mapped on the southern portion of the rezoning area to the south of Noll Street (which is to be mapped as a result of the Proposed Action). East of Stanwix Street and to the north of Noll Street, the rezoning area is zoned M3-1.

M1-2 districts allow commercial and low-density light manufacturing uses, as well as certain community facility uses such as houses of worship and schools. However, residential uses are not permitted. Moreover, M1-1 districts do not have height limits. M3-1 districts allow heavy industries that generate noise, traffic, or pollutants that meet low performance standards. Typical uses include power plants, solid waste transfer facilities, and fuel supply depots. Residential and community facility uses are not permitted in M3-1 districts.



Rheingold Development Rezoning

Figure 2

Existing Zoning

Table 1: Projected and Potential Development Sites

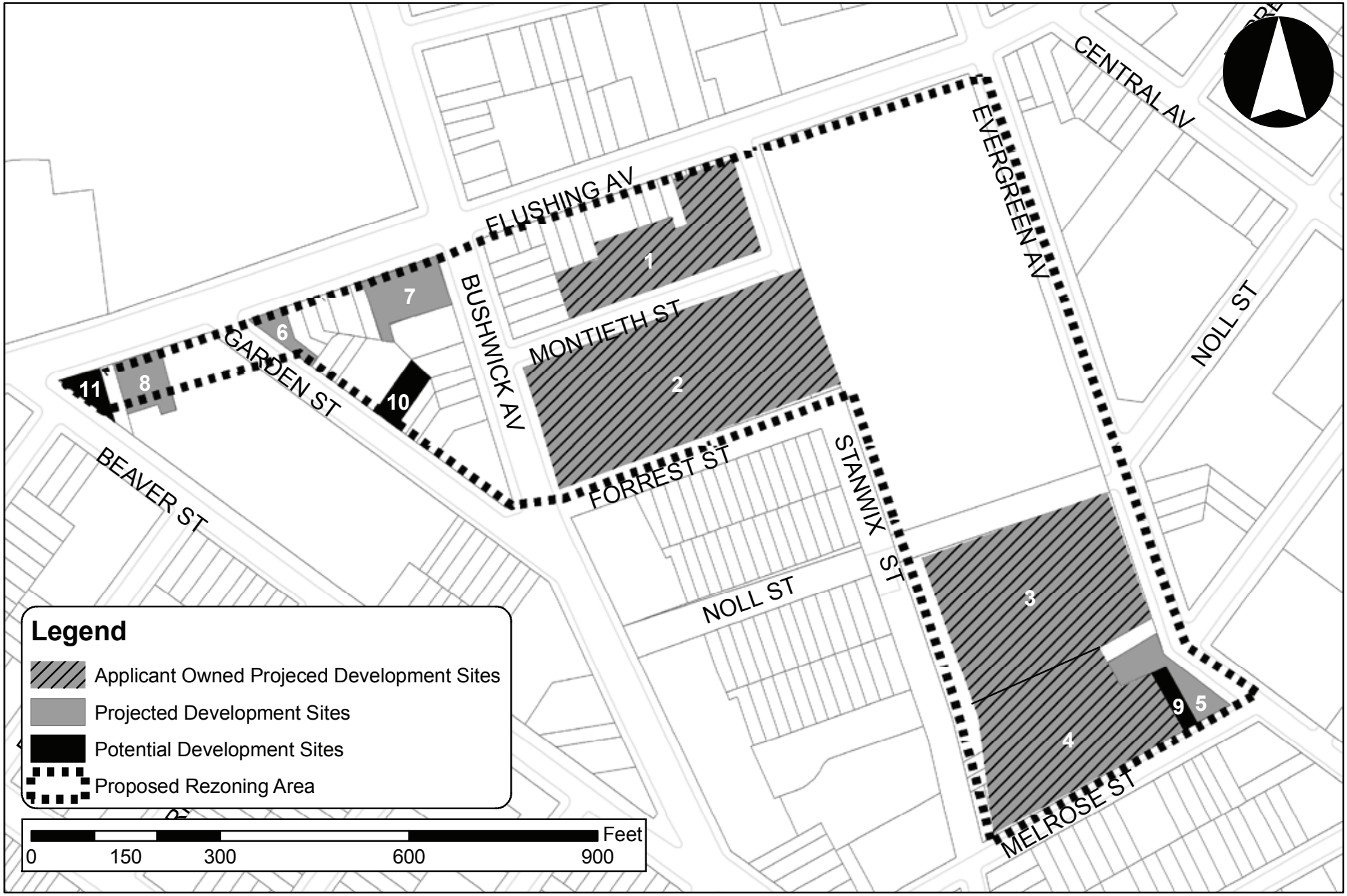
Projected Development Sites	Block	Lot(s)
Projected Development Site 1*	3139	18, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36
Projected Development Site 2*	3141	1, 5, 6, 7, 8, 10, 11, 12, 14, 15, 18, 20, 21, 22, 23, 36
Projected Development Site 3*	3152	p/o 3, p/o 48
Projected Development Site 4*	3152	1, 2, p/o 3, 45, p/o 48, 56, 58, 62, 63, 64, 66
Projected Development Site 5	3152	36, 37, 38, 41, 43
Projected Development Site 6	3138	20, 22
Projected Development Site 7	3138	32
Projected Development Site 8	3137	56
Potential Development Sites	**Block**	**Lot(s)**
Potential Development Site 9	3152	44
Potential Development Site 10	3138	11
Potential Development Site 11	3137	51
Blocks and Lots within the rezoning area not considered Projected or Potential Development Sites	**Block**	**Lot(s)**
	3137	26 (portion), 49 (portion), 51
	3138	1, 7, 9, 10, 13, 17, 18, 23, 24, 25, 27, 36, 38, 40, 41
	3139	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 15, 16, 17
	3140	1*, 50*
	3152	35

Notes:
*Applicant owned sites.

The rezoning area currently contains a mix of land uses, including commercial, residential, parking and vehicle storage, automotive, transportation-related and industrial uses. It also includes a significant amount of vacant land. The northern tip of the P.S. 120 playground, which extends along Flushing Avenue between Garden and Beaver Streets, is also included within the boundaries of the rezoning area.

Commercial uses are generally concentrated near Flushing Avenue and along Bushwick Avenue in the western portion of the rezoning area, and include local retail, restaurant, and office uses. Residential uses are also largely concentrated in the western portion of the rezoning area, and generally include low-rise 3-to 5-story walkup residential tenement buildings, some of which include ground floor retail. Industrial, vehicle storage, parking, automotive and transportation-related uses are largely located to the east of Bushwick Avenue. A large two-story warehouse at 930 Flushing Avenue, which occupies most of the M3-1 zoning district within the rezoning area, extends along the west side of Evergreen Avenue between Flushing Avenue and Noll Street.

Eight projected development sites (four of which are applicant owned) were identified as part of the reasonable worst-case development scenario (discussed in more detail below). In addition, three potential development sites which are less likely to be developed were identified. The eight projected and three potential development sites are listed in Table 1 and illustrated in Figure 3. Table



Rheingold Development Rezoning

Figure 3

RWCDS Projected & Potential Development Sites

TABLE 2
Projected and Potential Development Sites Existing Land Use and Zoning

Site No.	Block	Lot	Address	Land Use Category	Zoning	Lot Area (sf)	Gross Floor Area	No. Bldg.	No. Stories	Residential (sf)	Dwelling Units	Commercial (sf)	Industrial/ Warehouse (sf)	Vacant Land	Build FAR
Applicant Owned Projected Development Sites															
Projected 1	3139	18	902 Flushing Ave.	Vehicle Storage/Parking Lot	M1-1	1,452	0	0	0	0	0	0	0	0	0.00
		19	904 Flushing Ave.	Vehicle Storage/Parking Lot	M1-1	2,065	0	0	0	0	0	0	0	0	0.00
		20	906 Flushing Ave.	Vehicle Storage/Parking Lot	M1-1	2,053	0	0	0	0	0	0	0	0	0.00
		21	908 Flushing Ave.	Vehicle Storage/Parking Lot	M1-1	2,041	0	0	0	0	0	0	0	0	0.00
		23	Montieth St.	Vehicle Storage/Parking Lot	M1-1	1,875	0	0	0	0	0	0	0	0	0.00
		24	35 Montieth St.	Vehicle Storage/Parking Lot	M1-1	1,875	0	0	0	0	0	0	0	0	0.00
		25	Montieth St.	Vehicle Storage/Parking Lot	M1-1	1,875	0	0	0	0	0	0	0	0	0.00
		26	31 Montieth St.	Vehicle Storage/Parking Lot	M1-1	2,500	0	0	0	0	0	0	0	0	0.00
		27	29 Montieth St.	Vehicle Storage/Parking Lot	M1-1	1,600	0	0	0	0	0	0	0	0	0.00
		28	27 Montieth St.	Vehicle Storage/Parking Lot	M1-1	1,833	0	0	0	0	0	0	0	0	0.00
		29	25 Montieth St.	Vehicle Storage/Parking Lot	M1-1	1,833	0	0	0	0	0	0	0	0	0.00
		30	23 Montieth St.	Vehicle Storage/Parking Lot	M1-1	1,833	0	0	0	0	0	0	0	0	0.00
		31	21 Montieth St.	Vehicle Storage/Parking Lot	M1-1	2,500	0	0	0	0	0	0	0	0	0.00
		32	19 Montieth St.	Vehicle Storage/Parking Lot	M1-1	2,500	0	0	0	0	0	0	0	0	0.00
		33	17 Montieth St.	Vehicle Storage/Parking Lot	M1-1	2,500	0	0	0	0	0	0	0	0	0.00
		34	15 Montieth St.	Vehicle Storage/Parking Lot	M1-1	1,875	0	0	0	0	0	0	0	0	0.00
		35	13 Montieth St.	Vehicle Storage/Parking Lot	M1-1	1,875	0	0	0	0	0	0	0	0	0.00
		36	11 Montieth St.	Vehicle Storage/Parking Lot	M1-1	1,875	0	0	0	0	0	0	0	0	0.00
					Total	*35,960*	*0*	*0*	*N.A.*	*0*	*0*	*0*	*0*	*0*	*0.00*
Projected 2	3141	1	501 Bushwick Ave.	Vacant Land	M1-1	12,204	0	0	0	0	0	0	0	12,252	0.00
		5	489 Bushwick Ave.	Vacant Land	M1-1	1,782	0	0	0	0	0	0	0	1,775	0.00
		6	485 Bushwick Ave.	Vehicle Storage/Parking Lot	M1-1	1,768	0	0	0	0	0	0	0	0	0.00
		7	483 Bushwick Ave.	Vacant Land	M1-1	1,753	0	0	0	0	0	0	0	1,760	0.00
		8	479 Bushwick Ave.	Industrial	M1-1	1,739	1,235	1	0	0	0	0	1,235	0	0.71
		10	10 Montieth St.	Vacant Land	M1-1	2,500	0	0	0	0	0	0	0	2,500	0.00
		11	12 Montieth St.	Vacant Land	M1-1	2,500	0	0	0	0	0	0	0	2,500	0.00
		12	14 Montieth St.	Vacant Land	M1-1	2,815	0	0	0	0	0	0	0	2,810	0.00
		14	18 Montieth St.	Vacant Land	M1-1	2,646	0	0	0	0	0	0	0	2,620	0.00
		15	20-24 Montieth St.	Vacant Land	M1-1	7,500	0	0	0	0	0	0	0	7,500	0.00
		18	Montieth St.	Vacant Land	M1-1	3,750	0	0	0	0	0	0	0	3,750	0.00
		20	Montieth St.	Vacant Land	M1-1	3,750	0	0	0	0	0	0	0	3,750	0.00
		21	32 Montieth St.	Vacant Land	M1-1	2,500	0	0	0	0	0	0	0	2,500	0.00
		22	34 Montieth St.	Vacant Land	M1-1	2,500	0	0	0	0	0	0	0	2,500	0.00
		23	36 Montieth St.	Vacant Land	M1-1	24,409	0	0	0	0	0	0	0	24,300	0.00
		36	15 Forrest St.	Vacant Land	M1-1	10,168	0	0	0	0	0	0	0	10,200	0.00
					Total	*84,284*	*1,235*	*1*	*N.A.*	*0*	*0*	*0*	*1,235*	*80,717*	*0.71*
Projected 3	3152	3[1]	80 Evergreen Ave	Industrial/Warehouse	M1-1	*74,639*	77,680	2	1	0	0	0	77,680	0	1.04
		48[1]	123 Melrose St	Vacant Land	M1-1	*632*	0	0	0	0	0	0	0	632	0.00
						75,271	*77,680*	*2*	*1*	*0*	*0*	*0*	*77,680*	*632*	*1.04*
Projected 4	3152	1	28-32 Stanwix St	Vacant Land	M1-1	1,348	0	0	0	0	0	0	0	1,348	0.00
		2	Stanwix St	Vacant Land	M1-1	2,068	0	0	0	0	0	0	0	2,068	0.00
		3[1]	80 Evergreen Ave	Vacant Land	M1-1	29,223	0	0	0	0	0	0	0	23,115	0.00
		45	127 Melrose St	Vacant Land	M1-1	2,500	0	0	0	0	0	0	0	2,500	0.00
		48	123 Melrose St	Vacant Land	M1-1	9,378	0	0	0	0	0	0	0	9,378	0.00
		56	109 Melrose St	Vehicle Storage/Parking Lot	M1-1	2,500	0	0	0	0	0	0	0	0	0.00
		58	107 Melrose St	Vehicle Storage/Parking Lot	M1-1	5,000	0	0	0	0	0	0	0	0	0.00
		62	Melrose St	Vehicle Storage/Parking Lot	M1-1	2,500	0	0	0	0	0	0	0	0	0.00
		63	97 Melrose St	Vehicle Storage/Parking Lot	M1-1	1,975	0	0	0	0	0	0	0	0	0.00
		64	95 Melrose St	Vehicle Storage/Parking Lot	M1-1	2,163	0	0	0	0	0	0	0	0	0.00
		66	Melrose St	Vehicle Storage/Parking Lot	M1-1	2,061	0	0	0	0	0	0	0	0	0.00
					Total	*60,716*	*0*	*0*	*N.A.*	*0*	*0*	*0*	*0*	*38,409*	*0.00*
Projected Development Sites															
Projected 5	3152	36	96 Evergreen Ave	Vacant Land	M1-1	1,865	0	0	0	0	0	0	0	1,865	0.00
		37	98 Evergreen Ave	Vacant Land	M1-1	2,200	0	0	0	0	0	0	0	2,200	0.00
		38	-108 Evergreen Ave	Vacant Land	M1-1	2,400	0	0	0	0	0	0	0	2,400	0.00
		41	Evergreen Ave	Vacant Land	M1-1	790	0	0	0	0	0	0	0	790	0.00
		43	Melrose St	Vacant Land	M1-1	2,500	0	0	0	0	0	0	0	2,500	0.00
					Total	*9,755*	*0*	*0*	*N.A.*	*0*	*0*	*0*	*0*	*9,755*	*0.00*
Projected 6	3138	20	846 Flushing Ave	Automotive Repair	M1-1	3,300	1,000	1	1	0	0	0	1,000	0	0.00
		22	848 Flushing Ave	Automotive Repair	M1-1	2,275	0	0	0	0	0	0	0	0	0.00
					Total	*5,575*	*1,000*	*1*	*N.A.*	*0*	*0*	*0*	*1,000*	*0*	*0.00*
Projected 7	3138	32	860 Flushing Ave	Gas Station	M1-1	*10,600*	1,596	1	1	0	0	1,596	0	0	0.15
Projected 8	3137	56	832 Flushing Ave	Commercial	M1-1	*6,550*	6,000	1	1	0	0	6,000	0	0	0.92
				Projected Sites Total		***288,711***	***87,511***	***6***	***N.A.***	***0***	***0***	***7,596***	***79,915***	***129,513***	***2.82***
Potential Development Sites															
Potential 9	3152	44	131 Melrose St.	Industrial	M1-1	2,500	3,400	1	2	0	0	0	3,400	0	1.36
Potential 10	3138	11	31 Garden St.	Residential	M1-1	4,000	2,475	1	3	2,475	9	0	0	0	0.62
Potential 11	3137	51	818 Flushing Ave.	Commercial	M1-1	2,880	2,880	1	1	0	0	2,880	0	0	1.00

Notes:

[1] Portion

2 shows the existing land use and zoning of each of the projected and potential development sites. As shown in Table 1, the four largest projected development sites, including projected development sites 1 through 4, are owned by the applicant. Vacant land and vehicle storage uses occupy most of the projected development sites. All of the projected development sites are underutilized, and contain very few existing buildings. In total, existing uses on the 8 projected development sites include approximately 7,596 zsf of commercial use and approximately 79,915 zsf of industrial/warehouse use.

Purpose and Need for Proposed Action

The Proposed Action would facilitate a proposal by the applicant to develop new mixed-use residential development at a scale and density that the applicant considers appropriate for the area, and at the same time continue to permit certain commercial uses along the Flushing, Bushwick and Central Avenue corridors.

Also, while the affected area is currently zoned for manufacturing uses, it is located within an area that is largely characterized by residential and retail uses. The affected area contains underutilized lots used for vehicle/open storage, where residential uses are not permitted per the existing zoning. The Proposed Action would provide opportunities for new affordable and market rate residential development on those underutilized lots.

The existing low-density M1-1 zoning designations in the rezoning area would be replaced with contextual medium-density R6A and R7A residential zoning districts, which would allow residential development. The proposed rezoning area is located adjacent to an existing R7-2 zoning district to west of Stanwix Street and an existing R6 zoning district to north of Flushing Avenue. The proposed R6A and R7A districts would bring into compliance 23 pre-existing, noncompliant residential uses with approximately 172 dwelling units. These dwelling units are located within the M1-2 manufacturing district along Evergreen Avenue, Flushing Avenue, Garden Street, and Bushwick Avenue within the rezoning area.

The M3-1 district within the rezoning area would be rezoned to a M1-2 district, which allow less noxious uses and are typically mapped as buffer zones near residential uses. M3 zones generally permit heavy manufacturing uses while M1-2 zones permit light manufacturing and commercial uses. M1-2 districts also permit certain large retail uses, and community facility uses, by City Planning Commission special permit, whereas M3-1 districts do not. The proposed M1-2 district would extend the existing M1-2 zoning district located just north of the rezoning area, across Flushing Avenue. Uses on Block 3140 (transportation) would conform to the M1 designation.

In addition, the Proposed Action would make the Inclusionary Housing Program (IH) zoning regulations applicable in the proposed R6A and R7A districts. The Inclusionary Housing designation, which can be applied in areas being rezoned to allow medium- and high-density residential development, combines a zoning floor area bonus with a variety of housing subsidy programs to create incentives for the development and preservation of affordable housing.

The proposed mapping action would connect the neighborhoods to the east and west of the project site. New access to the existing and proposed housing on Stanwix Street, Forrest Street and Noll Street would be provided through the proposed Stanwix Street extension. New sidewalks and streets would connect the proposed new neighborhood with neighborhoods to the east and allow for

pedestrian and vehicle use. In addition, new infrastructure to support the proposed developments can be placed in the newly mapped public streets.

The Proposed Action

The applicant seeks approval from the CPC for zoning map changes and a zoning text amendment for an approximately 6 block area in the Bushwick neighborhood of Brooklyn Community District 4. The proposed rezoning area is generally bounded by Flushing Avenue on the north, Evergreen Avenue on the east, Melrose Avenue on the south, and Stanwix, Beaver, and Garden Streets to the west (see Figure 1). In addition, the applicant is seeking approval to amend the City Map to establish unmapped segments of Stanwix Street and Noll Street, located within the proposed rezoning area, as public streets.

Proposed Zoning

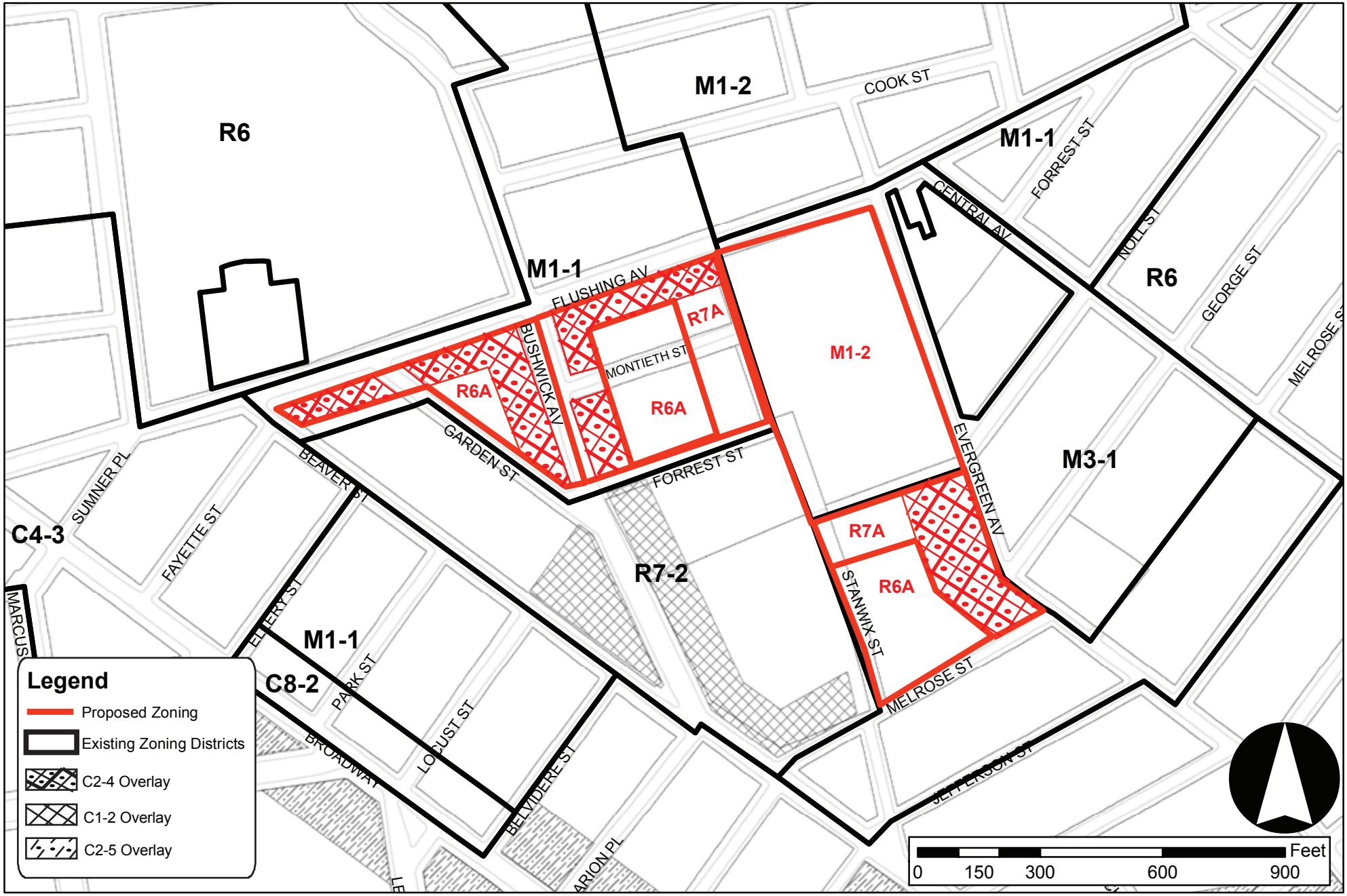
Figure 4 illustrates the proposed zoning designations, and the following provides a more detailed discussion of the proposed zoning changes. Table 3 at the end of this section summarizes the key bulk control regulations for the proposed zoning districts.

The existing low-density M1-1 zoning designations in the rezoning area would be replaced with contextual medium-density R6A and R7A residential zoning districts, which would allow residential development. The proposed rezoning area is located adjacent to an existing R7-2 zoning district to west of Stanwix Street and an existing R6 zoning district to north of Flushing Avenue; therefore, the proposed zoning map changes would extend residential zoning with similar districts (R7A, R6A).

Proposed R6A
Existing M1-1

The existing M1-1 zoning is a light manufacturing district with high performance standards that permits Use Groups 5-14, 16 and 17 as-of-right, and has a maximum FAR of 1.0 for commercial and industrial uses. Certain community facility uses (Use Group 4) such as houses of worship and schools are also allowed in M1-1 districts up to an FAR of 2.4. Residential uses are not permitted. M1-1 zoning districts typically act as buffers between M2 and M3 heavy manufacturing zoning districts and adjacent residential or commercial zoning districts.

As shown in Figure 4, the proposed R6A zoning district would be mapped in the western portion of the rezoning area along the south side of Flushing Avenue between Beaver and Garden Streets on Block 3137, and on Block 3138, which is bounded by Flushing Avenue, Bushwick Avenue and Garden Street. The midblocks of Block 3139 and 3141, which are generally bounded by the north side of Forrest Street between Bushwick Avenue and Stanwix Street would also be zoned R6A. The southwestern portion of rezoning area near the intersection of Melrose and Stanwix Streets (part of Block 3152) would be rezoned R6A as well. R6A is a contextual residential zoning district, which permits Use Groups 1-4 as-of-right and has a maximum FAR of 3.0 for both residential and community facility uses. Within the Inclusionary Housing Program, R6A districts allow a base FAR of 2.7 and maximum FAR of 3.6 for residential uses. The street wall could rise 40 to 60 feet, with a maximum building height of 70 feet.



Rheingold Development Rezoning

Figure 4

Proposed Zoning

Proposed R7A
Existing M1-1

The proposed R7A zoning district would be mapped on portions of Blocks 3139 and 3141, including along the south side of Flushing Avenue between Bushwick Avenue and Stanwix Street, the east side of Bushwick Avenue between Flushing Avenue and Forrest Street, and on the west side of the Stanwix Street (portion of which is to mapped as part of the Proposed Action) between Flushing Avenue and Forrest Street. R7A zoning would also be mapped on portions of Block 3152, including along the west side of Evergreen Avenue between Noll Street (to be mapped as part of the Proposed Action) and Melrose Street, and on the south side of Noll Street (to be mapped as part of the Proposed Action) between Stanwix Street and Evergreen Avenue. R7A is also a contextual residential district, which permits use groups 1-4 as-of-right but has a higher FAR than the R6A district with a maximum FAR of 4.0. Within the Inclusionary Housing Program, R7A districts allow a base FAR of 3.45 and maximum FAR of 4.6 for residential uses. This zoning district allows maximum building heights of 80 feet, street wall heights of 40 to 65 feet.

Proposed M1-2
Existing M3-1

The existing heavy M3-1 manufacturing zoning on Block 3140 would be replaced with high performance manufacturing M1-2 zoning. The existing M3-1 zoning is a heavy manufacturing use district, which permits Use Groups 5-18 as-of-right, and has a maximum floor area ratio (FAR) of 2.0 for commercial and industrial uses. Residential and community facility uses are not permitted. All manufacturing and industrial uses are required to conform to minimum performance standards in M3 districts. M1-2 zoning allows use groups 5-14, 16 and 17 as-of-right with has a maximum FAR of 2.0. Certain community facility uses (Use Group 4) such as houses of worship and schools are also allowed in M1-2 districts up to an FAR of 4.8. M1-2 districts also permit applications for special permits, whereas M3-1 districts do not. The M1-2 zoning light manufacturing district would be an appropriate buffer zoning district between the heavier industrial M3-1 zoning district to the east and the proposed R6A and R7A residential districts to the west and south.

C2-4 Commercial Overlays

As shown in Figure 4, C2-4 commercial overlays are proposed to be mapped on the south side of Flushing Avenue between Beaver Street and Evergreen Avenue, on both sides of Bushwick Avenue between Flushing Avenue and Forrest Street, and on the west side of Evergreen Avenue between Noll and Melrose Streets to a depth of 100 feet. C2 commercial overlays are mapped on streets within residential districts that serve the local retail needs of the surrounding residential neighborhood. Typical retail uses include grocery stores, restaurants and beauty parlors. C2 districts permit a slightly wider range of uses than C1 districts, such as funeral homes and repair services. The proposed commercial overlays would be mapped within R6A and R7A districts. Within the proposed R6A and R7A districts, ground floor retail uses would be allowed up to 2.0 FAR in mixed residential/commercial buildings. Buildings without residential uses would also be allowed 2.0 FAR of commercial uses.

The proposed C2-4 commercial overlays along the Bushwick, Flushing and Evergreen Avenues would extend existing C2-4 overlay districts along Bushwick Avenue, immediately to the south of the rezoning area, and be similar to C1-3 overlay districts mapped along Central Avenue on the west side, between Troutman Street and Willoughby Avenue and on the east side between Starr Street and Dekalb Avenue.

TABLE 3
Summary of Proposed Zoning Districts and Regulations

District	Maximum FAR	Streetwall (Min. base height/ Max. base Height	Maximum Building Height
Proposed R6A	Residential: 3.0 (2.70 to 3.6 FAR with Inclusionary Housing) Community Facility: 3.0 Commercial (when mapped with C2-4 overlay): up to 2.0	40 feet min. 60 feet max.	70 feet
Proposed R7A	Residential: 4.0 (up 3.45 to 4.6 FAR with Inclusionary Housing) Community Facility: 4.0 Commercial (when mapped with C2-4 overlay): up to 2.0	40 feet min. 65 feet max.	80 feet
Proposed M1-2	Community Facility: 4.8 Commercial/manufacturing: 2.0	Max. base height of 60 feet or four stories, whichever is less.	Controlled by sky exposure plane.

Inclusionary Housing Program

In addition to the aforementioned zoning map amendments, the Proposed Action includes the following zoning text amendment.

The proposed zoning text amendment modifies Section 23-922 of the New York City Zoning Resolution to make the appropriate R6A and R7A districts "inclusionary housing designated areas." This will establish an inclusionary floor area ratio (FAR) bonus, providing opportunity and incentive for the development of affordable housing.

The proposed zoning text amendment would make the Inclusionary Housing Program (IHP) zoning regulations applicable in the proposed R6A and R7A zoning districts in the rezoning area. The base and maximum FAR for R6A districts under the IHP is 2.7 and 3.6, respectively. The base and maximum FAR for R7A districts under the IHP is 3.45 and 4.6, respectively. In the areas where the IHP would be applicable, new residential developments that provide on- or off- site housing that will remain permanently affordable for low-and moderate-income families would receive increased floor area. Using the IHP, the floor area may be increased by 1.25 square feet for each square foot of affordable housing provided, up to the maximum FAR - a 33% bonus in exchange for 20% of floor area set aside as affordable units. The additional floor area must be accommodated within the bulk regulations of the underlying zoning districts. Affordable units could be financed through city, state, and federal affordable housing subsidy programs.

The affordable housing requirement of the Inclusionary Housing zoning bonus could be met through the development of affordable units, on-site, or off-site either through new construction or preservation of existing affordable units. Off-site affordable units must be located within the same community district, within a half-mile of the development receiving the FAR bonus, or anywhere within Community District 4. The availability of on-site and off-site options provides maximum flexibility to ensure the broadest possible utilization of the program under various market conditions

City Map Amendments

The Proposed Action also involves changes to the City Map, including: the mapping of an unbuilt, unmapped segment of Stanwix Street between Montieth Street and Forrest Street; and the mapping of an unbuilt, unmapped segment of Noll Street between Evergreen Avenue and Stanwix Street. As a result of the proposed mapping actions, Stanwix Street would connect Forrest and Montieth Streets

and Noll Street would connect Stanwix Street and Evergreen Avenue. Stanwix Street would have a mapped width of 50 feet, including a 30-foot travel way and two 10-foot sidewalks. Noll Street would also have a mapped width of 50 feet, including a 30-foot travel way and two 10-foot sidewalks. These widths are consistent with the adjacent streets connecting to these newly mapped street segments. The NYCDCP and NYCDOT have consulted on the area's circulation plan and recommended the opening of these newly mapped streets. In conjunction with this mapping, selected one-way streets within the study area would change in direction. Montieth Street would change from eastbound operation to westbound operation, Forrest Street would change from westbound operation to eastbound operation and Stanwix Street would change from northbound operation to southbound operation in the vicinity of the project site.

D. ANALYSIS FRAMEWORK

Reasonable Worst-Case Development Scenario (RWCDS)

In order to assess the possible effects of the Proposed Action, a reasonable worst-case development scenario was established for both the current zoning (Future No-Action) and proposed zoning (Future With-Action) conditions projected to the build year of 2016. The incremental difference between the Future No-Action and Future With-Action conditions are the basis of the impact category analyses of this Environmental Assessment Statement. To determine the With-Action and No-Action conditions, standard methodologies have been used following the *2012 CEQR Technical Manual* guidelines employing reasonable assumptions. These methodologies have been used to identify the amount and location of future development, as discussed below.

Development Site Criteria

In projecting the amount and location of new development, several factors have been considered in identifying likely development sites. These include known development proposals, past development trends, and the development site criteria described below. The first step in establishing the development scenario was to identify those sites where new development could reasonably occur. The applicant's development proposal on Sites 1 to 4 is considered a known proposal likely to occur as a result of the Proposed Action.

Development sites were identified based on the following criteria:

Any of the following categories of lots or assemblages with a total area greater than or equal to approximately 5,000 square feet (sf) or larger:

- Vacant, partially vacant, and underutilized buildings that have not been recently improved;
- Auto-related uses including: parking lots, open junk yards, auto repair shops and gas stations;
- Industrial or commercial buildings constructed to 50 percent or less of the FAR allowed by the proposed zoning (in Inclusionary Zoning designated areas the proposed R6A zoning district would permit a maximum residential FAR of 3.6 and the proposed R7A district would permit a maximum FAR of 4.6);

Definition of Projected and Potential Development

To produce a reasonable, conservative estimate of future growth, the development sites were further divided into two categories - projected development sites and potential development sites. The projected development sites are considered more likely to be developed by the 2016 build year because of: known development plans for such sites, their relatively low FAR and current utilization, and relatively large size. Potential development sites are considered less likely to be developed over the same period because of their relatively higher FARs, existing utilization, and generally more cumbersome means of development.

The following criteria are considered when categorizing a site as a projected or potential development site:

- Sites located in areas containing high levels of residential activity.
- Larger sites in common ownership are considered more likely to be developed than smaller sites or those in divided ownership.
- Redevelopment of older industrial buildings is considered more likely than redevelopment of more modern facilities.

The Environmental Impact Statement assesses both density-related and site specific potential impacts from the development on all projected development sites. Density-related impacts are dependent on the amount and type of development projected on a site and the resulting impact on traffic, air quality, community facilities, and open space. Site specific impacts relate to individual site conditions and are not dependent on the density of projected development. Site specific impacts include potential noise impacts from development, the effects on historic resources, and the possible presence of hazardous materials. Development is not anticipated on the potential development sites within the next decade; therefore, these sites have not been included in the density-related impact assessments. However, specific review of site specific impacts for these sites has been conducted in order to ensure a conservative analysis.

As stated above, eleven development sites (eight projected and three potential) have been identified in the rezoning area. Figure 3 shows these projected and potential development sites, and Table A1-1 in Appendix 1 to this document identify the uses expected to occur on each of those sites under future No-Action and future With-Action conditions.

The Future Without the Proposed Action (No-Action Condition)

Despite the presence of available vacant sites, the proposed rezoning area has seen little manufacturing development over the last three decades. In the future without the Proposed Action (No-Action), given the existing zoning and land use trends in the area, it is anticipated that the rezoning area would experience no new development by 2016 and the existing uses are anticipated to remain. Tables A1-1 in Appendix 1 show the anticipated development on the projected and potential sites identified in the RWCDS in the future without the Proposed Action.

As shown in Table A1-1, in the future without the Proposed Action scenario, the eight projected development sites would continue to accommodate a total of approximately 79,915 zsf of industrial/manufacturing/warehouse use, 7,596 zsf of commercial use, and 53,895 sf of vehicle/open storage/parking use, as well as 129,513 sf of vacant land, on the eight projected development sites.

The Future With the Proposed Action (With-Action Condition)

The Proposed Action would allow for the development of new uses and higher densities at the projected and potential development sites. In the future with the Proposed Action, it is expected that a total of approximately 1,076 dwelling units and 74,194 zsf of local retail would be developed.

Table 4 below provides a summary of the RWCDS for projected development sites. Detailed information on the RWCDS for each of the 8 projected development sites, as well as the 3 potential development sites, is provided in Tables A1-1 and included in Appendix 1.

Table 4
Incremental Difference between the No-Action and With-Action Conditions for Projected Development Sites

Site	Residential (zsf)	DUs	Inclusionary DUs	Retail (zsf)	Accessory Parking Spaces
1*	132,290	132	26	16,058	60
2*	326,426	326	65	17,010	150
3*	299,149	300	60	17,960	137
4*	219,134	219	44	3,154	103
5	36,581	37	7	8,292	16
6	15,331	15	3	4,739	7
7	29,150	29	6	7,414	14
8	18,013	18	4	-433	8
TOTAL	**1,076,074**	**1,076**	**215**	**74,194**	**495**

*Applicant's property

The reasonable worst-case development scenarios defined above represent the upper bounds of residential, retail, and parking uses for the purposes of impact analysis.

Based on 2010 Census Data for a half mile radius around the rezoning area, it is projected that the average household size for the projected residential development would be approximately 2.95 persons per dwelling unit. With the projected developments combined, the Proposed Action Proposed Action would add approximately 3,174 new residents. In addition, applying space occupancy rates typically used in CEQR documents, the Proposed Action would generate approximately 223 new employees (3 employees/1,000 sf of retail). Also using typical rates, the Proposed Action would remove 46 employees from the projected development sites. This would result in a net increase of 177 employees in the proposed rezoning area. It is assumed that the average dwelling unit size would be 1,000 sf, per DCP's standard guidelines.

A total of 3 sites were considered less likely to be developed within the foreseeable future, and were thus considered potential development sites (Table A1-1 in Appendix 1 lists all 3 potential development sites). The potential sites are deemed less likely to be developed because they did not closely meet the criteria listed above. However, as discussed above, the analysis recognizes that a number of potential sites could be developed under the Proposed Action in lieu of one or more of the projected sites in accommodating the development anticipated in the RWCDS. The potential sites are therefore also addressed in the EIS for site-specific effects.

As such, the environmental impact statement document will analyze the projected developments for all technical areas of concern and also evaluate the effects of the potential developments for site-specific effects such as archaeology, shadows, hazardous materials, air quality, and noise.

E. PROPOSED SCOPE OF WORK FOR THE EIS

As the RWCDS associated with the Proposed Action would affect various areas of environmental concern and were found to have the potential for significant adverse impacts, pursuant to the EAS and Positive Declaration, an Environmental Impact Statement (EIS) will be prepared for the Proposed Action. The EIS will analyze the RWCDS associated with the Proposed Action for all technical areas of concern.

The EIS will be prepared in conformance with all applicable laws and regulations, including SEQRA (Article 8 of the New York State Environmental Conservation Law) and its implementing regulations found at 6 NYCRR Part 617, New York City Executive Order No. 91 of 1977, as amended, and the Rules of Procedure for CEQR, found at Title 62, Chapter 5 of the Rules of the City of New York. The EIS will follow the guidance of the *CEQR Technical Manual*, dated January 2012, and will contain:

- A description of the Proposed Action and its environmental setting;
- A statement of the environmental impacts of the Proposed Action, including its short- and long-term effects and typical associated environmental effects;
- An identification of any adverse environmental effects that cannot be avoided if the Proposed Action is implemented;
- A discussion of reasonable alternatives to the Proposed Action;
- An identification of irreversible and irretrievable commitments of resources that would be involved in the Proposed Action should it be implemented; and
- A description of mitigation proposed to eliminate or minimize any significant adverse environmental impacts.

The EIS will analyze the projected developments for all technical areas of concern and also evaluate the effects of the potential developments for site-specific effects such as shadows, hazardous materials, air quality, and noise. Based on the preliminary screening assessments outlined in the *CEQR Technical Manual* and detailed in the EAS document, the following environmental areas would not require detailed analysis in the EIS: historic and cultural resources, natural resources, solid waste and sanitation services, and energy. It should be noted however that as a GHG emissions analysis will be provided in the EIS, pursuant to *CEQR Technical Manual* guidelines the Proposed Action and associated RWCDS's energy consumption will be calculated and provided in the EIS.

The specific technical areas to be included in the EIS, as well as their respective tasks, are described below.

TASK 1. PROJECT DESCRIPTION

The first chapter of the EIS introduces the reader to the Proposed Action and sets the context in which to assess impacts. The chapter contains a description of the Proposed Action: its location; the background and/or history of the project; a statement of the purpose and need; key planning considerations that have shaped the current proposal; a detailed description of the Proposed Action; and discussion of the approvals required, procedures to be followed, and the role of the EIS in the process. This chapter is the key to understanding the Proposed Action and its impact, and gives the public and decision-makers a base from which to evaluate the Proposed Action.

In addition, the project description chapter will present the planning background and rationale for the actions being proposed and summarize the reasonable worst-case development scenario for analysis in the EIS. The section on approval procedures will explain the Uniform Land Use Review Procedure (ULURP) process, its timing, and hearings before the Community Board, the Borough President's Office, the New York City Planning Commission (CPC), and the New York City Council. The role of the EIS as a full-disclosure document to aid in decision-making will be identified and its relationship to ULURP and the public hearings described.

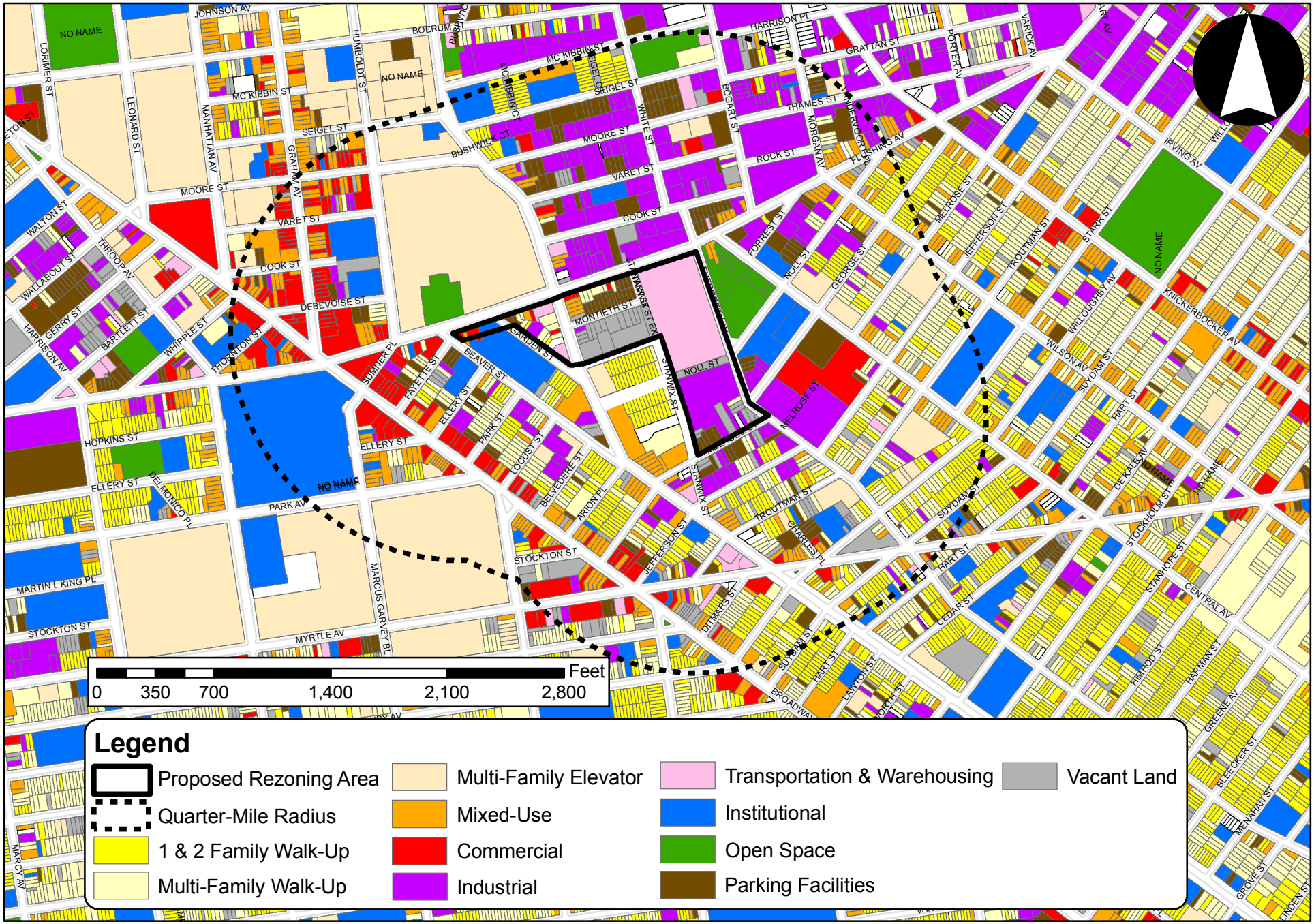
Finally, the project description chapter will describe, in detail, the Reasonable Worst Case Development Scenario. The chapter will provide a breakdown of the existing, no-action and with-action conditions for every development site. The chapter will also discuss the assumptions behind the Reasonable Worst Case Development Scenario.

TASK 2. LAND USE, ZONING, AND PUBLIC POLICY

This chapter will analyze the potential impacts of the Proposed Action on land use, zoning, and public policy, pursuant to the methodologies presented in the *2012 CEQR Technical Manual*. The primary land use study area will consist of the rezoning area, where the potential effects of the Proposed Action will be directly experienced (reflecting the proposed rezoning and resultant RWCDS). The secondary land use study area would include the neighboring areas within a ¼-mile boundary from the rezoning area, as shown in Figure 5, which could experience indirect impacts. The land use assessment will include a description of existing (2012) conditions and evaluations of the Future No-Action and With-Action conditions in 2016.

The analysis will include the following subtasks:

- Provide a brief development history of the rezoning area and surrounding study area.
- Provide a description of land use, zoning, and public policy in the study areas discussed above (a more detailed analysis will be conducted for the rezoning area). This task will be closely coordinated with Task 3, "Socioeconomic Conditions," which will provide a qualitative, and if warranted, a quantitative analysis of the project's effect on businesses and employment in the rezoning area. Recent trends in the rezoning area will be noted.
- Based on field surveys and prior studies, identify, describe, and graphically portray predominant land use patterns for the balance of the study areas. Describe recent land use trends in the study areas and identify major factors influencing land use trends, including a description of recent development trends.
- Describe and map existing zoning and recent zoning actions in the study areas.



Rheingold Development Rezoning

Figure 5

Land Use Study Area

- Describe relevant public policies that apply to the rezoning area and secondary study area. The rezoning area is not located within the boundaries of the City's Coastal Zone. Therefore, an assessment of the project's consistency with the City's Waterfront Revitalization Program is not required.
- Prepare a list of future development projects in the study areas that are expected to be constructed by the 2016 analysis year and may influence future land use trends. Also, identify pending zoning actions or other public policy actions that could affect land use patterns and trends in the study areas. Based on these planned projects and initiatives, assess future land use and zoning conditions without the Proposed Action (No-Action condition).
- Describe proposed zoning changes, and the potential land use changes based on the Proposed Action's RWCDS (With-Action condition).
- Discuss the Proposed Action's potential effects related to issues of compatibility with surrounding land use, the consistency with zoning and other public policies and the effect of the Proposed Action on ongoing development trends and conditions in the study areas.
- If necessary, mitigation measures to avoid or reduce potential significant adverse land use, zoning, and/or public policy impacts will be identified.

TASK 3. SOCIOECONOMIC CONDITIONS

The socioeconomic character of an area includes its population, housing, and economic activity. Socioeconomic changes may occur when a project directly or indirectly changes any of these elements. Although socioeconomic changes may not result in impacts under CEQR, they are disclosed if they would affect land use patterns, low-income populations, the availability of goods and services, or economic investment in a way that changes the socioeconomic character of the area. This chapter will assess the Proposed Action's potential effects on the socioeconomic character of the study area.

Pursuant to Section 310 of Chapter 5 of the *2012 CEQR Technical Manual,* the socioeconomic study area boundaries will be dependent on the size and characteristics of the RWCDS associated with the Proposed Action. A socioeconomic assessment seeks to assess the potential to change socioeconomic character relative to the study area population. The Proposed Action is expected to generate a net increase of 1,076 residential units, of which 215 would be affordable under the Inclusionary Housing Program. For projects or actions that result in an increase in population, the scale of the relative change is typically represented as a percent increase in population (i.e., a project that would result in a relatively large increase in population may be expected to affect a larger study area). Therefore, consistent with the *2012 CEQR Technical Manual,* the socioeconomic study area would be a 0.5 mile radius from the rezoning area, as the RWCDS associated with the Proposed Action would increase the population within an approximate quarter-mile radius of the rezoning area by more than 5 percent compared to the expected No-Action population.

Pursuant to the *2012 CEQR Technical Manual*, the five principal issues of concern with respect to socioeconomic conditions are whether a proposed action would result in significant adverse impacts due to: (1) direct residential displacement; (2) direct business and institutional displacement; (3) indirect residential displacement; (4) indirect business and institutional displacement; and (5) adverse effects on specific industries. As detailed below, the Proposed Action warrant an assessment of socioeconomic conditions with respect to three of these principal issues of concern, including: indirect residential displacement; indirect business displacement; and adverse effect on specific

industries. According to the *2012 CEQR Technical Manual*, the direct displacement of fewer than 500 residents or less than 100 workers would not typically be expected to alter the socioeconomic characteristics of a neighborhood. No direct residential displacement would occur under the Proposed Action, and, therefore, the Proposed Action would not result in significant adverse impacts due to direct residential displacement. The Proposed Action would result in the displacement of 8 business establishments, employing an estimated 46 workers.

In conformance with the *2012 CEQR Technical Manual guidelines*, the assessment of the three remaining areas of concern will begin with a preliminary assessment to determine whether a detailed analysis is necessary. Detailed analyses will be conducted for those areas in which the preliminary assessment cannot definitively rule out the potential for significant adverse impacts. The detailed assessments will be framed in the context of existing conditions and evaluations of the Future No-Action and With-Action conditions in 2016, including any population and employment changes anticipated to take place by the analysis year of the Proposed Action.

Indirect Residential Displacement

Indirect residential displacement is the involuntary displacement of residents that results from a change in socioeconomic conditions created by a Proposed Action. According to the *CEQR Technical Manual*, indirect residential displacement could occur if a proposed project either introduces a trend or accelerates a trend of changing socioeconomic conditions that may potentially displace a vulnerable population to the extent that the socioeconomic character of the neighborhood would change. To assess this potential impact, the *CEQR Technical Manual* seeks to answer a series of threshold questions in terms of whether the project substantially alters the demographic character of an area through population change or introduction of more costly housing.

The indirect residential displacement analysis will use the most recent available U.S. Census data, New York City Department of Finance's Real Property Assessment Data (RPAD) database, as well as current real estate market data, to present demographic and residential market trends and conditions for the study area. The presentation of study area characteristics will include population estimates, housing tenure and vacancy status, median value and rent, and median household income. Pursuant to *2012 CEQR Technical Manual* guidelines, the preliminary assessment will carry out the following the step-by-step evaluation:

- Step 1: Determine if the Proposed Action would add substantial new population with different income as compared with the income of the study area population. If the expected average incomes of the new population would be similar to the average incomes of the study area populations, no further analysis is necessary. If the expected average incomes of the new population would exceed the average incomes of the study area populations, then Step 2 of the analysis will be conducted.
- Step 2: Determine if the Proposed Action's population is large enough to affect real estate market conditions in the study area. If the population increase may potentially affect real estate market conditions, then Step 3 will be conducted.
- Step 3: Determine whether the study area potentially contains a population at risk of indirect displacement resulting from rent increases due to changes in the real estate market caused by the new population.

If the preliminary assessment finds that there is a substantial population potentially at risk of indirect displacement, a detailed analysis will be conducted. The detailed analysis would utilize more in depth

demographic analysis and field survey to characterize existing conditions of residents and housing, identify populations at risk of displacement, assess current and future socioeconomic trends that may affect these populations, and examine the effects of the Proposed Action on prevailing socioeconomic trends and, thus, impacts on the identified population at risk.

Direct Business Displacement

For direct business displacement, the type and extent of businesses and workers to be directly displaced by the RWCDS associated with the Proposed Action will be disclosed. The Proposed Action is expected to result in direct business displacement on five of the eight projected development sites. According to the *CEQR Technical Manual*, if a project would directly displace more than 100 employees, a preliminary assessment of direct business displacement is appropriate. Although it is expected that the Proposed Action would not exceed the *2012 CEQR Technical Manual* analysis threshold of 100 displaced employees, a preliminary assessment pursuant to CEQR guidelines will be provided in the EIS.

The analysis of direct business and institutional displacement will estimate the number of employees and the number and types of businesses that would be displaced by the Proposed Action, and characterize the economic profile of the study area using current employment and business data from the New York State Department of Labor or U.S. Census Bureau. This information will be used in addressing the following CEQR criteria for determining the potential for significant adverse impacts: (1) whether the businesses to be displaced provide products or services essential to the local economy that would no longer be available in its "trade area" to local residents or businesses due to the difficulty of either relocating the businesses or establishing new, comparable businesses; and (2) whether a category of businesses is the subject of other regulations or publicly adopted plans to preserve, enhance, or otherwise protect it.

Indirect Business Displacement

The concern with respect to indirect business and institutional displacement is whether a proposed action could lead to increases in property values, and thus rents, making it difficult for some businesses or institutions to remain in the area. According to the *2012 CEQR Technical Manual*, commercial developments or 200,000 sf or less or residential developments of 200 units or less would typically not result in significant indirect impacts. As compared to the future No-Action condition, the Proposed Action would result in a net reduction of 79,915 zsf of industrial/manufacturing/warehousing use and 52,894 sf of vehicle/open storage space and a net increase of 74,194 zsf of retail. Although the net increment of retail space added by the Proposed Action would be less than 200,000 sf, the Proposed Action would introduce a net increase of 1,076 residential dwelling units that could alter socioeconomic conditions in the study area. Therefore, an indirect business displacement analysis will be conducted to determine if the Proposed Action would introduce trends that make it difficult for businesses that are essential to the local economy to remain in the area.

The assessment will entail the following steps:

- Identify and characterize conditions and trends in employment and businesses within the study area. This analysis will be based on field surveys, employment data from the New York State Department of Labor and/or Census, and discussions with real estate brokers.
- Determine whether the Proposed Action and projected RWCDS would introduce enough of a new economic activity to alter existing economic patterns.

- Determine whether the Proposed Action and projected RWCDS would add to the concentration of a particular sector of the local economy enough to alter or accelerate an ongoing trend to alter existing economic patterns.
- Determine whether the Proposed Action and projected RWCDS would directly displace uses of any type that directly support businesses in the area or bring people to the area that form a customer base for local businesses.
- Determine whether the Proposed Action and projected RWCDS would directly or indirect displace residents, workers, or visitors who form the customer base of existing businesses in the area.

If the preliminary assessment determines that the Proposed Action and projected RWCDS could introduce trends that make it difficult for businesses that are essential to the local economy to remain in the area, a detailed analysis will be conducted. The detailed analysis would follow the *2012 CEQR Technical Manual* guidelines to determine whether the Proposed Action and projected RWCDS would increase property values and thus increase rents for a potentially vulnerable category of business and whether relocation opportunities exist for those businesses.

An assessment of the indirect business displacement due to market saturation is not warranted. The Proposed Action and associated RWCDS are not expected to add to, or create, a retail concentration that may draw a substantial amount of sales from existing businesses within the study area to the extent that certain categories of business close and vacancies in the area increase, thus resulting in a potential for disinvestment on local retail streets. The Proposed Action and associated RWCDS are also expected to introduce up to approximately 74,194 zsf of retail uses as compared to the No-Action condition. This retail space would not be concentrated on a single site, but would be distributed among several projected development sites in the rezoning area, and is expected to largely consist of local-serving retail. According to the guidelines established in the *CEQR Technical Manual*, projects resulting in less than 200,000 sf of regional-serving retail in the study area, or less than 200,000 sf of locally-serving or regional-serving retail on a single development site would not typically result in socioeconomic impacts. As the Proposed Action and associated RWCDS would not exceed the CEQR threshold, no further analysis is warranted.

Adverse Effects on Specific Industries

The analyses of direct business displacement will provide sufficient information to determine whether the Proposed Action could have any adverse effects on a specific industry, compared with the Future without the Proposed Action. The analysis will determine:

- Whether the Proposed Action would significantly affect business conditions in any industry or category of businesses within or outside the study areas.
- Whether the Proposed Action would substantially reduce employment or impair viability in a specific industry or category of businesses.

TASK 4. COMMUNITY FACILITIES

The Proposed Action would not result in the direct displacement of any existing community facilities or services, nor would it affect the physical operations or access to and from any police or fire stations. Therefore, the Proposed Action would not have any significant adverse direct impacts on existing community facilities or services.

The demand for community facilities and services is directly related to the type and size of the new population generated by development resulting from the Proposed Action. New workers tend to create limited demands for community facilities and services, while new residents create more substantial and permanent demands. The RWCDS for the Proposed Action would result in the addition of of approximately 1,076 residential units (compared to No-Action) to the area, of which 215 would be considered affordable under the Inclusionary Housing Program. According to *CEQR Technical Manual* guidelines and as presented in the EAS document, this level of development would trigger a detailed analysis of elementary, intermediate level schools, high schools, publicly funded day care centers, and libraries. This RWCDS would not introduce a large enough population or physically affect fire/police stations or a health care facility and therefore would not trigger a detailed analyses of potential impacts on police/fire protection services and health care facilities and no further analysis is necessary.

Public Elementary, Intermediate, and High Schools

- According to the *CEQR Technical Manual*, the primary study area for the analysis of elementary and intermediate schools should be the school districts' "sub-district" in which the project is located. The EIS analysis will assess the potential effects of the RWCDS on schools located within a primary study area, which is comprised of portions of two districts, including sub-district 2 of Community School District 32 (CSD 32) and sub-district 2 of CSD 14. The study area for high schools is the borough in which the project is located, which would be Brooklyn for the Proposed Action.
- Identify and locate the public elementary, intermediate, and high schools schools serving the primary and secondary study areas defined above. Existing capacity, enrollment, and utilization data for all public elementary, intermediate, and high schools within the study area will be provided for the current or most recent school year, noting any specific shortages of school capacity.
- Obtain information from the New York City School Construction Authority (SCA) or the New York City Department of City Planning (DCP) to identify conditions that would exist in the future without the Proposed Action (No-Action condition), taking into consideration projected changes in future enrollment, including those associated with other developments in the vicinity of the rezoning area, and plans to alter school capacity either through administrative actions on the part of the New York City Department of Education or as a result of the construction of new school space. Planned new capacity projects from the DOE's Five Year Capital Plan will not be included in the quantitative analysis unless the projects have commenced site preparation and/or construction. They may, however, be included in a qualitative discussion.
- Analyze future conditions with the Proposed Action, adding students likely to be generated by the RWCDS to the projections for the future No-Action condition. Project impacts will be assessed based on the difference between the future With-Action projections and the future No-Action projections (at the school sub-district level for elementary and intermediate schools) for enrollment, capacity and utilization in 2016.
- Determine whether the Proposed Action would result in a significant impact. A significant adverse impact may result, warranting consideration of mitigation, if the Proposed Action would result in: (1) a collective utilization rate of the elementary and/or intermediate schools in the sub-district study area that is equal to or greater than 100 percent in the With-Action

Condition; and (2) an increase of five percent or more in the collective utilization rate between the No-Action and With-Action conditions.

- If the assessment reveals the potential for a significant adverse schools impact, appropriate mitigation measures will be devised in coordination with the School Construction Authority.

Libraries

- According to the *2012 CEQR Technical Manual*, library branch catchment areas are usually three-quarters of a mile, which is the distance that users would be expected to travel for library services. Brooklyn Public Library branches within the three-quarters-of-a-mile study area will be identified, and the Brooklyn Public Library will be contacted and asked to provide information regarding branch holdings, annual circulation, and services.
- Study area population will be estimated using data from the 2010 Census. For this purpose, if at least 50 percent of a census tract's area is within the three-quarter mile study area, the tract is included for computation purposes. The average population per branch will be calculated, as well as the number of library holdings per resident. These numbers will be recalculated for future conditions by adding the estimated number of residents who would occupy currently anticipated residential developments in the study area and, for future conditions with the Proposed Action, the additional Action-generated development.
- The Brooklyn Public Library will be consulted regarding the potential impact of the new residents on library services.
- If the assessment reveals the potential for a significant adverse libraries impact, appropriate mitigation measures will be devised in coordination with the library.

Publicly Funded Day Care Centers

- The analysis will focus on publicly funded child care services for children under age 6, and for future developments low and moderate income households will be considered eligible for these services.
- Information on existing conditions will be obtained from the New York City Administration for Children's Services regarding the location, capacity, current enrollment, and number of available slots at publicly funded group child care and Head Start program facilities within a study area extending approximately 1.5 miles about the proposed rezoning area.
- The appropriate multiplier from Table 6-1b of the *2012 CEQR Technical Manual* will be applied to the number of low to moderate income housing units in developments anticipated in the future without the Proposed Action and the number of such units that would be built as a result of the Proposed Action to calculate the expected number of children eligible for publicly financed child care services. This number will be compared with the number of available slots in the study area to determine whether the number of additional children generated by the Proposed Action could be accommodated without causing a significant adverse impact.
- If the assessment reveals the potential for a significant adverse impact, appropriate mitigation measures will be devised in coordination with the Administration for Children's Services.

TASK 5. OPEN SPACE

New residents and workers introduced to the rezoning area under the Proposed Action would create added demands on local open space and recreational facilities. The rezoning area is located within an area that is considered an Underserved open space area. The *2012 CEQR Technical Manual* defines Underserved areas as areas of high population density in the City that are generally the greatest distance from parkland where the amount of open space per 1,000 residents is currently less than 2.5 acres. The Proposed Action and associated RWCDS would generate more than 50 residents and 125 workers, and therefore, would exceed the *2012 CEQR Technical Manual* thresholds. Therefore, a full detailed open space analysis will be conducted to determine whether the Proposed Action would affect the quantitative and qualitative measures of open space adequacy within the study area.

The open space analysis will consider both passive and active open space resources. Passive open space ratios will be assessed within a non-residential (¼-mile radius) study area and a residential (½-mile radius) study area. Active open space ratios will be assessed for the ½-mile residential study area. As recommended in the *CEQR Technical Manual*, both study areas comprise all census tracts that have 50 percent of their area located within ¼-mile radius and ½-mile radius from the boundary of all sites that would be developed as a result of the proposed project (see Figure 6). The detailed open space analysis in the EIS will include the following sub-tasks.

- Determine characteristics of the two open space user groups: residents and workers/daytime users. To determine the number of residents in the study areas, 2010 Census data will be compiled for census tracts comprising the non-residential and residential open space study areas. Because the study areas are characterized by a workforce and daytime population that may also use open spaces, the number of employees and daytime workers in the study areas will also be calculated, based on reverse journey-to-work census data. This information will be updated based on an annual growth rate derived from a comparison of New York State Department of Labor (NYSDOL) private sector employment data for zip codes comprising the approximately ½-mile area surrounding the projected development sites for the 3rd quarter of 2000 and the 3rd quarter of 2010. Additionally, the daytime population estimate will adjusted to include the student population of major colleges/universities in each study area.
- Inventory existing active and passive open spaces within the two open space study areas. The condition and usage of existing facilities will be described based on the inventory and field visits. Jurisdiction, features, user groups, quality/condition, factors affecting usage, hours of operation, and access will be included in the description of facilities. Acreage of these facilities will be determined and total study area acreage calculated. The percentage of active and passive open space will also be calculated. A map showing the locations of open spaces keyed to the inventory will be provided.
- Based on the inventory of facilities and study area populations, open space ratios will be calculated for the residential and daytime populations, and compared to City guidelines to assess adequacy. As per the *CEQR Technical Manual*, open space ratios are expressed as the amount of open space acreage per 1,000 user population, and will be calculated for active and passive open space, as well as the ratio for the aggregate open space.
- Assess expected changes in future levels of open space supply and demand in the 2016 analysis year, based on other planned development projects within the open space study areas. Any new open space or recreational facilities that are anticipated to be operational by the analysis year will also be accounted for. Open space ratios will be calculated for future No-Action

Open Space Study Area



conditions and compared with existing ratios to determine changes in future levels of adequacy.

- Assess the effects on open space supply and demand resulting from increased residential and worker populations added by the RWCDS. The assessment of the Proposed Action's impacts will be based on a comparison of open space ratios for the future No-Action versus future With-Action conditions. As per the *CEQR Technical Manual,* a quantitative significant adverse impact may occur if a proposed action would reduce the open space ratio by more than 5 percent in areas that are currently below the City's median community district open space ration of 1.5 acres per 1,000 residents. In areas that are extremely lacking in open space, a reduction as small as 1 percent may be considered significant, depending on the area of the City. In addition to the quantitative analysis, qualitative analysis will be performed to determine if the changes resulting from the Proposed Action constitute a substantial change (positive or negative) or an adverse effect to open space conditions. The qualitative analysis will assess whether or not the study area is sufficiently served by open spaces, given the type (active vs. passive), capacity, condition, and distribution of open space, and the profile of the study area population.
- If the results of the impact analysis identify a potential for a significant impact, discuss potential mitigation measures.

TASK 6. SHADOWS

This chapter will examine the Proposed Action's potential for significant and adverse shadow impacts pursuant to *CEQR Technical Manual* criteria. The *CEQR Technical Manual* requires a shadow analysis for proposed actions that have the potential to cast new shadows on a publicly-accessible open space or historic resource with sun-sensitive features. Generally, the potential for shadow impacts exists if an action would result in new structures, or additions to buildings resulting in structures, over 50 feet in height that could cast shadows on important natural features, publicly accessible open space, or on historic features that are dependent on sunlight. In addition, new construction or building additions resulting in incremental height changes of less than 50 feet can also potentially result in shadow impacts if they are located adjacent to, or across the street from, a sunlight-sensitive resource.

The Proposed Action would permit development of buildings of greater than 50 feet in height, and therefore has the potential to result in shadow impacts in the areas to be rezoned. The EIS will assess the RWCDS on a site-specific basis for potential shadowing effects of new developments or enlargements at both the projected and potential development sites on light-sensitive uses, and disclose the range of shadow impacts, if any, which are likely to result from the Proposed Action, further identifying:

- Projected and potential development sites adjacent to parks, publicly-accessible open space, important natural resources, and sunlight-sensitive historic resources.
- Projected and potential development sites located in areas which are not susceptible to shadow impacts.
- The EIS will provide a preliminary shadows screening assessment to ascertain whether the projected and potential developments' shadows may potentially reach any sunlight-sensitive resources at any time of year.
- Pursuant to CEQR, a Tier 1 Screening Assessment will be conducted to determine the longest shadow study area for the projected and potential developments, which is defined as 4.3 times the height of any new structures including building enlargements (the longest shadow that

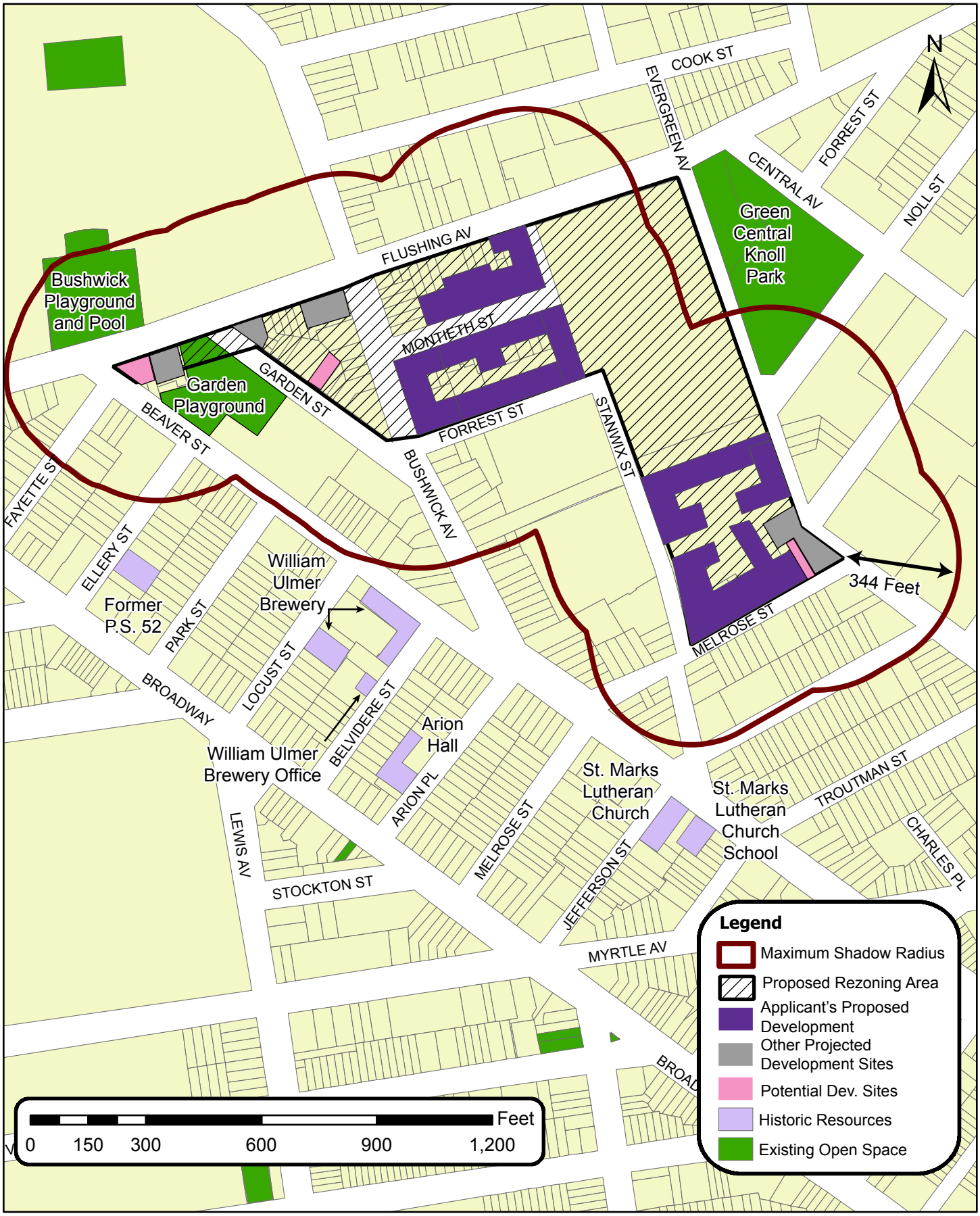
would occur on December 21, the winter solstice). Figure 7 illustrates the locations of the projected and potential developments in relation to the existing sunlight-sensitive resources.

- A Tier 2 Screening Assessment will be conducted if any portion of a sunlight-sensitive resource lies within the longest shadow study area. The Tier 2 assessment will determine the triangular area that cannot be shaded by the projected and potential developments, which in New York City is the area that lies between -108 and +108 degrees from true north.
- If any portion of a sunlight-sensitive resource is within the area that could be potentially shaded by the projected or potential developments, a Tier 3 Screening Assessment will be conducted. The Tier 3 Screening Assessment will determine if shadows resulting from the projected and potential developments can reach a sunlight-sensitive resource through the use of three-dimensional computer modeling software with the capacity to accurately calculate shadow patterns. The model will include a three-dimensional representation of the sunlight-sensitive resource(s), a three dimensional representation of the projected and potential development sites identified in the RWCDS, and a three-dimensional representation of the topographical information within the area being analyzed. Shadow analyses will be conducted for four representative days of the year to determine the extent and duration of new shadows that would be cast on sunlight-sensitive resources as a result of the Proposed Action.
- If the screening analysis does not rule out the possibility that action-generated shadows would reach any sunlight-sensitive resources, a detailed analysis of potential shadow impacts on publicly-accessible open spaces or sunlight-sensitive historic resources resulting from new construction or enlargement identified in the RWCDS (both projected and potential development sites) will be provided in the EIS. The detailed shadow analysis will establish a baseline condition (future No-Action) which will be compared to the future condition resulting from the Proposed Action (future With-Action) to illustrate the shadows cast by existing or future buildings and distinguish the additional (incremental) shadow cast by the projected and potential developments. The detailed analysis will include the following tasks:
    - Document the analysis with graphics comparing shadows resulting from the No-Action condition with shadows resulting from the Proposed Action, with incremental shadow highlighted in a contrasting color.
    - Provide a summary table listing the entry and exit times and total duration of incremental shadow on each applicable representative day for each affected resource.
    - Assess the significance of any shadow impacts on sunlight-sensitive resources.
    - If the results of the detailed analysis identify a potential for a significant impact, discuss potential mitigation measures.

TASK 7. URBAN DESIGN/VISUAL RESOURCES

A preliminary analysis of urban design and visual resources is appropriate when there is the potential for a pedestrian to observe, from the street level, a physical alteration beyond that allowed by existing zoning, including the following: 1) projects that permit the modification of yard, height, and setback requirements; and 2) projects that result in an increase in built floor area beyond what would be allowed 'as-of-right' or in the future without the Proposed Action. CEQR stipulates a detailed analysis for projects that would potentially obstruct view corridors, compete with icons in the skyline, or would result in substantial alterations to the streetscape of the neighborhood by noticeably changing the scale of buildings.

Figure 7


N
COOK ST
EVERGREEN AV
FORREST ST
CENTRAL AV
NOLL ST
Green Central Knoll Park
FLUSHING AV
Bushwick Playground and Pool
MONTIETH ST
GARDEN ST
Garden Playground
BEAVER ST
FORREST ST
STANWIX ST
BUSHWICK AV
FAYETTE ST
ELLERY ST
Former P.S. 52
PARK ST
William Ulmer Brewery
344 Feet
MELROSE ST
LOCUST ST
BROADWAY
BELVIDERE ST
Arion Hall
ARION PL
William Ulmer Brewery Office
St. Marks Lutheran Church
St. Marks Lutheran Church School
TROUTMAN ST
CHARLES PL
LEWIS AV
STOCKTON ST
MELROSE ST
JEFFERSON ST
MYRTLE AV
Legend
Maximum Shadow Radius
Proposed Rezoning Area
Applicant's Proposed Development
Other Projected Development Sites
Potential Dev. Sites
Historic Resources
Existing Open Space
Feet
0 150 300 600 900 1,200

As the Proposed Action would rezone some areas to allow higher density and create new zoning districts to be mapped within the study area, as well as the mapping of new streets, a preliminary assessment of urban design and visual resources will be provided in the EIS.

As defined in Chapter 10, Section 310 of the *CEQR Technical Manual*, the urban design study area will be the same as that used for the land use analysis (delineated by an approximate ¼-mile radius from the proposed rezoning area boundary see Figure 5). For visual resources, the view corridors within the study area from which such resources are publicly viewable should be identified, if any. The assessment will be based on *CEQR Technical Manual* methodologies for a preliminary assessment, and include the following:

- Based on field visits, describe the project site and the urban design and visual resources of the rezoning area and adjacent study area, using text, photographs and other graphic material as necessary to identify critical features, use, bulk, form, and scale.
- Discuss specific relationships between the proposed rezoning area and adjacent areas regarding light, air, and views.
- In coordination with the land use task, describe the changes expected in the urban design and visual character of the study area due to planned development projects in the future without the Proposed Action (No-Action condition).
- Describe the potential changes that could occur in the urban design character of the study area as a result of the Proposed Action (With-Action condition). For the projected and potential development sites, the analysis will focus on general building types for the sites that are assumed for development as well as elements such as street wall height, setback, and building envelope. Photographs and/or other graphic material will be utilized, where applicable, to assess the potential effects on urban design and visual resources, including views of/to resources of visual or historic significance (landmark structures, historic districts, parks, etc.).
- A detailed analysis will be prepared if warranted based on the preliminary assessment. As described in the *CEQR Technical Manual*, examples of projects that may require a detailed analysis are those that would make substantial alterations to the streetscape of a neighborhood by noticeably changing the scale of buildings, potentially obstruct view corridors, or compete with icons in the skyline. The detailed analysis would describe the projected and potential development sites and the urban design and visual resources of the surrounding area. The analysis would describe the potential changes that could occur to urban design and visual resources in the future with the proposed action condition, in comparison to the future without the proposed action condition, focusing on the changes that could negatively affect a pedestrian's experience of the area. If necessary, mitigation measures to avoid or reduce potential significant adverse impacts will be identified.

TASK 8. HAZARDOUS MATERIALS

The Proposed Action would result in new residential development in areas currently zoned for manufacturing, and therefore has the potential to result in significant hazardous materials impacts. The hazardous materials assessment will determine which, if any, of the projected and potential development sites may have been adversely affected by present or historical uses at or adjacent to the sites. The hazardous materials analysis examines the potential for the presence of hazardous material on the projected and potential development sites. It then determines any resulting additionally testing, remediation, mitigation or other measures that would need to occur prior to or during construction to ensure there would be no potential for significant adverse impacts associated

with any such hazardous materials.

Phase I Environmental Site Assessments (ESAs) were prepared for the projected development sites owned by the applicant and were reviewed by the New York City Department of Environmental Protection (DEP). Based on the findings in the Phase I ESAs, DEP concluded that past on-site and surrounding area land uses may have impacted soil and groundwater (see Appendix 2 for DEP letter). Therefore, DEP requested a Phase II Environmental Site Assessment (Phase II) be prepared to adequately identify/characterize the surface and subsurface soils above the subject parcels prior to on-site soil disturbance. In addition, DEP requested that an investigative Health and Safety Plan (HASP) be submitted to DEP for review and approval. The applicant prepared a Phase II Work Plan and HASP which were approved by DEP (see Appendix 2 for DEP letter). To preclude the potential for significant adverse impacts on the applicant's property (projected development sites 1-4), an (E) designation would be placed on all Blocks and Lots under the control of the applicant. An (E) designated site is an area within which no change of use or development requiring a New York City Department of Buildings permit may be issued without approval of the Mayor's Office of Environmental Remediation (OER). These sites require the OER's review to ensure protection of human health and the environment from any known or suspected hazardous materials associated with the site. The (E) designation ensures that the fee owner and/ or applicant conduct a testing and sampling protocol and an approved plan for remediation, where appropriate, to the satisfaction of the OER before the issuance of a permit by the Department of Buildings. The environmental requirements for the (E) designation also include mandatory construction-related health and safety plan, which must also be approved by the OER.

The (E) designations serves as a mechanism to assure the potential for hazardous materials contamination that may exist in the sub-surface soils and groundwater on the applicant's site would be characterized prior to any site disturbance (i.e., site grading, excavation, demolition or building construction). The (E) designation will require that Phase II testing occur and is binding upon the property's successors and assigns. The Phase II environmental assessment would be conducted pursuant to the DEP-approved Phase II Work Plan and HASP. All known and found USTs and ASTs would be property closed and removed from the site in accordance with all applicable federal, state and local regulations. All materials containing lead-based paint and asbestos would be removed from the site in accordance with all federal, state and local laws.

For the projected and potential development sites not under the control of the applicant (projected development sites 5-8 and potential development sites 9-11), a preliminary screening assessment was prepared pursuant to the *2012 CEQR Technical Manual* and Chapter 24 of Title 15 of New York City Department of Environmental Protection (NYCDEP) rules governing the placement of (E) designations was conducted for these development sites to determine which sites warrant an institutional construction (E-designation or similar mechanism). The preliminary screening for the projected and potential development sites not under the control of the applicant was reviewed by DEP. DEP recommended that all Blocks and Lots associated with these sites (Block 3137, Lots 51, 56; Block 3138, Lots 11, 20, 22, 32; Block 3152, Lots 36, 37, 38, 41, 43, 44) be given an (E) designation for hazardous materials pursuant to 11-15 of the New York City Zoning Resolution.

The implementation of the preventative and remedial measures outlined above would avoid the potential that significant adverse hazardous materials impacts would result from potential development in the rezoning area. With the use of (E) designations on the aforementioned sites, which requires the implementation of the preventative and remedial measures outlined above, the proposed rezoning action would not be likely to have significant adverse hazardous materials

impacts.

A summary of findings and conclusions for all projected and potential development sites will be prepared for inclusion in the EIS.

TASK 9. WATER AND SEWER INFRASTRUCTURE

The *2012 CEQR Technical Manual* outlines thresholds for analysis of a project's water demand and its generation of wastewater and stormwater. For the Proposed Action, an analysis of water supply is not warranted as the RWCDS associated with the Proposed Action would not result in a demand of more than 1 million gpd and the proposed rezoning area is not located in an area that experiences low water pressure. A preliminary assessment of the Proposed Action's effects on wastewater and stormwater infrastructure is warranted because the RWCDS for the Proposed Action would result in the development of more than 400 residential units in Brooklyn. Therefore, this chapter will analyze the Proposed Action's potential effects on wastewater and stormwater infrastructure. NYCDEP will be consulted during the preparation of the stormwater and wastewater infrastructure assessment.

- Describe existing conditions. The existing stormwater drainage system and surfaces (pervious or impervious) on the projected development sites will be described, and the amount of stormwater generated on those sites will be estimated using NYCDEP's volume calculation worksheet. Drainage areas with direct discharges and overland flow will be presented.
- The existing sewer system serving the rezoning area will be described based on records obtained from NYCDEP. Records obtained will include sewer network maps, drainage plans, capacity information for sewer infrastructure components, and other information as warranted. The existing flows to the North River and Wards Island water pollution control plants (WPCP) that serve the rezoning area will be obtained for the latest 12-month period, and the average dry weather monthly flow will be presented.
- Described future No-Action condition. Any changes to the stormwater drainage system and surface area expected in the future without the Proposed Action will be described. Any changes to the sewer system that are expected to occur in the future without the Proposed Action will be described based on information provided by NYCDEP.
- Assess future stormwater generation from the projected development sites as well as newly mapped streets and assess the Proposed Action's potential to create impacts. Changes to the projected development sites' proposed surface area (pervious or impervious) will be described, and runoff coefficients and runoff for each surface type/area will be presented. Volume and peak discharge rates of stormwater from the sites will be determined based on the NYCDEP volume calculation worksheet. In addition, new sewers to be incorporated in the mapped streets will be assessed.
- Sanitary sewage generation for the projected development sites identified in the RWCDS will be estimated. The effects of the incremental demand on the system will be assessed to determine if there will be any impact on operations of the WPCP.
- Based on the assessment of future stormwater and wastewater generation, the change in flows and volumes to the combined sewer system and/or waterbodies due to the Proposed Action will be determined.
- A stormwater Best Management Practices (BMPs) will be devised will be devised in coordination with the NYC Department of Environmental Protection

- If the assessment reveals the potential for a significant adverse impact, appropriate mitigation measures will be devised in coordination with the NYC Department of Environmental Protection.

TASK 10. Transportation

The Proposed Action is expected to induce new residential and commercial development, which would generate additional vehicular travel and demand for parking, as well as additional subway and bus riders and pedestrian traffic. These new trips have the potential to affect the area's transportation systems. In addition, the Proposed Action would modify the existing street network by establishing new street, which would change vehicular traffic patterns in the area. Therefore, the transportation studies will be a critical focus of the EIS, including four key issues: (1) the size of the traffic study area and the number of intersections to be analyzed both within the rezoning area and along major access routes; (2) the likelihood that the Proposed Action and the amount of projected development envisioned in the RWCDS would generate significant traffic impacts requiring mitigation; (3) the potential increase in the parking demand; and (4) an increased level of transit use and pedestrian demand, and the possible need for mitigation to accommodate transit passengers. As detailed in the Transportation Planning Factors (TPF) technical memorandum included in Appendix 3, there are a total of 8 projected development sites in the proposed rezoning area.

Traffic

The EIS will provide a detailed traffic analysis focusing on those peak hours and street network intersections where the highest concentrations of action-generated demand would occur. The peak hours for analysis will be selected, and the specific intersections to be included in the traffic study area will be determined based upon the proposed traffic assignment patterns and the *CEQR Technical Manual* analysis threshold of 50 additional vehicle trips per hour.

The RWCDS exceeds the minimum development density screening thresholds specified in Table 16-1 of the *2012 CEQR Technical Manual*. Therefore, a trip generation forecast is required to determine if the Proposed Action would generate 50 or more vehicle trips in any peak hour. As detailed in the TPF technical memorandum included in Appendix 3, based on a preliminary travel demand forecast and trip assignment for the RWCDS, the Proposed Action is expected to generate more than 50 additional vehicular trips in the weekday AM, midday, PM, and Saturday midday peak hours. In addition to the vehicle demand generated by the residential and retail component of the Proposed Action, the Proposed Action's restructuring of the local street system would result in diversions to existing vehicle trips. Most notably, Stanwix Street would become a one-way southbound, while Noll Street would be one-way westbound. These diversions are shown in the TPF memo.

The development generated vehicle trips were combined with the diverted vehicle trips and were assigned to the traffic network to determine what intersections would experience a demand of 50 vehicles or greater during the weekday AM, midday, PM, or Saturday midday peak periods. As a result, four intersections would have an incremental vehicle assignment of greater than 50 vehicles during one or more of the four peak periods of analysis (see TPF memo):

- Bushwick Avenue & Noll Street
- Bushwick Avenue & Arion Place\Beaver Street
- Beaver Street & Melrose Street

- Stanwix Street & Montieth Street

As such, manual counts would be conducted at these intersections during the four peak periods. In addition to manual counts at each of the four intersections that would experience net vehicle increments of 50 vehicles or greater during one or more peak periods, counts would be conducted at the following eleven intersections to confirm/refine the diversions that would occur as a result of the restructuring of the local street system:

1. Bushwick Avenue & Flushing Avenue
2. Bushwick Avenue & Montieth Avenue
3. Bushwick Avenue & Forrest Street
4. Stanwix Street & Melrose Street
5. Flushing Avenue & Evergreen Avenue
6. Flushing Avenue & Stanwix Street
7. Stanwix Street & Noll Street
8. Stanwix Street & Jefferson Street
9. Bushwick Avenue & Jefferson Street
10. Stanwix Street & Bushwick Avenue
11. Evergreen Avenue & Noll Street

It should be noted that more intersections may be required to be studied based on consultation with DOT.

The following outlines the anticipated scope of work for conducting a traffic impact analysis for the Proposed Action's RWCDS:

- Conduct a count program for traffic analysis locations that includes a mix of automatic traffic recorder (ATR) machine counts and manual intersection turning movement counts, along with vehicle classification counts and travel time studies (speed runs) as support data for air quality and noise analyses. The manual turning movement counts will be supplemented by nine days of automatic traffic recorder (ATR) counts at a total of 7 locations, and vehicle classification counts that will be conducted on one weekday and one Saturday along a total of five corridors. The manual turning movement and vehicle classification counts will be conducted concurrently with the ATR counts. Where applicable, available information from recent studies in the vicinity of the study area will be compiled, including data from such agencies as the New York City Department of Transportation (DOT) and the New York City Department of City Planning (DCP).
- Inventory physical data at each of the analysis intersections, including street widths, number of traffic lanes and lane widths, pavement markings, turn prohibitions, bicycle routes and parking regulations. Signal phasing and timing data for each signalized intersection included in the analysis will be obtained from DOT.
- Determine existing traffic operating characteristics at each analysis intersection including capacities, volume-to-capacity (v/c) ratios, average vehicle delays, and levels of service (LOS) per traffic movement, per intersection approach, and per overall intersection. The methodology of the 2000 Highway Capacity Manual (HCS+, Version 5.5) will be used for the analysis.

- Based on available sources, Census data and standard references including the *2012 CEQR Technical Manual*, estimate the travel demand for projected development sites in the future without the Proposed Action (the No-Action condition), as well as the demand from other significant development sites planned in the vicinity of the study area by the 2016 analysis year. This will include daily and hourly person trips, and a modal distribution to estimate trips by auto, taxi, and other modes. A truck trip generation forecast will also be prepared based on data from the *2012 CEQR Technical Manual* and previous studies conducted in this area of Manhattan. Mitigation measures accepted for all No-Action projects and other NYCDOT initiatives will be included in the future No-Action network, as applicable.
- Compute the future 2016 No-Build traffic volumes based on an approved background traffic growth rate for the study area (0.5 percent per year) and demand from any other significant development projects expected to be completed in the future without the Proposed Action. Incorporate any planned changes to the roadway system anticipated by 2016, and determine the No-Action intersection v/c ratios, delays and levels of service.
- Based on available sources, Census data and standard references including the *2012 CEQR Technical Manual*, develop a travel demand forecast for projected development sites based on the net change in uses compared to the No-Action condition as defined in the RWCDS. Determine the net change in vehicle trips expected to be generated by projected development sites under the Proposed Action, assign that volume of traffic in each analysis period to the approach and departure routes likely to be used, and prepare traffic volume networks for the 2016 future with the Proposed Action condition for each analyzed peak hour. Determine the resulting v/c ratios, delays, and LOS at analyzed intersections for the With-Action condition, and identify significant adverse traffic impacts in accordance with *2012 CEQR Technical Manual* criteria.
- Identify and evaluate traffic improvements needed to mitigate significant traffic impacts, where practicable. Development of these measures will be coordinated with DOT and other agencies as necessary. Where impacts cannot be mitigated, they will be described as unavoidable adverse impacts.

Parking

Parking demand from commercial uses typically peaks in the midday period and declines during the afternoon and evening. By contrast, residential demand typically peaks in the overnight period. The parking analyses will document changes in off-street parking utilization in the No-Action and With-Action conditions within ¼-mile of projected development sites during the weekday midday and overnight periods. On-street parking conditions (existing curbside regulations and parking utilization) in the vicinity of projected development sites will also be documented for these periods.

Parking demand generated by new residential development will be forecast based on the most recently available Census auto ownership data by income group for the proposed rezoning area. Parking demand from retail and other commercial uses will be derived from the forecasts of daily auto trips from these uses. The forecast of new parking supply will be based on the net change in parking spaces on projected sites, consistent with the RWCDS.

Based on the above assumptions, an assessment will be provided to determine whether there would be excess parking demand, and whether there are a sufficient number of other parking spaces available in the study area to accommodate that excess demand.

Transit

According to the general thresholds used by the Metropolitan Transportation Authority (MTA) and specified in the *2012 CEQR Technical Manual*, detailed transit analyses are generally not required if a Proposed Action is projected to result in fewer than 200 peak hour rail or bus transit trips. If a proposed action would result in 50 or more bus trips being assigned to a single bus line (in one direction), or if it would result in an increase of 200 or more trips at a single subway station or on a single subway line, a detailed bus or subway analysis would be warranted. As detailed in the TPF technical memorandum included in Appendix 3, the Proposed Action's RWCDS is expected to generate a net increase of more than 200 additional subway and bus trips in one or more peak hours, and would therefore require a detailed transit analyses based on *2012 CEQR Technical Manual* criteria.

Subway

There are three subway stations located within a half-mile radius of the proposed rezoning site: Myrtle Avenue Station, which services the J, M and Z lines; Flushing Avenue Station, which provides J and M line service; and Morgan Avenue Station, which provides service for the L line.

Transit analyses typically focus on the weekday AM and PM commuter peak hours as it is during these periods that overall demand on the subway and bus systems is usually highest. As shown in the draft TPF technical memorandum in Appendix 3, the Myrtle Avenue station is the only subway station expected to experience more than 200 hourly project-generated trips. The analysis of conditions at subway stations serving the rezoning area will therefore consider the Myrtle Avenue Station for the J, M, Z lines. This analysis will focus on the key stairways and entrance control areas of the station, and will include the following subtasks:

- A detailed analysis of subway station stairways and entrance control areas will be conducted at the Myrtle Avenue Station for the J, M, Z lines in the weekday AM and PM peak hours.
- The analysis will be based on counts conducted at those control areas and/or pedestrian circulation elements that would be traversed by significant concentrations of project-generated trips.
- Conditions and volumes in the future without the Proposed Action will be determined using background growth rates specified in the *2012 CEQR Technical Manual* and accounting for any trips expected to be generated by No-Build developments.
- Conditions and volumes in the future with the Proposed Action will be determined based on the assignment of project-generated subway trips.
- Any potential significant adverse impacts at station stairways and entrance control areas will be identified using *2012 CEQR Technical Manual* impact criteria. Mitigation measures will be identified in conjunction with the lead agency and NYC Transit, as appropriate.

As shown in the TPF technical memorandum in Appendix 3, the Proposed Action (including all projected development sites) would generate a net total of approximately 539 subway trips in the weekday AM peak hour and 633 in the PM peak hour. These trips would be distributed among a total of four subway routes (J, M, Z, L), and further divided between the inbound and outbound directions. Therefore, the number of peak hour trips occurring on any one route in any one direction would not exceed the 200-trip *CEQR Technical Manual* transit analysis threshold. An analysis of subway line haul conditions is therefore not warranted and will not be included in the EIS.

Bus

The proposed rezoning area is served by eight NYC Transit local bus routes that connect the proposed rezoning area with other parts of Brooklyn and include the B15, B38, B43, B46, B47, B54, B57 and B60 routes.

According to the general thresholds used by the Metropolitan Transportation Authority (MTA) and specified in the *2012 CEQR Technical Manual*, a detailed analysis of bus conditions is generally not required if a Proposed Action is projected to result in fewer than 50 peak hour trips being assigned to a single bus line (in one direction), as this level of new demand is considered unlikely to result in significant adverse impacts. As shown in the TPF technical memorandum in Appendix 3, it is estimated that all of the projected development sites within the proposed rezoning area would generate a total of 139 and 312 new bus trips in the weekday AM and PM peak hours, respectively. As these trips would be widely disbursed throughout the study area and distributed among several bus routes, it is highly unlikely that any one route would experience 50 or more trips in one direction in any peak hour. Therefore, the Proposed Action is not expected to result in any significant adverse impacts to bus transit services based on *2012 CEQR Technical Manual* criteria, and a detailed bus analysis is not warranted. The EIS will, however, include a qualitative discussion of the bus services operating in proximity to the rezoning area.

Pedestrians

Pedestrian Level of Service Analyses

According to *2012 CEQR Technical Manual* criteria, projected pedestrian volume increases of less than 200 persons per hour at any pedestrian element (sidewalks, corner areas and crosswalks) would not typically be considered a significant impact, since that level of increase would not generally be noticeable and therefore would not require further analysis. Although the new pedestrian trips generated by the RWCDS would be dispersed throughout the rezoning area, some concentrations of new pedestrian trips are expected during peak periods along corridors connecting the projected development sites to area subway stations. Based on the level of new pedestrian demand generated by the RWCDS, it is anticipated that project-generated pedestrian trips would potentially exceed the 200-trip *CEQR Technical Manual* analysis threshold at one or more locations listed below in one or more peak hours.

Corner Locations

1. Southwest corner of Bushwick Avenue & Flushing Avenue
2. Southeast corner of Bushwick Avenue & Flushing Avenue
3. Northeast corner of Bushwick Avenue & Montieth Street
4. Southeast corner of Bushwick Avenue & Montieth Street
5. Northeast corner of Bushwick Avenue & Forrest Street
6. Southwest corner of Stanwix Street & Flushing Avenue
7. Southwest corner of Evergreen Avenue & Noll Street
8. Northwest corner of Evergreen Avenue & Melrose Street

Crosswalk Locations

1. South crosswalk at Bushwick Avenue & Flushing Avenue
2. South crosswalk at Stanwix Street & Flushing Avenue
3. East crosswalk at Bushwick Avenue & Montieth Street

Sidewalk Locations

1. South sidewalk on Flushing Avenue between Garden Street & Bushwick Avenue
2. South sidewalk on Flushing Avenue between Bushwick Avenue & Stanwix Street
3. East sidewalk on Bushwick Avenue between Flushing Avenue & Montieth Street
4. East sidewalk on Bushwick Avenue between Montieth Street & Forrest Street
5. West sidewalk on Evergreen Avenue between Noll Street & Melrose Street

It is therefore anticipated that the EIS will include a quantitative pedestrian impact analysis focusing on those sidewalks, corner areas and crosswalks along these corridors that would experience more than 200 additional pedestrian trips as well as exceed impact thresholds in the *2012 CEQR Technical Manual*. Pedestrian counts will be conducted at each of these locations, and levels of service determined for the existing, No-Action and With-Action conditions. The specific pedestrian facilities to be analyzed will be determined once the assignment of project-generated pedestrian trips has been finalized.

Vehicular and Pedestrian Safety

Traffic accidents involving pedestrians as well as bicycles at key study area intersections will be researched and documented. The potential for the Proposed Action to have significant pedestrian and/or bicycle impacts will be identified through a comparison of the future No-Action and future With-Action conditions.

TASK 11. AIR QUALITY

The Proposed Action, under the RWCDS, would affect 8 projected and 3 potential development sites, and include new buildings. Air quality, which is a general term used to describe pollutant levels in the atmosphere, would be affected by these changes. Air quality analyses will be conducted, following the procedures outlined in the 2012 *New York City Environmental Quality Review (CEQR) Technical Manual*, to determine whether the Proposed Action under the RWCDS would result in exceedances of ambient air quality standards or health-related guideline values. The air quality studies for the Proposed Action will include both mobile and stationary source analyses. The methodologies and procedures utilized in these analyses are described below.

The key issues that would be addressed are:

- The potential impact from the exhaust of parking garages associated with the proposed developments;
- The potential for emissions from the heating, ventilation and air conditioning (HVAC) systems of the proposed development buildings to significantly impact other proposed development buildings (project-on-project impacts);
- The potential for emissions from the HVAC systems of the proposed development buildings to significantly impact existing land uses (project-on-existing impacts);
- The potential for combined impacts from clusters of HVAC emissions (i.e., HVAC emissions from proposed development buildings of approximately the same height that are located in close proximity to one another) to significantly impact existing land uses and other proposed development sites;
- The potential for significant air quality impacts from the HVAC systems of existing “major” emission sources with 20 or more millions Btu/hr heat input or any “large” combustion source (e.g., power plants) on the proposed developments; and

- The potential for significant air quality impacts on the proposed development sites from air toxic emissions generated by nearby existing industrial sources.

As described in the TPF in Appendix 3, the project trip generation estimates are expected to be below the *CEQR* threshold (170 or more peak hour vehicle trips for air quality), and it is also unlikely that the number of vehicle trips will exceed the City's current interim guidance criteria for requiring an analysis of fine particulate matter ($PM_{2.5}$). Therefore, it is anticipated that a detailed analysis of mobile source air quality impacts is not warranted. However, if traffic is found to be higher than anticipated a mobile source analysis will be conducted per the CEQR Technical Manual standards. As noted above, the Proposed Action would result in new accessory parking facilities; therefore, the mobile source analysis will account for the impacts from these sources.

Subtasks for the air quality analysis include the following:

Mobile Source Analyses (Garage Analyses)

- Gather existing air quality data. Collect and summarize existing ambient air quality data for the study area. Specifically, ambient air quality monitoring data published by the NYSDEC will be compiled for the analysis of existing and future conditions.
- Assess the potential CO impacts associated with proposed accessory parking facilities. Information on the conceptual design of the parking facilities will be employed to determine potential worst-case off-site impacts from emissions. A screening analysis will be used following the procedures suggested in the 2012 *CEQR Technical Manual* for parking facilities to determine maximum potential worst-case impacts. Cumulative impacts from on-street sources and emissions from the proposed parking facilities will be calculated where appropriate.
- Compare existing and future levels with standards. Future CO pollutant levels with and without the Proposed Action will be compared with the National Ambient Air Quality Standards (NAAQS) to determine compliance with standards, and the City's CO *de minimis* will be employed to determine the impacts of the Proposed Action.
- If the net estimated number of equivalent heavy duty trucks from the Proposed Action is greater than the City's current screening thresholds for determining whether a $PM_{2.5}$ analysis is warranted, an analysis will be conducted using the CAL3QHCR model. Mobile source $PM_{2.5}$ impacts will be evaluated against currently available NYCDEP and NYSDEC guidance criteria and, where necessary, combined with stationary source $PM_{2.5}$ impacts to determine whether potential significant adverse air quality impacts could occur with the Proposed Action.

Stationary Source Analyses

There will be an analysis of the potential for the emissions from the heating, ventilation and air conditioning systems (HVAC) of the Proposed Action development sites to significantly impact existing land uses or any of the other development sites. The HVAC stationary source analysis will be conducted as follows:

- Assumptions regarding building heights and distances for locating nearest receptors will be determined based on the RWCDS.
- The HVAC analysis will be performed as a screening analysis for individual development sites and for a cumulative (or cluster) analysis. The analyses will be performed in accordance with the methods presented in Section 322 of the 2012 *CEQR Technical Manual*.

- In the event of predicted exceedances associated with individual development sites, a detailed dispersion modeling analysis using the U.S. Environmental Protection Agency (EPA) AERMOD dispersion model will be performed. Concentrations of nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and particulate matter (PM2.5 and PM10)will be determined at sensitive receptor sites. Five years of meteorological and background data will be used for these simulation analyses. Predicted values will be compared with NAAQS and other relevant standards. A protocol outlining the detailed air quality stationary source analysis methodology and its underlying assumptions will be submitted to the lead agency for approval prior to conducting the analysis. In the event that violations of standards are predicted, examine design measures to reduce pollutant levels to within standards.

An analysis will be conducted to determine the potential for air quality impacts on the Proposed Action development sites from existing or proposed sources in the surrounding area. The analysis will be performed as follows:

- Large sources within 1,000 feet of the rezoning area and commercial, institutional and large-scale residential sources within 400 feet of the rezoning area will be identified.
- Information from the New York City Department of Buildings (NYCDOB) database will be used to identify potential sources of concern. NYCDEP's permit records will also be used as necessary to determine specific equipment information, emission rates and stack exhaust parameters.
- The analysis will be performed as a screening analysis for individual sources in accordance with the methods presented in Section 322 of the 2012 *CEQR Technical Manual*.
- In the event of predicted exceedances associated with individual sites, a detailed dispersion modeling analysis using the EPA AERMOD dispersion model will be performed. Concentrations of nitrogen dioxide, sulfur dioxide, and particulate matter will be determined at sensitive receptor sites. Five years of meteorological and background data will be used for these simulation analyses. Predicted values will be compared with NAAQS and other relevant standards. In the event that violations of standards are predicted, examine design measures to reduce pollutant levels to within standards.

Industrial Source Analyses

- A list of potential emission sources within the air quality study area will be compiled based on EPA, NYSDEC, and NYCDEP, and Geographic Information System databases and field observations. For facilities identified as having a NYCDEP permit, emission information for these facilities will be requested from NYCDEP's Bureau of Environmental Compliance (BEC). Emission and stack parameter data contained in BEC operating permits will then be used to estimate any potential for these sources to result in air quality levels at the new residential and commercial sites that exceed applicable air quality standards and guidelines. Field surveys and consultation with DCP will be used to determine which, if any, of these permits are associated with businesses that are no longer in operation. No analysis would be conducted for such facilities.
- For business for which no permits are available from NYSDEC or NYCDEP where air toxic emissions are expected, material safety data sheets and/or permits with similar processes would be utilized to conservatively estimate the emissions from emission sources.
- Following collection of data on emission sources, an industrial source screening analysis as detailed in Section 322 of the 2012 *CEQR Technical Manual* will be performed. The screening analysis will be used to estimate the short-term and annual concentrations of critical pollutants at the development sites. Predicted worst-case impacts on the Proposed Action development

sites will be compared with the short-term guideline concentrations (SGC) and annual guideline concentrations (AGC) reported in the NYSDEC's *DAR-1 AGC/SGC Tables* (September 2007) to determine the potential for significant impacts.

- If predicted concentrations of emissions from industrial sources on a future development site exceeds significant impact criteria, more detailed stationary source analyses will be performed with the AERMOD model. Five years of meteorological and background data will be used for these simulation analyses. Predicted values will be compared with NYSDEC SGCs and AGCs. In the event that violations of standards are predicted, examine design measures to reduce pollutant levels to within standards.

TASK 12. Greenhouse Gas Analysis (GHG)

As the RWCDS associated with the Proposed Action would exceed 350,000 sf of development, the analysis of GHG emissions will be included as a separate chapter in the EIS.

- Sources of GHG from the proposed development will be identified. The pollutants for analysis will be discussed, as well as the various city, state, and federal goals, policy, regulations, standards and benchmarks for GHG emissions.
- Fuel consumption will be estimated for the proposed buildings based on the calculations of energy use estimated for the project in the "Energy" screening analysis conducted as part of the EAS document.
- GHG emissions associated with project-related traffic will be estimated for the Proposed Action using data from the project's "Transportation" analysis. A calculation of Vehicle Miles Traveled (VMT) will be prepared.
- The types of construction materials and equipment proposed will be discussed along with opportunities for alternative approaches that may serve to reduce GHG emissions associated with construction.
- A qualitative discussion of stationary and mobile sources of GHG emissions will be provided in conjunction with a discussion of goals for reducing GHG emissions to determine if the project is consistent with GHG reduction goals, including building efficient buildings, use of clean power, transit-oriented development and sustainable transportation, reduction of construction operations emissions, and use of building materials with low carbon intensity.

TASK 13. NOISE

The Proposed Action would result in new residential and commercial development, and also alter traffic conditions and land uses in the study area. Noise, which is a general term used to describe unwanted sound, will likely be affected by these development changes. This chapter will examine potential noise impacts due to stationary sources. The amount of traffic generated as a result of the Proposed Action is not anticipated to be large enough to necessitate an analysis of mobile source noise. However, if traffic is found to be higher than anticipated a mobile source noise will be conducted per the CEQR Technical Manual standards. With regard to stationary sources and building attenuation, as the high ambient noise levels may affect the new sensitive uses introduced by the Proposed Action, the noise analysis will include the following:

- Changes in traffic noise levels with the Proposed Action;
- Stationary source noise impacts at or near the projected and potential residential and commercial uses (compliance with performance standards);

- The potential for noise from heavily trafficked roadways to impact proposed development buildings; and
- Achievement of acceptable interior noise levels in the projected and potential residential buildings;

As the Proposed Action induced traffic trip generation is projected to be too small to double the number of passenger car equivalents (PCEs) on any of the area's roadways between the No-Action and Action scenarios, the noise analysis will focus on quantifying in as much detail as possible, the existing ambient noise environment and then use those noise measurements as the principle means for establishing window wall attenuation requirements at each of the projected and potential development sites. The standard CEQR process of determining and establishing future noise levels via the PCE screening method will be employed but future Proposed Action noise levels are not expected to change significantly from measured levels. The noise analysis for the Proposed Action and associated RWCDS in will consist of the following tasks:

- Noise measurement sites will be selected at up to a maximum of 4 representative noise locations.
- Sites for attenuation analysis would be those where new sensitive uses will be introduced by the Proposed Action.
- Sites will be selected to provide adequate geographic coverage within the rezoning area and to ensure enough locations are selected to determine ambient noise levels over the large and diverse study area.
- Noise measurements will coincide with weekday peak traffic hour AM (8 to 9 AM), Midday (12 to 1 PM), and PM (5 to 6 PM) time periods.
- Noise measurements will be recorded in conformance with procedures contained in the 2012 NYC *CEQR Technical Manual*.
- The noise meter instrument used for the collection of ambient noise readings will be a calibrated Type I noise level meter conforming to the ANSI 1.4 Standard.
- A porous windscreen will be used during all measurement periods. All of the noise measurements will be taken by mounting the meter approximately five feet above the ground surface at that location. This height is generally considered representative of the ear level of an average person.
- Noise monitoring will be conducted under dry weather conditions with wind speeds below 15 mph and limited to non-holiday weekday Tuesdays, Wednesday and Thursdays.
- At each noise measurement site, noise levels will be measured in units of "A" weighted decibel scale (dBA), for duration of 20 minutes per time period and include noise descriptors such as equivalent noise level (L_{eq}) and statistical percentile levels L_{max}, L_{min}, L_1, L_{10}, L_{50}, L_{90}.
- A summary table of existing measured noise levels for all time periods will be provided as part of the noise study documentation.
- At each of the noise measurement sites a PCE noise analysis, in accordance with CEQR requirements, will be completed to determine noise levels under future No Action and Proposed Action conditions. All projections will be made with Leq noise descriptor.
- Estimated window-wall attenuation requirements under future Proposed Action conditions will be determined based on the highest L_{10} noise level estimated at each monitoring site.
- Window wall attenuation requirements will be based on the proposed land use of each of the potential and projected development site based on CEQR interior noise exposure level limits.
- A summary of the noise measurement findings and window wall attenuation requirements will be summarized in a table format acceptable to DCP for inclusion in the environmental documentation prepared for the project effort.

TASK 14. NEIGHBORHOOD CHARACTER

The character of a neighborhood is established by numerous factors, including land use patterns, the scale of its development, the design of its buildings, the presence of notable landmarks, and a variety of other physical features that include traffic and pedestrian patterns, noise etc. The area surrounding the rezoning area consists of a mix of uses. Residential development is located to the northwest, west, and south, as well as further to the east of the rezoning area. A large public park, Green Central Knoll, is located directly east of the rezoning area and extends along the east side of Evergreen Avenue. Industrial, warehouse, and manufacturing uses are largely concentrated to the north of the rezoning area, and commercial uses are centered along Broadway. Vacant, undeveloped land and parking lots are also prevalent throughout the area.

The proposed development has the potential to alter certain constituent elements of the affected area's neighborhood character, including land use patterns, socioeconomic conditions, traffic and noise levels, and therefore an analysis will be provided in the EIS. As suggested by the *CEQR Technical Manual*, the study area for neighborhood character will be coterminous with the ¼-mile land use study area. The chapter will summarize changes that can be expected in the character of the neighborhood in the future without the Proposed Action (No-Build condition) as well as describing the Proposed Action's impacts on neighborhood character. Subtasks will include:

- Based on the other EIS chapters, describe the predominant factors that contribute to defining the character of the neighborhood, including land use, zoning, and public policy; socioeconomic conditions; open space; historic and cultural resources; urban design and visual resources; transportation; and noise.
- Summarize changes in the character of the neighborhood that can be expected in the future No-Build condition based on planned development projects, public policy initiatives, and planned public improvements, as applicable.
- Summarize changes in the character of the neighborhood that can be expected in the future Build condition, based on the RWCDS, and compare to the future No-Build condition. A qualitative assessment will be presented, which will include a description of the potential effects of the Proposed Action on neighborhood character.

TASK 15. CONSTRUCTION IMPACTS

Construction impacts, though temporary, can have a disruptive and noticeable effect on the adjacent community, as well as people passing through the area. Construction impacts are usually important when construction activity has the potential to affect transportation conditions, archaeological resources and the integrity of historic resources, community noise patterns, air quality conditions, and mitigation of hazardous materials. According to the *CEQR Technical Manual*, multi-sited projects with overall construction periods lasting longer than two years and which are near to sensitive receptors should undergo a preliminary impact assessment. This chapter of the EIS will provide a construction schedule for the projected development sites as well as a preliminary impact assessment following the guidelines in the *CEQR Technical Manual*. The preliminary assessment will evaluate the duration and severity of the disruption or inconvenience to nearby sensitive receptors. If the preliminary assessments indicate the potential for a significant impact during construction, a detailed construction impact analysis will be undertaken and reported in the EIS in accordance with guidelines contained in the *CEQR Technical Manual*. Technical areas to be assessed include the following:

- Transportation Systems. This assessment will qualitatively consider losses in lanes, sidewalks, and other transportation services on the adjacent streets during the various phases of construction, and identify the increase in vehicle trips from construction workers and equipment. If warranted under CEQR guidelines, a travel demand forecast for the RWCDS' construction period will be prepared.
- Air Quality. The construction air quality impact section will contain a qualitative discussion of both mobile air source emissions from construction equipment and worker and delivery vehicles, and fugitive dust emissions. It will discuss measures to reduce impacts.
- Noise Impacts. The construction noise impact section will contain a qualitative discussion of noise from construction activity.
- Hazardous Materials. In coordination with the work performed for hazardous materials, above, summarize actions to be taken during project construction to limit exposure of construction workers to potential contaminants.
- Socioeconomic Conditions. The EIS will consider whether construction conditions as a result of the Proposed Action and associated RWCDS would affect access to existing businesses, the potential consequences concerning their continued viability, and the potential effects of their loss, if any, on the character of the area.
- Neighborhood Character. This assessment will consider potential impacts during the construction period to the character of the surrounding neighborhood.
- Other Technical Areas. As appropriate, discuss the other areas of environmental assessment, including Land Use, Zoning and Public Policy, Open Space, Socioeconomic Conditions, Community Facilities, Historic and Cultural Resources, and Infrastructure, for potential construction-related impacts.

TASK 16. MITIGATION

Where significant adverse project impacts have been identified, measures to mitigate those impacts will be described. These measures will be developed and coordinated with the responsible City/State agencies as necessary, including NYCDRP, LPC, NYCDOT, and NYCDEP. Where impacts cannot be mitigated, they will be described as unavoidable adverse impacts.

TASK 17. ALTERNATIVES

The purpose of an alternatives section in an EIS is to examine development options that would tend to reduce project-related impacts. The alternatives will be defined once the full extent of the Proposed Action's impacts has been identified. The alternatives will include the No Build Alternative and an alternative that reduces any identified significant adverse impacts. The alternatives analysis will be qualitative, except where significant adverse impacts of the Proposed Action have been identified. The level of analysis provided will depend on an assessment of project impacts determined by the analysis connected with the appropriate tasks.

TASK 18. SUMMARY EIS CHAPTERS

In accordance with CEQR guidelines, the EIS will include the following three summary chapters, where appropriate to the Proposed Action:

- **Unavoidable Adverse Impacts** - which summarizes any significant adverse impacts that are unavoidable if the Proposed Action is implemented regardless of the mitigation employed (or if mitigation is not feasible).
- **Growth-Inducing Aspects of the Proposed Action** - which generally refer to "secondary" impacts of a Proposed Action that trigger further development.
- **Irreversible and Irretrievable Commitments of Resources** - which summarizes the Proposed Action and its impacts in terms of the loss of environmental resources (loss of vegetation, use of fossil fuels and materials for construction, etc.), both in the immediate future and in the long term.

TASK 19. EXECUTIVE SUMMARY

The executive summary will utilize relevant material from the body of the EIS to describe the Proposed Action, its environmental impacts, measures to mitigate those impacts, and alternatives to the Proposed Action. The executive summary will be written in enough detail to facilitate drafting of a notice of completion by the lead agency.

APPENDIX 1

RWCDS TABLES FOR PROJECTED AND POTENTIAL DEVELOPMENT SITES

Table A1-1
RWCDS for Projected and Potential Development Sites

Site Data									Existing Condition								
Site Number	Block	Lot	Address	Lot Area	Bldg Area	FAR	Land Use Description	Zoning	Industrial/ Manufacturing/ Warehouse (ZSF)	Vacant Land	Wholesale	Commercial (Office)	Commercial (Retail/ Other)(ZSF)	Public / Community Use	Residential (ZSF)	DUs	Vehicle/Open Storage
	3139	18	902 Flushing Ave	1,452	0	0.00	Vehicle Storage/Parking Lot	M1-1									1,452
1		19	904 Flushing Ave	2,065	0	0.00	Vehicle Storage/Parking Lot	M1-1									2,065
		20	906 Flushing Ave	2,053	0	0.00	Vehicle Storage/Parking Lot	M1-1									2,053
		21	908 Flushing Ave	2,041	0	0.00	Vehicle Storage/Parking Lot	M1-1									2,041
		23	Montieth St	1,875	0	0.00	Vehicle Storage/Parking Lot	M1-1									1,875
		24	35 Montieth St	1,875	0	0.00	Vehicle Storage/Parking Lot	M1-1									1,875
		25	Montieth St	1,875	0	0.00	Vehicle Storage/Parking Lot	M1-1									1,875
		26	31 Montieth St	2,500	0	0.00	Vehicle Storage/Parking Lot	M1-1									2,500
		27	29 Montieth St	1,600	0	0.00	Vehicle Storage/Parking Lot	M1-1									1,600
		28	27 Montieth St	1,833	0	0.00	Vehicle Storage/Parking Lot	M1-1									1,833
		29	25 Montieth St	1,833	0	0.00	Vehicle Storage/Parking Lot	M1-1									1,833
		30	23 Montieth St	1,833	0	0.00	Vehicle Storage/Parking Lot	M1-1									1,833
		31	21 Montieth St	2,500	0	0.00	Vehicle Storage/Parking Lot	M1-1									2,500
		32	19 Montieth St	2,500	0	0.00	Vehicle Storage/Parking Lot	M1-1									2,500
		33	17 Montieth St	2,500	0	0.00	Vehicle Storage/Parking Lot	M1-1									2,500
		34	15 Montieth St	1,875	0	0.00	Vehicle Storage/Parking Lot	M1-1									1,875
		35	13 Montieth St	1,875	0	0.00	Vehicle Storage/Parking Lot	M1-1									1,875
		36	11 Montieth St	1,875	0	0.00	Vehicle Storage/Parking Lot	M1-1									1,875
				35,960													**35,960**
2	3141	1	501 Bushwick Ave	12,204	0	0.00	Vacant Land	M1-1		12,252							
		5	489 Bushwick Ave	1,782	0	0.00	Vacant Land	M1-1		1,775							
		6	485 Bushwick Ave	1,768	0	0.00	Vehicle Storage/Parking Lot	M1-1									1,775
		7	483 Bushwick Ave	1,753	0	0.00	Vacant Land	M1-1		1,760							
		8	479 Bushwick Ave	1,739	1,235	0.71	Industrial	M1-1	1,235								
		10	10 Montieth St	2,500	0	0.00	Vacant Land	M1-1		2,500							
		11	12 Montieth St	2,500	0	0.00	Vacant Land	M1-1		2,500							
		12	14 Montieth St	2,815	0	0.00	Vacant Land	M1-1		2,810							
		14	18 Montieth St	2,646	0	0.00	Vacant Land	M1-1		2,620							
		15	20-24 Montieth St	7,500	0	0.00	Vacant Land	M1-1		7,500							
		18	Montieth St	3,750	0	0.00	Vacant Land	M1-1		3,750							
		20	Montieth St	3,750	0	0.00	Vacant Land	M1-1		3,750							
		21	32 Montieth St	2,500	0	0.00	Vacant Land	M1-1		2,500							
		22	34 Montieth St	2,500	0	0.00	Vacant Land	M1-1		2,500							
		23	36 Montieth St	24,409	0	0.00	Vacant Land	M1-1		24,300							
		36	15 Forrest St	10,168	0	0.00	Vacant Land	M1-1		10,200							
				84,284	**1,235**				**1,235**	**80,717**							**1775**
3	3152	3 [1]	80 Evergreen Ave	74,639	77,680	1.04	Industrial	M1-1	77,680								
		48 [1]	123 Melrose St	632	0	0.00	Vacant Land	M1-1		632							
				75,271	**77,680**				**77,680**	**632**							
4	3152	1	28-32 Stanwix St	1,348	0	0.00	Vacant Land	M1-1		1,348							
		2	Stanwix St	2,068	0	0.00	Vacant Land	M1-1		2,068							
		3 [1]	80 Evergreen Ave	29,223	0	0.00	Vacant Land	M1-1		23,115							
		45	127 Melrose St	2,500	0	0.00	Vacant Land	M1-1		2,500							
		48 [1]	123 Melrose St	9,378	0	0.00	Vacant Land	M1-1		9,378							
		56	109 Melrose St	2,500	0	0.00	Vehicle Storage/Parking Lot	M1-1									2,500
		58	107 Melrose St	5,000	0	0.00	Vehicle Storage/Parking Lot	M1-1									5,000
		62	Melrose St	2,500	0	0.00	Vehicle Storage/Parking Lot	M1-1									2,500
		63	97 Melrose St	1,975	0	0.00	Vehicle Storage/Parking Lot	M1-1									1,975
		64	95 Melrose St	2,163	0	0.00	Vehicle Storage/Parking Lot	M1-1									2,135
		66	Melrose St	2,061	0	0.00	Vehicle Storage/Parking Lot	M1-1									2,050
				60,716						**38,409**							**16,160**
5	3152	36	96 Evergreen Ave	1,865	0	0.00	Vacant Land	M1-1		1,865							
		37	98 Evergreen Ave	2,200	0	0.00	Vacant Land	M1-1		2,200							
		38	100-108 Evergreen Ave	2,400	0	0.00	Vacant Land	M1-1		2,400							
		41	Evergreen Ave	790	0	0.00	Vacant Land	M1-1		790							
		43	Melrose St	2,500	0	0.00	Vacant Land	M1-1		2,500							
				9,755						**9,755**							
6	3138	20	846 Flushing Ave	3,300	1,000	0.30	Auto Repair	M1-1	1,000								
		22	848 Flushing Ave	2,275	0	0.00	Auto Repair	M1-1									
				5,575	**1,000**				**1,000**								
7	3138	32	860 Flushing Ave	10,600	1,596	0.15	Gas Station	M1-1					1,596				
8	3137	56	832 Flushing Ave	6,550	6,000	0.92	Commercial/Supermarket	M1-1					6,000				
			Projected Sites Total	**288,711**	**87,511**				**79,915**	**129,513**	**0**	**0**	**7,596**	**0**	**0**	**0**	**53,895**

POTENTIAL SITES **EXISTING CONDITION**

Site Number	Block	Lot	Address	Lot Area	Bldg Area	FAR	Land Use Description	Zoning	Industrial/ Manufacturing/ Warehouse (ZSF)	Vacant Space in Bldg	Commercial (Wholesale)	Commercial (Office)	Commercial (Retail/ Other)(ZSF)	Public / Community Use	Residential (ZSF)	DUs	Public Parking Spaces
9	3152	44	131 Melrose St	2,500	3,400	1.36	Industrial	M1-1	3,400								
10	3138	11	31 Garden St	4,000	2,475	0.62	Residential	M1-1							2,475	9	
11	3137	51	818 Flushing Ave	2,880	2,880	1.00	Commercial	M1-1					2,880				
			Potential Sites Total	**9,380**	**8,755**				**3,400**				**2,880**		**2,475**	**9**	

Table A1-1a
RWCDS for Projected and Potential Development Sites

Future Without -Action Condition

Site Number	MAX Allowable FAR	Built FAR	Sites with Change from Existing to No-Action	Building Area (SF)	Industrial/ Manufacturing/ Warehouse (ZSF)	Vacant Land	Wholesale	Commercial (Office)	Commercial (Retail/ Other) (ZSF)	Public/ Community Use	Residential (ZSF)	DUs	Vehicle/Open Storage	AccessoryParking Spaces
	1.0	0.00		0									1,452	
1	1.0	0.00		0									2,065	
	1.0	0.00		0									2,053	
	1.0	0.00		0					0				2,041	
	1.0	0.00		0									1,875	
	1.0	0.00		0									1,875	
	1.0	0.00		0									1,875	
	1.0	0.00		0									2,500	
	1.0	0.00		0									1,600	
	1.0	0.00		0									1,833	
	1.0	0.00		0									1,833	
	1.0	0.00		0									1,833	
	1.0	0.00		0									2,500	
	1.0	0.00		0									2,500	
	1.0	0.00		0									2,500	
	1.0	0.00		0									1,875	
	1.0	0.00		0									1,875	
	1.0	0.00		0									1,875	
													35,960	
2	1.0	0.00		0		12,252								
	1.0	0.00		0		1,775								
	1.0	0.00		0									1,775	
	1.0	0.00		0		1,760								
	1.0	0.71		1,235	1235									
	1.0	0.00		0		2,500								
	1.0	0.00		0		2,500								
	1.0	0.00		0		2,810								
	1.0	0.00		0		2,620								
	1.0	0.00		0		7,500								
	1.0	0.00		0		3,750								
	1.0	0.00		0		3,750								
	1.0	0.00		0		2,500								
	1.0	0.00		0		2,500								
	1.0	0.00		0		24,300								
	1.0	0.00		0		10,200								
					1235	**80,717**							**1,775**	
3	1.0	1.04		77,680	77,680									
	1.0	0.00		0		632								
					77,680	632								
4	1.0	0.00		0		1,348								
	1.0	0.00		0		2,068								
	1.0	0.00		0		23,115								
	1.0	0.00		0		2,500								
	1.0	0.00		0		9,378								
	1.0	0.00		0									2,500	
	1.0	0.00		0									5,000	
	1.0	0.00		0									2,500	
	1.0	0.00		0									1,975	
	1.0	0.00		0									2,135	
	1.0	0.00		0									2,050	
	1.0	0.00		0										
						38,409							**16,160**	
5	1.0	0.00		0		1,865								
	1.0	0.00		0		2,200								
	1.0	0.00		0		2,400								
	1.0	0.00		0		790								
	1.0	0.00		0		2,500								
						9,755								
6	1.0	0.30		1,000	1,000									
	1.0	0.00		0										
				1,000	**1,000**									
7	1.0	0.15		1,596					1596					
8	1.0	0.92		6,000					6,000					
				88,511	**79,915**	**129,513**	**0**	**0**	**7,596**	**0**	**0**	**0**	**53,895**	**0**

POTENTIAL SITES

Site Number	MAX Allowable FAR	Built FAR	Sites with Change from Existing to No-Action	Building Area (SF)	Industrial/ Manufacturing/ Warehouse (ZSF)	Vacant Land	Wholesale	Commercial (Office)	Commercial (Retail/ Other)(ZSF)	Public/ Community Use	Residential (ZSF)	DUs	Public Parking Spaces	AccessoryParking Spaces
9	1	0.11		3,400	3,400									
10	1	0.10		2,475							2,475	9		
11	1	0.09		2,880					2,880					
			Potential Sites Total	**8,755**	**3,400**				**2,880**		**2,475**	**9**		

Table A1-1b
RWCDS for Projected and Potential Development Sites

Future With-Action Condition

PROJECTED SITES

Site Number	Development Type	Proposed Zoning	Proposed Built FAR	Lot Area	Industrial/ Manufacturing/ Warehouse (ZSF)	Wholesale	Commercial (Office)	Commercial (Retail) (ZSF) [2]	Public/ Community Facility	Residential (ZSF)	Total DUs [3]	Inclusionary DUs [4]	Public Parking Spaces	AccessoryParking Spaces
	New construction	R7A/C2-4	4.6/2.0	18,892				16,058		70,845	71	14		32
1		R6A	3.6	17,068						61,445	61	10		29
				35,960				16,058		132,290	132	26		60
2	New construction	R7A/C2-4	4.6/2.0	20,012				17,010		75,045	75	15		34
		R7A	4.6	20,002						92,009	92	18		41
		R6A	3.6	44,270						159,372	159	32		75
				84,284				17,010		326,426	326	65		150
3	New construction	R7A/C2-4	4.6/2.0	21,129				17,960		79,234	79	16		36
		R7A	4.6	25,004						115,018	115	23		52
		R6A	3.6	29,138						104,897	105	21		49
				75,271				17,960		299,149	299	60		137
4	New construction	R7A/C2-4	4.6/2.0	3,710				3,154		13,913	14	3		6
		R6A	3.6	57,006						205,222	205	41		96
				60,716				3,154		219,134	219	44		103
5	New construction	R7A/C2-4	4.6/2.0	9,755				8,292		36,581	37	7		16
6	New construction	R6A/C2-4	3.6/2.0	5,575				4,739		15,331	15	3		7
7	New construction	R6A/C2-4	3.6/2.0	10,600				9,010		29,150	29	6		14
8	New construction	R6A/C2-4	3.6/2.0	6,550				5,568		18,013	18	4		8
					0	**0**	**0**	**81,790**	**0**	**1,076,074**	**1,076**	**215**		**495**

[1] Portion of Lot 3

[2] Assuming 1.0 FAR with 15% of floor area designated to residential uses (lobbies, etc.)

[3] Assuming 1,000 sf/DU

[4] Assuming 20% of Proposed Max. Floor Area

POTENTIAL SITES

Site Number	Development Type	Proposed Zoning	Proposed Built FAR	Lot Area	Industrial/ Manufacturing/ Warehouse	Wholesale	Commercial (Office)	Commercial (Retail)(ZSF)	Public/ Community Facility	Residential (ZSF)	Total DUs	Inclusionary DUs	Public Parking Spaces	AccessoryParking Spaces
9	New construction	R7A/C2-4	4.6/2.0	2,500				2,125		9,375	9	2		4
10	New construction	R6A	3.6	4,000				0		18,400	18	4		8
11	New construction	R6A/C2-4	3.6/2.0	2,880				2,448		10,800	11	2		5
				9,380				**4,573**		**38,575**	**39**	**8**		**18**

Table A1-1c
RWCDS Projected and Potential Development Sites

Increment												
PROJECTED SITES												
Site Number	**Industrial/ Manufacturing/ Warehouse (ZSF)**	**Vacant Land**	**Vehicle/Open Storage**	**Wholesale**	**Commercial (Office)**	**Commercial (Retail) (ZSF)**	**Community Facility**	**Residential (ZSF)**	**DUs**	**Inclusionary DUs [4]**	**Public Parking Spaces**	**AccessoryParking Spaces**
1			-35,960			16,058		132,290	132	26	0	60
2	-1,235	-80,717	-1775			17,010		326,426	326	65	0	150
3	-77,680	-632				17,960		299,149	299	60	0	137
4		-38,409	-16,160			3,154		219,134	219	44	0	103
5		-9,755				8,292		36,581	37	7	0	16
6	-1,000					4,739		15,331	15	3	0	7
7						7,414		29,150	29	6	0	14
8						-433		18,013	18	4	0	8
Projected Sites Total	**-79,915**	**-129,513**	**-53,895**	**0**	**0**	**74,194**	**0**	**1,076,074**	**1,076**	**215**	**0**	**495**

[1] Portion of Lot 3

[2] Assuming 1.0 FAR with 15% of floor area designated to residential uses (lobbies, etc.)

[3] Assuming 1,000 sf/DU

[4] Assuming 20% of Proposed Max. Floor Area

POTENTIAL SITES

Site Number	Industrial/ Manufacturing/ Warehouse(ZSF)	Vacant Land	Vehicle/Open Storage	Commercial (Wholesale)	Commercial (Office)	Commercial (Retail/ Other)(ZSF)	Community Facility	Residential (ZSF)	DUs	Inclusionary DUs	Public Parking Spaces	AccessoryParking Spaces
9	-3,400					2,125		9,375	9	2		4
10								15,925	9	4		8
11						-432		10,800	11	2		5
Potential Sites Total	**-3,400**					**1,693**		**36,100**	**30**	**8**		**18**

APPENDIX 2

NEW YORK CITY DEPARTMENT OF ENVIRONMENTAL PROTECTION

ENVIRONMENTAL REVIEW LETTERS

NYC
Environmental
Protection

June 1, 2010

Mr. Robert Dobruskin
Director, Environmental Assessment and Review
New York City Development of City Planning
22 Reade Street, Room 4E
New York, New York 10007

Caswell F. Holloway
Commissioner

Angela Licata
Deputy Commissioner
ALicata@dep.nyc.gov

Re: Rheingold Development Rezoning
Block 3138, 3139, 3140, 3141, 3152,
Portion of Block 3137, Lots 26, 49, and 56.
09DCP002K/09DEPTECH271K
ULURP # NO080322ZMK and 070250MMK

Dear Mr. Dobruskin:

59-17 Junction Boulevard
Flushing, NY 11373

(718) 595-4398 tel
(718) 595-4479 fax

The New York City Department of Environmental Protection, Bureau of Environmental Planning and Analysis (DEP) has reviewed the May 2010 Phase II Environmental Site Investigation Work plan (Phase II) and Health and Safety Plan (HASP) prepared by AMEX Earth & Environmental Inc., on behalf of Forrest Lots LLL (applicant) for the above-referenced project. The applicant is seeking zoning map amendments to change the zoning for all of Block 3138, 3139, 3140, 3141, 3152, portion of Block 3137, Lots 26, 49, and 56 bounded by Flushing Avenue to the north, Forrest and Melrose Street to the south, Evergreen Avenue to the east and Stanwix, Garden and Beaver Street to the west in Brooklyn Community District 4. As currently proposed, the M3-1 zoning would be replaced with an M1-2 light manufacturing district; the M1-1 zoning would be replaced with a combination of R6A and R7A residential zoning districts. In addition, a C2-4 commercial overlay would be mapped on the proposed action area blocks that will have frontage on Flushing Avenue, Bushwick Avenue and a portion of Evergreen Avenue to a depth of 100 feet. The zoning authorization would facilitate the development of four to eight -story mixed used buildings on all of Block 3141 and portions of Blocks 3139 and 3152. The proposed development would consist of approximately 28,000 square feet (sf) of local retail and 947 dwelling units (24% of which would be affordable dwelling units and senior housing). It should be noted that Block 3138, portion of Block 3139, 3140, 3141, portion of Block 3139, 3152 and portion of Block 3137, Lots 26, 49, and 56 are not under the control or ownership of the applicant and there are no proposed development plans for these sites.

DEP finds the Work plan and HASP for the site investigation acceptable.

- The applicant is reminded that soil and groundwater samples should be collected and analyzed by an NYSDOH ELAP-CERTIFIED laboratory for the presence of Volatile Organic Compounds by USEPA Method 8260, Semi-

Volatile Organic Compounds by USEPA Method 8270, Pesticides/Polychlorinated Biphenyis by USEPA Method 8081/8082 and Target Analyte List Metals.

- Upon completion of the investigation activities, the consultant should submit a detailed Phase II report to DEP for review and approval. The report should include, at a minimum, an executive summary, narrative of the field activities, laboratory data and conclusions, comparison of soil and groundwater analytical result (i.e., New York State Department of Environmental Conservation 6 NYCRR PART 375 and Technical and Operations Guidance Series Water Quality Standards), updated site plans depicting sample locations, boring logs, and remedial recommendations, if warranted.

DEP should be notified at least one week prior to the start of any field work. Future correspondence and submittals should include DEP tracking number 09DEPTECH271K. If you have any questions, you may contact Maurice Winter at 718-595-4514.

Sincerely,

Maurice Winter for

John Wuthenow

Director

Site Assessment

Cc: G. Heath
J. Wuthenow
M. Winter
M. Myrie
Celeste Evans- DCP
J. Jarboe- DCP
File

The City of New York

DEPARTMENT OF ENVIRONMENTAL PROTECTION
59-17 Junction Boulevard
Flushing, New York 11373

Steven W. Lawitts
Acting Commissioner

Tel. (718) 595-6576
Fax (718) 595-3557

Angela Licata
Deputy Commissioner

Bureau of Environmental Planning & Analysis

Tel. (718) 595-4398
Fax: (718) 595-4479
alicata@dep.nyc.gov

July 28, 2009

Mr. Robert Dobruskin
Director, Environmental Assessment and Review
New York City Development of City Planning
22 Reade Street, Room 4E
New York, New York 10007

CEQR
072909
CITY PLANNING COMMISSION
DEPARTMENT OF CITY PLANNING
22 READE STREET
NEW YORK, N.Y. 10007-1216

Re: Rheingold Development Rezoning
Block 3138, 3139, 3140, 3141, 3152,
Portion of Block 3137, Lots 26, 49, and 56.
09DCP002K/09DEPTECH271K
ULURP # NO080322ZMK and 070250MMK

Dear Mr. Dobruskin:

The New York City Department of Environmental Protection, Bureau of Environmental Planning and Analysis (DEP) has reviewed the July 2008 Environmental Assessment Statement (EAS), prepared by Philip Habid & Associates LLC, the June 2008 Phase I Environmental Site Assessment (Phase I) conducted by ATC Associates Inc., and the July 2005 Phase I Environmental Site Assessment (Phase I) conducted by Singer Environmental Group., on behalf of Forrest Lots LLL (applicant) for the above-referenced project. The applicant is seeking zoning map amendments to change the zoning for all of Block 3138, 3139, 3140, 3141, 3152, portion of Block 3137, Lots 26, 49, and 56 bounded by Flushing Avenue to the north, Forrest and Melrose Street to the south, Evergreen Avenue to the east and Stanwix, Garden and Beaver Street to the west in Brooklyn Community District 4. As currently proposed, the M3-1 zoning would be replaced with an M1-2 light manufacturing district; the M1-1 zoning would be replaced with a combination of R6A and R7A residential zoning districts. In addition, a C2-4 commercial overlay would be mapped on the proposed action area blocks that will have frontage on Flushing Avenue, Bushwick Avenue and a portion of Evergreen Avenue to a depth of 100 feet. The zoning authorization would facilitate the development of four to eight -story mixed used buildings on all of Block 3141 and portions of Blocks 3139 and 3152.The proposed development would consist of approximately 28,000 square feet (sf) of local retail and 947 dwelling units (24% of which would be affordable dwelling units and senior housing). It should be noted that Block 3138, portion of Block 3139, 3140, 3141, portion of Block 3139, 3152 and portion of Block 3137, Lots 26, 49, and 56 are not under the control or ownership of the applicant and there are no proposed development plans for these sites.

The June 2008 and the July 2005 Phase I revealed that historical on-site and surrounding areas land uses have predominantly consisted of a variety of residential, commercial, industrial and manufacturing uses including automobile repair facilities, parking facilities, paper products manufacturing company, plumbing wholesale warehouse, gasoline stations, used auto storage and sales, steel works/construction business and accessory parking, tow truck business, drycleaners, iron works facility and unknown industrial, commercial, manufacturing and retail facilities uses.

Based upon our review of the submitted documentation, we have the following comments/recommendations:

PAGE 2/3 * RCVD AT 8/3/2009 9:34:43 AM [Eastern Daylight Time] * SVR:NYFX01/2 * DNIS:3352 * CSID:12127203495 * DURATION (mm-ss):02-04

Proposed Development Site (Block 3141 and portions of Blocks 3139 and 3152)

Past on-site and the surrounding areas land uses may have impacted the soil and groundwater at this site. Therefore, A Phase II Environmental Site Assessment (Phase II) is necessary to adequately identify/characterize the surface and subsurface soils of the above subject parcels prior to on-site soil disturbance. A Phase II Investigative Protocol/Workplan summarizing the proposed drilling and soil/groundwater sampling activities should be submitted to DEP for review and approval. The Workplan should include blueprints and/or site plans displaying the current surface grade and sub-grade elevations and a site map depicting the proposed soil boring locations. Soil and groundwater samples should be collected and analyzed by a New York State Department of Health Environmental Laboratory Approval Program certified (NYSDOH ELAP-CERTIFIED) laboratory for the presence of Volatile Organic Compounds (VOCs) by U.S. EPA Method 8260, Semi-Volatile Organic Compounds (SVOCs) by Method 8270, Pesticides/Polychlorinated Biphenyl (Pesticides/PCBs) by Method 8081/8082 and Target Analyte List (TAL) metals. An investigative Health and Safety Plan (HASP) should also be submitted to DEP for review and approval. The Phase II Workplan and HASP should be submitted to DEP for review and approval prior to start of any fieldwork.

Block 3138, portion of Block 3139, 3140, 3141, portion of Block 3139, 3152 and portion of Block 3137, Lots 26, 49, and 56.

Since Block 3138, portion of Block, 3140, 3141, portion of Block 3139, 3152 and Portion of Block 3137, Lots 26, 49, and 56 are not under the control or ownership of the applicant and there are no proposed development plans for these sites, DEP recommends that the above mention Block and Lots be given an "E" designation for hazardous materials on the zoning map pursuant to 11-15 of the New York City Zoning Resolution. The "E" designation will ensure that testing and mitigation will be provided as necessary before any future development. Soil and groundwater samples should be collected and analyzed by an NYSDOH ELAP-CERTIFIED laboratory for the presence of VOCs by U.S. EPA Method 8260, SVOCs by Method 8270, Pesticides/PCBs by Method 8081/8082 and TAL Metals. An investigative Health and Safety Plan (HASP) will also be required to be submitted for review and approval. Phase II Investigative Protocols/Workplans will be required to be submitted to DEP for review and approval prior to any soil disturbances.

The Phase II Workplan and HASP for the proposed development site (Block 3141 and portions of Blocks 3139 and 3152) should be submitted to DEP for review and approval prior to start of any fieldwork. Future correspondence and submittals should include DEP tracking number 09DEPTECH271K. If you have any question, you may contact Maurice Winter at 718-595-4514.

Sincerely,

Maurice Winter for

John Wuthenow

Director

Site Assessment

G. Heath; J. Wuthenow; M. Winter; M. Myrie; Celeste Evans- DCP; File

PAGE 3/3 * RCVD AT 8/3/2009 9:34:43 AM [Eastern Daylight Time] * SVR:NYFX01/2 * DNIS:3352 * CSID:12127203495 * DURATION (mm-ss):02-04

APPENDIX 3

TRANSPORTATION PLANNING FACTORS MEMORANDUM

Philip Habib & Associates

Engineers and Planners • 102 Madison Avenue • New York, NY 10016 • 212 929 5656 • 212 929 5605 (fax)

TECHNICAL MEMORANDUM

TO: **NYCDCP**

FROM: **Philip Habib & Associates**

DATE: **July 24, 2012**

PROJECT: **Rheingold Development Rezoning (CEQR# 09DCP002K)**

RE: **Preliminary Transportation Planning Factors (TPF)**

This memorandum summarizes the transportation planning factors to be used for the analyses of traffic, parking, transit, and pedestrian conditions for the proposed Rheingold Development Rezoning that would occur in Bushwick, Brooklyn. A preliminary travel demand forecast based on these factors is also presented based on the amount of new travel demand that would be generated. Preliminary traffic and pedestrian assignments for this scenario are provided along with a proposed study area for the transportation analyses.

THE PROPOSED ACTION

The Proposed Action is for a change to the official City-map to map two new street segments and a zoning map amendment affecting an approximately five block area in Bushwick, Brooklyn, in Community District 4. The proposed rezoning action affects the area bounded by Flushing Avenue on the north and Melrose Street and Forrest Street on the south, between Evergreen Avenue and Garden, Stanwix and Beaver Streets. The applicant is proposing a rezoning of its site within the rezoning area, which consists of all of Blocks 3140, 3141 and Block 3139 lots 18-21 and 23-26 and Block 3152 lots 1-3, 45, 48, 56, 58, 62-64, 66 and 100. In addition to the sites controlled by the applicant, the rezoning would also affect all of Block 3138, the remainder of the lots on Block 3139 and 3152 and lots 26 (portion), 49 (portion), 51 and 56 on Block 3137. The blocks zoned M3-1 would be rezoned M1-2 and the blocks zoned M1-1 would be rezoned R7A and R6A with a C2-4 commercial overlay mapped along portions of the Bushwick, Flushing and Evergreen Avenue frontages to a depth of 100 feet. The proposed action also includes a zoning text amendment, which modifies Section 23-922 of the NYC Zoning Resolution to make the appropriate R6A and R7A districts “Inclusionary Housing designated areas.” This will establish an inclusionary floor area ratio (FAR) bonus, providing opportunity and incentive for the development of affordable housing.

The proposed mapping action would map and formally bestow to the City the unbuilt section of Stanwix Street between Montieth Street and Forrest Street and the unbuilt section of Noll Street between Evergreen Avenue and Stanwix Street and open them to public traffic. The proposed project also includes the future installation of a new traffic signal at the intersection of Bushwick Avenue and Noll Street, if warranted, which would be installed by applicant and maintained by New York City Department of Transportation (NYCDOT).

PROJECTED DEVELOPMENT

Under the reasonable worst-case development scenario (RWCDS), the proposed actions would result in 1,076 dwelling units (DUs) and approximately 81,790 sf of local retail (74,194 sf net) on the projected development sites. Of the 1,076 DUs, 47 units would be set aside for senior housing, however for conservative analysis purposes, all dwelling units would be considered typical.

The RWCDS would replace approximately 79,915 sf of warehouse/wholesale, 1,000 sf of auto care, 6,000 sf of local retail (supermarket) and a 1,596 sf gas station, all of which would operate under No Build conditions.

PRELIMINARY TRANSPORTATION PLANNING FACTORS

Table 1 shows the preliminary transportation planning factors to be used for the travel demand forecast generated by the proposed action in the weekday AM, midday, PM and Saturday midday peak hours. These include trip generation rates, temporal and directional distributions, mode choice factors, vehicle occupancies and truck trip factors for each proposed land use. Table 1 also shows the transportation planning factors for each of the No Build land uses that would be eliminated as part of the proposed action. It should be noted that the vehicular demand for the No Build warehouse/wholesale use is based on vehicle counts conducted at the site in 2006. Although the counts at this site were conducted in 2006, the use has remained the same. However, updated vehicle counts would confirm this vehicular demand. In addition, for conservative analysis purposes, credit for the transit and pedestrian trips generated by the No Build warehouse/wholesale use has not been taken. These transportation planning assumptions were based on standard CEQR criteria, standard professional references, Census data, recent surveys and studies that have been used in previous EASs and EISs for projects with similar uses.

TRIP GENERATION

Table 2 provides the overall resulting trip generation for the development program for each of the three weekday peak hours for person trips for each mode of transportation and for vehicle trips for autos, taxis and trucks. This table also shows the number of trips generated by the No Build land uses that would be eliminated under Build conditions. Table 2 also shows the net incremental transportation demand when the Build trip generation volumes are combined with the trip generation volumes of the No Build land uses that would be eliminated under Build conditions.

Rheingold Development Rezoning **Transportation Planning Assumptions**

Table 1

	Build Conditions		Existing Uses			
Land Use:	Residential	Local Retail	Warehouse/ Wholesale (10)	Autocare	Supermarket	Gas Station
Size/Units:	1076 DUs	81,790 gsf	78,915 gsf	1,000 gsf	6,000 gsf	1,596 gsf 6 Pump
Trip Generation:	(1)	(1)		(5,6)	(1)	(8)
Weekday	8.075	205		19.42	175	194
Saturday	9.6	240		19.42	231	194
	per DU	per 1,000 sf		per 1000 gsf	per 1,000 sf	per pump
Temporal Distribution:	(1)	(1)		(4)	(1)	(8)
AM	10.0%	3.0%		13.2%	5.0%	6.2%
MD	5.0%	19.0%		11.0%	6.0%	8.2%
PM	11.0%	10.0%		14.2%	10.0%	8.2%
Saturday MD	8.0%	10.0%		11.0%	9.0%	8.2%
Modal Splits:	(3) AM/MD/PM	(2) AM/MD/PM		(4) AM/MD/PM	(2) AM/MD/PM	(9) AM/MD/PM
Auto	12.6%	2.0%		85.0%	2.0%	95.0%
Taxi	1.9%	3.0%		5.0%	3.0%	0.0%
Subway	60.3%	5.0%		1.0%	5.0%	2.5%
Bus	8.6%	20.0%		1.0%	20.0%	2.5%
Walk	14.5%	70.0%		8.0%	70.0%	0.0%
Other	2.1%	0.0%		0.0%	0.0%	0.0%
	100.0%	100.0%		100.0%	100.0%	100.0%

	(2)		(2)		(4)		(7)		(9)	
In/Out Splits:	In	Out	In	Out	In	Out	In	Out	In	Out
AM	15.0%	85.0%	50.0%	50.0%	65.0%	35.0%	61.0%	39.0%	50.0%	50.0%
MD	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
PM	70.0%	30.0%	50.0%	50.0%	50.0%	50.0%	51.0%	49.0%	50.0%	50.0%
Saturday MD	53.0%	47.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%

Vehicle Occupancy:	(3)		(2)		(4)		(7)		(3)	
Auto	1.13		2.00		1.30		2.00		1.13	
Taxi	1.40		2.00		1.30		2.00		N/A	
Truck Trip Generation:	(1)		(1)		(4)		(7)			
	Weekday	Saturday	Weekday	Saturday	Weekday	Saturday	Weekday	Saturday		
	0.06	0.02	0.35	0.04	0.89	0.01	1.2	0.24	N/A	
	per DU		per 1,000 sf		per DU		per 1,000 sf		per 1,000 sf	
	(1)		(1)		(5)		(7)			
AM	12.0%		8.0%		14.1%		3.0%		N/A	
MD	9.0%		11.0%		9.0%		6.0%		N/A	
PM	2.0%		2.0%		1.0%		7.0%		N/A	
Saturday MD	9.0%		11.0%		9.0%		5.6%		N/A	

	In	Out	In	Out	In	Out	In	Out	In	Out
AM/MD/PM	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%

Sources:
(1) 2012 CEQR Technical Manual.
(2) Retail Industrial Text Amendment FEIS
(3) Based on 2005-2009 American Community Survey (ACS) Data for tracts 389, 391, 425 and 487.
(4) Greenpoint-Williamsburg Rezoning FEIS, 2004.
(5) Based on ITE Trip Generation Manual, 8th Edition, Landuse Code 942 (Automobile Care Center); weekday trip rate data not available, average weekend rate assumed for weekday.
(6) Person trip rate = ITE average vehicle trip rate x 1.30/0.95.
(7) Admiral Row Plaza EAS, 2011.
(8) Based on ITE Trip Generation Manual, 8th Edition, Landuse Code 945 (Gasoline/Service Station with Convenience Market); weekday midday trip rate data not av Weekday PM rate assumed to be the same as weekday midday; Weekend trip rate assumed to be the same as weekday trip rate.
(9) Based on Hunts Point Alternative Fueling Facility EAS, August 2011.
(10) Vehicular travel demand was based on counts from 2006. Credit for transit and pedestrian trips is not being taken for conservative purposes.
Note: Gross floor area numbers are approximate.

	Proposed Land Use				No Build Land Use				Net Total Increment					
Land Use:	Residential	Local Retail	Warehouse/ Wholesale		Autocare	Supermarket	Gas Station		Residential	Local Retail	Warehouse/ Wholesale	Autocare	Supermarket	Gas Station
Size/Units:	1,076 Dus	81,790 gsf	-78,915 gsf		-1,000 gsf	-6,000 gsf	-1,596 gsf -6 pump		1076 Dus	74,194 gsf	-78915 gsf	-1000 gsf	-6000 gsf	-1,596 gsf -6 pump
Peak Hour Trips:		(1)					(2)							
AM	869	377			-3	-53	-27		868	377		-3	-53	-27
MD	434	2389			-2	-63	-42		434	2389		-2	-63	-42
PM	956	1258			-3	-105	-42		956	1258		-3	-105	-42
SMD	826	1472			-2	-125	-42		826	1472		-2	-125	-42

Person Trips:

		Proposed Land Use In	Out	In	Out	TOTAL	No Build Land Use In	Out	In	Out	In	Out	TOTAL	Net Total Increment In	Out	TOTAL
AM	Auto	16	93	4	4	117	-1	-1	-1	0	-13	-13	-29	5	83	88
	Taxi	2	14	6	6	28	0	0	-1	-1	0	0	-2	7	19	26
	Subway	79	445	9	9	543	0	0	-2	-1	0	0	-3	86	453	539
	Bus	11	64	38	38	150	0	0	-6	-4	0	0	-11	42	97	139
	Walk	19	107	132	132	390	0	0	-22	-14	0	0	-37	128	225	353
	Other	3	16	0	0	18	0	0	0	0	0	0	0	3	16	18
	Total	130	739	189	189	1246	-2	-1	-32	-20	-13	-13	-80	272	892	1164
MD	Auto	27	27	24	24	103	-1	-1	-1	-1	-20	-20	-43	30	30	60
	Taxi	4	4	36	36	80	0	0	-1	-1	0	0	-2	39	39	78
	Subway	131	131	60	60	381	0	0	-2	-2	-1	-1	-4	189	189	377
	Bus	19	19	239	239	515	0	0	-6	-6	-1	-1	-14	251	251	502
	Walk	31	31	836	836	1735	0	0	-22	-22	0	0	-44	846	846	1691
	Other	5	5	0	0	9	0	0	0	0	0	0	0	5	5	9
	Total	217	217	1195	1195	2824	-1	-1	-32	-32	-22	-22	-109	1358	1358	2717
PM	Auto	84	36	13	13	146	-1	-1	-1	-1	-20	-20	-44	75	27	101
	Taxi	13	5	19	19	56	0	0	-2	-2	0	0	-3	30	23	53
	Subway	403	173	31	31	639	0	0	-3	-3	-1	-1	-6	432	201	633
	Bus	58	25	126	126	334	0	0	-11	-10	-1	-1	-22	172	140	312
	Walk	97	42	440	440	1019	0	0	-37	-36	0	0	-74	500	446	945
	Other	14	6	0	0	20	0	0	0	0	0	0	0	14	6	20
	Total	669	287	629	629	2213	-1	-1	-54	-51	-22	-22	-152	1222	842	2064
SMD	Auto	55	49	15	15	134	-1	-1	-1	-1	-20	-20	-44	48	42	89
	Taxi	8	7	22	22	60	0	0	-2	-2	0	0	-4	28	28	56
	Subway	264	234	37	37	572	0	0	-3	-3	-1	-1	-7	297	267	565
	Bus	38	33	147	147	366	0	0	-12	-12	-1	-1	-26	172	168	339
	Walk	64	56	515	515	1150	0	0	-44	-44	0	0	-87	535	528	1063
	Other	9	8	0	0	17	0	0	0	0	0	0	0	9	8	17
	Total	438	388	736	736	2299	-1	-1	-62	-62	-22	-22	-171	1090	1040	2130

Vehicle Trips :

		Proposed Land Use In	Out	In	Out	TOTAL	(3) In	Out	No Build Land Use In	Out	In	Out	In	Out	TOTAL	Net Total Increment In	Out	TOTAL
AM	Auto (Total)	15	82	2	2	101	-32	-4	-1	-1	0	0	-12	-12	-62	-28	67	39
	Taxi	2	9	3	3				0	0	0	0	0	0				
	Taxi (Bal.)	11	11	6	6	34			0	0	0	0	0	0	0	17	17	34
	Truck	4	4	1	1	10			0	0	0	0	0	0	0	5	5	10
						145									-64	-6	89	83
		In	Out	In	Out		(3) In	Out	In	Out	In	Out	In	Out				
MD	Auto (Total)	24	24	12	12	72	-18	-18	-1	-1	0	0	-18	-18	-74	-1	-1	-2
	Taxi	3	3	18	18				0	0	0	0	0	0				
	Taxi (Bal.)	6	6	36	36	84			0	0	0	0	0	0	0	42	42	84
	Truck	2	2	2	2	8			0	0	0	0	0	0	0	4	4	8
						165									-75	45	45	90
		In	Out	In	Out		(3) In	Out	In	Out	In	Out	In	Out				
PM	Auto (Total)	75	32	6	6	119	-4	-28	-1	-1	-1	-1	-18	-18	-72	57	-10	47
	Taxi	9	4	9	9				0	0	-1	-1	0	0				
	Taxi (Bal.)	13	13	18	18	62			0	0	-2	-2	0	0	-4	29	29	58
	Truck	0	0	0	0	0			0	0	0	0	0	0	0	0	0	0
						181									-76	86	19	105
		In	Out	In	Out		(3) In	Out	In	Out	In	Out	In	Out				
SMD	Auto (Total)	49	43	7	7	106	-6	-4	-1	-1	-1	-1	-18	-18	-50	30	26	56
	Taxi	6	5	11	11				0	0	-1	-1	0	0				
	Taxi (Bal.)	11	11	23	23	68			0	0	-2	-2	0	0	-4	32	32	64
	Truck	1	1	0	0	2			0	0	0	0	0	0	0	1	1	2
						176									-55	63	59	122

Notes:

(1)- 25% linked-trip credit applied to local retail use

(2)- Based on ITE Trip Generation Handbook, Second Edition: Landuse Code 945, (Gasoline/Service Station with Convenience Market) AM= 62%, MD=PM=SMD=5(
pass-by rate credit applied to Gas Station use

(3) Vehicular travel demand was based on counts from 2006. Credit for transit and pedestrian trips is not being taken for conservative purpose
Saturday numbers were derived from the ratio of weekday and Saturday; based on the ratio from ITE Trip Generation Manua

As shown in Table 2, the proposed action under Build conditions would generate a total net increase of approximately 83, 90, 105, and 122 vehicle trips (in and out combined) in the AM, midday, PM, Saturday midday peak hours, respectively. (Vehicle trips include auto and truck trips, and trips by taxi which have been balanced to reflect that some taxis arrive or depart empty.)

Peak hour subway trips would increase by 539, 377, 633, and 565 in the weekday AM, midday, PM, and Saturday midday, respectively. Bus trips would increase by approximately 139, 502, 312, and 339 in the weekday AM, midday, PM, and Saturday midday peak hours, respectively. The proposed action would generate an additional 353, 1,691, 945, and 1,063 pedestrian trips during the weekday AM, midday, PM, and Saturday midday peak hours, respectively.

TRAFFIC NETWORK

The existing street network in western Bushwick, shown in Figure 1, includes two major two-way arterials – Bushwick Avenue and Flushing Avenue. Bushwick Avenue is a major north-south arterial that carries the heaviest traffic in the study area and the major east-west artery in the study area is Flushing Avenue. The study area has an irregular street pattern which in composed of different grid orientations and discontinuous streets (e.g. Beaver Street in the study area becomes Bushwick Avenue and Stanwix and Noll Streets in the study are both discontinuous). Given this interruption in the center of the street grid, traffic volumes on several local streets are typically lower than on other local streets in the area.

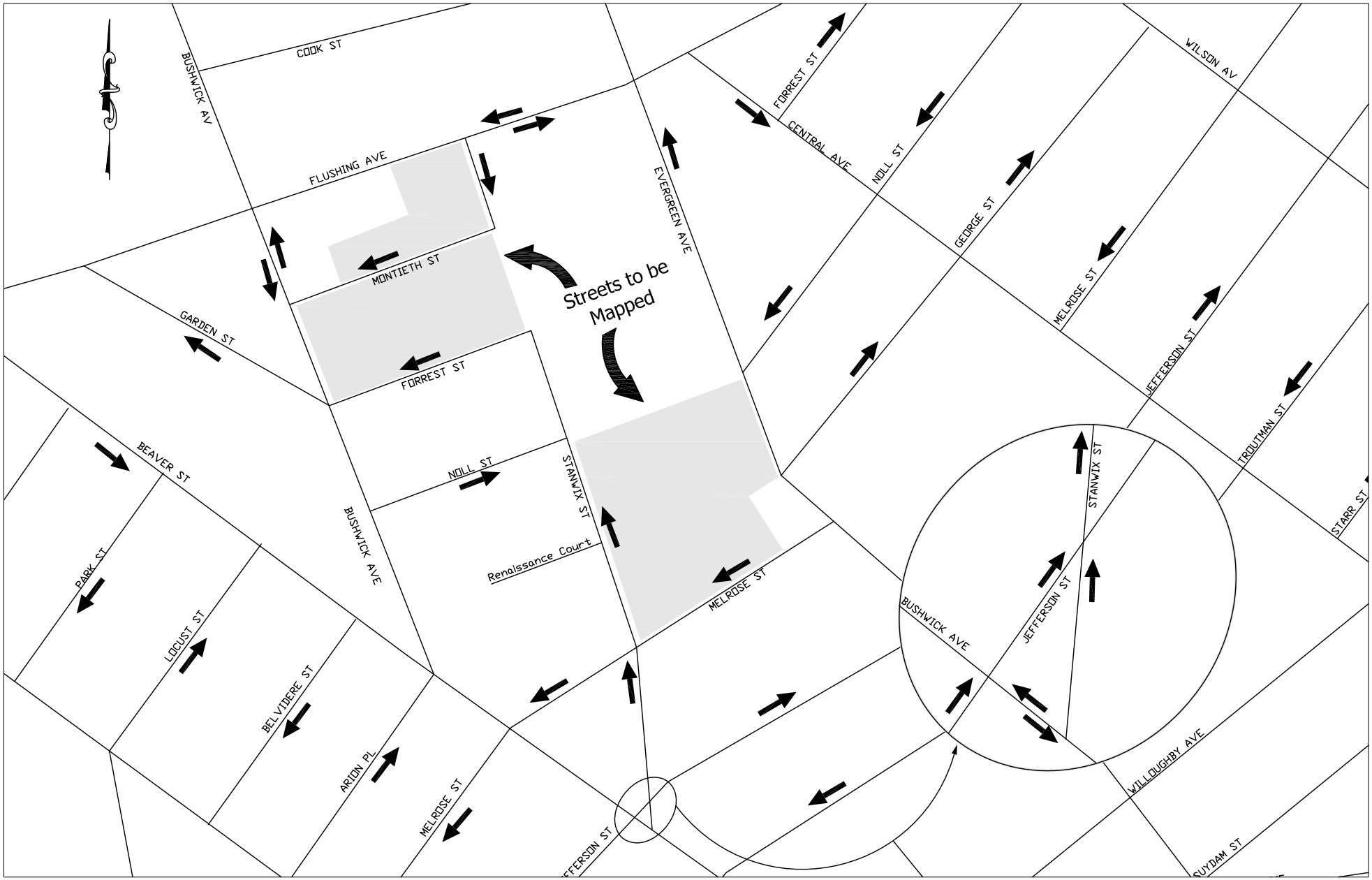
In addition to the new housing and retail development, there would be a restructuring of the local street system, including the mapping of new street segments and change in traffic flow direction of selected streets in the study area, which is shown in Figure 2. The proposed action would map and open Stanwix Street from Forrest Street to Montieth Street, making Stanwix Street a north-south street continuous from Bushwick Avenue to Flushing Avenue. Similarly, the mapping and opening of Noll Street from Stanwix Street to Evergreen Avenue would also make that east-west street continuous in the study area.

As shown in Table 2, the proposed action under Build conditions would generate a total net increase of approximately 83, 90, 105, and 122 vehicle trips (in and out combined) in the AM, midday, PM, and Saturday midday peak hours, respectively. (Vehicle trips include auto and truck trips, and trips by taxi which have been balanced to reflect that some taxis arrive or depart empty.) Figure 3 shows the primary vehicle assignments to the study network for each of the four peak periods.

In addition to the vehicle demand generated by residential and retail, the proposed action's restructuring of the local street system would result in diversions to existing vehicle trips. Most notably, Stanwix Street would become a one-way southbound, while Noll Street would be one-way westbound. These diversions are shown in Figure 4.

The development generated vehicle trips were then combined with the diverted vehicle trips and were assigned to the traffic network to determine what intersections would experience a demand of 50 vehicles or greater during the weekday AM, midday, PM, or Saturday midday peak periods. Figure 5 shows the preliminary assignments of these vehicles for the four peak periods, taking into account the future diversions. As shown in

Figure 1
Existing Street Network

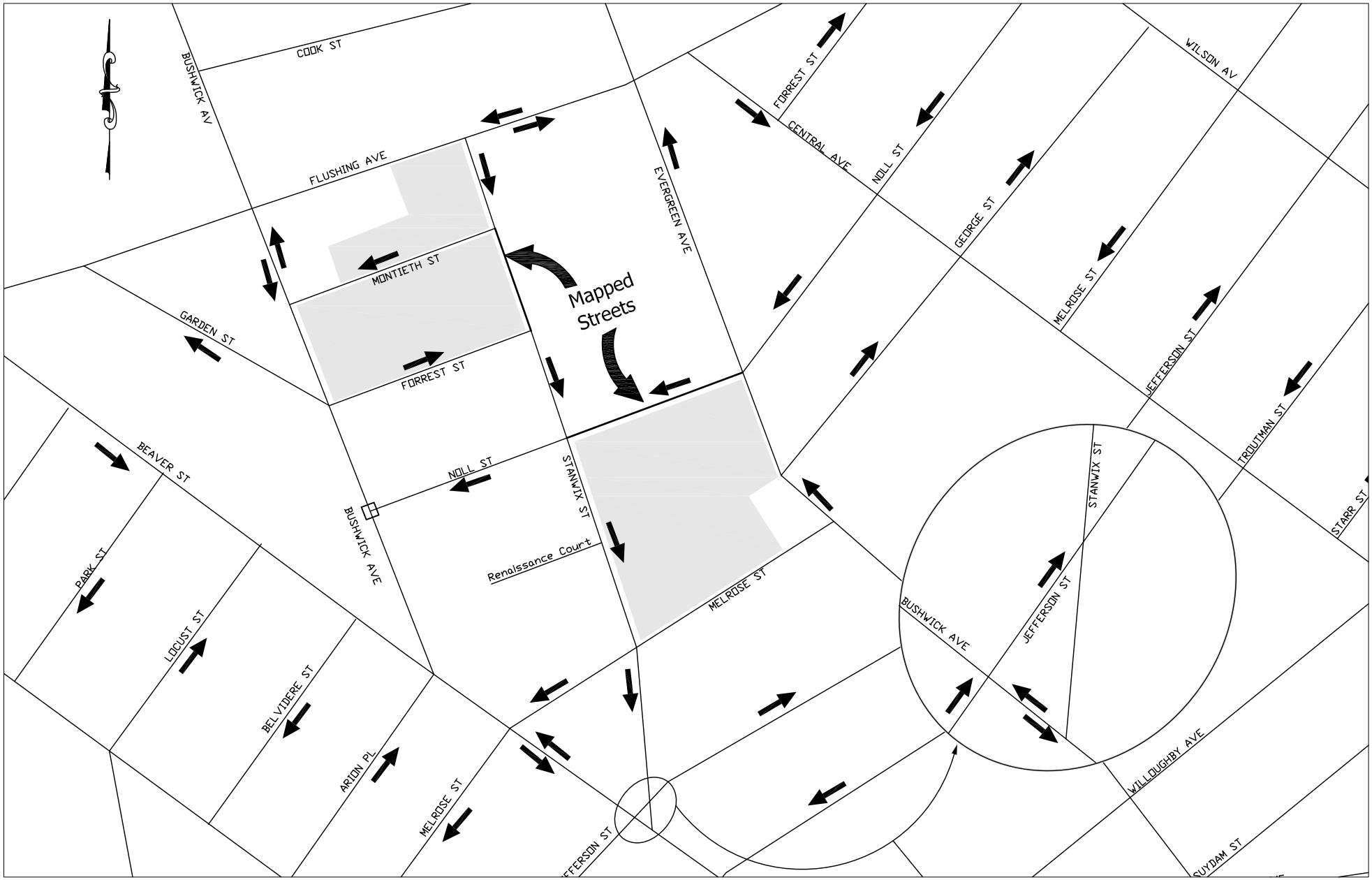


Legend

Street Direction

Project Site

Figure 2
Future Street Network



Legend

Street Direction

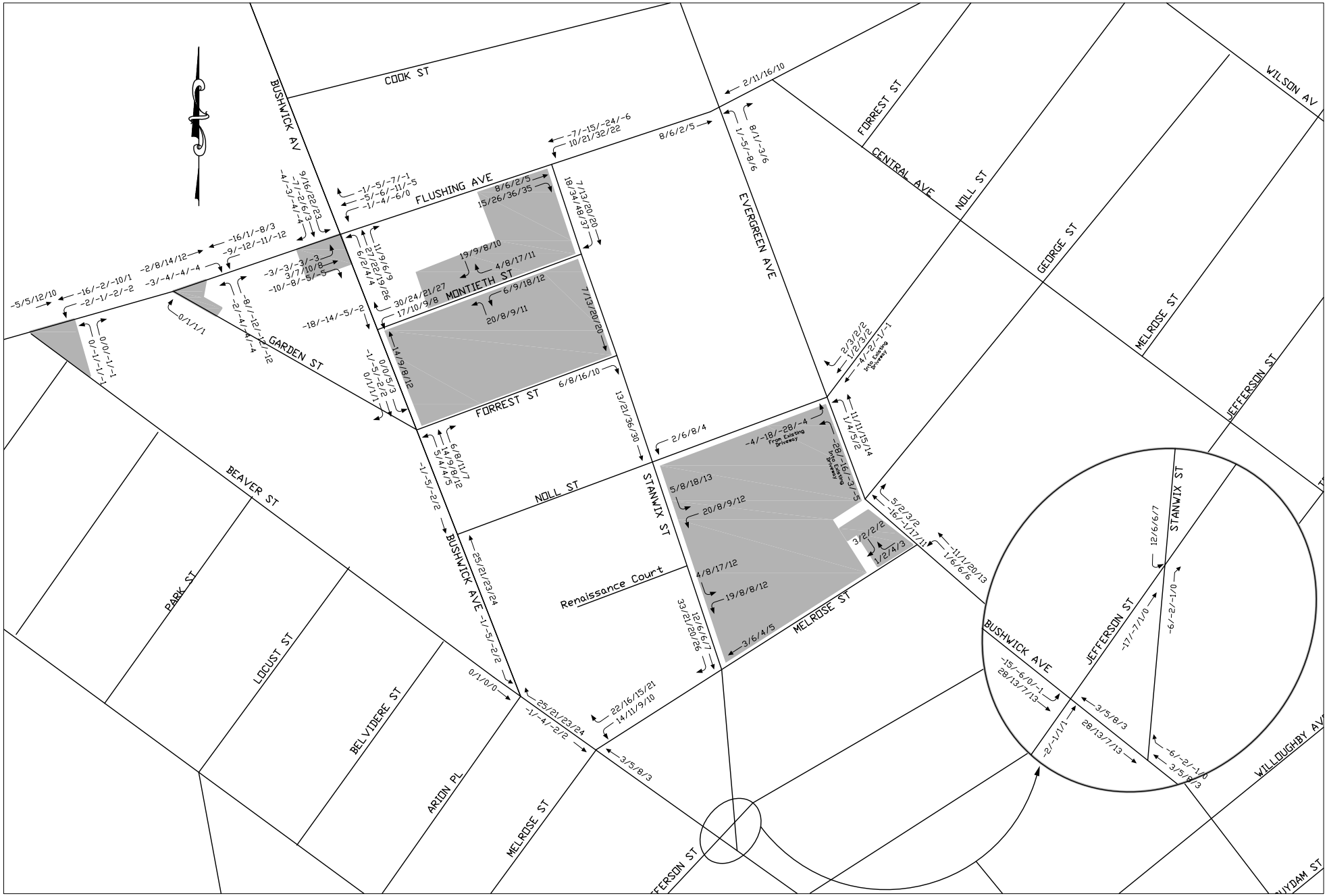
Proposed Signal Location

Project Site

Rheingold Development Rezoning

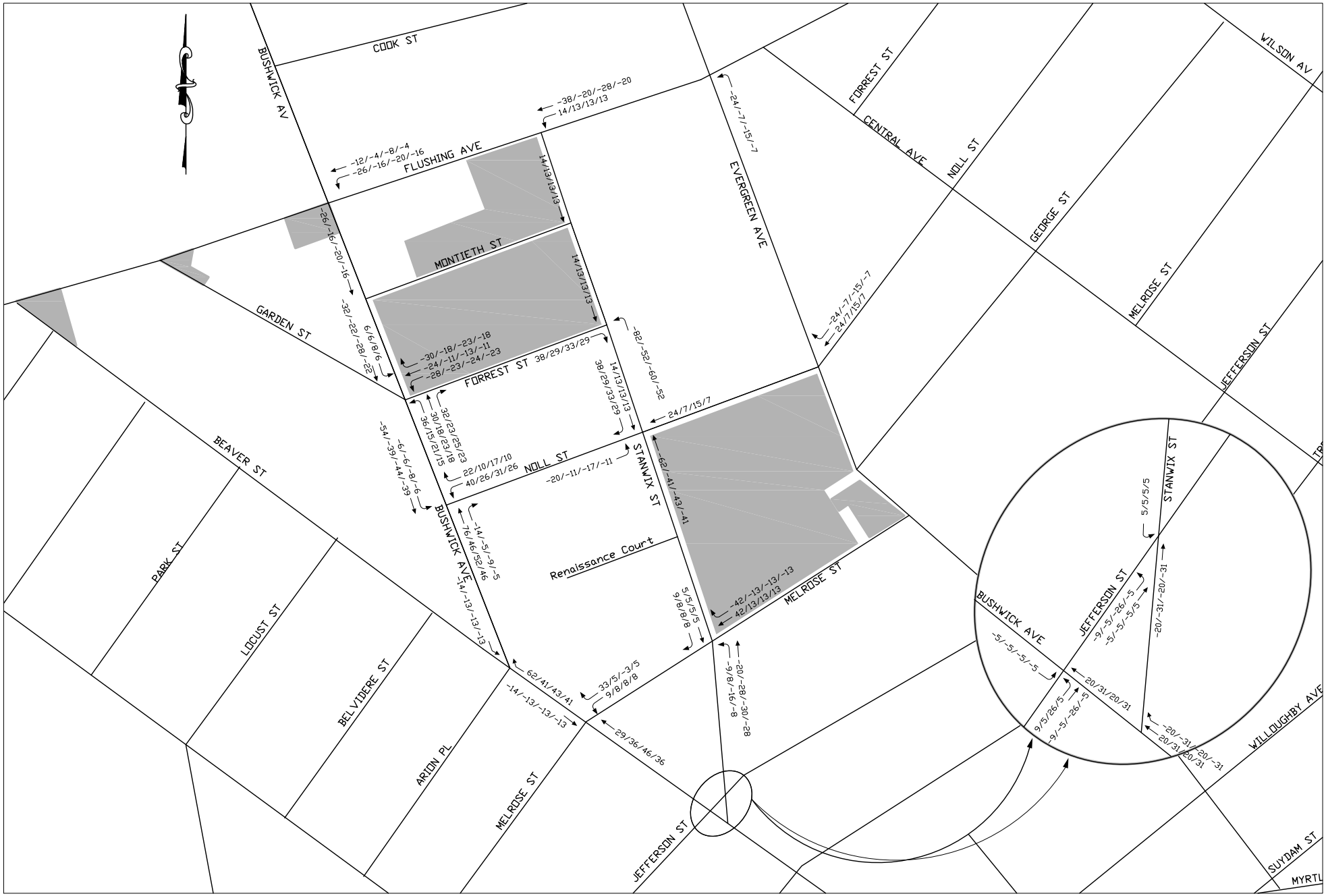
Figure 3

Project Generated Traffic Volumes



22/16/15/21 = AM/MD/PM/SMD Peak Hour Vehicle Volumes

Figure 4
2012 Diversion Traffic Volumes



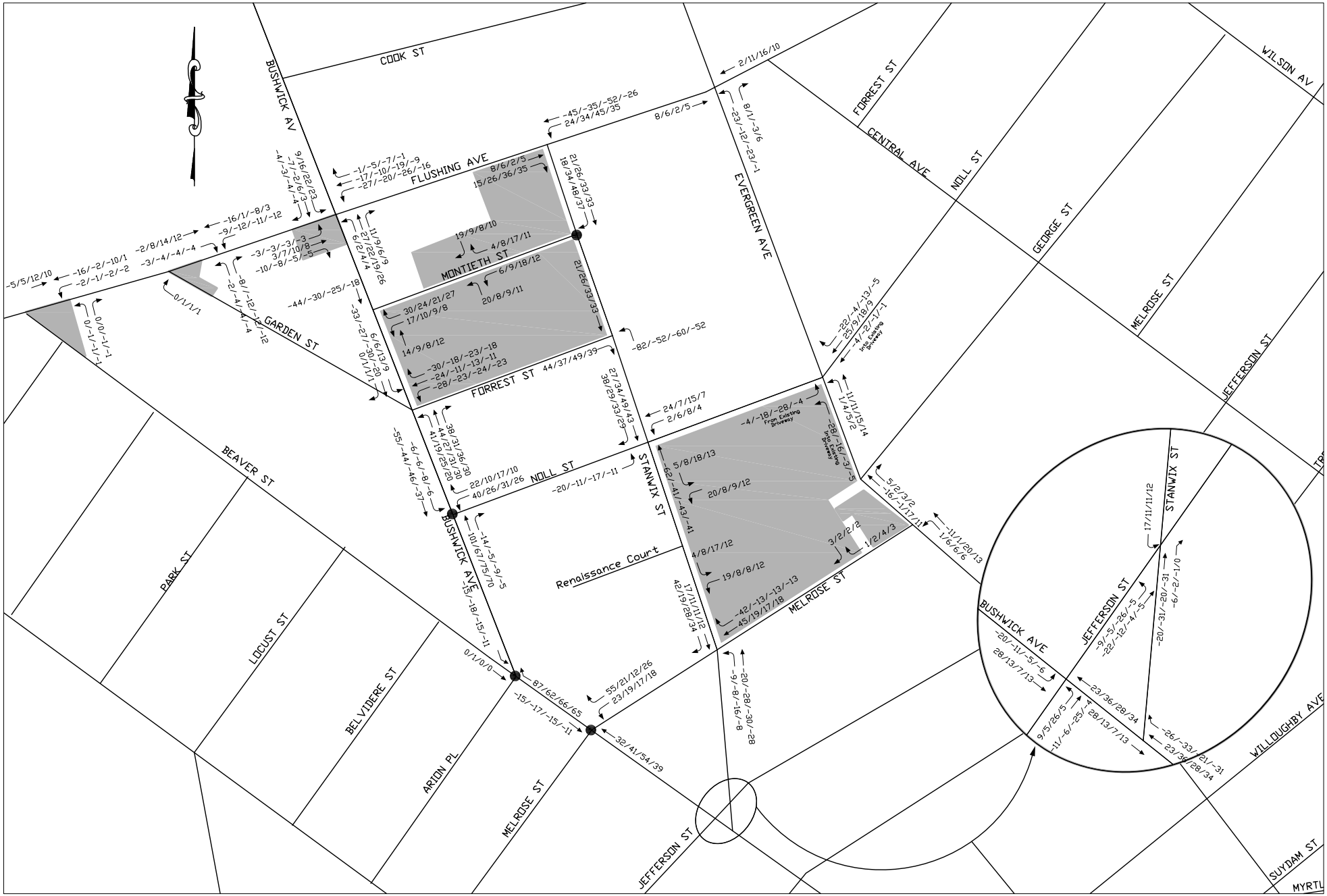
33/5/-3/5 = AM/MD/PM/SMD Peak Hour Vehicle Diversion Volumes

Project Site

Rheingold Development Rezoning

Figure 5

Net Project Increment Traffic Volumes



55/21/12/26 = AM/MD/PM Peak Hour Vehicle Volumes

Project Site

Intersections > 50 vph in Any Peak Hour

the figure, four intersections would have an incremental vehicle assignment of greater than 50 vehicles during one or more of the four peak periods of analysis. Based on this primary assignment, the study area for the proposed rezoning would be comprised of approximately four intersections:

1. Bushwick Avenue & Noll Street
2. Bushwick Avenue & Arion Place\Beaver Street
3. Beaver Street & Melrose Street
4. Stanwix Street & Montieth Street

In addition to manual counts at each of the four intersections that would experience net vehicle increments of 50 vehicles or greater during one or more peak periods, counts would be conducted at the following eleven intersections to confirm/refine the diversions that would occur as a result of the restructuring of the local street system:

1. Bushwick Avenue & Flushing Avenue
2. Bushwick Avenue & Montieth Avenue
3. Bushwick Avenue & Forrest Street
4. Stanwix Street & Melrose Street
5. Flushing Avenue & Evergreen Avenue
6. Flushing Avenue & Stanwix Street
7. Stanwix Street & Noll Street
8. Stanwix Street & Jefferson Street
9. Bushwick Avenue & Jefferson Street
10. Stanwix Street & Bushwick Avenue
11. Evergreen Avenue & Noll Street

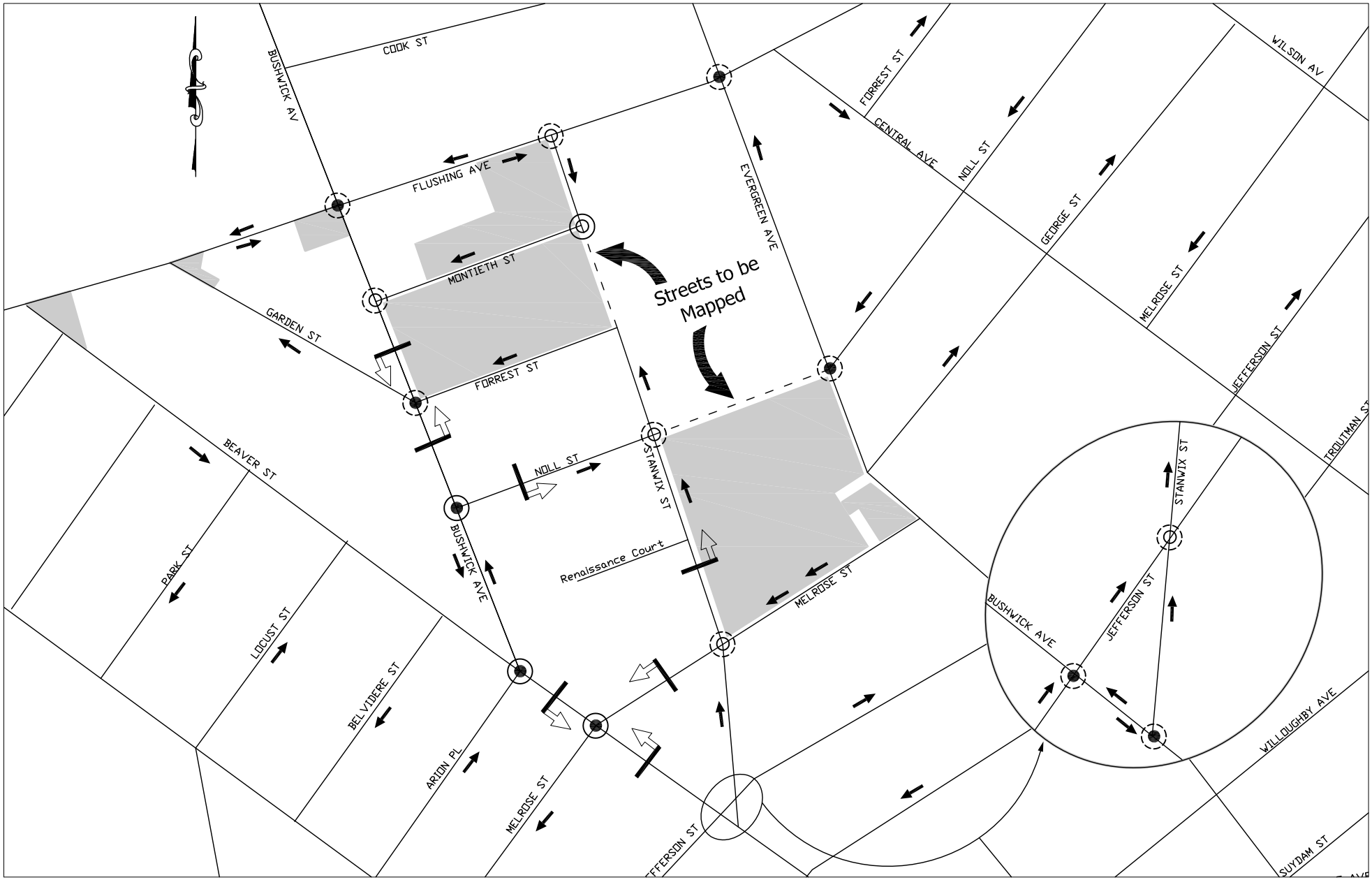
The traffic study area was selected to include the intersections most likely to be used by concentrations of project-generated vehicles traveling to and from the proposed rezoning area and is bounded on the north by Flushing Avenue, on the south by Melrose Street, on the east by Evergreen Avenue, and on the west by Bushwick Avenue, and is shown in Figure 6. Figure 6 shows the intersections would be counted and the intersections that would be analyzed. The analysis would include establishing the existing traffic operation characteristics at each analysis intersection including capacities, volume-to-capacity (v/c) ratios, average vehicle delays, and levels of service (LOS) per traffic movement and per intersection approach. The *2000 Highway Capacity Manual* procedures will be used.

PARKING

New development in R6A and R7A zoning districts must provide accessory parking, pursuant to NYC Zoning Resolution requirements. The proposed developments on Sites 1 through 8 would require a minimum of 495 accessory parking spaces. In order to comply with this requirement, 495 accessory parking spaces would be provided across the eight sites: 60 spaces on Site 1, 150 spaces on Site 2, 137 spaces on Site 3, 103 spaces on Site 4, 16 spaces on Site 5, 7 spaces on Site 6, 14 spaces on Site 7, and 8 spaces on Site 8.

According to 2000 Census data, the number of vehicles per household in the rezoning area and vicinity is approximately 0.4. This rate is used to forecast peak residential

Figure 6
Intersections to be Analyzed and Counted



Legend

- Signalized Intersection to be Analyzed
- Unsignalized Intersection to be Analyzed
- Signalized Intersection to be Counted
- Unsignalized Intersection to be Counted
- ATR's Locations
- Street Directions
- Project Site

parking demand for the proposed development, as the households on the projected development sites are expected to be generally similar to the existing residential population in terms of vehicle ownership.

Using the 0.4 vehicles per DU rate, the proposed development is expected to generate a residential parking demand of approximately 430 spaces. This demand would peak during the overnight period, while parking demand generated by the 81,790 sf of local retail, which is not expected to be substantial, would peak during the day. As the proposed development is expected to provide 495 required accessory parking spaces in eight garage locations on the project site, as required by zoning, all the projected parking demand generated by the proposed project would be accommodated in the proposed garages and there would be an excess of 65 spaces in the overnight.

TRANSIT

According to the general thresholds used by the Metropolitan Transportation Authority (MTA) and specified in the *2012 CEQR Technical Manual*, detailed transit analyses are generally not required if a Proposed Action is projected to result in fewer than 200 peak hour rail or bus transit riders. If a proposed action would result in 50 or more bus passengers being assigned to a single bus line (in one direction), or if it would result in an increase of 200 or more passengers at a single subway station or on a single subway line, a detailed bus or subway analysis would be warranted.

Subway

There are three subway stations located within a half-mile radius of the proposed rezoning site: Myrtle Avenue Station, which services the J, M and Z lines; Flushing Avenue Station, which provides J and M line service; and Morgan Avenue Station, which provides service for the L line. Figure 7 shows the locations of the three subway stations in relation to the proposed rezoning site.

Table 2 shows the preliminary forecast of weekday AM and PM peak hour transit trips for the proposed project. (Transit analyses typically focus on the weekday AM and PM commuter peak hours as it is during these periods that overall demand on the subway and bus systems is usually highest.) As shown in Table 2, it is estimated that the projected development site would generate a total of 539 and 633 new subway trips in the weekday AM and PM peak commuter hours, respectively.

A preliminary subway trip assignment was performed to determine which subway stations should be analyzed further. Table 3 shows the assumptions that were made in determining the number of trips each station would generate. As shown in the table, the Myrtle Avenue station and Flushing Avenue station would require further analysis during the AM and PM peak periods because the number of trips this station would generate would exceed the CEQR threshold of 200. As shown in Table 3, 222 and 255 subway trips would be generated at the Myrtle Avenue station and 187 and 230 subway trips would be generated at the Flushing Avenue station in the AM and PM peak hours, respectively.

Table 3
Project Generated Subway Trips (by Station)

AM Peak Hour

Sites	Subway Trips Generated	Morgan Avenue Station (L Train)		Flushing Avenue Station (J & M Trains)		Myrtle Avenue Station (J, M & Z Trains)	
		Percentage	Volume	Percentage	Volume	Percentage	Volume
1 & 2	231	42.0%	97	58.0%	134	0.0%	0
3, 4 & 5	276	10.0%	28	10.0%	28	80.0%	222
6, 7 & 8	25	0.0%	0	100.0%	25	0.0%	0
Total	532	Total	125	Total	187	Total	222

Midday Peak Hour

Sites	Subway Trips Generated	Morgan Avenue Station (L Train)		Flushing Avenue Station (J & M Trains)		Myrtle Avenue Station (J, M & Z Trains)	
		Percentage	Volume	Percentage	Volume	Percentage	Volume
1 & 2	160	42.0%	67	58.0%	93	0.0%	0
3, 4 & 5	178	10.0%	18	10.0%	18	80.0%	142
6, 7 & 8	38	0.0%	0	100.0%	38	0.0%	0
Total	376	Total	85	Total	149	Total	142

PM Peak Hour

Sites	Subway Trips Generated	Morgan Avenue Station (L Train)		Flushing Avenue Station (J & M Trains)		Myrtle Avenue Station (J, M & Z Trains)	
		Percentage	Volume	Percentage	Volume	Percentage	Volume
1 & 2	272	42.0%	114	58.0%	158	0.0%	0
3, 4 & 5	319	10.0%	32	10.0%	32	80.0%	255
6, 7 & 8	40	0.0%	0	100.0%	40	0.0%	0
Total	631	Total	146	Total	230	Total	255

SAT MD Peak Hour

Sites	Subway Trips Generated	Morgan Avenue Station		Flushing Avenue Station		Myrtle Avenue Station	
		Percentage	Volume	Percentage	Volume	Percentage	Volume
1 & 2	242	42.0%	102	58.0%	140	0.0%	0
3, 4 & 5	285	10.0%	29	10.0%	29	80.0%	228
6, 7 & 8	38	0.0%	0	100.0%	38	0.0%	0
Total	565	Total	131	Total	207	Total	228

Figure 7

Area Subway Facilities



Bus

Within a half-mile radius of the project site, there are eight bus lines; these lines include the B15, B38, B43, B46, B47, B54, B57 and B60. As shown in Table 2, it is estimated that the projected development associated with the proposed rezoning generate a total of 139 and 322 new bus-only trips in the weekday AM and PM peak hours, respectively. Since these trips would be dispersed amongst the eight bus routes within the half-mile radius of the development site, it is not expected that any one route would experience 50 or more trips in one direction in any peak hour; as such, a detailed bus analysis would not be warranted.

PEDESTRIANS

The Proposed Action would generate a net of approximately 353, 1,691, 945, and 1,063 walk-only trips during the AM, midday, PM, and Saturday midday peak hours, respectively. While it would be expected that walk-only trips generated by the Proposed Action (i.e., walk trips not associated with other modes) would be dispersed among pedestrian facilities throughout the proposed rezoning area, a vast majority of the pedestrian trips would be concentrated on the sidewalks, corners and crosswalks adjacent to the local retail locations on Evergreen, Flushing and Bushwick Avenues. As a result, the pedestrian facilities immediately adjacent to these retail portions of the Proposed Action would experience the highest volumes of pedestrians. Therefore the analyses of pedestrian conditions will focus on the weekday AM, midday, PM, and Saturday midday peak hours.

Based on a preliminary pedestrian assignment, 8 corner, 3 crosswalk and 5 sidewalk locations would be analyzed (see Figure 8):

Corner Locations

1. Southwest corner of Bushwick Avenue & Flushing Avenue
2. Southeast corner of Bushwick Avenue & Flushing Avenue
3. Northeast corner of Bushwick Avenue & Montieth Street
4. Southeast corner of Bushwick Avenue & Montieth Street
5. Northeast corner of Bushwick Avenue & Forrest Street
6. Southwest corner of Stanwix Street & Flushing Avenue
7. Southwest corner of Evergreen Avenue & Noll Street
8. Northwest corner of Evergreen Avenue & Melrose Street

Crosswalk Locations

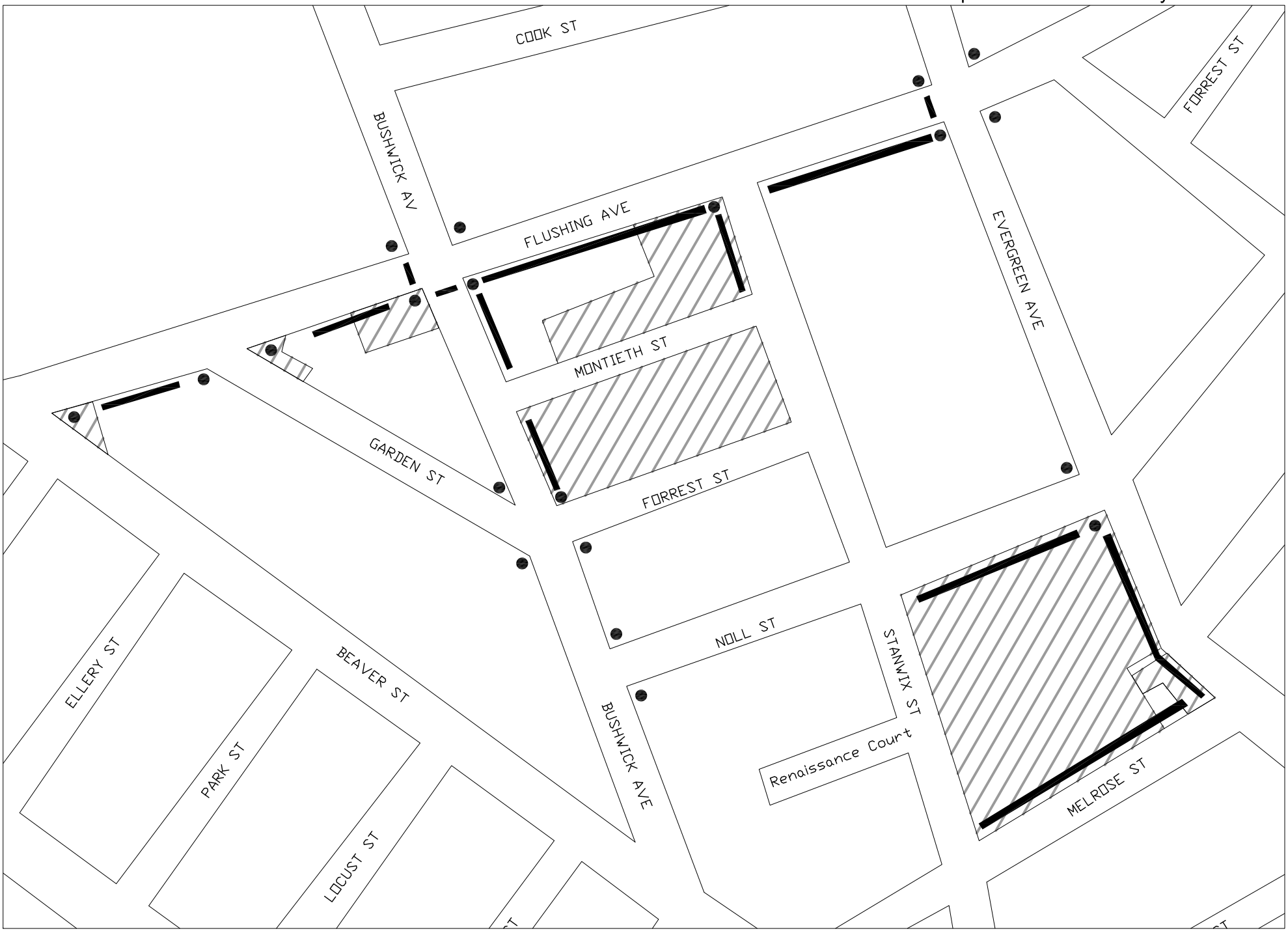
1. South crosswalk at Bushwick Avenue & Flushing Avenue
2. South crosswalk at Stanwix Street & Flushing Avenue
3. East crosswalk at Bushwick Avenue & Montieth Street

Sidewalk Locations

1. South sidewalk on Flushing Avenue between Garden Street & Bushwick Avenue
2. South sidewalk on Flushing Avenue between Bushwick Avenue & Stanwix Street
3. East sidewalk on Bushwick Avenue between Flushing Avenue & Montieth Street
4. East sidewalk on Bushwick Avenue between Montieth Street & Forrest Street
5. West sidewalk on Evergreen Avenue between Noll Street & Melrose Street

Figure 8

Proposed Pedestrian Analysis Locations



Pedestrian counts will be conducted at the locations listed above, as shown in Figure 8. These corners, crosswalks, and adjoining sidewalks will be evaluated based on the *2012 CEQR Technical Manual* criteria.

APPENDIX

SITE 1 AND 2							SITE 3 AND 4										SITE 5						SITE 6								SITE 7								SITE 8							
Residential		Local Retail		Total			Residential		Local Retail		Residential (Senior)		Warehouse		total		Residential		Local Retail		Total		Residential		Local Retail		Autocare		Total		Residential		Local Retail		Gas Station		Total		Residential		Local Retail		Supermarket		Total	
458 DUs		33068 gsf					518 DUs		21114 gsf		DUs		-78,915 gsf				37 DUs		8292 gsf				15 DUs		4739 gsf		-1000 gsf				29 DUs		9010 gsf		-1596 gsf -6 pump				18 DUs		5568 gsf		-6000 gsf			
Peak Hour Trips:																																													
370		153		522			418		97		0		0		516		30		38		68		12		22		-3		31		23		42		-27		38		15		26		-53		-12	
185		966		1151			209		617		0		0		826		15		242		257		6		138		-2		142		12		263		-42		233		7		163		-63		107	
407		508		915			460		325		0		0		785		33		127		160		13		73		-3		83		26		139		-42		122		16		86		-105		-3	
352		595		947			398		380		0		0		778		28		149		178		12		85		-2		95		22		162		-42		142		14		100		-125		-11	
In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	0	0	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
Auto 7	40	2	2	9	41	8	45	1	1	0	0	0	0	9	46	1	3	0	0	1	4	0	1	0	0	-1	-1	-1	1	0	3	0	0	-13	-13	-12	-10	0	2	0	0	-1	0	0	1
Taxi 1	6	2	2	3	8	1	7	1	1	0	0	0	0	3	8	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	-1	-1	-1	0
Subway 33	190	4	4	37	193	38	214	2	2	0	0	0	0	40	217	3	15	1	1	4	16	1	6	1	1	0	0	2	7	2	12	1	1	0	0	3	13	1	7	1	1	-2	-1	0	7
Bus 5	27	15	15	20	42	5	31	10	10	0	0	0	0	15	40	0	2	4	4	4	6	0	1	2	2	0	0	2	3	0	2	4	4	0	0	4	6	0	1	3	3	-6	-4	-4	0
Walk 8	46	53	53	61	99	9	52	34	34	0	0	0	0	43	86	1	4	13	13	14	17	0	1	8	8	0	0	8	9	1	3	15	15	0	0	15	17	0	2	9	9	-22	-14	-13	-4
Other 1	7	0	0	1	7	1	7	0	0	0	0	0	0	1	7	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total 55	314	76	76	132	391	63	356	49	49	0	0	0	0	111	404	4	25	19	19	24	45	2	10	11	11	-2	-1	11	20	4	20	21	21	-13	-13	12	28	2	12	13	13	-32	-20	-17	5
																						In	Out	In	Out																				
Auto 12	12	10	10	21	21	13	13	6	6	0	0	0	0	19	19	1	1	2	2	3	3	0	0	1	1	-1	-1	1	1	1	1	3	3	-20	-20	-17	-17	0	0	2	2	-1	-1	1	1
Taxi 2	2	14	14	16	16	2	2	9	9	0	0	0	0	11	11	0	0	4	4	4	4	0	0	2	2	0	0	2	2	0	0	4	4	0	0	4	4	0	0	2	2	-1	-1	2	2
Subway 56	56	24	24	80	80	63	63	15	15	0	0	0	0	78	78	5	5	6	6	11	11	2	2	3	3	0	0	5	5	4	4	7	7	-1	-1	10	10	2	2	4	4	-2	-2	5	5
Bus 8	8	97	97	105	105	9	9	62	62	0	0	0	0	71	71	1	1	24	24	25	25	0	0	14	14	0	0	14	14	1	1	26	26	-1	-1	26	26	0	0	16	16	-6	-6	10	10
Walk 13	13	338	338	352	352	15	15	216	216	0	0	0	0	231	231	1	1	85	85	86	86	0	0	48	48	0	0	49	49	1	1	92	92	0	0	93	93	1	1	57	57	-22	-22	35	35
Other 2	2	0	0	2	2	2	2	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total 92	92	483	483	575	575	105	105	308	308	0	0	0	0	413	413	7	7	121	121	129	129	3	3	69	69	-1	-1	71	71	6	6	132	132	-22	-22	115	115	4	4	81	81	-32	-32	53	53
																						In	Out	In	Out																				
Auto 36	15	5	5	41	20	41	17	3	3	0	0	0	0	44	21	3	1	1	1	4	3	1	1	1	1	-1	-1	1	0	2	1	1	1	-20	-20	-16	-18	1	1	1	1	-1	-1	1	0
Taxi 5	2	8	8	13	10	6	3	5	5	0	0	0	0	11	7	0	0	2	2	2	2	0	0	1	1	0	0	1	1	0	0	2	2	0	0	2	2	0	0	1	1	-2	-2	0	0
Subway 172	74	13	13	184	86	194	83	8	8	0	0	0	0	202	91	14	6	3	3	17	9	6	2	2	2	0	0	7	4	11	5	3	3	-1	-1	14	8	7	3	2	2	-3	-3	6	2
Bus 24	10	51	51	75	61	28	12	32	32	0	0	0	0	60	44	2	1	13	13	15	14	1	0	7	7	0	0	8	8	2	1	14	14	-1	-1	15	14	1	0	9	9	-11	-10	-1	-1
Walk 41	18	178	178	219	196	47	20	114	114	0	0	0	0	160	134	3	1	45	45	48	46	1	1	26	26	0	0	27	26	3	1	48	48	0	0	51	50	2	1	30	30	-37	-36	-6	-5
Other 6	3	0	0	6	3	7	3	0	0	0	0	0	0	7	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total 285	122	254	254	539	376	322	138	162	162	0	0	0	0	484	300	23	10	64	64	87	74	9	4	36	36	-1	-1	44	39	18	8	69	69	-22	-22	65	55	11	5	43	43	-54	-51	0	-4
Auto 23	21	6	6	29	27	27	24	4	4	0	0	0	0	30	27	2	2	1	1	3	3	1	1	1	1	-1	-1	1	1	1	1	2	2	-20	-20	-17	-17	1	1	1	1	-1	-1	1	1
Taxi 4	3	9	9	12	12	4	4	6	6	0	0	0	0	10	9	0	0	2	2	3	2	0	0	1	1	0	0	1	1	0	0	2	2	0	0	3	3	0	0	2	2	-2	-2	0	0
Subway 112	100	15	15	127	115	127	113	10	10	0	0	0	0	137	122	9	8	4	4	13	12	4	3	2	2	0	0	6	5	7	6	4	4	-1	-1	11	10	4	4	3	3	-3	-3	4	3
Bus 16	14	60	60	76	74	18	16	38	38	0	0	0	0	56	54	1	1	15	15	16	16	1	0	9	9	0	0	9	9	1	1	16	16	-1	-1	17	17	1	1	10	10	-12	-12	-2	-2
Walk 27	24	208	208	235	232	31	27	133	133	0	0	0	0	164	160	2	2	52	52	54	54	1	1	30	30	0	0	31	31	2	2	57	57	0	0	58	58	1	1	35	35	-44	-44	-8	-8
Other 4	3	0	0	4	3	4	4	0	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total 186	165	298	298	484	463	211	187	190	190	0	0	0	0	401	377	15	13	75	75	90	88	6	5	43	43	-1	-1	48	47	12	10	81	81	-22	-22	71	70	7	6	50	50	-62	-62	-5	-6
In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
6	35	1	1	7	36	7	40	0	0	0	0	-32	-4	-25	36	0	3	0	0	1	3	0	1	0	0	-1	-1	-1	1	0	2	0	0	-12	-12	-11	-9	0	1	0	0	0	0	0	1
1	4	1	1	2	5	1	5	1	1	0	0	0	0	2	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	5	3	3	8	8	6	6	3	3	0	0	0	0	9	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	2	1	1	3	3	2	2	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	42	6	6	18	47	15	48	4	4	0	0	-32	-4	-13	48	1	3	0	0	1	3	0	1	0	0	-1	-1	-1	1	0	2	0	0	-12	-12	-11	-9	0	1	0	0	0	0	0	1
10	10	5	5	15	15	12	12	3	3	0	0	-18	-18	-3	-3	1	1	1	1	2	2	0	0	1	1	-1	-1	0	0	1	1	1	1	-18	-18	-16	-16	In	Out	In	Out				
1	1	7	7	8	8	1	1	5	5	0	0	0	0	6	6	0	0	2	2	2	2	0	0	1	1	0	0	1	1	0	0	2	2	0	0	2	2	0	0	1	1	0	0	1	1
3	3	14	14	17	17	3	3	10	10	0	0	0	0	13	13	0	0	4	4	4	4	0	0	2	2	0	0	2	2	0	0	4	4	0	0	4	4	0	0	2	2	0	0	2	2
1	1	1	1	2	2	1	1	1	1	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	14	20	20	35	35	16	16	14	14	0	0	-18	-18	12	12	1	1	5	5	6	6	0	0	3	3	-1	-1	2	2	1	1	5	5	-18	-18	-12	-12	0	0	3	3	-1	-1	3	3
																																						In	Out	In	Out				
32	15	3	3	35	17	35	15	2	2	0	0	-4	-28	33	-11	3	1	1	1	4	2	1	1	0	0	-1	-1	0	0	2	1	1	1	-18	-18	-15	-16	1	1	0	0	-1	-1	1	0
4	2	4	4	8	5	4	2	2	2	0	0	0	0	7	4	0	0	1	1	1	1	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1	-1	-1	0	0
7	7	6	6	13	13	6	6	5	5	0	0	0	0	12	12	0	0	2	2	2	2	0	0	2	2	0	0	2	2	0	0	2	2	0	0	2	2	0	0	1	1	-2	-2	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
39	21	9	9	47	30	42	22	7	7	0	0	-4	-28	45	1	3	1	2	2	5	3	1	2	2	2	-1	-1	2	3	2	1	3	3	-18	-18	-13	-14	1	1	2	2	-2	-2	0	0
21	18	3	3	24	21	24	21	2	3	0	0	-6	-4	19	21	2	1	1	1	3	2	1	1	0	0	-1	-1	0	0	1	1	1	1	-18	-18	-16	-16	1	1	1	1	-1	-1	1	1
3	2	4	4	7	7	3	3	3	3	0	0	0	0	6	5	0	0	1	1	1	1	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1	-1	-1	0	0
5	5	9	9	14	14	5	5	7	7	0	0	0	0	12	12	0	0	2	2	2	2	0	0	2	2	0	0	2	2	0	0	2	2	0	0	3	3	0	0	2	2	-2	-2	-1	-1
0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	24	12	13	38	36	30	28	9	10	0	0	-6	-4	33	34	2	2	3	3	5	5	1	1	2	2	-1	-1	2	2	1	1	3	3	-18	-18	-13	-13	1	1	3	3	-3	-3	0	0