

**GOWANUS CANAL CORRIDOR REZONING  
AND RELATED ACTIONS**

**DRAFT SCOPE OF WORK  
for the  
ENVIRONMENTAL IMPACT STATEMENT**

**CEQR No. 09DCP015K  
ULURP Nos. Pending**

***Lead Agency: NYC Department of City Planning***

***Prepared by: NYC Department of City Planning***

**February 6, 2009**

## I. INTRODUCTION

This is the Draft Scope of Work (DSOW) for the proposed Gowanus Canal Corridor Rezoning and Related Actions (the “proposed project” or “proposed actions”). The proposed project covers a portion of Brooklyn Community District 6, which in addition to Gowanus, includes the neighborhoods of Carroll Gardens/South Brooklyn, Cobble Hill, Columbia Street District, Park Slope and Red Hook. The proposed actions include zoning text and zoning map amendments proposed by the New York City Department of City Planning (DCP) for approximately 25 blocks in the Gowanus Canal corridor. See Figure 1 for the location of the proposed project.

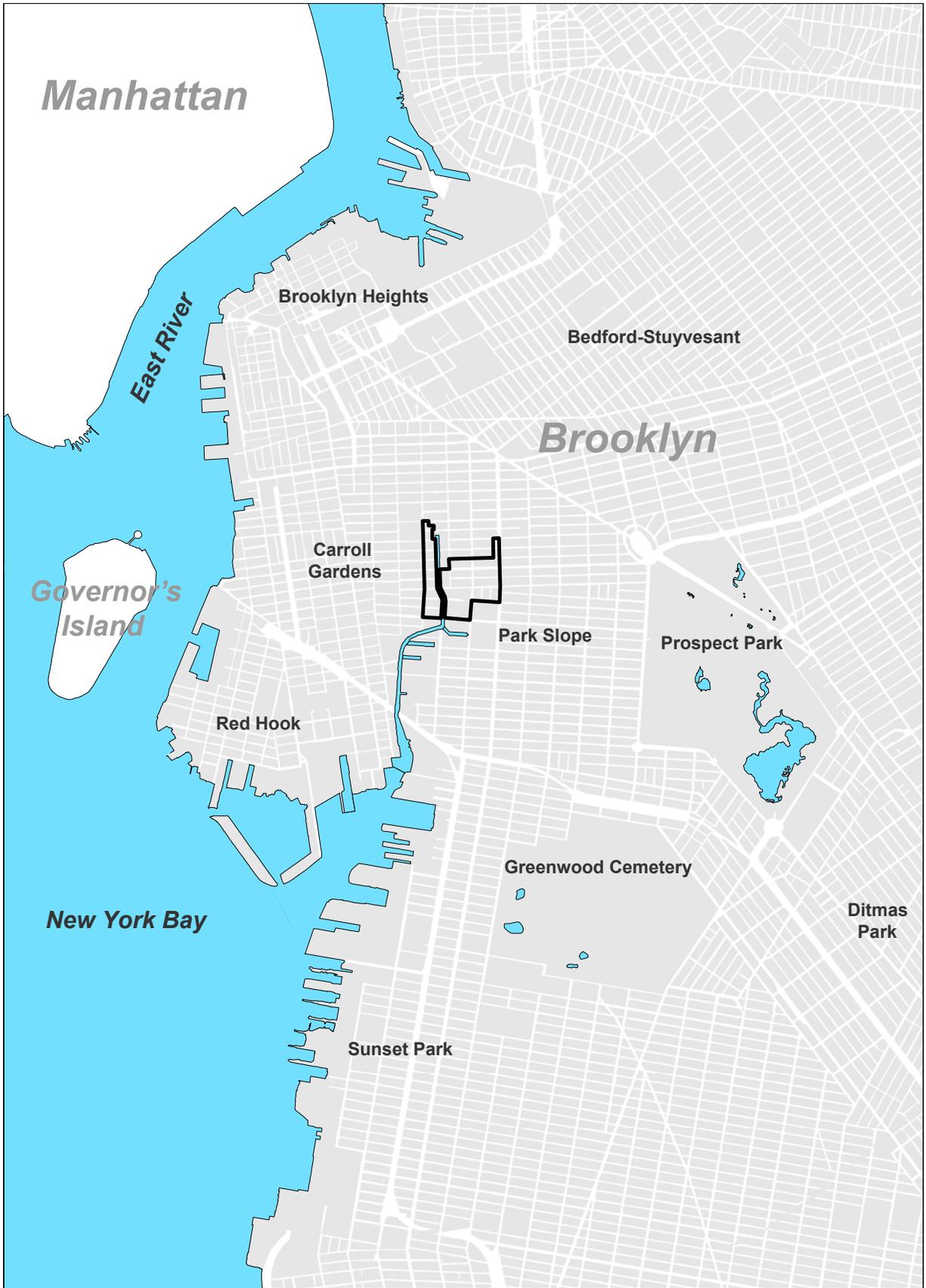
The proposed zoning map amendments would rezone approximately 25 blocks of land currently zoned M1-2 and M2-1 to a Special Gowanus Mixed Use District containing M1-4/R6B, M1-4/R7A, and M1-4/R6 districts, with R8A/C2-4 along 4<sup>th</sup> Avenue. The rezoning proposal would include a zoning text amendment to establish a Special Gowanus Mixed Use District with special regulations for bulk, streetscape, and parking, and to make the Inclusionary Housing program applicable within portions of the rezoning area. Text amendments would also establish special floor area regulations for blocks adjacent to the Gowanus Canal and establish a Waterfront Access Plan (WAP) for blocks on the Canal within the proposed Special Gowanus Mixed Use District. The rezoning proposal would also include a zoning text amendment that would modify the definition of “waterfront area” to specifically include the Gowanus Canal north of Hamilton Avenue for the purposes of applying the Zoning Resolution (ZR) provisions for waterfront area zoning.

The New York City Department of City Planning (DCP) has determined that an Environmental Impact Statement (EIS) for the proposed actions will be prepared pursuant to New York City Environmental Quality Review (CEQR) with DCP acting on behalf of the City Planning Commission (CPC) as the lead agency. The environmental analyses in the targeted EIS will assume a development period of ten years for the reasonable worst-case development scenario (RWCDS) for the project (build year 2018), and identify the cumulative impacts of other projects in areas affected by the proposed action. DCP will conduct a coordinated review of the proposed action among the involved and interested agencies and the public.

## REQUIRED APPROVALS AND REVIEW PROCEDURES

The proposed actions require City Planning Commission (CPC) and City Council approvals through the Uniform Land Use Review Procedure (ULURP), and include the following:

- **Zoning Map amendment** to change approximately 25 blocks currently zoned M1-2 and M2-1 to a new Special Gowanus Mixed Use District with M1-4/R6B, M1-4/R7A, and M1-4/R6 districts, and R8A/C2-4 along 4<sup>th</sup> Avenue.
- **Zoning Text amendment** to modify the definition of “waterfront area” to specifically include the Gowanus Canal north of Hamilton Avenue in ZR 12-10, for the purposes of applying the waterfront zoning regulations of ZR 62-00. This component may be removed from the proposed project in the future as the CPC referred a separate proposed action (N 090239 ZRY) on December 15, 2008, that would modify Article VI, Chapter 2 (*Special Regulations Applying to the Waterfront Area*) of the Zoning Resolution. That separate action also included modification of the “waterfront area” definition as part of that action.



**Gowanus Canal Corridor Rezoning**  
**Figure 1:**  
**Locator Map**

**Legend**

 Proposed Rezoning Area

0 1,150 2,300 4,600 Feet



Source: MapPLUTO 2007, NYCDP.

- **Zoning Text amendment** to establish a Special Gowanus Mixed Use District extending over all or portions of 25 blocks in an area generally bounded by Bond Street to the west, 100 feet west of 4<sup>th</sup> Avenue to the east, Baltic Street and Sackett Street to the North, and 3<sup>rd</sup> Street and 1<sup>st</sup> Street to the South. Regulations within the special district would include:
  - Application of Special Mixed Use District use regulations of ZR 123-00, combining an M1 manufacturing district with a residential zoning district;
  - Establishment of height and setback regulations for all buildings in the district, including:
    - Modifications to underlying bulk regulations for blocks along the Gowanus Canal to encourage varied building forms and heights that consider the scale of the adjacent neighborhood. Building heights would be limited to 55 feet at the streetwall along Bond and Nevins Streets, 65 feet along other narrow streets, 85 feet after a setback and 125 feet for limited portions of larger sites south of Carroll Street. Active ground floor uses or planted screening would be required for a portion of a site's frontage.
  - Streetscape regulations requiring a percentage of the street frontage to be used for active, non-residential uses on portions of identified corridors of 3<sup>rd</sup> Avenue, 3<sup>rd</sup> Street and Union Street;
  - Modifications to accessory residential off-street parking requirements to address the physical conditions of sites in the district and possible limitations on below-grade parking.
  - Establishment of a WAP for blocks adjacent to the Gowanus Canal. The WAP would modify the underlying requirements for waterfront public access on waterfront zoning lots, identifying specific locations for required public walkways along the Canal, upland connections, supplemental public access areas and visual corridors, and modify the zoning's design standards to suit the unique character of the Canal.
- **Zoning text amendment** to make the Inclusionary Housing program applicable within portions of the proposed rezoning area.
- **Zoning text amendment** to apply streetscape regulations of ZR 37-01 to commercial overlay districts within R8A zoning districts in Community District 6, Brooklyn. The proposed text amendment would require retail continuity on blocks zoned R8A/C2-4, including a portion of 4<sup>th</sup> Avenue that is within the rezoning area.

**A. PROJECT DESCRIPTION**

DCP is proposing zoning map and text amendments for an area encompassing approximately 25 blocks in the Gowanus neighborhood, located in Community District 6, Brooklyn. The area affected by the proposed zoning map changes and related zoning text amendments is generally bounded by Bond Street, Baltic Street, Gowanus Canal, Sackett Street, 4<sup>th</sup> Avenue, 1<sup>st</sup> Street, 3<sup>rd</sup> Avenue and 3<sup>rd</sup> Street. Zoning text amendments regarding streetscape on 4<sup>th</sup> Avenue and the applicability of waterfront zoning to the Gowanus Canal are also proposed and would also apply to other limited areas of Community District 6, Brooklyn, as described below.

The rezoning area involves multiple acres of land currently zoned M1-2 and M2-1 that would be changed to mixed-use zoning districts with residential designations ranging from R6B on narrow sidestreets to R8A along 4<sup>th</sup> Avenue, with intermediate FARs on wider streets and on blocks flanking the Canal. The

## **Gowanus Canal Corridor Rezoning and Related Actions**

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rezoning area includes areas categorized as canal blocks (blocks being rezoned adjacent to the Canal) and non-canal blocks to the north and east of the Gowanus Canal (see Figure 2). The rezoning approach addresses the different land use and physical conditions of these two sets of blocks.

The canal blocks are zoned M2-1 and predominantly consist of assemblages of vacant and underutilized land and buildings alongside some industrial and warehouse buildings, community facilities, and parking and construction-related uses. The blocks on the western side of the Canal are located immediately across Bond Street from the adjacent residential Carroll Gardens neighborhood.

The non-canal blocks are zoned primarily M1-2 and contain pockets of existing residential uses alongside a mix of light industrial, warehousing and commercial uses. Union Street and 3<sup>rd</sup> Avenue and 4<sup>th</sup> Avenue in particular are characterized by a number of retail and commercial uses such as hotels, storage facilities, and local shops and restaurants.

The proposed actions would address the following land use goals:

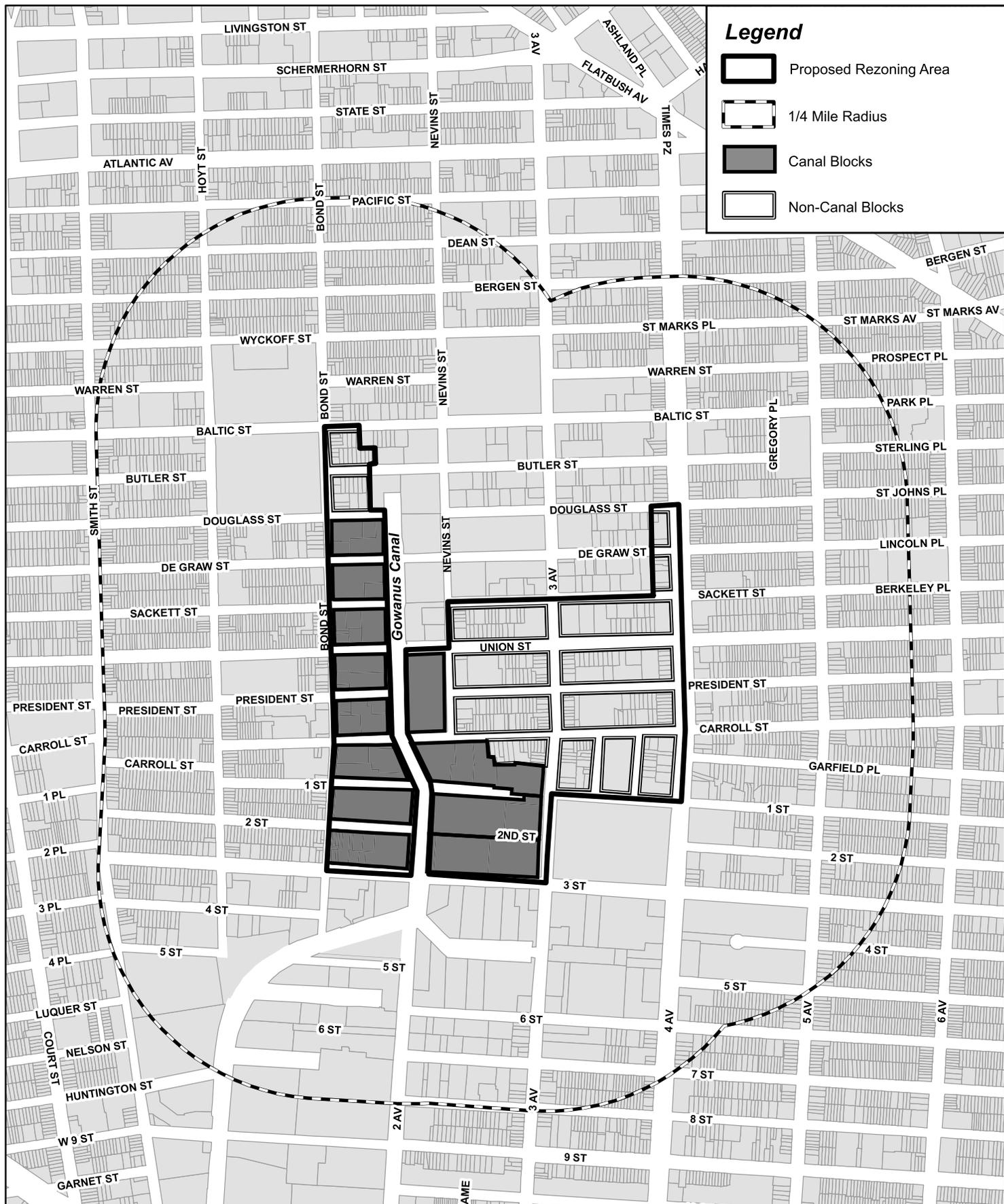
- Allow a mix of uses, including residential, in certain areas currently zoned for manufacturing uses
- Maintain areas for continued industrial as well as commercial uses
- Encourage the redevelopment of the waterfront, including opportunities for public access at the Canal's edge
- Enliven the streetscape with pedestrian-friendly, active ground-floor uses
- Promote new housing production, including affordable housing through the City's Inclusionary Housing Program
- Establish limits for height and density that consider neighborhood context as well as other shared goals

### **B. BACKGROUND**

In response to requests from the local community to begin a dialogue on land use issues in the Gowanus Canal area, DCP initiated a study to establish a comprehensive framework to guide future land use changes. The Department conducted a number of public meetings hosted by Community Board 6 to identify areas where future housing or mixed use would be appropriate, as well as areas to be maintained for continued industrial and commercial use. It also proposed key urban design principles for areas where such land use changes could occur. The proposed actions incorporate the principles outlined in this framework as part of an area-wide rezoning.

### **C. PURPOSE & NEED**

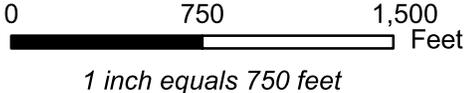
The Gowanus Canal is a 1.5 mile-long man-made waterway extending northward from the Gowanus Bay. It lies within a valley, with the blocks along its eastern and western banks rising in grade to the adjacent neighborhoods of Carroll Gardens and Park Slope. The Canal was created in the late 1860s as an industrial waterway for barged materials. In the following decades, surrounding land was used for a wide range of industrial activities including heavy manufacturing, as well as the storage and distribution of materials used to build and maintain the adjacent residential neighborhoods. Today, the area is home to a mix of uses including light industrial and manufacturing, particularly south of 3<sup>rd</sup> Street, as well as commercial, retail, community facilities, and some residential uses.



**Legend**

-  Proposed Rezoning Area
-  1/4 Mile Radius
-  Canal Blocks
-  Non-Canal Blocks

**Gowanus Canal Corridor Rezoning**  
**Figure 2:**  
**Proposed Rezoning Area**



Source: MapPluto 2007, NYCDCP.

Building upon the existing mixed-use character of the area, the proposed actions would:

- Allow for a mix of uses, including residential, in certain areas currently zoned for manufacturing uses
- Maintain areas for continued industrial as well as commercial uses
- Encourage the redevelopment of the waterfront, including opportunities for public access at the Canal's edge
- Enliven the streetscape with pedestrian-friendly, active ground-floor uses
- Promote new housing production, including affordable housing through the City's Inclusionary Housing Program
- Establish limits for height and density that consider neighborhood context as well as other shared goals

While the Canal was formerly home to a number of active industrial facilities along its banks, the nature of activity along the Canal has changed in recent decades. Portions of the land along the Canal are still strongly industrial in character. However, manufacturing and industrial uses are no longer present in other locations, leaving substantial parcels of vacant and underutilized land. Other areas near the Canal contain a mix of uses, including housing and community facilities. A concentration of existing, non-conforming residential uses exists on the east side of the Canal near Carroll Street. Commercial and light industrial activities are scattered through much of the area, with the greatest concentration in the area south of 3<sup>rd</sup> Street. As continuing efforts to improve water quality in the Canal have progressed, notably with the reactivation of the flushing tunnel at the head of the Canal in 1999, area residents have expressed interest in creating opportunities for future recreation and open space at its edge.

Although some manufacturing zones in the Gowanus Canal corridor remain active industrial and commercial areas, industrial uses have declined in other portions of the Gowanus Canal area in recent decades, leaving substantial quantities of vacant and underutilized land and buildings. The proposed action would change the zoning in these areas to permit a mix of uses including residential, commercial, retail, light industrial, and community facilities. The proposed zoning changes would affect only 25 blocks of the approximately 60 blocks surrounding the Gowanus Canal currently zoned for manufacturing.

The area is well served by public transportation, with service from New York City Transit's F and G subway trains on Smith Street and the R train on 4<sup>th</sup> Avenue within walking distance of the proposed rezoning area. The rezoning area is immediately adjacent to the thriving residential neighborhoods of Carroll Gardens and Park Slope, and is easily accessible from the Brooklyn-Queens Expressway.

The Park Slope neighborhood was rezoned in 2003, establishing height limits on the side streets that reflect the neighborhood's prevailing rowhouse character while allowing greater residential density along 4<sup>th</sup> Avenue. In recent years, a number of apartment houses of up to 12 stories have been constructed on 4<sup>th</sup> Avenue.

In contrast, few new buildings have been constructed within the proposed rezoning area in recent years. Current zoning allows industrial and some commercial uses, with no new residential uses permitted. Some light industrial and commercial uses exist alongside vacant and underutilized land and buildings, particularly on sites along the Canal, and pockets of nonconforming residential buildings exist within the

rezoning area. Outside the proposed rezoning area, areas of continuing industrial activity exist to the south of 3<sup>rd</sup> Street and on blocks north of Sackett Street on the east side of the Canal.

The proposed action would create opportunities for development of a mix of uses, including residential, on underutilized and vacant land in this transit-accessible area. The proposed mixed-use districts would permit the continuation of existing light industrial and commercial uses as well as the development of a variety of new uses including residential.

Development on blocks along the waterfront would achieve a variety of goals such as reactivating vacant and underutilized land; facilitating the creation of new housing, including affordable housing; facilitating the creation of publicly-accessible open space at the water's edge; and balancing the unusual physical conditions of Canal-front blocks, are subject to flood zone restrictions and public access requirements, with the provision of off-street parking. The proposed rezoning would encourage a range of heights and building forms, allowing sufficient flexibility for building heights to achieve the many goals for development in this area while addressing unique site conditions and reflecting the existing built character of the Gowanus neighborhood. The range of permitted heights would address the existing low-scale context of certain adjacent areas while allowing limited portions of buildings to rise higher only on blocks with sufficient depth to achieve a transition among building heights. In order to provide an active and varied pedestrian experience, the proposal includes provisions that would require active ground floor uses and screening of parking or inactive ground floor portions of the building, where permitted. Consistent with the requirements of waterfront zoning, the proposed action would also require the development and maintenance of publicly accessible open spaces at the Canal's edge as a condition of new residential or commercial development on sites adjacent to the Canal.

## **EXISTING ZONING**

As shown in Figure 3, the area surrounding the Gowanus Canal is primarily zoned M1-2 and M2-1. The M1-2 is a light industrial district which permits industrial, retail and office uses, as well as limited community facility uses as-of-right. The maximum FAR in an M1-2 district is 2.0, and residential uses are not permitted. The M2-1 district is a moderate-intensity industrial district which permits some heavier industrial uses, office uses and some retail uses at a maximum FAR of 2.0. Community Facility and residential uses are not permitted in M2-1 zoning districts.

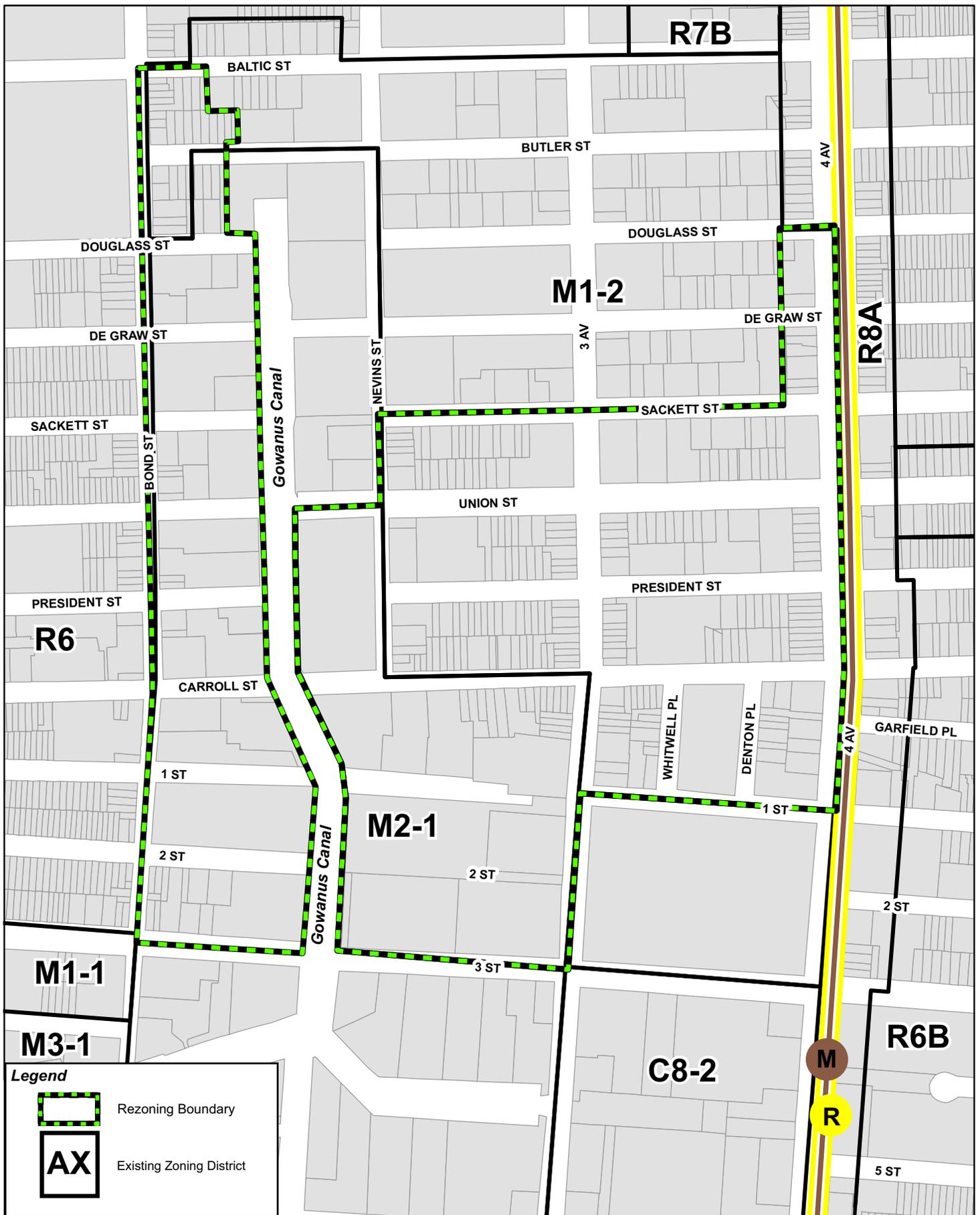
## **PROPOSED ZONING**

In the proposed rezoning area, existing M1-2 and M2-1 districts would be rezoned to a Special Gowanus Mixed Use District with MX districts (M1-4/R6B, M1-4/R7A, and M1-4/R6), and an R8A/C2-4 district along portions of 4<sup>th</sup> Avenue within the study area. The proposed zoning districts are exhibited in Figure 4 and the proposed zoning changes are listed below.

The proposed zoning changes are listed below:

- Change from **M1-2 and M2-1 to M1-4/R6B** portions of two blocks located along Bond Street between Baltic Street and Douglass Street on the west side of the Canal, and all or portions of ten blocks from Nevins Street to 4<sup>th</sup> Avenue between Sackett Street and 1<sup>st</sup> Street on the east side of the Canal.

These blocks are characterized by existing residential, storage, commercial and office uses. The zoning change would allow for a mix of uses, including residential, at a scale that is consistent with the established low-rise residential scale on these blocks along narrow streets.



Gowanus Canal Corridor Rezoning  
 Figure 3:  
 Existing Zoning

0 350 700 Feet

1 inch equals 350 feet



Source: MapPluto 2007, NYCDP.



**Legend**

Rezoning Boundary

**Proposed Zoning Districts:**

- M1-4/R6B
- M1-4/R7A
- MX (M1-4/R6 - 3.3 FAR)
- MX (M1-4/R6 - 3.6 FAR)
- R8A/C2-4

**Gowanus Canal Corridor Rezoning**  
**Figure 4:**  
**Proposed Zoning**

0 350 700 Feet

1 inch equals 350 feet

Source: MapPluto 2007, NYCDP.

## **Gowanus Canal Corridor Rezoning and Related Actions**

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The M1-2 district allows light industrial and some commercial uses, and the M2-1 allows medium-intensity industrial uses, both with a maximum FAR of 2.0. The proposed M1-4/R6B would permit a maximum FAR of 2.0 for compatible light manufacturing, commercial, community facility, or residential uses with a maximum height of 40 feet at the streetwall and a maximum building height of 50 feet after a setback.

- Change from **M1-2 to M1-4/R7A** portions of seven blocks along Union Street between Nevins Street and 4<sup>th</sup> Avenue and 3<sup>rd</sup> Avenue from Sackett Street to 1<sup>st</sup> Street.

This area is characterized by mixed-use residential and commercial buildings as well as some light manufacturing, office, warehouse, and a recently built hotel. The M1-2 district allows light industrial and some commercial uses with a maximum FAR of 2.0. The proposed M1-4/R7A district would facilitate development for a mix of uses, including residential use, at a scale appropriate to the wide streets of Union Street and 3<sup>rd</sup> Avenue. With the related text amendment, an Inclusionary Housing bonus would encourage the provision of affordable housing in conjunction with new developments. For residential uses, a base FAR of 3.45 would be allowed, with a bonus to 4.6 FAR in exchange for the provision of 20 percent of the floor area as affordable housing. Buildings would be limited to a maximum streetwall height of 65 feet and a maximum building height after setback of 80 feet. Compatible light industrial and commercial uses would be allowed at a maximum FAR of 2.0.

- Change from **M1-2 to R8A/C2-4** portions of six blocks along 4<sup>th</sup> Avenue between Douglass Street and 1<sup>st</sup> Street.

The area is characterized largely by auto-related uses and mixed commercial and residential buildings. The proposed R8A/C2-4 zoning district would facilitate residential and commercial development consistent uses currently permitted on the remainder of 4<sup>th</sup> Avenue, a wide boulevard, to the north, south, and east of the rezoning area.

The existing M1-2 district allows light industrial and some commercial uses with a maximum FAR of 2.0. The proposed R8A/C2-4 district, with the related text amendment to apply the Inclusionary Housing program, would allow residential use at a base FAR of 5.4 with a bonus to 7.2 FAR. New developments would be required to build along a streetwall within a contextual envelope with a maximum base height of 80 feet, and a maximum height after setback of 120 feet. The C2-4 commercial overlay would allow commercial uses with a maximum FAR of 2.0, or one story within a mixed-use building.

- Change from **M2-1 to M1-4/R6** blocks along the western side of the Canal south of Douglass Street to 3<sup>rd</sup> Street, and along the eastern side of the Canal from Union Street to 3<sup>rd</sup> Street.

This area is characterized by existing one and two story industrial buildings, at-grade parking facilities, and vacant land and buildings. The proposed zoning changes would facilitate new mixed-use development which would be required to provide public access areas at the Canal's edge per requirements outlined in the WAP (see zoning text amendments, below). Development on the waterfront would be subject to the special bulk requirements of the Special Gowanus Mixed Use District.

The existing M2-1 district allows medium-intensity industrial uses with a maximum FAR of 2.0. The proposed M1-4/R6 zoning district, under the proposed regulations of the Special Gowanus Mixed Use District (see zoning text amendments, below), would allow residential buildings at a base FAR of 2.5 with an Inclusionary Housing bonus up to 3.3 FAR, with height and bulk regulations controlled by the proposed Special Gowanus Mixed Use District. Blocks south of Carroll Street along the Canal are larger than blocks north of Carroll Street, allowing them to accommodate more bulk than the blocks north of Carroll Street and are therefore permitted a slightly higher FAR. Larger lots of a certain size, located

south of Carroll Street along the Canal, would be allowed a base FAR of 2.7 with an Inclusionary Housing bonus up to 3.6 FAR. Commercial and light industrial uses would be subject to a maximum FAR of 2.0.

## **ZONING TEXT AMENDMENTS**

### *Definition of Waterfront Area*

A proposed zoning text amendment would modify the definition of “waterfront area” to specifically include the Gowanus Canal north of Hamilton Avenue under Section 12-10 of the Zoning Resolution. This would apply the provisions of Section 62-00 of the Zoning Resolution (Special Regulations Applying in the Waterfront Area). This would require new non-industrial developments on lots adjoining the Canal to build and maintain waterfront public access areas at the Canal’s edge.

This component may be removed from the proposed project in the future as the CPC referred a separate proposed action (N 090239 ZRY) on December 15, 2008, that would modify Article VI, Chapter 2 (*Special Regulations Applying to the Waterfront Area*) of the Zoning Resolution. That separate action also included modification of the “waterfront area” definition as part of that action.

### *Waterfront Access Plan (WAP)*

The proposed zoning text amendment would establish a WAP for the waterfront blocks in an area bounded generally by Douglass Street, Bond Street, 3<sup>rd</sup> Street, 3<sup>rd</sup> Avenue, and Nevins Street. The proposed WAP would specify the location of required shore public walkways, supplemental public access areas, upland connections, and visual corridors to ensure access to the Canal from surrounding neighborhoods and to address the configuration and varied conditions along the Canal’s edge. The WAP would also modify design standards for public access to address the unique character of the Canal.

### *Special Gowanus Mixed Use District*

The proposed Special Gowanus Mixed Use District would modify certain use and parking regulations on both waterfront and non-waterfront blocks, and would establish special height and setback regulations for buildings on waterfront blocks.

A summary of the provisions of the proposed Special Gowanus Mixed Use District follows:

- Allow a mix of compatible light industrial, commercial, community facility, and residential uses.
- On canal blocks:
  - In the proposed M1-4/R6 district, establish a base residential FAR of 2.5 with an Inclusionary Housing bonus up to 3.3 FAR. On larger waterfront sites south of Carroll Street, establish a base residential FAR of 2.7 with a bonus up to 3.6 FAR.
  - Establish special height and setback regulations for canal blocks. Building heights along the narrow streets of Bond Street and Nevins Street would be limited to 55 feet, with a height of 65 feet permitted after a setback. Beyond these street frontages, limit building heights to a maximum streetwall height of 65 feet, with a maximum height of 85 feet permitted after a setback. On larger waterfront sites south of Carroll Street providing waterfront access, portions of a building could rise to 125 feet after a setback in certain locations, subject to floorplate limitations.

## Gowanus Canal Corridor Rezoning and Related Actions

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- Establish streetscape requirements to encourage a pedestrian-friendly environment, including requirements for active ground-floor use on a percentage of site frontage, and screening requirements for off-street parking facilities.
- Modify requirements for accessory residential off-street parking on canal blocks to address site conditions and facilitate active ground floor use for a percentage of site frontage.
- Allow a portion of accessory residential off-street parking spaces to be occupied by a car-sharing vehicle.
- On upland (non-canal) blocks:
  - Require a percentage of the street frontage to be used for active, non-residential uses on identified corridors such as 3<sup>rd</sup> Avenue and Union Street.
  - Modify requirements for accessory residential off-street parking on smaller sites where site conditions may limit potential for below-grade parking.
  - Allow a portion of accessory residential off-street parking spaces to be occupied by a car-sharing vehicle.

### *Streetscape Regulations in Commercial Overlay Districts within R8A Districts*

A proposed text amendment would apply streetscape regulations to commercial overlay districts within R8A districts in Community District 6, Brooklyn. Under this text amendment, which would affect portions of 4<sup>th</sup> Avenue between Atlantic Avenue and 15<sup>th</sup> Street, retail continuity would be required for buildings with more than 50 feet of frontage on a wide street.

### *Inclusionary Housing in Rezoning Area*

The proposed zoning text amendment would make the Inclusionary Housing program applicable within portions of the rezoning area in Brooklyn, Community District 6. The base and bonused FARs listed in Table 1 below would apply to new residential development. Base FARs apply to developments which do not use the Inclusionary Zoning bonus. The full bonused FAR is available to buildings which take full advantage of the program by providing 20 percent of the total new housing floor area as affordable residential floor area in accordance with the Inclusionary Housing program.

**Table 1: Proposed Inclusionary Housing Zoning – Gowanus Canal Corridor Rezoning Area**

<b>Zoning District</b>	<b>Base FAR</b>	<b>Bonused FAR</b>
R7A	3.45	4.6
R8A	5.4	7.2
R6 (smaller Canal sites)	2.5	3.3
R6 (larger Canal sites south of Carroll St.)	2.7	3.6

## **II. APPROACH**

For purposes of assessing the potential for short and long term effects that may occur as a result of the proposed actions, DCP has defined a reasonable worst-case development scenario (RWCDS). The RWCDS will provide a conservative development envelope in which the project can occur, and will be used as the basis for evaluation in the EIS.

The CEQR process would begin with screening the RWCDs for the relevant areas discussed in the *CEQR Technical Manual* and presenting the results of that screening in an Environmental Assessment Statement (EAS). A Draft Scope of Work (DSOW) for an EIS will then be prepared for use in the public scoping process. DCP will consult with other city agencies as it prepares the DSOW (e.g. New York City Department of Transportation, New York City Landmarks Preservation Commission, and New York City Department of Environmental Protection) to gain their input on scoping sections relevant to their areas of expertise. Once the DSOW is complete, it will be released for public review in accordance with applicable regulations.

A RWCDs has been developed for this project and it contains both Projected and Potential Development sites. The sites most likely to experience redevelopment by 2018 as a result of the proposed actions were identified based primarily on size, location, and degree of utilization as described in detail later in this document. These are designated as Projected Development Sites (see Figure 5a). Other sites with less potential for redevelopment/conversion are identified as Potential Development Sites (see Figure 5b). The EIS will analyze the Projected Development Sites for all density-related and site-specific impacts. Potential Development Sites are evaluated only for site-specific potential impacts. Density-related impacts are dependent on the amount of development projected on a site; i.e., the number of dwelling units and the resulting population's impact on traffic, mobile-source air quality, community facilities and services, 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 analysis for historic resources, shadows, urban design and visual resources, hazardous materials, stationary-source air quality, and noise.

DCP has identified 26 Projected Development Sites that would be likely to be developed as a result of the proposed actions. These 26 development sites could result in a net increase of 3,211 dwelling units, 572 of which would be affordable under the Inclusionary Housing Program, a net increase of 34,681 square feet of retail space, a net increase of 32,032 square feet of community facility space, a net decrease of 184,757 square feet of commercial space,<sup>1</sup> a net decrease of 543,716 square feet of industrial space, and a net increase of 1,166 accessory parking spaces. In addition, there are 40 Potential Development Sites considered less likely to be developed in the foreseeable future. (See Tables 2a: Projected Development Sites and 2b: Potential Development Sites).

A RWCDs for both “future no action” and “future with action” conditions will be analyzed for an analysis year of 2018 (Build Year). For area-wide rezonings not associated with a specific development, a ten-year period is typically considered to be the length of time over which developers would act on the change in zoning and the effects of the proposed actions would be felt. The future with action (Future With Action) scenario identifies the amount, type and location of development that is expected to occur by 2018 as a result of the proposed actions. The future without the action (Future No Action) scenario identifies similar development projections for 2018 absent the proposed actions. The incremental difference between the Future With Action and Future No Action scenarios serves as the basis for the environmental impact analyses.

Standard methodologies have been utilized following *CEQR Technical Manual* guidelines, and RWCDs assumptions employed, in order to determine the scenarios. These methodologies have been used to estimate the amount and location of future residential, commercial and community facility growth. Several factors were considered in projecting the amount and location of new residential development, such as known development proposals, past development trends, and DCP's standard “soft site” criteria. Generally, for area-wide rezonings that create a broad range of development opportunities, new

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<sup>1</sup> The commercial space square footage value includes 113,967 square feet of office space and 70,790 square feet of hotel space.



Source: MapPluto 2007, NYCDP.

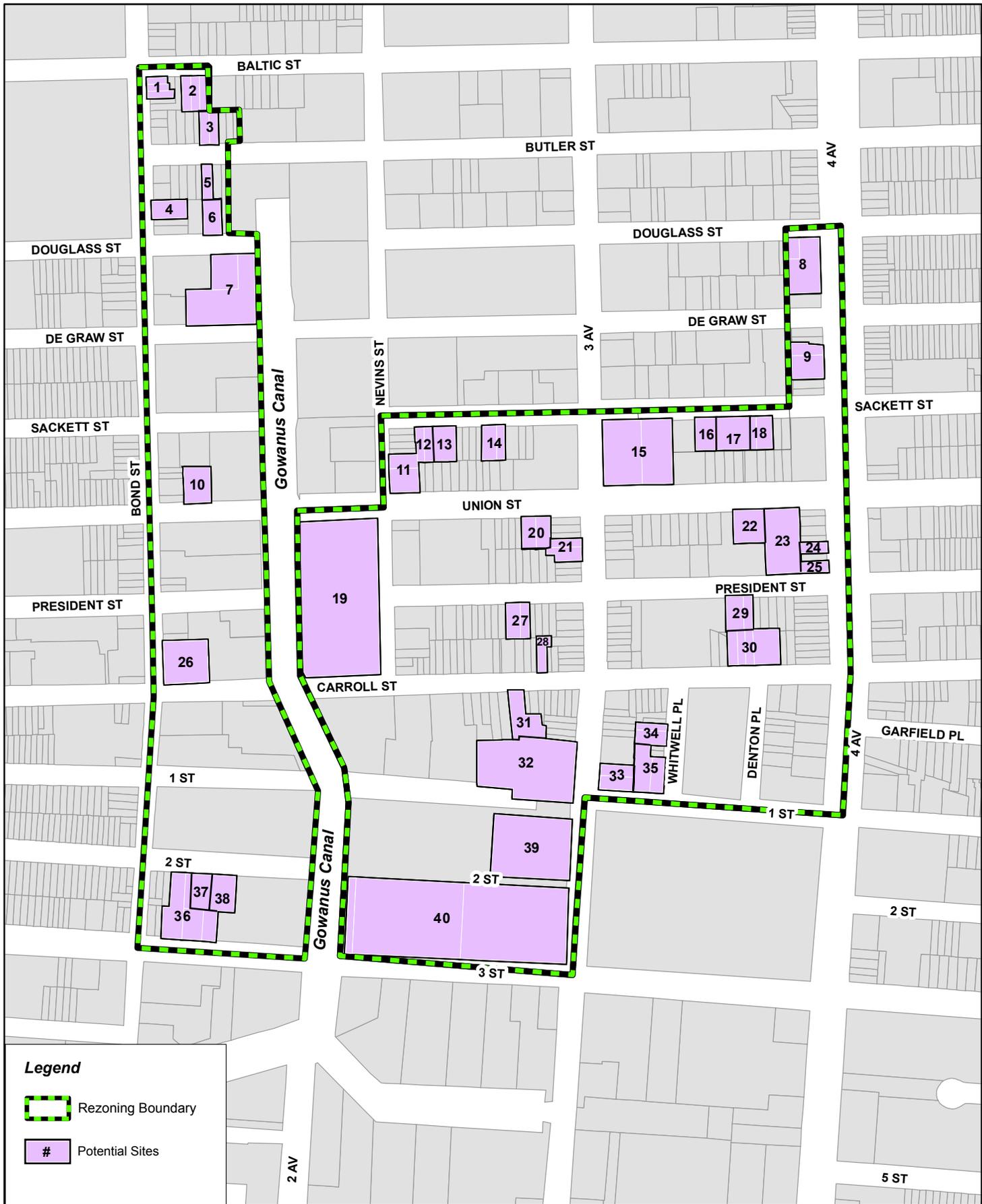


Table 2a: Projected Development Sites

Site Description				Existing Conditions									No Action Conditions									With Action Conditions										INCREMENT									
Block	Lot	Lot Area	Zoning District	Built FAR	Building Area (sf)	Indust./Auto/storage (sf)	Office (sf)	Retail (sf)	Community Facility (sf)	Dwelling Units	Parking spaces	Hotel (sf)	Indust./Auto/storage (sf)	Vacant Building (sf)	Office (sf)	Retail (sf)	Community Facility (sf)	Total Dwelling Units	Total parking spaces	Proposed Zoning	Proposed FAR	Hotel (sf)	Indust./Auto/storage (sf)	Vacant Bldg (sf)	Office (sf)	Retail (sf)	Community Facility (sf)	Total Dwelling Units	Affordable Dwelling Units	Market Rate Dwelling Units	Total parking spaces	Hotel (sf)	Indust./Auto/storage (sf)	Vacant Building (sf)	Office (sf)	Retail (sf)	Community Facility (sf)	Total Dwelling Units	Total parking spaces		
A	405	7	1500	M1-2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	M1-4/R6B	2	0	0	0	0	0	0	0	3	0	3	2	0	0	0	0	0	0	0	3	2
	405	12	4000	M1-2	1	3900	3900	0	0	0	0	0	3900	0	0	0	0	0	0	M1-4/R6B	2	0	0	0	0	0	0	0	8	0	8	4	0	-3900	0	0	0	0	0	8	4
	405	63	2500	M1-2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	M1-4/R6B	2	0	0	0	0	0	0	0	5	0	5	3	0	0	0	0	0	0	0	5	-4
	405	64	2500	M1-2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	M1-4/R6B	2	0	0	0	0	0	0	0	5	0	5	3	0	0	0	0	0	0	0	5	-4
Total A		10500			3900	3900	0	0	0	0	0	3900	0	0	0	0	0	0	12			0	0	0	0	0	0	21	0	21	11	0	-3900	0	0	0	0	0	21	-2	
B	411	60	5000	M1-2	1.03	5125	5125	0	0	0	0	0	5125	0	0	0	0	0	0	M1-4/R6B	2	0	0	0	0	0	0	0	10	0	10	0	0	-5125	0	0	0	0	0	10	0
Total B		5000			5125	5125	0	0	0	0	0	5125	0	0	0	0	0	0	0			0	0	0	0	0	0	10	0	10	0	0	-5125	0	0	0	0	0	10	0	
C	417	1	8578	M2-1	1.56	13386	13386	0	0	0	2	0	13386	0	0	0	0	0	2	M1-4/R6 (MX 3.3)	3.3	0	0	0	0	0	0	28	6	23	11	0	-13386	0	0	0	0	0	28	9	
	417	10	18739	M2-1	1.22	22834	22834	0	0	0	2	0	22834	0	0	0	0	0	2	M1-4/R6 (MX 3.3)	3.3	0	0	0	0	0	0	62	12	49	25	0	-22834	0	0	0	0	0	62	23	
Total C		27317			36220	35770	0	0	0	4	0	35770	0	0	0	0	0	4			0	0	0	0	0	0	90	18	72	36	0	-35770	0	0	0	0	0	90	32		
D	424	1	47500	M2-1	0.23	11100	11100	0	0	0	4	0	47500	0	0	0	0	0	0	M1-4/R6 (MX 3.3)	3.3	0	0	0	0	11875	0	145	29	116	72	0	-47500	0	0	11875	0	0	145	72	
	424	20	12500	M2-1	0	0	0	0	0	0	0	0	12500	0	0	0	0	0	0	M1-4/R6 (MX 3.3)	3.3	0	0	0	0	0	0	41	8	33	21	0	-12500	0	0	0	0	0	41	21	
	431	7	6200	M2-1	1	6200	6200	0	0	0	0	0	6200	0	0	0	0	0	0	M1-4/R6 (MX 3.3)	3.3	0	0	0	0	0	0	20	4	16	10	0	-6200	0	0	0	0	0	20	10	
	431	12	8978	M2-1	1	8978	8978	0	0	0	0	0	8978	0	0	0	0	0	0	M1-4/R6 (MX 3.3)	3.3	0	0	0	0	0	0	30	6	24	15	0	-8978	0	0	0	0	0	30	15	
	431	17	29800	M2-1	0.27	8150	8150	0	0	0	0	0	8150	0	0	0	0	0	0	M1-4/R6 (MX 3.3)	3.3	0	0	0	0	0	0	98	20	79	49	0	-8150	0	0	0	0	0	98	49	
Total D		104978			34428	34428	0	0	0	4	0	83328	0	0	0	0	0	0			0	0	0	0	11875	0	335	67	268	167	0	-83328	0	0	11875	0	0	335	167		
E	427	37	2430	M1-2	2.86	6939	0	0	0	0	0	0	0	6939	0	0	0	0	0	R8A/C2-4	7.2	0	0	0	0	2430	0	15	3	12	0	0	0	0	-6939	2430	0	0	0	15	0
	427	38	2356	M1-2	1.15	2700	0	0	0	0	0	0	0	0	2700	0	0	0	0	R8A/C2-4	7.2	0	0	0	0	2356	0	15	3	12	0	0	0	0	-2700	2356	0	0	0	15	0
Total E		4786			9639	0	0	0	0	0	0	0	0	9639	0	0	0	0			0	0	0	0	4786	0	30	6	24	0	0	0	0	-9639	4786	0	0	0	30	0	
F	433	28	30100	M1-2	1	30000	30000	0	0	0	0	0	30000	0	0	0	0	0	0	M1-4/R7A	4.6	0	0	0	0	13485	0	125	25	100	50	0	-30000	0	0	13485	0	0	125	50	
	433	46	3450	M1-2	0.99	3420	3420	0	0	0	0	0	3420	0	0	0	0	0	0	M1-4/R7A	4.6	0	0	0	0	0	1532	14	3	11	6	0	-3420	0	0	0	1532	14	6		
Total F		33550			33420	33420	0	0	0	0	0	33420	0	0	0	0	0	0			0	0	0	0	13485	1532	139	28	111	56	0	-33420	0	0	13485	1532	139	56			
G	434	47	2375	M1-2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	M1-4/R7A	4.6	0	0	0	0	1064	0	10	2	8	4	0	0	0	0	1064	0	0	10	4	
	434	48	2375	M1-2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	M1-4/R7A	4.6	0	0	0	0	1064	0	10	2	8	4	0	0	0	0	1064	0	0	10	4	
	434	49	2375	M1-2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	M1-4/R7A	4.6	0	0	0	0	1064	0	10	2	8	4	0	0	0	0	1064	0	0	10	4	
	434	50	2375	M1-2	0	0	0	0	0	0	4	0	0	0	0	0	0	0	4	M1-4/R7A	4.6	0	0	0	0	1064	0	10	2	8	4	0	0	0	0	1064	0	0	10	0	
	434	52	3563	M1-2	0	0	0	0	0	0	4	0	0	0	0	0	0	0	4	M1-4/R7A	4.6	0	0	0	0	1596	0	15	3	12	6	0	0	0	0	1596	0	0	15	2	
Total G		13063			0	0	0	0	0	8	0	0	0	0	0	0	0	0	8			0	0	0	5852	0	54	11	43	22	0	0	0	0	5852	0	0	54	14		
H	434	35	19000	M1-2	0.07	1298	1298	0	0	0	15	0	1298	0	0	0	0	0	15	R8A/C2-4	7.2	0	0	0	0	2920	0	134	27	107	54	0	-1298	0	0	2920	0	0	134	39	
Total H		19000			1298	1298	0	0	0	15	0	1298	0	0	0	0	0	15			0	0	0	0	2920	0	134	27	107	54	0	-1298	0	0	2920	0	0	134	39		
I	438	1	1500	M2-1	0	0	0	0	0	4	0	0	0	0	0	0	0	0	4	M1-4/R6 (MX 3.3)	3.3	0	0	0	0	0	0	5	1	4	2	0	0	0	0	0	0	5	-2		
	438	2	1500	M2-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	M1-4/R6 (MX 3.3)	3.3	0	0	0	0	0	0	5	1	4	2	0	0	0	0	0	0	5	-3		
	438	3	28500	M2-1	0.03	720	720	0	0	0	80	0	720	0	0	0	0	0	80	M1-4/R6 (MX 3.3)	3.3	0	0	0	0	0	0	94	19	75	47	0	-720	0	0	0	0	0	94	-33	
	445	0	18459	M2-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	M1-4/R6 (MX 3.3)	3.3	0	0	0	0	0	0	61	12	49	30	0	0	0	0	0	0	61	30		
	445	7	1500	M2-1	2	3000	3000	0	0	0	0	0	3000	0	0	0	0	0	0	M1-4/R6 (MX 3.3)	3.3	0	0	0	0	0	0	5	1	4	2	0	-3000	0	0	0	0	5	2		
	445	8	4500	M2-1	1	4500	4500	0	0	0	0	0	0	0	0	0	4500	0	0	0	M1-4/R6 (MX 3.3)	3.3	0	0	0	0	0	0	15	3	12	7	0	0	0	0	-4500	0	0	15	7
	445	11	29620	M2-1	0.65	19200	19200	0	0	0	0	0	0	0	0	0	19200	0	0	0	M1-4/R6 (MX 3.3)	3.3	0	0	0	0	14810	0	83	17	66	41	0	0	0	0	-4390	0	0	83	41
	445	20	8900																																						



Table 2a: Projected Development Sites (Continued)

Site Description				Existing Conditions									No Action Conditions								With Action Conditions										INCREMENT									
Block	Lot	Lot Area	Zoning District	Built FAR	Building Area (sf)	Indust./Auto/storage (sf)	Office (sf)	Retail (sf)	Community Facility (sf)	Dwelling Units	Parking spaces	Hotel (sf)	Indust./Auto/storage (sf)	Vacant Building (sf)	Office (sf)	Retail (sf)	Community Facility (sf)	Total Dwelling Units	Total parking spaces	Proposed Zoning	Proposed FAR	Hotel (sf)	Indust./Auto/storage (sf)	Vacant Bldg (sf)	Office (sf)	Retail (sf)	Community Facility (sf)	Total Dwelling Units	Affordable Dwelling Units	Market Rate Dwelling Units	Total parking spaces	Hotel (sf)	Indust./Auto/storage (sf)	Vacant Building (sf)	Office (sf)	Retail (sf)	Community Facility (sf)	Total Dwelling Units	Total parking spaces	
X	456	32	3913	M1-2	1.98	7760	7760	0	0	0	0	0	0	0	0	7760	0	0	0	R8A/C2-4	7.2	0	0	0	0	0	532	0	28	6	22	9	0	0	0	0	-7228	0	28	9
	456	34	5870	M1-2	1	5870	5870	0	0	0	0	0	0	0	0	5870	0	0	0	R8A/C2-4	7.2	0	0	0	0	798	0	41	8	33	13	0	0	0	0	-5072	0	41	13	
	456	6	3600	M1-2	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3	M1-4/R6B	2	0	0	0	0	0	0	7	0	7	8	0	0	0	0	0	0	7	5
Total X		13383			13630	13630	0	0	0	0	3	0	0	0	13630	0	0	0	3			0	0	0	0	1330	0	76	14	62	31	0	0	0	0	-12300	0	76	28	
Y	456	13	3757	M1-2	1	3740	0	0	3740	0	0	0	0	0	0	3740	0	0	0	M1-4/R6B / R8A/C2-4	4.6	0	0	0	0	1683	0	16	3	12	9	0	0	0	0	-2057	0	16	9	
	456	17	3871	M1-2	0.99	3850	3850	0	0	0	3	0	3850	0	0	0	0	0	3	M1-4/R6B	2	0	0	0	0	0	0	8	0	8	10	0	-3850	0	0	0	0	8	7	
	456	23	8936	M1-2	2.15	19192	19192	0	0	0	3	0	19192	0	0	0	0	0	3	R8A/C2-4	7.2	0	0	0	0	1215	0	63	13	50	19	0	-19192	0	0	1215	0	63	16	
Total Y		16564			26782	23042	0	3740	0	0	6	0	23042	0	0	3740	0	0	6			0	0	0	0	2898	0	86	16	71	38	0	-23042	0	0	-842	0	86	32	
Z	462	14	45442	M2-1	0.41	18500	0	18500	0	0	30	0	0	0	18500	0	0	0	30	M1-4/R6 (MX 3.6)	3.6	0	0	0	11361	0	0	152	30	122	76	0	0	0	-7140	0	0	152	46	
Total Z		45442			18500	0	18500	0	0	30	0	0	0	18500	0	0	0	30			0	0	0	11361	0	0	152	30	122	76	0	0	0	-7140	0	0	152	46		
<b>Grand Total</b>		978773			599844	451099	37400	3740	0	10	278	70790	543716	0	133919	46018	2000	10	318			0	0	0	19953	80699	34032	3222	572	2650	1484	-70790	-543716	0	-113966.5	34681	32032	3211	1166	

Table 2b: Potential Development Sites

Site Description				Existing Conditions								Without Action								With Action								Increment											
Site	Block	Lot	Lot Area	Zoning	Built FAR	Building Area	Industrial/Auto/Storage (sf)	Vacant Building (sf)	Office (sf)	Retail (sf)	Community Facility (sf)	Dwelling Units	Hotel (sf)	Industrial/Auto/Warehouse/Storage (sf)	Parking/Vehicle Storage	Vacant Building (sf)	Office (sf)	Retail (sf)	Community Facility (sf)	Dwelling Units	Proposed Zoning	Proposed FAR	Hotel (sf)	Industrial/Auto/Warehouse/Storage (sf)	Vacant Building (sf)	Office (sf)	Retail (sf)	Community Facility (sf)	Total Dwelling Units	Affordable Dwelling Units	Market Rate Dwelling Units	Hotel (sf)	Industrial/Auto/Storage (sf)	Vacant Building (sf)	Office (sf)	Retail (sf)	Community Facility (sf)	Total Dwelling Units	
1	405	8	1500	M1-2	0.13	2980	0	0	2980	0	0	0	0	0	0	0	2980	0	0	0	M1-4/R6B	2	0	0	0	0	1490	0	0	1	0	1	0	0	0	-1490	0	0	1
	405	9	1200	M1-2	0.83	1000	0	0	0	1000	0	0	0	0	0	0	0	1000	0	0	M1-4/R6B	2	0	0	0	0	1000	0	1	0	1	0	0	0	0	0	0	1	
	405	10	1095	M1-2	2.19	2400	0	0	0	800	0	2	0	0	0	0	0	800	0	2	M1-4/R6B	2	0	0	0	0	800	0	2	0	2	0	2	0	0	0	0	0	2
Total 1			3795		6380	0	0	2980	1800	0	2	0	0	0	0	0	2980	1800	0	2			0	0	0	1490	1800	0	4	0	4	0	0	0	-1490	0	0	2	
2	405	13	2500	M1-2	0.6	1512	0	0	0	0	2	0	0	0	0	0	0	0	0	2	M1-4/R6B	2	0	0	0	0	0	5	0	5	0	0	0	0	0	0	0	3	
	405	14	2500	M1-2	1.16	2888	0	0	0	2088	0	1	0	0	0	0	2088	0	1	M1-4/R6B	2	0	0	0	0	2088	0	3	0	3	0	0	0	0	0	0	0	2	
	405	15	2500	M1-2	1	2500	0	0	0	2500	0	0	0	0	0	0	2500	0	0	M1-4/R6B	2	0	0	0	0	0	0	5	0	5	0	0	0	0	0	-2500	0	0	5
Total 2			7500		6900	0	0	0	4588	0	3	0	0	0	0	0	4588	0	3					0	0	2088	0	13	0	13	0	0	0	0	-2500	0	0	11	
3	405	59	2500	M1-2	0.96	2400	0	0	0	0	2	0	0	0	0	0	0	0	2	M1-4/R6B	2	0	0	0	0	0	5	0	5	0	0	0	0	0	0	0	0	3	
	405	60	2500	M1-2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	M1-4/R6B	2	0	0	0	0	0	5	0	5	0	0	0	0	0	0	0	0	5	
Total 3			5000		2400	0	0	0	0	0	2	0	0	0	0	0	0	0	2					0	0	0	10	0	10	0	0	0	0	0	0	0	0	8	
4	411	3	5000	M1-2	1	5000	0	0	0	5000	0	0	0	0	0	0	10000	0	0	M1-4/R6B	2	0	0	0	0	5000	0	5	0	5	0	0	0	0	0	-5000	0	0	5
Total 4			5000		5000	0	0	0	5000	0	0	0	0	0	0	0	10000	0	0					0	0	5000	0	5	0	5	0	0	0	0	-5000	0	0	5	
5	411	12	2500	M1-2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	M1-4/R6B	2	0	0	0	0	0	5	0	5	0	0	0	0	0	0	0	0	5	
Total 5			2500		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					0	0	0	5	0	5	0	0	0	0	0	0	0	0	5	
6	411	58	5000	M2-1	1	5000	5000	0	0	0	0	0	0	5000	0	0	0	0	0	M1-4/R6B	2	0	0	0	1000	0	9	0	9	0	-5000	0	1000	0	0	0	0	9	
Total 6			5000		5000	5000	0	0	0	0	0	0	0	5000	0	0	0	0	0					1000	0	9	0	9	0	-5000	0	1000	0	0	0	0	0	9	
7	417	14	7850	M2-1	1	6000	6000	0	0	0	0	0	0	6000	0	0	0	0	0	MX 3.3	3.3	0	0	0	7850	0	18	4	14	0	-6000	0	7850	0	0	0	18		
	417	21	24850	M2-1	0.74	17395	17395	0	0	0	0	0	0	17395	0	0	0	0	0	MX 3.3	3.3	0	0	0	0	0	82	16	66	0	-17395	0	0	0	0	0	82		
Total 7			32700	0	1.74	23395	23395	0	0	0	0	0	0	23395	0	0	0	0	0					7850	0	0	100	20	80	0	-23395	0	7850	0	0	0	100		
8	420	34	2520	M1-2	1	2520	2520	0	0	0	0	0	0	2520	0	0	0	0	0	R8A/C2-4	7.2	0	0	0	0	342.72	0	18	4	14	0	-2520	0	0	343	0	0	18	
	420	37	13480	M1-2	0.09	1248	0	0	0	1248	0	0	0	0	0	0	1248	0	0	R8A/C2-4	7.2	0	0	0	0	1833.28	0	95	19	76	0	0	0	585	0	0	95		
Total 8			16000	0	1.09	3768	2520	0	0	1248	0	0	0	2520	0	0	1248	0	0					0	0	2176	0	113	23	90	0	-2520	0	0	928	0	0	113	
9	427	40	2940	M1-2	1.47	4320	0	0	0	2160	0	1	0	0	0	0	2160	0	1	R8A/C2-4	7.2	0	0	0	0	2940	0	18	4	15	0	0	0	780	0	0	16		
	427	42	6075	M1-2	2	12150	12150	0	0	0	0	0	0	12150	0	0	0	0	0	R8A/C2-4	7.2	0	0	0	0	6075	0	38	8	30	0	-12150	0	0	6075	0	0	38	
Total 9			9015				0	5000																			203	41	163	0	0	0	0	0	0	0	0		
10	431	43	7581	M2-1	1	7581	7581	0	0	0	0	0	0	7581	0	0	0	0	0	MX 3.3	3.3	0	0	0	0	0	25	5	20	0	-7581	0	0	0	0	0	25		
Total 10			7581		7581	7581	0	0	0	0	0	0	0	7581	0	0	0	0	0					0	0	0	25	5	20	0	-7581	0	0	0	0	0	25		
11	433	1	5600	M1-2	0.33	1825	1825	0	0	0	0	0	0	1825	0	0	0	0	0	M1-4/R7A M1-4/R6B - M1-4/R7A	4.6	0	0	0	0	5600	20	4	16	0	-1825	0	0	0	5600	0	0	20	
	433	5	3200	M1-2	1	3200	3200	0	0	0	0	0	0	3200	0	0	0	0	0					0	0	11	0	11	0	-3200	0	0	0	0	0	0	11		
Total 11			8800		5025	5025	0	0	0	0	0	0	0	5025	0	0	0	0	0					0	0	5600	31	4	27	0	-5025	0	0	0	5600	0	0	31	
12	433	12	2380	M1-2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	M1-4/R6B	2	0	0	0	0	0	5	0	5	0	0	0	0	0	0	0	5		
	433	13	2500	M1-2	0.77	1920	0	0	0	0	3	0	0	0	0	0	0	0	2	M1-4/R6B	2	0	0	0	0	0	3	0	3	0	0	0	0	0	0	0	0	1	
Total 12			4880		1920	0	0	0	0	0	3	0	0	0	0	0	0	0	2					0	0	0	8	0	8	0	0	0	0	0	0	0	0	6	
13	433	14	6400	M1-2	1.33	8500	7000	0	0	0	0	1	0	7000	0	0	0	0	1	M1-4/R6B	2	0	0	0	0	0	13	0	13	0	-7000	0	0	0	0	0	0	13	
Total 13			6400		8500	7000	0	0	0	0	1	0	0	7000	0	0	0	0	1					0	0	0	13	0	13	0	-7000	0	0	0	0	0	0	13	
14	433	21	4133	M1-2	1.48	6100	4133	0	0	0	2	0	0	4133	0	0	0	0	2	M1-4/R6B	2	0	0	0	0	0	8	0	8	0	-4133	0	0	0	0	0	0	8	
	433	23	2133	M1-2	0.56	1188	0	0	0	0	1	0	0	0	0	0	0	0	1	M1-4/R6B	2	0	0	0	0	0	4	0	4	0	0	0	0	0	0	0	0	4	
Total 14			6266		7288	4133	0	0	0	0	3	0	0	4133	0	0	0	0	3					0	0	0	13	0	13	0	-4133	0	0	0	0	0	0	9	
15	434	1	21055	M1-2	1	21000	21000	0	0	0	0	0	0	21000	0	0	0	0	0	M1-4/R7A M1-4/R7A & M1-4/R6B	4.6	0	0	0	9432.64	0	87	17	70	0	-21000	0	9433	0	0	0	87		

Table 2b: Potential Development Sites (Continued)

Site Description				Existing Conditions									Without Action							With Action							Increment												
Site	Block	Lot	Lot Area	Zoning	Built FAR	Building Area	Industrial/Auto/Storage (sf)	Vacant Building (sf)	Office (sf)	Retail (sf)	Community Facility (sf)	Dwelling Units	Hotel (sf)	Industrial/Auto/Storage (sf)	Parking/Vehicle Storage	Vacant Building (sf)	Office (sf)	Retail (sf)	Community Facility (sf)	Dwelling Units	Proposed Zoning	Proposed FAR	Hotel (sf)	Industrial/Auto/Storage (sf)	Vacant Building (sf)	Office (sf)	Retail (sf)	Community Facility (sf)	Total Dwelling Units	Affordable Dwelling Units	Market Rate Dwelling Units	Hotel (sf)	Industrial/Auto/Storage (sf)	Vacant Building (sf)	Office (sf)	Retail (sf)	Community Facility (sf)	Total Dwelling Units	
18	434	29	1663	M1-2	0.95	1575	1575	0	0	0	0	0	0	1575		0	0	0	0	0	M1-4/R6B	2	0	0	0	0	0	0	3	0	3	0	-1575	0	0	0	0	0	3
	434	30	3645	M1-2	1.06	3848	3848	0	0	0	0	0	0	3848		0	0	0	0	0	M1-4/R6B	2	0	0	0	0	0	0	7	0	7	0	-3848	0	0	0	0	0	7
Total 18						5308	5423	0	0	0	0	0	0	5423	0	0	0	0	0	0			0	0	0	0	0	0	11	0	11	0	-5423	0	0	0	0	0	11
19	439	1	101500	M2-1	0.25	25430	25430	0	0	0	0	0	0	25430		0	0	0	0	0	MX 3.3	3.3	0	0	0	20000	11250	0	304	61	243	0	-25430	0	20000	11250	0	0	304
Total 19						101500	25430	0	0	0	0	0	0	25430	0	0	0	0	0	0			0	0	0	20000	11250	0	304	61	243	0	-25430	0	20000	11250	0	0	304
20	440	27	3600	M1-2	1.93	6956	0	2318	0	0	0	4	0	0	0	0	0	2318	0	4	M1-4/R7A	4.6	0	0	0	0	0	3600	13	3	10	0	0	0	0	-2318	3600	0	8
	440	29	3600	M1-2	1.26	4552	0	4552	0	0	0	0	0	0	4552		0	0	0	0	0	M1-4/R7A	4.6	0	0	0	0	0	3600	13	3	10	0	-4552	0	0	0	0	3600
Total 20						7200	11508	0	6870	0	0	4	0	0	4552	0	0	0	2318	0	4			0	0	0	0	7200	26	5	21	0	-4552	0	0	-2318	7200	21	
21	440	35	2048	M1-2	0	0	0	0	0	0	0	0	0	2048		0	0	0	0	0	M1-4/R7A	4.6	0	0	0	0	0	2048	7	1	6	0	-2048	0	0	2048	0	0	7
	440	36	3518	M1-2	1.84	6480	6480	0	0	0	0	0	0	6480		0	0	0	0	0	M1-4/R7A	4.6	0	0	0	0	0	3518	13	3	10	0	-6480	0	0	3518	0	0	13
Total 21						5566	6480	0	0	0	0	0	0	8528	0	0	0	0	0	0			0	0	0	0	0	5566	20	4	16	0	-8528	0	0	5566	0	0	20
22	441	21	8518	M1-2	1.05	8930	0	8930	0	0	0	0	0	8930		0	0	0	0	0	M1-4/R7A	4.6	0	0	0	0	0	8518	31	6	25	0	-8930	0	0	0	8518	0	31
Total 22						8518	8930	0	8930	0	0	0	0	0	8930	0	0	0	0	0	0			0	0	0	0	8518	31	6	25	0	-8930	0	0	0	8518	0	31
23	441	24	19000	M1-2	1	19000	19000	0	0	0	0	0	0	19000		0	0	0	0	0	M1-4/R6B	3.3	0	0	0	0	0	63	0	63	0	-19000	0	0	0	0	0	63	
Total 23						19000	19000	0	0	0	0	0	0	19000	0	0	0	0	0	0			0	0	0	0	0	63	0	63	0	-19000	0	0	0	0	0	63	
24	441	33	2240	M1-2	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	R8A/C2-4	7.2	0	0	0	2240	0	0	14	3	11	0	0	0	2240	0	0	14	
Total 24						2240	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			0	0	0	2240	0	0	14	3	11	0	0	0	2240	0	0	14
25	441	35	2400	M1-2	0	0	0	0	0	0	0	0	0	0		0	0	2400	0	0	R8A/C2-4	7.2	0	0	0	2400	0	0	15	3	12	0	0	0	2400	-2400	0	15	
Total 25						2400	0	0	0	0	0	0	0	0	0	0	0	2400	0	0	0			0	0	0	2400	0	0	15	3	12	0	0	0	2400	-2400	0	15
26	445	1	15480	M2-1	0.98	15178	0	0	15178	0	0	0	0	0		0	15178	0	0	0	MX 3.3	3.3	0	0	0	0	0	51	10	41	0	0	0	-15178	0	0	0	51	
Total 26						15480	0	0	15178	0	0	0	0	0	0	0	0	15178	0	0	0			0	0	0	0	0	51	10	41	0	0	0	-15178	0	0	0	51
27	447	22	4000	M1-2	1	4000	4000	0	0	0	0	0	0	4000		0	0	0	0	0	M1-4/R6B	2	0	0	0	0	0	8	0	8	0	-4000	0	0	0	0	0	8	
	447	24	2500	M1-2	0.92	2310	0	0	0	0	0	2	0	0		0	0	0	0	2	M1-4/R6B	2	0	0	0	0	0	5	0	5	0	0	0	0	0	0	0	5	
Total 27						6500	4000	0	0	0	0	2	0	4000	0	0	0	0	0	2			0	0	0	0	0	13	0	13	0	-4000	0	0	0	0	0	13	
28	447	43	2400	M1-2	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	M1-4/R6B	2	0	0	0	0	0	5	0	5	0	0	0	0	0	0	0	5	
Total 28						2400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			0	0	0	0	5	0	5	0	0	0	0	0	0	0	5	
29	448	25	5000	M1-2	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	M1-4/R6B	2	0	0	0	0	0	10	0	10	0	0	0	0	0	0	0	10	
	448	27	2500	M1-2	0.84	2100	0	0	0	0	0	3	0	0		0	0	0	0	0	M1-4/R6B	2	0	0	0	0	0	5	0	5	0	0	0	0	0	0	0	5	
Total 29						7500	0	0	0	0	0	3	0	0	0	0	0	0	0	0	3			0	0	0	0	15	0	15	0	0	0	0	0	0	0	15	
30	448	47	7392	M1-2	1.29	9500	9500	0	0	0	0	0	0	9500		0	0	0	0	0	M1-4/R6B	2	0	0	0	0	0	15	0	15	0	-9500	0	0	0	0	0	15	
	448	52	2500	M1-2	1.18	2961	0	0	0	0	0	3	0	0		0	0	0	0	3	M1-4/R6B	2	0	0	0	0	0	5	0	5	0	0	0	0	0	0	0	5	
	448	53	2300	M1-2	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	M1-4/R6B	2	0	0	0	0	0	5	0	5	0	0	0	0	0	0	0	5	
	448	54	2700	M1-2	1.13	900	0	0	0	0	0	2	0	0		0	0	0	0	2	M1-4/R6B	2	0	0	0	0	0	5	0	5	0	0	0	0	0	0	0	5	
Total 30						14892	9500	0	0	0	0	5	0	9500	0	0	0	0	0	5			0	0	0	0	0	30	0	30	0	-9500	0	0	0	0	0	30	
31	453	36	9854	M2-1	0.96	9500	9500	0	0	0	0	0	0	9500		0	0	0	0	0	M1-4/R6B	2.45	0	0	0	0	0	24	0	24	0	-9500	0	0	0	0	0	24	
Total 31						9854	9500	0	0	0	0	0	0	9500	0	0	0	0	0	0			0	0	0	0	0	24	0	24	0	-9500	0	0	0	0	0	24	
32	453	54	42816	M2-1	2.1	90000	0	90000	0	0	0	0	0	90000		0	0	0	0	0	MX 3.6	3.6	0	0	0	24319.488	0	0	130	26	104	0	-90000	0	24319	0	0	130	
Total 32						42816	90000	0	90000	0	0	0	0	0	90000	0	0	0	0	0	0			0	0	0	24319.488	0	0	130	26	104	0	-90000	0	24319	0	0	130
33	454	1	4000	M1-2	2	8000	4000	0	0	0	1	0	0	4000		0	0	0	1	0	M1-4/R7A	4.6	0	0	0	0	4000	14	3	12	0	-4000	0	0	4000	0	0	10	
	454	3	3200	M1-2	0.96	3086	3086	0	0	0	0	0	0	3086		0	0	0	0	0	M1-4/R7A	4.6	0	0	0	0													

Table 2b: Potential Development Sites (Continued)

Site Description				Existing Conditions									Without Action							With Action										Increment										
Site	Block	Lot	Lot Area	Zoning	Built FAR	Building Area	Industrial/Auto/Storage (sf)	Vacant Building (sf)	Office (sf)	Retail (sf)	Community Facility (sf)	Dwelling Units	Hotel (sf)	Industrial/Auto/Warehouse/Storage (sf)	Parking/Vehicle Storage	Vacant Building (sf)	Office (sf)	Retail (sf)	Community Facility (sf)	Dwelling Units	Proposed Zoning	Proposed FAR	Hotel (sf)	Industrial/Auto/Warehouse/Storage (sf)	Vacant Building (sf)	Office (sf)	Retail (sf)	Community Facility (sf)	Total Dwelling Units	Affordable Dwelling Units	Market Rate Dwelling Units	Hotel (sf)	Industrial/Auto/Storage (sf)	Vacant Building (sf)	Office (sf)	Retail (sf)	Community Facility (sf)	Total Dwelling Units		
36	462	6	9175	M2-1	0.17	1600	1600	0	0	0	0	0	0	1600		0	0	0	0	0	0	MX 3.6	3.6	0	0	0	0	0	0	33	7	26	0	-1600	0	0	0	0	0	33
	462	8	2000	M2-1	0.9	1800	1800	0	0	0	0	0	0	1800		0	0	0	0	0	0	MX 3.6	3.6	0	0	0	0	0	0	7	1	6	0	-1800	0	0	0	0	0	7
	462	42	3600	M2-1	1	3600	3600	0	0	0	0	0	0	3600		0	0	0	0	0	0	MX 3.6	3.6	0	0	0	0	0	0	13	3	10	0	-3600	0	0	0	0	0	13
	462	44	5400	M2-1	2	10800	10800	0	0	0	0	0	0	10800		0	0	0	0	0	0	MX 3.6	3.6	0	0	0	0	0	0	19	4	16	0	-10800	0	0	0	0	0	19
Total 36						20175								17800	0	0	0	0	0	0			0	0	0	0	0	0	73	15	58	0	-17800	0	0	0	0	0	73	
37	462	9	5900	M2-1	1.77	10440	10440	0	0	0	0	0	0	10440		0	0	0	0	0	0	MX 3.6	3.6	0	0	0	0	0	0	21	4	17	0	-10440	0	0	0	0	0	21
Total 37						5900								10440	0	0	0	0	0	0			0	0	0	0	0	0	21	4	17	0	-10440	0	0	0	0	0	21	
38	462	12	7092	M2-1	0.56	4000	4000	0	0	0	0	0	0	4000		0	0	0	0	0	0	MX 3.6	3.6	0	0	0	0	0	0	26	5	20	0	-4000	0	0	0	0	0	26
Total 38						7092								4000	0	0	0	0	0	0			0	0	0	0	0	0	26	5	20	0	-4000	0	0	0	0	0	26	
39	967	24	40500	M2-1	0.78	31500	31500	0	0	0	0	0	0	31500		0	0	0	0	0	0	MX 3.6	3.6	0	0	0	0	5508	0	140	28	112	0	-31500	0	0	5508	0	0	140
Total 39						40500								31500	0	0	0	0	0	0			0	0	0	0	5508	0	140	28	112	0	-31500	0	0	5508	0	0	140	
40	972	1	4636	M2-1	0	0	0	0	0	0	0	0	0	0		0	0	2318	0	0	0	MX 3.6	3.6	0	0	0	0	2318	0	14	3	11	0	0	0	0	0	0	14	
	972	43	66165	M2-1	0.09	5625	5625	0	0	0	0	0	0	0		0	0	33083	0	0	0	MX 3.6	3.6	0	0	0	0	16541.25	0	222	44	177	0	0	0	0	-16541	0	0	222
	972	58	69080	M2-1	0.09	6320	6320	0	0	0	0	0	0	0		0	0	34540	0	0	0	MX 3.6	3.6	0	0	0	0	17270	0	231	46	185	0	0	0	0	-17270	0	0	231
Total 40						139881								0	0	0	69941	0	0	0			0	0	0	0	36129.25	0	467	93	374	0	0	0	0	-33811	0	0	467	

## **Gowanus Canal Corridor Rezoning and Related Actions**

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development can be expected to occur on a selected number of sites within a rezoning area, rather than the entire rezoning area. The following guidelines were used to develop the RWDCS for the proposed Gowanus Canal Corridor Rezoning and Related Actions.

The identification of new development sites was based on the following criteria:

- Sites for which owners have expressed interest in redevelopment;
- Vacant lots or assemblages 4,000 square feet or larger in single ownership;
- Lots with a total size of 5,000 square feet or larger (may include potential assemblages totaling 5,000 square feet, if assemblage seems probable) occupied by buildings with floor area ratios equal to or less than half the proposed maximum permitted FAR;
- Lots of 5,000 square feet or larger developed with buildings used for industrial, manufacturing, parking or automotive uses, including those that are built at greater than 50 percent of proposed FAR;
- Single lots adjacent to an assembled development site that, if the lot were acquired, would occupy an entire block frontage;
- Pre-existing residential buildings with fewer than six units on lots of 2,500 or larger that can be combined with adjacent lot for minimum 5,000 square-foot lot size with floor area ratios equal to or less than half the proposed maximum permitted FAR;
- Sites that meet the criteria above when assembled with adjacent lots;
- Vacant lots of 2,000 square feet or more;
- Sites on which hotel development has been proposed but building permits have not been issued.

However, lots meeting the above criteria were not considered as new development sites if:

- There are known development plans for the site under existing zoning or pending discretionary actions that would allow redevelopment;
- The site contains a school, cemetery, house of worship or other public facility;
- The lot contains less than 5,000 square feet;
- The lot is a residential property that is built to more than 50 percent of proposed FAR;
- Two residential properties total 5,000 square feet but are built to more than 50 percent of the proposed FAR with two different owners; or
- The lot contains an existing public or community facility use.

In addition, the following modifications to these RWDCS guidelines were made for split lots and to account for the possibility of manufacturing use:

- On blocks along 3<sup>rd</sup> Avenue, 4<sup>th</sup> Ave and Union Street, single lots or combined lots with 50 feet of frontage or more were given FAR for unspecified non-residential use. This was calculated as the remaining ground floor space after parking was considered. This was also calculated for lots on other frontages where there is known interest in providing non-residential space, or where there is proposed commercial directly across the street.
- For split lots, a blended FAR was used (e.g., a block split 50 percent between MX 3.6 and M1-4/R6B would be considered  $[3.6+2.0]/2=2.8$  FAR).

- If parking was waived in R7A or R8A districts, then the entire ground floor allocated as active ground floor retail.
- Parking requirements:
  - R7A – 40 percent parking requirement, 30 percent for sites less than 10,000 square feet or if 15 or fewer spaces are required;
  - R8A – 40 percent parking requirement, waived for sites less than 10,000 square feet or if 15 or fewer spaces are required;
  - R6B – 50 percent, waived for 5 or fewer spaces;
  - MX 3.3 – 40 percent with waiver up to 5 spaces;
  - MX 3.6 – 50 percent.

### **III. EIS SCOPE OF WORK**

As the RWCDs associated with the proposed actions would affect various areas of environmental concern and was found to have the potential for significant impacts, pursuant to the EAS and Positive Declaration, an EIS will be prepared for the proposed actions. 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 analyze the projected developments for all environmental impact categories pursuant to the *CEQR Technical Manual* and also evaluate the effects of the potential developments for site-specific impacts such as those related to historic resources, shadows, hazardous materials, air quality (stationary sources), and noise (building attenuation). The specific analysis areas to be included in the EIS, as well as their respective tasks and methodologies, are described below.

#### **Task 1. PROJECT DESCRIPTION**

The first chapter of the EIS introduces the reader to the proposed actions and develops the context in which the impacts will be assessed in the EIS. This chapter of the document will identify the proposed actions, present the background and/or history of the proposed actions, and contain: a statement of the public purpose and need for the proposed actions; key planning considerations that have shaped the current proposal; a detailed description of the proposed actions; and a discussion of the approvals required, procedures to be followed, and the role of the EIS in the process. This chapter is integral in understanding the proposed actions and provides the public and decision-makers a base from which to evaluate the proposed actions.

The project description chapter will present the rationale for the proposed zoning map and text amendments and will summarize the reasonable worst-case development scenario (RWCDs) for analysis in the EIS and present its rationale.

The section on required approvals will explain the ULURP process, schedule, and hearings with the Community Board, the Brooklyn Borough President's office, 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.

### **Task 2. LAND USE, ZONING, AND PUBLIC POLICY**

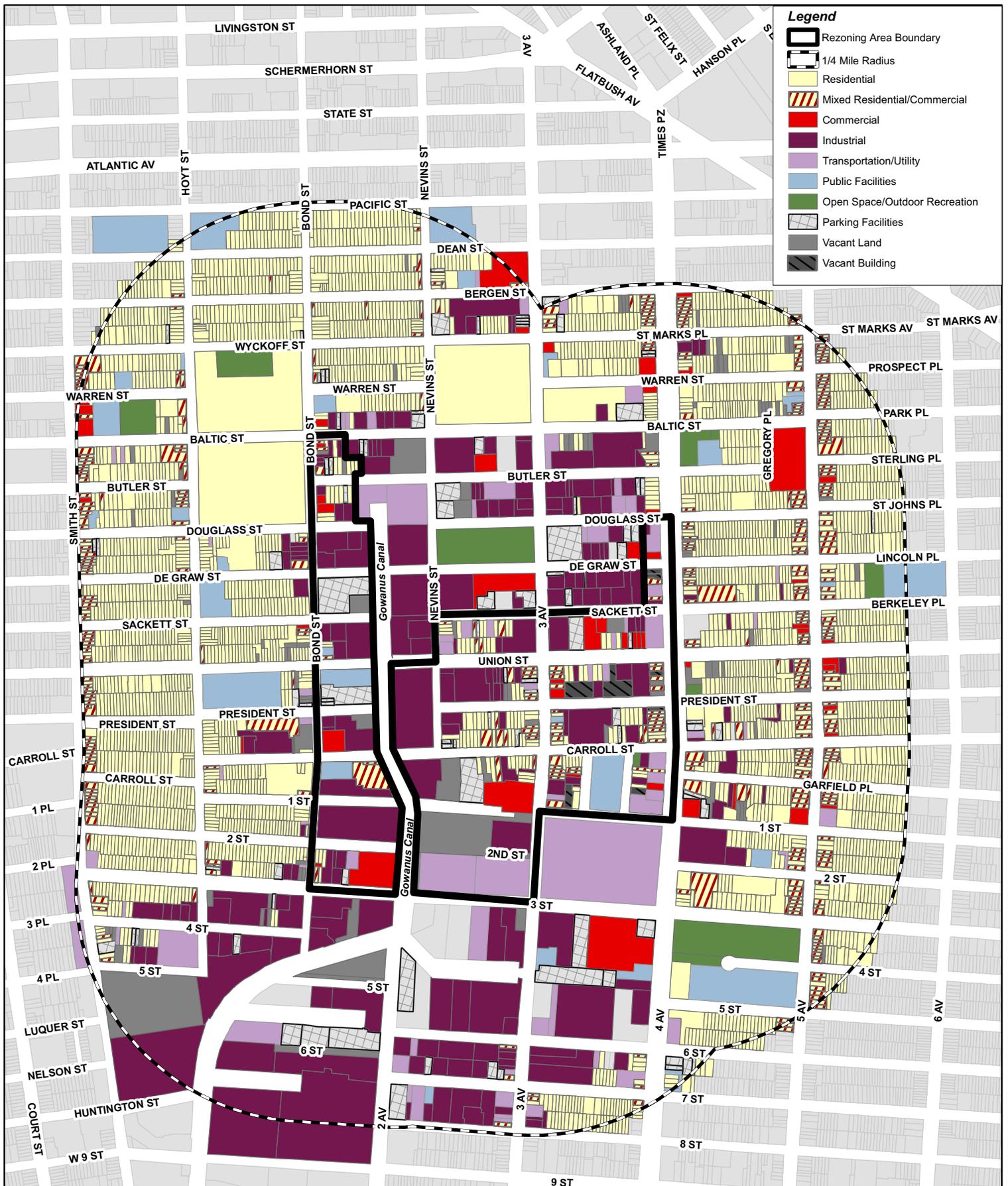
This chapter will analyze the potential impacts of the proposed actions on land use, zoning, and public policy. The primary land use study area consists of the proposed rezoning area, where the potential land use effects of the proposed actions will be direct (reflecting the RWCDs). The secondary land use study area includes the neighboring areas within a ¼-mile boundary that could experience indirect impacts. Figure 6 depicts the existing land use within the proposed rezoning area and secondary study area. Subtasks will:

- Provide a detailed description of the existing 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 analysis of the proposed project’s effect on businesses and employment in the study areas. Recent trends in the proposed rezoning area will be noted;
- Based on field surveys and prior studies, identify, describe, and graphically portray predominant land use patterns for the remainder of the land use study area. Describe recent land use trends in the study areas and identify major factors influencing land use trends;
- Describe and map existing zoning and recent zoning actions in the study area, in addition to any recent BSA actions;
- Prepare a list of future development projects in the study areas that are expected to be constructed by the Build 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 area. Based on these planned projects and initiatives, assess future land use and zoning conditions without the proposed actions;
- Describe and assess the potential land use changes in the proposed rezoning area based on the RWCDs; and
- Assess effects of the projected development resulting from the proposed actions on land use and land use trends, public policy, and zoning. Discuss the proposed actions’ potential effects related to issues of compatibility with surrounding land use, the consistency with zoning and other public policies, including transit-oriented development, and the effect of the proposed actions on ongoing development trends and conditions in the study area.

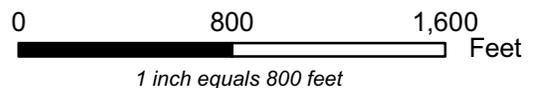
### **Task 3 SOCIOECONOMIC CONDITIONS**

This chapter will examine the effects of the proposed actions on socioeconomic conditions in the study area, including population characteristics, increase in economic activity, and the potential displacement of businesses and employment from the rezoning area. The analysis will provide a qualitative assessment of potential socioeconomic changes that may occur as a result of the proposed actions including, the direct displacement of residential population, businesses, or employees; new development that is markedly different from existing uses and activities within the neighborhood; an adverse effect on conditions in the real estate market in the area; or an adverse effect on socioeconomic conditions in a specific industry.

Screening analyses will be conducted pursuant to the *CEQR Technical Manual* methodology. The analyses will present sufficient information regarding the effects of the proposed actions to make a preliminary assessment either to rule out the possibility of significant impacts, or to establish that a more detailed analysis is necessary in order to make a determination as to impacts. The preliminary assessment will examine five areas of concern including: (1) direct residential displacement; (2) direct business and



**Gowanus Canal Corridor Rezoning**  
**Figure 6**  
**Land Use & Neighborhood Character Study Area**



Source: MapPLUTO, NYDCP, 2007.

institutional displacement; (3) indirect residential displacement; (4) indirect business and institutional displacement; and (5) adverse effects on specific industries. For each area of concern, a detailed analysis will be conducted if, based on the preliminary screening assessment, it has been determined that a socioeconomic impact is likely or cannot be ruled out.

A ¼-mile buffer of the proposed rezoning area was used to develop the socioeconomic conditions study area. The study area was further adjusted to reflect boundaries of census tracts, as exhibited in Figure 7. An overview of the three primary subtasks for detailed analysis, if determined to be necessary, follows.

### *Population Characteristics*

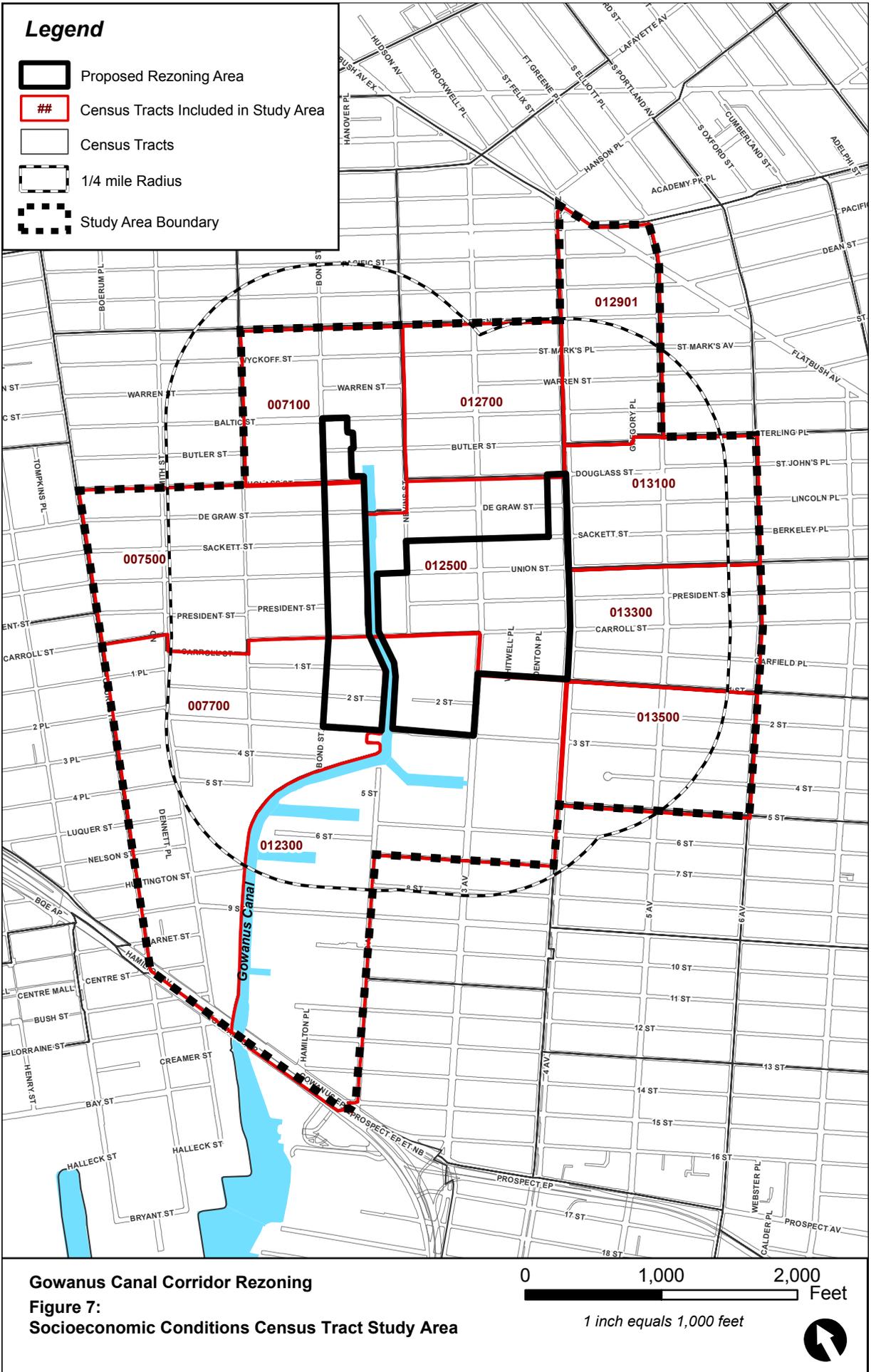
- Based on the U.S. Census of Population and Housing, describe the 2000 population characteristics of the study area and the primary and secondary study areas;
- Discuss population trends in the Future No Action Condition; and
- Estimate the population associated with the RWCDs under the proposed actions and assess impacts on population, if any.

### *Housing Characteristics*

- Using 2000 Census data and other information, such as reports on housing value and median rents, describe the housing characteristics of the study area including, if applicable, the presence of public housing and other rent-regulated housing;
- Assemble and discuss information on housing market conditions, including identification of presence of any unique or predominant population groups or presence of populations particularly vulnerable to economic changes, using Census data and other sources; and
- Estimate housing changes associated with the proposed actions and assess impacts on housing, if any, and housing trends in the Future No Action Condition.

### *Economic Characteristics*

- Describe existing economic activity in the study area (using the most recent data available), including the number and types of businesses and employment by key sectors;
- Describe the physical characteristics of the existing manufacturing and commercial buildings in the study area and surrounding areas, including the general size of the structures, configurations, and condition. Determine the approximate vacancy rate and rent levels for buildings in the study area. This will be based on visual inspections, discussions with the Brooklyn Office of DCP, and discussions with real estate brokers;
- Describe trends in commercial and manufacturing use in the Future No Action Condition;
- Describe current economic policies for the area, including the Mayor's Industrial Policy;
- Discuss how some uses are becoming nonconforming as a result of the proposed rezoning and any potential socioeconomic impacts;
- Estimate net new employment and other economic activity in the study areas under the RWCDs;



Source: MapPLUTO, NYCDP, 2007; US Census Tiger Files.

- Estimate direct displacement of manufacturing and commercial businesses and employment based on sites identified for likely development. After accounting for currently vacant properties, configurations and conditions, use a ratio of number of properties converted to total properties to estimate potential displacement;
- Estimate indirect (or secondary) displacement of businesses and residents resulting from a change in socioeconomic conditions created by the proposed actions. Identify the size and type of residents, businesses, institutions, or employees affected; and
- Assess the impact of displacement. Identify likely relocation areas nearby.

### **Task 4. COMMUNITY FACILITIES AND 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 actions. New workers tend to create limited demands for community facilities and services, while new residents create more substantial and permanent demands. Community facilities other than open space (see Task 5) will be examined in this chapter, including public schools, libraries, health care facilities, day care centers, and police and fire protection services.

The proposed actions are projected to generate a net increase of 3,211 dwelling units, 572 of which would be affordable under the Inclusionary Housing program. Since this projected development is expected to generate 50 or more elementary/middle school students and 150 or more high school students, detailed analyses for both public elementary/middle schools and high schools are warranted, in accordance with the *CEQR Technical Manual* (Table 3C-1 and Table 3C-2). The high school analysis will be borough-based although public high schools within the study area will be identified and their locations shown on the relevant figure in the EIS.

The proposed action would represent a five percent or greater increase over the average dwelling units per library branch in the borough of Brooklyn (734 dwelling units), the screening threshold for detailed analysis. Therefore a detailed public library analysis is warranted.

Based on the number of affordable housing units in the RWCDS, the proposed action would generate more than 50 children eligible for publicly funded daycare. A detailed analysis of day care facilities is required for the proposed action, in accordance with *CEQR Technical Manual* (Table 3C-1 and Table 3C-4).

Based on the number of affordable units in the RWCDS, the proposed action would not generate more than 600 units of low-to-moderate income units. Therefore, in accordance with *CEQR Technical Manual* (Table 3C-1), a detailed assessment of healthcare facilities is not warranted.

The New York City Police and Fire Departments routinely evaluate the need for changes in personnel, equipment, or facilities based on population, response times, crime levels, or other local factors. Therefore a detailed assessment of service delivery is usually conducted only if a proposed action would directly affect the physical operations of a station house or precinct house. Since the proposed actions would not directly affect existing police and fire facilities, a detailed assessment is not warranted.

Following *CEQR Technical Manual* guidelines, the proposed study area for community facilities will encompass an approximate ½-mile, ¾ mile or 1-mile boundary from the rezoning area depending on the nature of the community facility involved. Subtasks will include:

- Identify and locate/map all community facilities within the defined study area for general informational purposes, including schools, libraries, health care facilities, police precincts, fire houses, etc.
- Identify and locate public schools within the project study area (within or near ½ mile radius of the rezoning area). Assess conditions in the project study area and for the affected school districts (Community School Districts 13 and 15) as a whole, in terms of enrollment and utilization during the current school year, noting any specific shortages of school capacity. Identify conditions that will exist in the future without the action, taking into consideration projected increases in future enrollment, including those associated with other developments in the vicinity of the project area and plans to increase school capacity either through administrative actions on the part of the New York City Department of Education (DOE) or as a result of the construction of new school space. Sources for the information will be noted in the EIS text or footnotes. Analyze future conditions with the proposed actions, adding students likely to be generated by the action 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 study-area and school district levels) for enrollment, capacity, and utilization in 2018. 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 after impacts, if any, have been identified.
- Identify the local public library branch(es) serving the area. Describe the existing population served by the branch(es), using information gathered for socioeconomic conditions assessment and information services provided by branch(es). Circulation, level of utilization, and other relevant existing conditions will be based on publicly available information and/or consultation with the Brooklyn Public Library administration. For Future No Action Conditions, projections of population change in the area and information on any planned changes in library services of facilities will be described and the effects of these changes on conditions will be assessed qualitatively. The effects of the addition of the population resulting from the projected developments will be qualitatively assessed in terms of special programs, facilities, and collections, with input from library branch management staff.
- Identify existing public day care and head start facilities within approximately one mile of the rezoning area. Describe each facility in terms of its location, ages served, number of slots (capacity), existing enrollment and length of waiting list. Information will be based on publicly available information and/or consultation with the Administration for Children's Services' Division of Child Care and Head Start (CCHS). Sources for the information will be noted in the EIS text or footnotes. For Future No Action Conditions, information will be obtained on any changes planned for day care programs or facilities in the area, including closing or expansion of existing facilities and establishment of new facilities. Any expected increases in the population of children up to, and including age 12 within the eligibility income limitations, based on *CEQR Technical Manual* methodology (Table 3C-4), will be discussed as potential additional demand; and the potential effect of any population increases on demand for day care services in the study area will be assessed. The potential effects of the additional eligible children resulting from projected developments induced by the RWCDS will be assessed by calculating the percent increase in demand generated by the RWCDS over the existing capacity.
- A brief discussion of existing police and fire services in or near the project study area will be provided for informational purposes.

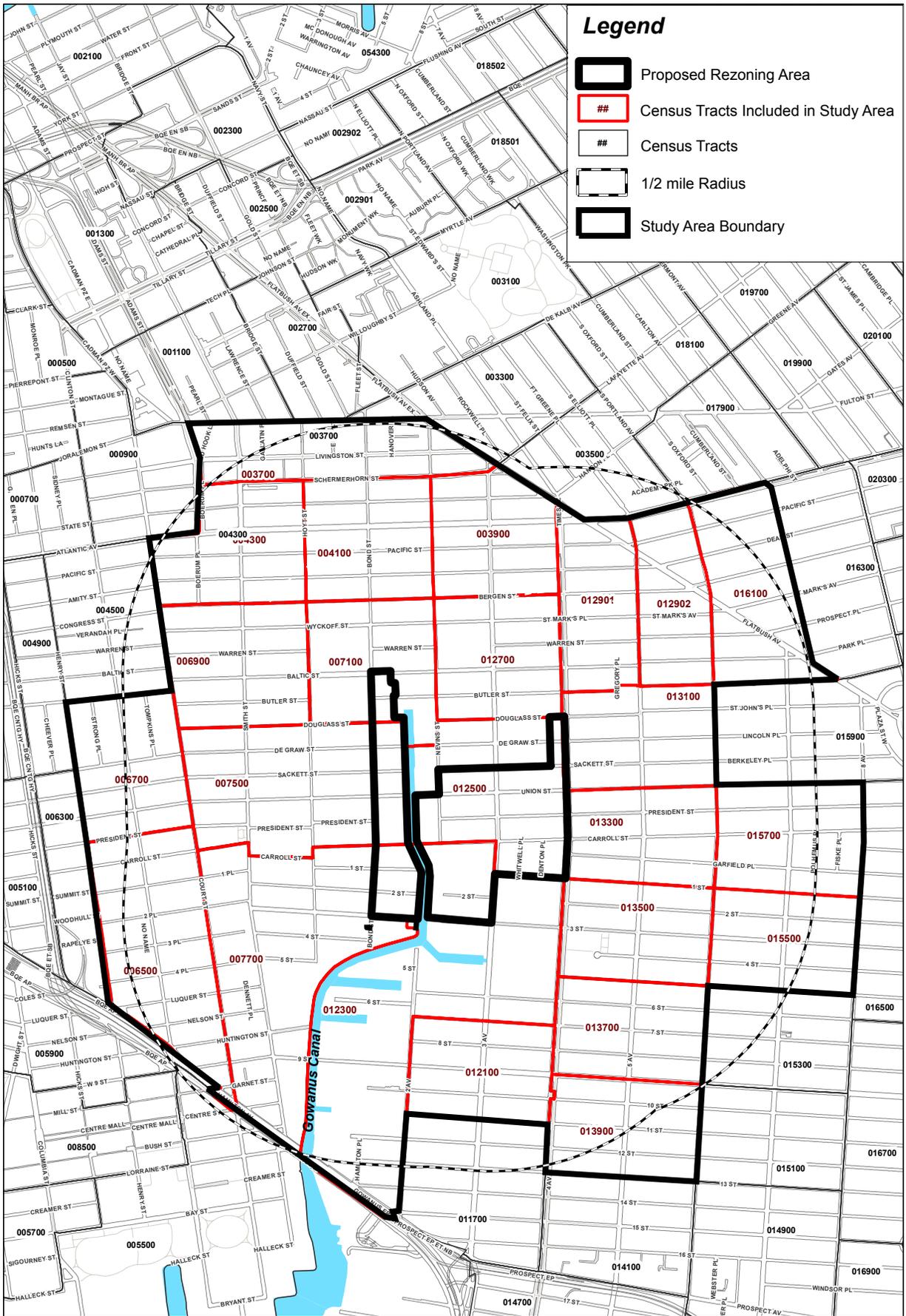
### **Task 5. OPEN SPACE**

New residents and workers generated from new development and conversions in the project area would place added demands on existing open space and recreational facilities. The proposed actions would generate more than the CEQR threshold of 200 residents, but are not expected to exceed the CEQR threshold of 500 workers. Therefore, a detailed open space analysis will be conducted for the residential population only, and is anticipated to include the following tasks:

- Using 2000 Census data and other data where applicable, calculate the total residential population of the open space study area. As per CEQR guidelines and as shown in Figure 8, the open space study area is defined as the area within a ½-mile boundary from the proposed rezoning area, adjusted to include all census tracts with at least 50 percent of their land area within the ½-mile area;
- Inventory existing active and passive open spaces within the residential study area boundaries. The condition and usage of existing facilities will be described based on the inventory and field visits for the study area. 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 residential study area acreages calculated. Include a discussion of the relationship between the proposed project and the proposed Brooklyn Greenway to the extent it is relevant to the proposed project. The percentage of active and passive open space will also be calculated;
- Based on the inventory of facilities and residential study area populations, open space ratios will be calculated for the residential population in the relevant study areas, 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;
- Expected changes in future levels of open space supply and demand in the Build Year will be addressed, based on project-generated increases in the residential study area populations and on increases in population resulting from other planned development projects within the study area(s). Any new open space and recreational facilities that are anticipated to be operational by the Build Year will also be accounted for. Residential open space ratios will be developed for the Future No Action Condition and compared with existing ratios to determine changes in future levels of adequacy;
- Effects on open space supply and demand resulting from increased residential populations will be assessed. The assessment of proposed actions' impacts will be based on a comparison of residential open space ratios for the Future No Action versus Future With Action Conditions. In addition to the quantitative analysis, qualitative analysis will be performed to determine whether the project-induced changes constitute a substantial change (positive or negative) or represent an adverse effect to open space conditions; and
- If the results of the impact analysis identify a potential for a significant impact, discuss potential mitigation measures.

### **Task 6. SHADOWS**

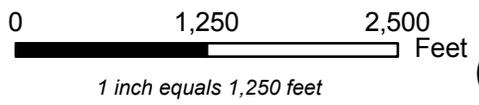
This chapter will examine the proposed actions' potential for significant and adverse shadow impacts pursuant to *CEQR Technical Manual* criteria. Generally, the potential for shadow impacts exists if an action involves the construction of new structures (or additions to buildings resulting in structures) that would be over 50 feet in height and could cast shadows on important natural features, publicly-accessible open space, or on historic features that are dependent on sunlight. The proposed actions would permit



**Legend**

-  Proposed Rezoning Area
-  Census Tracts Included in Study Area
-  Census Tracts
-  1/2 mile Radius
-  Study Area Boundary

**Gowanus Canal Corridor Rezoning**  
**Figure 8:**  
**Open Space Study Area**



Source: MapPLUTO, NYDCP, 2007; US Census Tiger Files.

development of buildings of greater than 50 feet in height in certain portions of the proposed rezoning area, and therefore may result in shadow impacts on existing project area resources. The EIS will assess the RWCDS on a site-specific basis, for potential shadowing effects on existing CEQR-defined sunlight-sensitive uses. It will disclose the range of shadow impacts that are likely to result from the proposed actions, if any, and will further identify:

- Projected and Potential Development Sites adjacent to existing 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; and
- If warranted, potential shadow impacts on publicly-accessible open spaces or sunlight-sensitive historic resources, resulting from new construction identified in the RWCDS (both Projected and Potential Development Sites), will be evaluated. The hours that project-generated shadows will fall on sun-sensitive resources will be calculated for March 21, May 6, June 21, and December 21. The duration of the shadow increment on the identified open space or historic resources with sun-sensitive features will be calculated, shadow diagrams for each analysis period will be prepared, and the effects of the incremental shadows will be assessed. The shadow assessment will be coordinated with Task 5, “Open Space” and Task 7, “Historic Resources.”

### **Task 7. HISTORIC RESOURCES**

The *CEQR Technical Manual* identifies historic resources as districts, buildings, structures, sites, and objects of historical, aesthetic, cultural, and archaeological importance. This includes designated New York City Landmarks (NYCL); properties calendared for consideration as landmarks by the New York City Landmarks Preservation Commission (LPC); properties listed on the State/National Register of Historic Places (S/NR) or contained within a district listed on or formally determined eligible for S/NR listing; properties recommended by the New York State Board for listing on the S/NR; National Historic Landmarks; and properties not identified by one of the programs listed above, but that meet their eligibility requirements. Since the proposed actions would induce development that could result in new in-ground disturbance and construction of a building type not currently permitted in the affected area, the proposed actions have the potential to result in impacts to archaeological and architectural resources.

The proposed project area includes the Gowanus Canal Historic District, which has been determined S/NR-eligible. The Gowanus Canal bulkhead, part of which is located within the project area, was identified as a contributing element within the Historic District, which does not have delineated boundaries, but is defined by the contributing elements within it. Other nearby historic resources include the Carroll Street Bridge, a New York City Landmark (NYCL) and S/NR-eligible, and the Carroll Gardens Historic District (NYCL, S/NR), located east and west of Hoyt Street between Union and 2<sup>nd</sup> Streets. Given the presence of the S/NR eligible Gowanus Canal Historic District and the NYCL landmarked Carroll Street Bridge, the analysis of historic resources is an important consideration for the EIS. The historic resources analysis will therefore be undertaken in consultation with the New York City Landmarks Preservation Commission (LPC) and will be prepared in accordance with the methodologies presented in the *CEQR Technical Manual*.

Impacts on historic resources will be considered on the affected sites and in a 400-foot radius area surrounding the identified development sites. Archaeological resources are considered only in those areas where new in-ground disturbance is likely to occur; these are limited to sites that may be developed under the proposed actions, and include Projected as well as Potential Development Sites. In coordination with the research conducted for the land use and hazardous materials tasks, this section will include an

overview of the study area's history and land development. This history will be detailed enough to determine whether any potential archaeological resources may be present on the site, thus requiring further study. Subtasks will include:

**Architectural Resources:**

- Submit the proposed project to the LPC for its review and determination regarding architectural sensitivity;
- Research and describe history of land use and architecturally sensitive locations in the project area;
- Identify, map and describe LPC-designated, S/NR-listed, and LPC- and S/NR-eligible architectural resources in the proposed project area. All potential architectural resources should be photographed and keyed to a Sanborn map. Address, block/lot, architect, date, and original use should be provided for each eligible property; and
- Identify and assess the probable impacts of development resulting from the proposed actions on architectural resources on, adjacent to, and in the study area for the Projected and Potential Development Sites.

**Archaeological Resources:**

- Submit the proposed project to LPC for its review and determination regarding archaeological sensitivity;
- Research and describe history of land use and potentially archaeologically-sensitive locations in the rezoning area as identified by LPC;
- Based on City and State files, identify and map inventoried archaeological resources and/or sensitive locations;
- Identify any other areas thought to be archaeologically sensitive within the rezoning area; and
- Identify Projected and Potential Development Sites where new in-ground disturbance is expected to occur if the proposed actions are implemented, and any resulting potential archaeological impacts.

**Task 8. URBAN DESIGN/VISUAL RESOURCES**

This chapter will assess urban design patterns and visual resources of the study area, and the potential for the proposed actions to affect these resources. As defined in Chapter 3G, Section 310 of the *CEQR Technical Manual*, the urban design and visual resources study area will be the same as that used for the land use analysis (delineated by a ¼-mile buffer from the proposed rezoning area, as shown in Figure 6). The proposed actions could result in the construction of structures, building uses, size, and types that are not currently permitted in the rezoning area, and therefore has the potential to result in impacts related to urban design and visual resources. A detailed list of tasks follows.

- Describe the urban design and visual resources of the proposed rezoning area and adjacent areas, using photographs and other graphic material as necessary to identify critical features, use, bulk, form, and scale;
- Discuss specific relationships between the rezoning area and adjacent areas regarding light, air, and views;

- An assessment of the modifications to the use and bulk regulations through the zoning map and text amendments will be included in the analysis, as these affect height, dimensions, and scale of the development in the study area;
- Describe the changes expected in the urban design and visual character of the project area resulting from various development anticipated to occur in the study area in the Future No Action Condition;
- Describe the potential changes that could occur in the urban design character of the study area in the Future With Action Condition. For the projected development scenario, the analysis will focus on specific buildings and sites where changes are being projected and on more general building types (e.g., 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 in the study area, including resources of visual or historic significance. The analysis will focus on the development sites and the facing and adjacent buildings; and
- Describe the potential changes, if any, that could occur in the urban design character and visual resources of the surrounding area.

### **Task 9. 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 proposed actions would permit new development that 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 urban design features. A neighborhood character analysis considers an amalgam of impact categories, assessing the combined impacts of land use, urban design, visual resources, historic resources, socioeconomics, traffic and noise. As suggested in the *CEQR Technical Manual*, the study area for neighborhood character will be coterminous with the ¼-mile land use study area (see Figure 6). The EIS will:

- Describe the predominant factors that contribute to defining the character of the neighborhood, drawing on relevant EIS chapters; and
- Summarize changes in the character of the neighborhood that can be expected in the Future No Action Condition based on planned development projects, public policy initiatives, and planned public improvements.
- Summarize changes in the character of the neighborhood that can be expected in the Future With Action Condition, based on the RWCDS, and compare to the Future No Action Condition. A qualitative assessment will be presented, which will include a description of the potential effects of the proposed actions on neighborhood character.

### **Task 10. NATURAL RESOURCES**

As stated in the *CEQR Technical Manual*, a natural resource is defined as a plant or animal species and any area capable of providing habitat for plant and animal species or capable of functioning to support environmental systems and maintain the City's environmental balance. Such resources include surface and groundwater, wetlands, dunes and beaches, grasslands, woodlands, landscaped areas, gardens, and build structures used by wildlife. An assessment of natural resources is appropriate if natural resources exist on or near the site of a proposed action, or if an action involves disturbance of that resource. A

detailed screening analysis will be presented in the EIS identifying whether the proposed actions would result in significant impacts to natural resources, and if warranted, a detailed analysis will be provided.

This task will examine the proposed project and provide an assessment of potential impacts on natural resources in conformance with *CEQR Technical Manual* guidelines. The EIS chapter will include floodplain graphics and descriptions of existing water quality, aquatic resources, and waterfront conditions (e.g., bulkhead). This task will include the following:

- Describe the natural resources and water quality conditions along the Gowanus Canal, with site specific data as may be available through a literature review. Among the documents to be reviewed in this analysis will include the DEP Harbor Survey and the DEP Gowanus Long Term Waterbody/Watershed Facility Plan; and ACOE Gowanus Canal and Bay Restoration Study (e.g., the DEP Harbor Survey, ACOE data). This section will also describe the general characteristics of the Canal, including its water quality classification, and pollutant sources and chemical and biological conditions based on currently available data.
- Review currently available information on aquatic habitats in the study area. This will also rely on published literature, including the identification of any essential fish habitats. The presence of tidal wetlands will be based on existing DEC tidal wetlands maps, U. S. Fish and Wildlife Service National Wetlands Inventory maps and field investigations. The New York State Natural Heritage Program, the National Marine Fisheries Service and the U.S. Fish and Wildlife Service will be contacted to obtain data as to the potential presence of any rare or endangered plant or animal species in the area and essential fish habitats, along the Gowanus Canal. An assessment of potential impacts from the proposed project will be presented evaluating any changes in aquatic habitats and terrestrial resources
- The proposed rezoning action would be located partially in the Red Hook Water Pollution Control Plant (WPCP) drainage area and partially within the Owls Head WPCP drainage area. The development anticipated to result from the proposed zoning changes would likely result in a net increase in sanitary wastewaters within areas that have combined sewers and could result in a change in the volume and/or frequency of combined sewer overflows (CSOs) within the drainage areas. The EIS will include information on CSO events experienced in the area, as described by DEP.

#### **Task 11. HAZARDOUS MATERIALS**

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. As the proposed actions would result in new residential development in areas currently zoned for manufacturing, they have the potential to result in significant hazardous materials impacts.

Pursuant to the *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, a preliminary screening assessment will be conducted for the Projected and Potential Development Sites to determine which sites warrant an (E) designation without the preparation of a Phase I assessment, and which sites require further assessment. If the potential for contamination is not identified on a Projected or Potential Development Site, the screening assessment will be conducted on adjacent properties. If impacts are not identified on the adjacent properties, the screening assessment will be expanded to include properties within 400 feet of the development sites to determine if an (E) designation on the development site is warranted.

For City-owned sites or sites that are proposed for City ownership, (E) designations will not be placed on development lots. Instead, since development of these sites would occur through disposition to a private entity, a similar mechanism to ensure that further investigative and/or remedial activities (as well as health and safety measures) prior to and/or during construction will be required under the City's contract of sale with the private entity selected to develop the site. The agency-owner will enter into a Memorandum of Understanding with the NYCDEP to ensure that such requirements will transfer to the private entity through the contract of sale or other relevant instrument.

In addition to the environmental database search, readily-available public records will be requested and reviewed, where applicable. Freedom of Information Law (FOIL) requests will be submitted to various City and State agencies, including the New York State Department of Environmental Conservation (NYSDEC), New York City Department of Health, NYCDEP, FDNY, and the New York City Department of Sanitation (DSNY), regarding the release of petroleum products and/or hazardous materials and/or other environmental concerns at the subject sites. A database search will be conducted for each site on the New York City Department of Buildings (DOB) website.

The hazardous materials assessment will include the following tasks:

- Review United States Geological Society (USGS) topographical maps to ascertain the terrain. Available USGS and New York State Geological Survey documents will be examined with respect to surface and subsurface geological conditions, as well as the groundwater conditions, in the vicinity of the subject properties;
- Review as needed of Sanborn Fire Insurance Maps to develop a profile on the historical uses of properties; and
- Perform field reconnaissance. A majority of the properties in the rezoning area are owned privately and are not accessible for field inspection. Therefore, field reconnaissance will consist of observing the sites from public vantage points (i.e., sidewalks and streets) and noting the general uses of the buildings (i.e., industrial, manufacturing, residential, commercial, etc.). Field reconnaissance will consist of:
  - Characterization of the range of industrial uses and activities performed in the rezoning area;
  - Description of constituents most commonly associated with the various industrial activities identified;
  - Notation of surrounding properties to assess potential impacts on the subject property;
  - Observation of illegal dumping of domestic refuse, hazardous waste, and/or construction debris on the site or in the area;
  - Evidence of electrical transformers or large capacitors on the subject property; and
  - Review of data for underground storage tanks or aboveground storage tanks (USTs and/or ASTs) in the rezoning area.

The mapping, literature, and field data will be evaluated to assess the potential for environmental concerns at the subject sites. A summary of findings and conclusions will be prepared for inclusion in the EIS to determine where (E) designations may be appropriate.<sup>2</sup>

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<sup>2</sup> As described in the *CEQR Technical Manual*, an (E) designation is used in connection with an environmental review pursuant to any zoning map amendment to identify potential significant contamination on one or more tax lots within the affected zoning area that is not under the control of the applicant. The (E) designation discloses the

The (E) designation would require that the fee owner of an (E) designated site conduct a testing and sampling protocol, and remediation, where appropriate, to the satisfaction of NYCDEP before the issuance of a building permit by the Department of Buildings (pursuant to the *Zoning Resolution of the City of New York* [ZR] Section 11-15 [Environmental Requirements]). The (E) designation may also result in mandatory construction-related health and safety plans which must be approved by NYCDEP.

**Task 12. WATERFRONT REVITALIZATION PROGRAM**

The study area is adjacent to the Gowanus Canal and within the City's coastal zone. Therefore, this chapter will include a map illustrating that the rezoning area is within the boundaries of the coastal zone. The proposed action's level of compliance with the City's Local Waterfront Revitalization Plan (LWRP), and a New York City Consistency Assessment Form (CAF), will be included in the EIS.

**Task 13. INFRASTRUCTURE**

According to the *CEQR Technical Manual*, the City's infrastructure comprises the physical systems supporting its population, including water supply, wastewater treatment and storm water management. This chapter will describe the existing infrastructure in the proposed rezoning area. Additionally, it will include any currently proposed or contemplated capital projects under consideration by the city that are both expected to be completed and implemented by 2018 (e.g., NYCDEP's proposed Gowanus Pumping Station upgrades) and are within the proposed project's immediate drainage area. The proposed actions would induce new development which could place additional demands on infrastructure. The proposed project also lies on the Gowanus Canal at a low elevation in an area that is currently subject to drainage and flooding impacts. This task will be undertaken in coordination with NYCDEP regarding water and sewer system capacity and infrastructure issues in the area. An analysis will be conducted to determine the potential for the projected developments induced by the proposed actions to impact the City's infrastructure. The analysis will contain three components, as presented below.

*WATER SUPPLY*

- The existing water distribution system serving the proposed rezoning area will be described as necessary based on information obtained from entities such as the NYCDEP Bureau of Water Supply and Wastewater Collection;
- The current water usage in the area will be examined as needed to satisfy CEQR;
- The likely demand will be assessed per the *CEQR Technical Manual* for the Future No Action Condition, and the effects on the system will be described;
- Water demand for the projected developments induced by the proposed actions (Future With Action Condition); will be projected per the *CEQR Technical Manual* and
- The effects of the incremental demand on the system will be assessed based on information obtained from the City to determine if there is sufficient capacity to maintain adequate supply and pressure.

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potential contamination associated with the site and the required mitigation needed to ensure the protection of public health and the environment prior to construction of the site.

### *SEWAGE AND STORMWATER*

- The existing sewer systems serving the rezoning area will be described using information obtained from NYCDEP or others. Existing and future flows to the Red Hook and Owls Head WPCPs that serve the area will be estimated. Information on existing sewer infrastructure in the area, including sanitary, storm, and combined sewer mains, regulators, interceptor sewers, outfalls, and other principal components of the local system also will be provided based on available records;
- Recent problems with combined sewer overflows and back-ups during storm events will be addressed based on discussions with NYCDEP.
- Changes in sewer conditions expected to occur under the Future No Action, if any, will be identified based on information obtained from NYCDEP;
- Information on sanitary sewage and stormwater generation will be compiled for the projected developments induced by the proposed actions based on water usage estimates. The adequacy of sewer systems to meet demand generated by the projected developments induced by the proposed actions will be qualitatively assessed in concert with NYCDEP as necessary;
- Assess the potential impacts from the proposed actions related to drainage conditions; and
- The effects of the incremental demand on the system will be assessed to determine whether there would be any impact on the WPCP, or on its State Pollution Discharge Elimination System (SPDES) permit conditions.

### **Task 14. SOLID WASTE AND SANITATION SERVICES**

The proposed actions would induce new development that would require sanitation services. This chapter will provide an estimate of the additional solid waste expected to be generated by the projected developments and assess its effects on the City's solid waste and sanitation services. This assessment will:

- Describe existing and future New York City solid waste disposal practices;
- Estimate solid waste generation for Existing Conditions;
- Forecast solid waste generation by the projected developments induced by the proposed actions (Future With Action Condition) based on CEQR guidelines; and
- Assess the impacts of the proposed actions' solid waste generation (for projected developments only) on the City's collection needs and disposal capacity.

### **Task 15. ENERGY**

All new structures requiring heating and cooling are subject to the New York State Energy Conservation Code, which reflects state and city energy policy. Therefore according to the *CEQR Technical Manual*, actions resulting in new construction would not create significant energy impacts, and as such would not require a detailed energy assessment. For CEQR purposes, the energy impact analysis should focus on a proposed action's energy consumption. A qualitative assessment/screening analysis will be provided in the EIS, as appropriate. As necessary, the analysis will estimate the additional energy consumption associated with the projected developments induced by the proposed actions, including an estimate of the demand load on electricity, gas, and other energy sources, and an assessment of available supply.

**Task 16. TRAFFIC AND PARKING**

To determine the traffic volume generated by the proposed actions, transportation planning assumptions will be developed for use in forecasting project travel demand. Trip generation, modal split, and vehicle occupancy rates for proposed uses will be derived from approved rates in standard professional references, information from other development studies, and reasonable planning assumptions. Using these data, a preliminary travel demand forecast will be prepared for the purposes of scoping based on the RWCDS. This forecast will show the net change in trips (compared to the Future No Action Condition) generated by the full build-out of Projected Development Sites in each analyzed peak hour.

*TRAFFIC AND PARKING ANALYSES*

According to the *CEQR Technical Manual*, if a proposed action in any area of the city would generate greater than 50 peak hour vehicle trip ends, there is likely a need for further traffic analysis. It is anticipated that the total projected net increment in vehicle trips would not exceed this threshold during the weekday peak hours. However, it is anticipated that the “OUT” vehicle trip ends during the weekday AM peak hour and the “IN” trip ends during the PM peak hour would exceed this threshold. As a result, traffic assignment will be conducted for each of the 26 projected development sites to determine if any intersections within the study area would exceed this threshold. For intersections that would exceed this threshold, the EIS will provide a detailed traffic analysis focusing on weekday AM, Midday and PM peak hours, and Saturday peak hour. To select the specific peak hours for analysis, existing peak traffic volumes based upon traffic counts will be used. Specific intersections to be included in the traffic study area will be determined based on the anticipated distribution of project-generated traffic.

The subtasks of the traffic analysis include:

- Define a traffic study area consisting of intersections to be analyzed within the rezoning area and along major routes leading to and from the area.
- Develop a count program for traffic analysis locations that includes a mix of automatic traffic recorder (ATM) machine counts and manual intersection turning movement counts, along with vehicle classification counts and travel time studies (speed runs). The speed runs and the ATR, manual turning movement and vehicle classification counts will be conducted at the same time. Data from this count program will be supplemented by traffic data from NYCDOT, DCP and other sources, where available.
- Inventory physical data at each of the analyzed intersections, including street widths, number of traffic lanes and lane widths, pavement markings, turn prohibitions, and parking regulations. Signal phasing and timing data for each signalized intersection included in the analysis will be obtained from NYCDOT.
- Determine existing traffic operating characteristics at each analyzed 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 presented in the *2000 Highway Capacity Manual* (Highway Capacity Software HCS+T7F™) will be used for the analysis. Based on available sources, 2000 US Census data and standard references, the travel demand for projected development sites in the future without the proposed actions (the Future No Action Condition) will be estimated, as well as the demand from other significant development sites planned in the vicinity of the study area by the 2018 analysis year. This will include daily and hourly person trips, and a modal distribution to estimate trips by auto, taxi, and other modes. In addition, a truck trip generation forecast will be prepared.

- Compute the 2018 Future No Action traffic volumes based on an approved background traffic growth rate for the study area (1.0 percent per year) and the volume of traffic expected to be generated by projected development sites and other significant development projects expected to be completed in the future without the proposed actions. Any planned changes to the roadway system expected by 2018 will be incorporated, and the Future No Action intersection v/c ratios, delays and levels of service will be determined.
- Using available sources, 2000 US Census data and standard references, the travel demand forecast for projected development sites will be finalized based on the net change in uses compared to the Future No Action Condition as defined in the RWCDS. Determine the net change in vehicle traffic expected to be generated by projected development sites under the proposed actions, 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 2018 Future With Action Condition for each analyzed peak hour. Determine the resulting v/c ratios, delays, and LOS at analyzed intersections for the Future With Action Condition, and identify significant traffic impacts in accordance with *CEQR Technical Manual* criteria.
- Identify and evaluate traffic improvements necessary to mitigate significant traffic impacts. The mitigation analysis will outline the full set of measures required for the 2018 development scenario.
- Construction period traffic impacts will be assessed qualitatively by accounting for losses in lanes, walkways and other above- and below-grade transportation services and anticipated increases in vehicles from construction workers. Potential temporary impacts to these transportation systems will also be analyzed for the construction condition.

The parking studies will focus on the amount of parking to be provided as part of the Projected Development Sites included in the RWCDS (assumed to be pursuant to zoning and reflective of site conditions, i.e., new developments are expected to provide accessory parking while conversion and conversion/expansion developments are not), and on their ability to accommodate projected parking demand generated by the proposed actions. To determine the area's capacity to accommodate additional parking, a parking (On and Off-Street) inventory will be conducted in a study area extending approximately ¼-mile from the boundaries of the proposed rezoning area. In addition, any changes to parking supply and demand in the Future No Action Condition will be considered.

The parking analysis subtasks include:

- Conduct an inventory of the public parking lots and garages in the study area, noting their locations, capacities, and peak weekday midday and overnight utilization levels.
- Record on-street parking regulations and inventory the number of legal on-street parking spaces within the study area, noting their general utilization levels on a typical weekday.
- Project future parking availability based on an annual background growth rate of 1.0 percent per year. The assessment will account for existing parking facilities that are expected to be removed or relocated and other changes to parking conditions in the future as a result of the proposed actions.
- Develop parking accumulation profiles for the Projected Development Sites expected to occur as a result of the proposed actions by the 2018 analysis year. It is assumed that each identified new development would provide parking in accordance with applicable zoning requirements. Based on these 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 in the peak weekday midday and overnight periods.

**Task 17. TRANSIT AND PEDESTRIANS**

According to the *CEQR Technical Manual* criteria, if a proposed action in any area of the city would generate fewer than 200 peak hour subway or bus trips, it is unlikely that there would be a need for further analysis. As it is anticipated that new demand from the proposed actions would exceed this threshold in the AM and PM peak hour at the Carroll Street Station (F/G) and the Union Street Station (M/R), peak hour conditions at the four street stairs and the fare array will be analyzed quantitatively in the EIS. Furthermore, a substantial amount of new pedestrian trips are expected to be generated by the proposed action, therefore pedestrian analyses will be provided in the EIS.

Six subway stations are located in proximity to the proposed project. These include the Smith Street Station (F/G), Carroll Street Station (F/G), Bergen Street Station (F/G), 4<sup>th</sup> Avenue/9<sup>th</sup> Street Station (M/R), Union Street Station (M/R), and Pacific Street Station (D/M/N/R)/Atlantic Avenue (B/Q/2/3/4/5/LIRR). Trips from Projected Development Sites will be assigned to individual subway stations based on proximity to station entrances and existing ridership patterns for the subway routes serving each station.

It is expected that the proposed actions would also generate more than 200 new subway trips at the Carroll Street Station (F/G) and the Union Street Station (M/R). Consequentially, a detailed subway analysis will be conducted for these two stations. Conditions for the remaining stations serving the proposed rezoning area will be discussed qualitatively in the EIS.

Approximately seven MTA NYC Transit local bus routes are located within ¼--mile of one or more Projected Development Sites. These routes include the B37, B63, B65, B71, B75, B77, and B103. As the proposed actions are expected to result in fewer than 200 new bus trips in either the AM or PM peak hours, conditions on the various routes serving the proposed rezoning area will be discussed qualitatively in the EIS.

Walk-only trips from Projected Development Sites (i.e., walk trips not associated with other modes) would be widely dispersed among pedestrian facilities (sidewalks, corner areas, and crosswalks) throughout the proposed rezoning area. However, concentrations of new pedestrian trips are expected during peak periods along corridors connecting Projected Development Sites to area subway stations. The analysis of pedestrian conditions will focus on pedestrian facilities in the vicinity of the entrances to the subway stations, such as the Union Street and Carroll Street stations, where the majority of project-generated subway demand is expected to occur.

**Task 18. AIR QUALITY**

The EIS air quality chapter will describe the Existing (baseline) Conditions and compare conditions in the Future With Action Condition to Future No Action Condition. The future analysis year is 2018. The air quality analysis includes a study of mobile source impacts as well as stationary source impacts.

*MOBILE SOURCE ANALYSIS*

The mobile source analysis will evaluate the potential impacts from carbon monoxide (CO) and particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>) due to vehicular traffic anticipated to be generated by the proposed

project.<sup>3</sup> The analysis will be conducted using the EPA MOBILE6.2 model for vehicular emissions calculation, AP-42 procedures for fugitive dust emissions, and dispersion model CAL3QHC for impact evaluation at all intersections and sensitive sites. If potential significant impacts are identified using the CAL3QHC model, then the refined model CAL3QHCR will be used at the affected intersections

Additionally, the mobile source analysis will analyze the potential impacts of parking facilities. The EIS will assume that each new development will provide the parking required as per the zoning, or as identified in the RWCDS. The parking facilities air quality impact analysis will be performed using methodologies and procedures described in *CEQR Technical Manual, Air Quality Appendix* to evaluate air quality impacts from the proposed parking garage or parking lot. Emissions of CO resulting from vehicles entering, parking, idling, and exiting the parking facilities will be estimated using the EPA MOBILE6.2 model.

Mobile source analysis subtasks include the following:

- Select intersection locations and sensitive sites for micro-scale analysis based on a screening analysis of traffic conditions. These intersections for the Future With Action Condition will coincide with the intersections analyzed under the Future No Action Condition. At each analyzed intersection, a series of multiple receptor sites will be analyzed in accordance with state or federal guidelines. Based on a review of necessary traffic data, an evaluation statement and map showing the intersections and sensitive sites selected for mobile source analysis for both CO and Particulate Matters (PM<sub>10</sub> and PM<sub>2.5</sub>) will be developed and submitted to DCP for approval. This submission will present a detailed description of the selection process and traffic data used for determining worst-case analysis periods and the approach for conducting a detailed impact analysis on these selected sites.
- Upon DCP approval of sites selection, the prediction of on-road motor-vehicle-generated CO and Particulate Matters (PM<sub>10</sub> and PM<sub>2.5</sub>) emissions will be characterized by traffic conditions, thermal states (hot/cold start estimates), vehicle classifications, regional parameters, meteorological phenomena, and physical configurations. The traffic data on roadway links near each analyzed intersection site will be organized into a mathematical model input format by traffic link(s) for the analysis year(s). Automobile and truck emission factors, such as idle or cruise emissions, will be predicted using EPA model MOBILE6.2 as applicable for New York City.
- By using EPA air pollutant dispersion models CAL3QHC / CAL3QHCR to mathematically simulate how traffic, meteorology, and geometry combine to affect pollutant concentrations. These traffic data include peak hour volumes, vehicular emission factors, directional splits, turning volumes, and signal timing. At each analysis intersection site, calculate maximum pollutant concentrations for Existing, Future No Action, and Future With Action Conditions. The air quality analysis will evaluate the effects of project-generated traffic on CO (carbon monoxide) and Particulate Matters (PM<sub>10</sub> and PM<sub>2.5</sub>) levels at analyzed intersection sites, as well as the neighborhood scale for PM<sub>2.5</sub>. The predicted pollutant concentration levels and project impacts will be compared with NAAQS standards and applicable NYC *de minimis criteria*. At locations where impacts would exceed standards or thresholds, EPA's refined simulation model CAL3QHCR will be used.

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<sup>3</sup> Relevant technical information from the environmental reviews of 363-365 Bond Street (CEQR No. 08DCP033K) and Gowanus Green (CEQR No. 09HPD024K), to the extent available, will be factored into the analysis.

- In CAL3QHCR impact modeling, the most recent 5 year 2002-2006 hourly meteorological data with surface data from LaGuardia airport and upper-air data from Brookhaven will be utilized. CAL3QHCR model will be run using 24-hr traffic distribution survey or NYCDEP data for daytime and nighttime in project area as established in Report #34; or by using NYSDEC SIP summary in Time of Day Factors Used to Estimate Hourly VMT for the New York City area.
- Based on parking garage locations and sizes, as provided by DCP, an air quality impact analysis for the two largest parking facilities included in the proposed project with the greatest capacity will be conducted. The parking facilities air quality impact analysis will be performed using methodology described in the Air Quality Appendix of the *CEQR Technical Manual*, to evaluate air quality impacts from the proposed parking garage or parking lot. Emissions of CO resulting from vehicles entering, parking, idling, and exiting the parking facilities will be estimated using the EPA MOBILE6.2 model. For all arriving and departing vehicles, an average speed of five miles per hour (mph) will be conservatively assumed for travel within the garages or parking lots. All departing vehicles will be assumed to idle for one minute before proceeding to the exit. The concentrations within the enclosed garage will be calculated assuming a minimum ventilation rate of one cubic foot per minute of fresh air per gross square foot of garage area. Based on the EPA's idling and running emission factors and estimated queuing time, the CO idling emission rate and emission strength per unit area for the parking area will be determined. The ambient impact concentrations can be then calculated based on guidelines and formats pertaining to the dispersion of pollutants from area sources, and the methodology in EPA's Workbook of Atmospheric Dispersion Estimates, AP-26 and *CEQR Technical Manual*. Since numbers of diesel vehicles that use parking garage are minor, which usually only account for a small portion (less than five percent) of the vehicle fleet in the parking facilities; therefore, their released PM<sub>2.5</sub> is not expected to be a major concern. A screen test will be conducted by comparing the peak hour ins and outs of diesel vehicles to a threshold of 16 diesel vehicles or equivalent. If the amount of peak hour diesel vehicles does not exceed the threshold, then a PM impact assessment for parking facilities is not necessary. If necessary, the PM impacts will be derived from CO impacts by comparing size of diesel fleet to total traffic in the garage.
- If the project impact is predicted to be significant, then the identification of mitigation measures may be required, as appropriate, to eliminate or reduce impacts. While mitigation will primarily come from traffic measures, other potential mitigation measures may include equipment and engine retrofit, facility operational schedules, street widening, street direction changes, new signals, signal timing and phasing modifications, and/or the revision of on-street parking and standing regulations. The air quality analysis for mitigation measures will use the same methodologies described above to examine, quantify (as possible) and recommend (as appropriate) ameliorative measures to minimize any significant adverse impacts of the proposed project.

### STATIONARY SOURCE ANALYSIS

The proposed project will be assessed for potential impacts associated with on-site stationary sources and nearby industrial facilities and large stationary sources, specifically: (1) the potential effects from on-site heating, ventilation, and air conditioning (HVAC) system emissions associated with each Projected and Potential Development Sites of the proposed project and other development sites; (2) future air quality impacts on Projected and Potential Development Sites and proposed new uses due to the air pollutants emitted from existing nearby industrial, commercial, institutional, or large-scale residential stationary sources, if any; (3) on-site emergency generator, if any. The potential for impacts from these stationary

sources will be assessed in the EIS documents following the procedures outlined in the *CEQR Technical Manual*.<sup>4</sup>

On-site stationary source analysis steps include:

- Collect development plans and maps to determine information regarding building heights and distances for locating nearest receptors based on the proposed development plans.
- Perform screening analysis in accordance with the methods presented in Section 322 of the *CEQR Technical Manual*.
- Prepare map of the proposed HVAC sites to be analyzed, based on the RWCDs scenario.
- Conduct advance analysis using SCREEN3 of HVAC groups of sources. Examine the use of fuel restrictions which would be ensured through the mapping of (E) designations on Projected and Potential Development Sites to avoid significant adverse air quality impacts.
- Perform refined AERMOD modeling if required. The CEQR-specified criteria pollutants will be considered for the analysis, including NO<sub>2</sub>, PM and SO<sub>2</sub>.
- Review the latest NYCDEP and NYSDEC monitoring data for background concentrations determination.
- Perform NAAQS compliance determination.
- Review installation and use of emergency generators, and conduct impact analysis if required.

### *INDUSTRIAL SOURCE ANALYSIS*

A screening analysis will be conducted for examining any potential impacts on future residential and commercial land uses included in the proposed project and development that would be affected by air pollutants emitted from existing nearby industrial, commercial, institutional, or large-scale residential uses. To assess the potential of impacts on the Projected and Potential Development Sites from existing manufacturing operations in the surrounding area, an industrial source screening analysis will be conducted.

The screening analysis will begin with an investigation and a review of inventories, to identify sources of industrial emissions in the study area (within 400 feet of the rezoning area). Based on information obtained from NYCDEP's Bureau of Environmental Compliance (BEC), NYSDEC permit data and the EPA's Envirofacts database, a listing of federal, state and City-permitted industrial sources and registered facilities will be developed. Then those industrial sources within 400 feet of a Projected or Potential Development Site will be selected for analysis. The AERMOD dispersion model screening database will be used to estimate the short-term and annual concentrations of critical pollutants at the potential receptor sites. Predicted worst-case impacts will be compared with the short-term guideline concentrations (SGC) and annual guideline concentrations (AGC) reported in DEC's DAR-1 AGC/SGC Tables (September 2007) to determine the potential for significant impacts. In the event that violations of standards are predicted, measures to reduce pollutant levels to within standards will be examined.

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<sup>4</sup> Relevant technical information from the environmental reviews of 363-365 Bond Street and Public Place, to the extent available, will be factored into the analysis.

### *MAJOR (LARGE) STATIONARY SOURCE ANALYSIS*

The *CEQR Technical Manual* also requires an assessment of proposed actions that would be located within 1,000 feet of a “large” emission source (such as solid waste, incinerators, cogeneration facilities, asphalt and concrete plants, or power generating plants), or a potential major source of odors. Similar to the procedures described above, a review of NYSDEC and NYCDEP permit or registration data inventories to identify any large emission sources will be conducted. If necessary, a field survey will be conducted and emissions from large source will be analyzed. This analysis would be conducted in conjunction with the industrial source analysis described earlier, to determine potential cumulative impacts on new sensitive receptors resulting from the proposed actions.

### *ODOR ASSESSMENT*

The Gowanus Canal has been identified by NYCDEP as a potential source of odors. In addition, at the head of the Gowanus Canal (between the Gowanus Pump Station and approximately Sackett Street) CSO sediment is exposed at low tide. Therefore, this study is being proposed to quantify the odor levels and determine the potential for odor impacts on the project site.

Although there could be many odorous compounds associated with the decay of organic materials in sediments, hydrogen sulfide (H<sub>2</sub>S) is expected to be the most prevalent malodorous gas. Generally, H<sub>2</sub>S is used as a trace indicator for odors in an odor impact analysis because:

- It has a very unique, unpleasant, and discernable odor character (similar to rotten eggs);
- It has a very low odor recognition threshold; and
- It can be monitored by hand-held and/or stationary instruments.

Therefore, the concentration of H<sub>2</sub>S in air will be the focus of the odor assessment.

A Hydrogen Sulfide Assessment Protocol was developed in conjunction with NYCDEP for the proposed actions’ odor assessment. Based on the protocol, sampling will be conducted during the expected time period of the reasonable worst case odor emissions. Weather condition (temperature, general wind direction and speed, recent precipitation) and tidal condition will be considered to determine the time period of expected worst-case odor emissions. Sampling will be conducted during a six hour period that encompasses three hours before and three hours after the point of low tide on the Gowanus Canal. To the greatest extent possible, sampling will be performed during dry periods when ambient temperatures are above 80 °F and the winds are light. Weather data will be noted during the sampling period.

The following monitoring locations will be utilized:

- Location #1: De Graw Street next to the Canal.
- Location #2: De Graw Street 50 feet from the Canal.
- Location #3: Butler Street in front of Potential Development Site 5 (Block 411, Lot 12 -192 Butler Street).
- Location #4: Percival Street next to the Canal (outside the rezoning area). (This receptor may be anywhere along the Canal from Bay Street to Bryant Street.)

The following sequencing shall be performed for the sampling event, as outlined in the odor monitoring protocol. At all locations, if the first day's monitoring data show that the highest hourly H<sub>2</sub>S concentration is less than 5 ppb, potential odor effects on the proposed project at that location would be

unlikely and the sampling program will be complete. If the first day's monitoring data shows that the highest hourly H<sub>2</sub>S concentration is between 5 ppb and 15 ppb, another two days of continuous monitoring will be conducted. If the first day's monitoring data shows that the highest hourly H<sub>2</sub>S concentration is greater than 15ppb, the proposed project site would potentially be subject to significant adverse odor impacts, and the sampling program will be complete.

### **Task 19. NOISE**

This EIS chapter will examine potential noise impacts due to both existing and future mobile and stationary sources, as the proposed actions would locate noise sensitive receptors near manufacturing zones, and they have the potential to generate increased vehicular traffic-volumes. The analysis of noise from mobile sources will employ the logarithmic equations provided in the *CEQR Technical Manual* and TNM (or an equivalent model), if necessary, while the analysis of noise from stationary sources will employ SoundPLAN 6.4.

The detailed noise analysis will contain the following:

- Changes in traffic noise levels with the proposed actions;
- Stationary source noise impacts at or near the projected and potential residential and commercial uses (compliance with performance standards);
- Achievement of acceptable interior noise levels (45 dBA) in the projected and potential residential/commercial buildings; and
- Short-term construction phase noise and vibration impacts (discussed within the Construction Impacts chapter).

Existing noise levels will be monitored at noise-sensitive locations. Future traffic noise levels will be estimated based on the proportionate change in traffic volume between existing and future conditions, in accordance with *CEQR Technical Manual* methodology.

If the difference in traffic volume (i.e. PCEs) between the Future No Action and Future With Action Conditions is found to be greater than a 100 percent increase (corresponding to a 3 dBA increase in noise level), the TNM model (or an equivalent model) will be used in a detailed analysis.

Detailed analyses of existing and future stationary noise sources will be conducted using SoundPLAN 6.4 sound analysis software. The Project Description chapter will discuss allowable zoning performance standards for noise for the proposed zoning.

The following tasks will be performed in compliance with guidelines contained in the *CEQR Technical Manual*:

- Site selection will occur in accordance with the *CEQR Technical Manual* guidelines and will include three different types: sites where the proposed actions would have the potential for significant impacts due to project-generated traffic, sites near a potentially substantial stationary source noise generator, and sites that can be used to determine the building attenuation necessary to comply with noise regulations.
- Data collection: Existing noise levels at the mobile source monitoring locations will be determined by performing one-hour equivalent (20-minute readings as per *CEQR Technical Manual* guidelines) continuous noise levels ( $L_{eq}$ ) and statistical percentile noise levels ( $L_{max}$ ,  $L_{min}$ ,  $L_1$ ,  $L_{10}$ ,  $L_{50}$ ,  $L_{90}$ ). Continuous 24-hour readings will be taken at one monitoring site to measure noise from trucks entering and exiting each of the concrete plants (mobile source noise) within

the vicinity of the rezoning area, as well as readings to measure noise generated by the concrete plant itself (stationary source noise).

The noise levels will be measured in units of “A” weighted decibels (dBA). The monitoring periods will coincide with AM, Midday, and PM peak traffic noise periods. Additionally, a set of noise measurements will be taken near the concrete plant during peak operating periods, including when the plant is loading trucks and when no trucks are being loaded. If the exact hours for peak operation cannot be obtained, 24-hour readings will be taken in order to capture all noise associated with the plant. It is anticipated that no detailed analysis of weekend conditions will be necessary since peak project-generated total traffic and baseline traffic values on weekends would be less than peak weekday values. The proposed actions are not expected to result in off-peak non-typical traffic time periods requiring assessment.

- **Equipment:** As needed, the analysis will utilize state-of-the-art equipment, including Bruel&Kjaer 2236 and 2260 Precision Sound Level Meters (SLM), WeatherLink System, Calibrators, etc., which are ready for field monitoring tasks of any size and duration. A porous windscreen will be used on the SLM during all measurement periods. Noise measurements will be taken by mounting the SLM approximately five feet above the ground surface at that location. This height is generally considered representative of the ear level of an average person.
- **Analysis Year Noise Level Estimates:** Following procedures outlined in the *CEQR Technical Manual* for assessing stationary and mobile source noise impacts, Future No Action and project-related noise levels will be estimated at proposed sensitive land uses. To determine Future No Action and Future With Action noise levels, the analysis of noise from mobile sources will employ the logarithmic equations provided in the *CEQR Technical Manual* and TNM (or an equivalent model), if necessary, while the analysis of noise from stationary sources will employ SoundPLAN 6.4.
- **Noise Criteria:** CEQR air-borne noise criteria will be followed to determine project impacts at the future sensitive sites in the proposed rezoning area. The criteria will take into consideration the indoor and outdoor areas at the monitored sites, which are representative of noise-sensitive land uses in the area.
- **Analysis Year Noise Impacts:** Noise impacts will be determined by comparing Future No Action and Future With Action noise levels following the CEQR methodology. Also, since the proposed actions will result in sensitive receptors being located within a manufacturing zone, Future With Action noise levels will be compared with CEQR noise exposure guidelines and the New York City Noise Code. Noise from nearby stationary sources will also be assessed.
- **Noise Abatement Analysis:** At locations where noise abatement may be required, appropriate mitigation measures will be considered in accordance with the CEQR guidelines and recommendations for their implementation will be made. Future residential/commercial buildings on Projected/Potential Development Sites, where mitigation may be required as a result of the proposed actions, may receive (E) designations to ensure that noise attenuation is provided to comply with acceptable interior noise requirements.
- **Construction Noise Analysis:** Potential construction-phase noise impacts will be qualitatively assessed and recommendations will be made to comply with NYCDEP guidelines contained in Report #CON-79-001 and the NYC Noise Code. Noise and ground-borne vibration impacts during construction will be addressed at vulnerable sites and, if necessary, appropriate recommendations will be made for their control. Should potential impacts be identified, practicable mitigation measures will be developed.

### **Task 20. 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 traffic conditions, archaeological resources and the integrity of historic resources, community noise patterns, air quality conditions, and mitigation of hazardous materials. As there are no specific plans for individual buildings, the construction assessment for the proposed actions will be qualitative, focusing on areas where construction activities may pose specific environmental problems. The chapter will address all proposed development sites for technical areas of concern related to construction, in accordance with *CEQR Technical Manual* guidelines. Suggestions on incorporating measures to avoid potential impacts will also be included, such as dust suppression and use of low-sulfur diesel fueled equipment. Construction phase noise impacts will be qualitatively assessed and recommendations will be made to comply with NYCDEP guidelines contained in Report #CON-79- 001 and New York City Noise Control Code. Noise and ground-borne vibration impacts during construction will be addressed at vulnerable sites and if necessary, appropriate recommendations will be made for their control. Should potential impacts be identified, practicable mitigation measures will be identified. It should be noted that most of the construction induced by the proposed actions would be gradual, taking place over a ten-year period (analysis year 2018), thereby minimizing potential impacts.

### **Task 21. PUBLIC HEALTH**

According to the *CEQR Technical Manual*, public health involves the activities that society undertakes to create and maintain conditions in which people can be healthy. Many public health concerns are closely related to air quality, hazardous materials, construction and natural resources. A public health assessment may be warranted if a proposed action results in a) increased vehicular traffic or emissions from stationary sources resulting in significant air quality impacts; b) increased exposure to heavy metals and other contaminants in soil/dust resulting in significant impacts, or the presence of contamination from historic spills or releases of substances that might have affected or might affect groundwater to be used as a source of drinking water; c) solid waste management practices that could attract vermin and result in an increase in pest populations; d) potentially significant impacts to sensitive receptors from noise and odors; or e) vapor infiltration from contaminants within a building or underlying soil that may result in significant hazardous materials or air quality impacts

Based on the findings of the tasks discussed above, the public health assessment will examine the proposed project and provide a screening level of assessment in conformance with *CEQR Technical Manual* guidelines. It will evaluate the likelihood of exposure, as well as the potential impacts of those exposures on human health due to hazardous material that may be present at the site, including any worker or resident exposure either during construction or occupancy of the proposed project; current and future water quality conditions along the Gowanus Canal, and the potential for any impacts on project residents or open space users due to water quality conditions; current air emissions, including any industrial emissions in the area and the potential to exceed air quality standards or guidelines and impact future residents; current noise levels in the area and any exposure of residents to excessive noise levels; and solid waste and sanitation services that would be necessary to avoid public health impacts. In determining the significance of any potential effects to public health, the chapter will consider the likelihood of occurrence, characteristics of the population potentially affected, the time frame of potential exposures, latency, seriousness of the potential health effect, duration, number of persons potentially affected, and the reversibility of potential impacts.

Where any mitigation may be necessary to avoid impacts to public health, it will be described under this task as well as Task 22, Mitigation.

**Task 22. MITIGATION**

Where significant impacts have been identified in Tasks 2 through 21, measures to mitigate those impacts will be described. These measures will be developed and coordinated with the responsible city/state agencies as necessary, including LPC, NYCDOT, and NYCDEP. Where impacts cannot be mitigated, they will be described as unavoidable adverse impacts.

**Task 23. ALTERNATIVES**

The purpose of an alternatives section in an EIS is to examine development options that may reduce project-related impacts. The alternatives are usually defined once the full extent of the proposed actions' impacts has been identified, but at this time it is anticipated that they will include the following:

- The “No Action” Alternative, which assumes no area-wide rezoning or any other element of the proposed actions (i.e., text amendments, mapping actions, etc.), but includes as-of- right development from individual projects proposed by others in the rezoning area (and essentially is the same as the Future No Action Condition);
- A No Impact Alternative (if significant impacts are identified for the proposed actions);
- A lesser density alternative (not quantified except in technical areas where impacts are identified for the proposed actions); and
- One other fully quantified alternative that may be considered as the EIS process moves forward.

The alternatives analysis is primarily qualitative, except where impacts of the proposed actions have been identified. For technical areas where impacts have been identified, the alternatives analysis will determine whether these impacts would still occur under each alternative.

**Task 24. EIS SUMMARY CHAPTERS**

The EIS will include the following three summary chapters, where appropriate, in accordance with CEQR guidelines:

- *Unavoidable Adverse Impacts.* This chapter will summarize any significant adverse impacts that are unavoidable if the proposed actions are implemented regardless of the mitigation employed (or if mitigation is unfeasible);
- *Growth-Inducing Aspects* of the proposed actions. This chapter will assess the potential for the proposed actions to result in “secondary” impacts that trigger further development.
- *Irreversible and Irretrievable Commitments of Resources.* This chapter will provide an overview of the short- and long-term impacts of the proposed actions in terms of the loss of environmental resources (use of fossil fuels and materials for construction, loss of vegetation, etc.).

**Task 25. EXECUTIVE SUMMARY**

The executive summary will utilize relevant material from the body of the EIS to describe the proposed actions, their significant and adverse environmental impacts, measures to mitigate those impacts, and alternatives to the proposed actions.

## **APPENDIX**



**THE Louis Berger Group, Inc.**

**One Seaport Plaza, 199 Water Street, 23<sup>rd</sup> Floor, New York, NY 10038**

**Tel (212) 612-7900 Fax (212) 363-4341**

**[www.louisberger.com](http://www.louisberger.com)**

**MEMORANDUM**

**TO:** Glen Price (NYDCP)  
**FROM:** Denise Huang/Mike Monteleone (LBG)  
**CC:** George Rupp (LBG)  
**DATE:** February 6, 2008  
**SUBJECT:** Gowanus Rezoning – Transportation Planning Factors

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The purpose of this memo is to document the trip generation and modal split assumptions used in quantifying the volume of trips generated by the proposed Gowanus Rezoning project (proposed actions) in Brooklyn, New York. Trip generation, modal split, and vehicle occupancy rates for proposed uses were derived from approved rates in standard professional references, information from other development studies, and reasonable planning assumptions. For each of the land use categories envisioned under the build condition (residential, office, local retail, destination retail, light industry, and community facility) sources with similar geographic and/or use characteristics were used to the greatest extent possible.

**PROJECTED DEVELOPMENT**

The proposed actions involve zoning text and map amendments for an area encompassing 25 blocks in the Gowanus, Carroll Gardens/South Brooklyn, Cobble Hill, Columbia Street District, Park Slope, and Red Hook neighborhoods located in Brooklyn, New York. The rezoning area covers a portion of Brooklyn Community District 6 and is generally bounded by Bond Street, Baltic Street, the Gowanus Canal, Sackett Street, 4<sup>th</sup> Avenue, 1<sup>st</sup> Street, 3<sup>rd</sup> Avenue, and 3<sup>rd</sup> Street.

A total of 26 projected development sites within the rezoning area have been identified as most likely to be developed as a result of the proposed actions. Table 1 shows the total incremental net change in development on the 26 projected development sites that would result from the proposed actions under the reasonable worst case development scenario (RWCDS). Compared to the no build condition (Table 1), the proposed rezoning would result in a net increase of 3,211 dwelling units (572 of which would be affordable under the Inclusionary Housing Program), a net increase of 34,681 square feet of retail space, a net increase of 32,032 square feet of community facility space, a net decrease of 184,757 square feet of commercial space,<sup>1</sup> a net decrease of 543,717 square feet of industrial space, and a net increase of 1,166 accessory parking spaces. A total of approximately 70,790 square feet (177 rooms) of hotels, 113,967 square feet of office space, and 543,716 square feet of light industrial space would be displaced by the proposed actions.

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<sup>1</sup> The commercial space square footage value includes 113,967 square feet of office space and 70,790 square feet of hotel space.

Table 1  
Projected Net Change in Land Use Development  
(As a result of the RWCDs)

Land Use	Change
Net Increase	
Residential	3,216,540 gfs/3,211 D.U.
Community Facility	32,032 gsf
Local Retail	22,806 gsf
Destination Retail	11,875 gsf
Accessory Parking	1,166 spaces
Net Decrease	
Light Industrial	543,716 gsf
Office	113,967 gsf
Hotel	70,790 gsf / 177 rooms

Trip generation was projected for the residential, office, local retail, destination retail, light industrial, and community facility space. Trip generation estimates were developed for the typical weekday AM, midday, and PM peak hours, and for the Saturday midday peak hour. A summary of trip generation factors used in the calculations is provided in Table 2 and a more detailed description is provided below.

**Residential**

For the weekday, a daily trip generation rate of 8.075 person trips per unit of development was used in the calculation of the residential portion of the proposed actions. This rate is consistent with the *Downtown Brooklyn Rezoning FEIS*. Similarly, for Saturday, a daily trip generation rate of 7.679 per unit of residential development was used. This rate is based on the *Atlantic Yards Arena and Redevelopment Project EIS*.

The temporal distribution (times when people arrive and depart the site) used for the weekday was 9.1 percent for the AM, 4.7 percent for the midday, and 10.7 percent for the PM peak hour. For Saturday midday, the temporal distribution used was 7.0 percent. These distributions are based on the *Downtown Brooklyn Rezoning FEIS* and the *Atlantic Yards Arena and Redevelopment Project EIS*.

The in/out splits (direction of travel to and from the site) for weekday residential trips are consistent with the *Downtown Brooklyn Rezoning FEIS* and the *Atlantic Yards Arena and Redevelopment Project EIS*. The weekday In splits used were 20 percent for the AM, 51 percent for the midday, and 65 percent for the PM. For Saturday midday, the In split used was 50 percent, which is consistent with the *Atlantic Yards Arena and Redevelopment Project EIS*.

The modal splits (method of travel to and from the site) for residential trips were based on the *2000 Census journey-to-work data*. The modal splits used for all time periods (weekday AM, midday, and PM and Saturday midday) were 9.6 percent travel by auto, 0.7 percent travel by taxi, 1.5 percent travel by bus, 68.7 percent travel by subway, 0.2 percent by railroad, 9.5 percent travel by walking, and 9.6 percent by other.

The auto vehicle occupancy rate (1.14 persons per auto) and the taxi vehicle occupancy rate (1.14 rate persons per taxi) were also based on the *2000 Census journey-to-work data*.

**Table 2  
Gowanus Rezoning Project  
Transportation Planning Factors**

Land Use:	Residential		Office		Local Retail		Destination Retail		Light Industrial		Community Facility		Hotel	
	(1 & 2) Weekday	(3) Saturday	(1 & 2) Weekday	(3) Saturday	(1 & 2, 13) Weekday	(3, 13) Saturday	(7, 13) Weekday	(13) Saturday	(8) Weekday	(8) Saturday	(2) Weekday	(2) Saturday	(3) Weekday	(3) Saturday
Daily Person Trips	8,075 (trips/dwelling unit)	7,679	18.00 (trips/1,000 gsf)	0.90	154 (trips/1,000 gsf)	154	68 (trips/1,000 gsf)	79	10.27 (trips/1,000 gsf)	1.95	26.6 (trips/1,000 gsf)	26.6	5.82 (trips/room)	8.61
<b>Temporal Distribution:</b>	(1, 2, 3)		(2, 3)		(2, 3)		(2, 7)		(8)		(2, 10)		(3)	
AM (8-9)	9.1%		11.8%		3.1%		2.4%		13.2%		7.2%		6.6%	
MD (12-1)	4.7%		14.5%		19.0%		8.7%		11.0%		7.1%		8.3%	
PM (5-6)	10.7%		13.7%		9.6%		8.9%		14.1%		8.3%		7.7%	
SAT (12-1)	7.0%		15.0%		9.5%		11.6%		10.6%		7.1%		7.5%	
<b>In/Out Splits:</b>	(2, 3)		(2, 3)		(2, 3)		(2, 10)		(2, 10)		(2, 10)		(3)	
AM (8-9)	In 20%	Out 80%	In 96%	Out 4%	In 50%	Out 50%	In 61%	Out 39%	In 88%	Out 12%	In 96%	Out 4%	In 41%	Out 59%
MD (12-1)	In 51%	Out 49%	In 39%	Out 61%	In 50%	Out 50%	In 55%	Out 45%	In 50%	Out 50%	In 45%	Out 55%	In 68%	Out 32%
PM (5-6)	In 65%	Out 35%	In 5%	Out 95%	In 50%	Out 50%	In 47%	Out 53%	In 12%	Out 88%	In 42%	Out 58%	In 59%	Out 41%
SAT (12-1)	In 50%	Out 50%	In 60%	Out 40%	In 55%	Out 45%	In 55%	Out 45%	In 50%	Out 50%	In 45%	Out 55%	In 56%	Out 44%
<b>Modal Splits:</b>	(5)		(6)		(2, 12)		(2)		(15)		(15)		(3)	
Auto	All Periods 9.6%		AM/PM/SAT 52.5%		All Periods 2.0%		All Periods 20.0%		AM/PM/SAT 52.5%		All Periods 52.5%		All Periods 30.1%	
Taxi	0.7%		0.5%		3.0%		2.0%		0.5%		0.5%		12.3%	
Bus	1.5%		6.4%		5.0%		30.0%		6.4%		6.4%		5.5%	
Subway	68.7%		26.4%		6.0%		0.0%		26.4%		26.4%		18.8%	
Railroad	0.2%		1.4%		0.0%		0.0%		1.4%		1.4%		0.0%	
Walk	9.5%		8.3%		84.0%		26.0%		8.3%		8.3%		33.3%	
Other	9.6%		4.3%		0.0%		0.0%		4.3%		4.3%		0.0%	
	100.0%		100.0%		100.0%		100.0%		100.0%		100.0%		100.0%	
<b>Vehicle Occupancy:</b>	(5)		(4)		(2)		(2)		(15)		(15)		(3)	
Auto	1.14		1.65		2.00		2.00		1.65		1.65		1.60	
Taxi	1.14		1.40		2.00		2.00		1.40		1.40		1.40	
<b>Truck Trip Generation:</b>	(2, 9)		(3, 9, 14)		(2, 9)		(2, 9)		(15)		(15)		(3)	
Weekday	0.07	0.00	0.16	0.01	0.35	0.02	0.35	0.02	0.16	0.01	0.16	0.01	0.06	0.01
Saturday	0.00		0.00		0.02		0.02		0.01		0.01		0.01	
per 1,000 gsf			per 1,000 gsf		per 1,000 gsf		per 1,000 gsf		per 1,000 gsf		per 1,000 gsf		per 1,000 gsf	
AM (8-9)	(2, 3)		(3, 14)		(2, 3)		(2, 3)		(15)		(15)		(3)	
MD (12-1)	12.0%		7.0%		8.0%		8.0%		7.0%		7.0%		12.0%	
PM (5-6)	9.0%		7.0%		11.0%		11.0%		7.0%		7.0%		9.0%	
SAT (12-1)	2.0%		3.0%		2.0%		2.0%		3.0%		3.0%		0.0%	
	9.0%		11.0%		11.0%		11.0%		11.0%		11.0%		9.0%	
In 100%	Out 100%	In 100%	Out 100%	In 100%	Out 100%	In 100%	Out 100%	In 100%	Out 100%	In 100%	Out 100%	In 100%	Out 100%	In 100%

**Sources:**

1. Pushkarev & Zupan, "Urban Space for Pedestrians".
2. Downtown Brooklyn Rezoning FEIS.
3. Atlantic Yards Area and Redevelopment Project EIS, November 27, 2006.
4. Source: City Environmental Quality Review (CEQR) Technical manual, Appendix 3, 2001.
5. Based on 2000 Census journey-to-work data.
6. Based on 2000 Census reverse journey-to-work data.
7. Based on ITE Trip Generation Handbook, Land Use Code 820 (Shopping Center). Vehicle trip rate was converted to person trip rate.
8. Based on ITE Trip Generation Handbook, Land Use Code 110 (General Light Industrial). Vehicle trip rate was converted to person trip rate.
9. Use 5% of the weekday truck generation rates.
10. Saturday factor was assumed to be the same as weekday midday.
11. Saturday factor was assumed to be the same as weekday AM and PM peak.
12. Modal split for subway and walk was modified for Local Retail.
13. A 25 percent credit for linked trips was applied to the daily trip generation rates.
14. Weekday office truck trip rate and temporal distribution were based on PHA June 10, 2004 survey at existing office building in Midtown and Lower Manhattan.
15. Light Industrial and Community Facility modal split and truck trip rate and temporal distribution were assumed to be the same as office land use.

The weekday delivery trip rate of 0.07 truck-trips per 1,000 gross square feet (gsf) was used to calculate the truck trip generation for residential development. The weekday rate was based on the *Downtown Brooklyn Rezoning FEIS*. For the Saturday delivery trip rate, because limited information is available for the generation of truck trips on Saturday, it is assumed that Saturday truck trip generation rates be 5% of the weekday rates. As such, the Saturday delivery trip rate of 0.00 truck trips per 1,000 gsf was used.

The temporal distribution for truck trip generation used for the weekday was 12.0 percent for the AM, 9.0 percent for the midday, and 2.0 percent for the PM peak hours. This distribution is consistent with the *Downtown Brooklyn Rezoning FEIS*, the *Atlantic Yards Arena and Redevelopment EIS*. For Saturday midday, the temporal distribution used was 9.0 percent, which is based on the *Atlantic Yards Arena and Redevelopment Project EIS*.

### **Office**

For weekdays, a daily trip generation rate of 18.0 person trips per 1,000 gsf of development was used in the calculation of the office portion of the proposed actions. This rate is based on the *Downtown Brooklyn Rezoning FEIS*. Similarly, for Saturday, a daily trip generation rate of 0.90 per 1,000 gsf of development was used. This rate is based on the *Atlantic Yards Arena and Redevelopment Project EIS*.

The temporal distribution used for the weekday was 11.8 percent for the AM, 14.5 percent for the midday, and 13.7 percent for the PM peak hour. This distribution is consistent with the rates outlined in the *Downtown Brooklyn Rezoning FEIS* and the *Atlantic Yards Arena and Redevelopment Project EIS*. For Saturday midday, the temporal distribution used was 15.0 percent, which is based on the *Atlantic Yards Arena and Redevelopment Project EIS*.

The in/out splits for weekday office trips are consistent with the *Downtown Brooklyn Rezoning FEIS* and the *Atlantic Yards Arena and Redevelopment Project EIS*. The weekday In splits used were 96 percent for the AM, 39 percent for the midday, and 5 percent for the PM. For Saturday midday the In split used was 60 percent, which is based on the *Atlantic Yards Arena and Redevelopment Project EIS*.

The modal splits for weekday AM and weekday PM trips were based on the *2000 Census reverse journey-to-work data*. The Saturday midday modal splits were assumed to be the same as the weekday. These modal splits used were 52.5 percent travel by auto, 0.5 percent travel by taxi, 6.4 percent travel by bus, 26.4 percent travel by subway, 1.4 percent by railroad, 8.3 percent travel by walking, and 4.3 percent by other.

The auto vehicle occupancy rate (1.65 persons per auto) and the taxi vehicle occupancy rate (1.40 rate persons per taxi) were based on the *CEQR Technical Manual*.

The weekday delivery trip rate of 0.16 truck-trips per 1,000 gsf was used to calculate the truck trip generation for office development. This rate was based on a survey conducted at existing office buildings in Midtown and Lower Manhattan on June 10, 2004 by PHA. These results were consistent with the *Atlantic Yards Arena and Redevelopment Project EIS*. For the Saturday delivery trip rate, because limited information is available for the generation of truck trips on Saturday, it is assumed that Saturday truck trip generation rates be 5 percent of the weekday rates and based on weekday patterns. As such, the Saturday delivery trip rate of 0.01 truck trips per 1,000 gsf was used.

The temporal distribution for truck trip generation used for the weekday was 7.0 percent for the AM, 7.0 percent for the midday, and 3.0 percent for the PM peak hours. This distribution is also based on the survey conducted at existing office buildings in Midtown and Lower Manhattan in June 10, 2004 by PHA. For Saturday midday, the temporal distribution used was 11.0 percent, which is based on the *Atlantic Yards Arena and Redevelopment Project EIS*.

### **Local Retail**

For weekdays, a daily trip generation rate of 205 person trips per 1,000 gsf of development was used in the calculation of the local retail portion of the proposed actions. This rate is based on the *Downtown Brooklyn Rezoning FEIS*. Similarly, for Saturday, a daily trip generation rate of 205 per 1,000 gsf of development was used. This rate is the same as weekday and is based on the *Atlantic Yards Arena and Redevelopment Project EIS*. A 25 percent credit for linked trips was subsequently applied to the total daily trip generation rates, yielding a net daily trip generation rate of 154 person trips per 1,000 gsf for both weekday and Saturday. The assumption of 25 percent linked trips to retail uses is consistent with the *CEQR Technical Manual*.

The temporal distribution used for the weekday was 3.1 percent for the AM, 19.0 percent for the midday, and 9.6 percent for the PM peak hour. This distribution is consistent with the rates outlined in the *Downtown Brooklyn Rezoning FEIS* and the *Atlantic Yards Arena and Redevelopment Project EIS*. For Saturday midday, the temporal distribution used was 9.5 percent, which is based on the *Atlantic Yards Arena and Redevelopment Project EIS*.

The in/out splits for weekday local retail trips are consistent with the *Downtown Brooklyn Rezoning FEIS* and the *Atlantic Yards Arena and Redevelopment Project EIS*. The weekday In splits used were 50 percent for the AM, 50 percent for the midday, and 50 percent for the PM. In addition, for Saturday midday, the In split used was 55 percent, which is based on the *Atlantic Yards Arena and Redevelopment Project EIS*.

The modal splits for local retail trips were based primarily on the *Downtown Brooklyn Rezoning FEIS* with some modifications to better represent travel characteristic in the study area. The modal splits used for all time periods (weekday AM, midday, and PM and Saturday midday) were 2.0 percent travel by auto, 3.0 percent travel by taxi, 5.0 percent travel by bus, 6.0 percent travel by subway, 0.0 percent by railroad, 84.0 percent travel by walking.

The auto vehicle occupancy rate (2.00 persons per auto) and the taxi vehicle occupancy rate (2.00 rate persons per taxi) were based on the *Downtown Brooklyn Rezoning FEIS*.

The weekday delivery trip rate of 0.35 truck trips per 1,000 gross square feet (gsf) was used to calculate the truck trip generation for local retail development. This rate was based on the *Downtown Brooklyn Rezoning FEIS*. For the Saturday delivery trip rate, because limited information is available for the generation of truck trips on Saturday, it is assumed that Saturday truck trip generation rates be 5 percent of the weekday rates and based on weekday patterns. As such, the Saturday delivery trip rate of 0.02 truck trips per 1,000 gsf was used.

The temporal distributions for truck trip generation used for the weekday was 8.0 percent for the AM, 11.0 percent for the midday, and 2.0 percent for the PM peak hours. This distribution is based on the *Downtown Brooklyn Rezoning FEIS*. For the Saturday midday, the temporal distribution used was 11.0 percent, which is based on the *Atlantic Yards Arena and Redevelopment Project EIS*.

### **Destination Retail**

For weekdays, a daily trip generation rate of 90 person trips per 1,000 gsf of development was used in the calculation of the destination retail portion of the proposed actions and for Saturday, a daily trip generation rate of 105 per 1,000 gsf of development was used. These rates are based on the Institute of Transportation Engineers (ITE) *Trip Generation Handbook, Land Use Code 820 (Shopping Center)*. A 25 percent credit for linked trips was subsequently applied to the total daily trip generation rates, yielding a net weekday daily trip generation rate of 68 person trips per 1,000 gsf and a net Saturday daily trip generation rate of 79 person trips per 1,000 gsf. The assumption of 25 percent linked trips to retail uses is consistent with the *CEQR Technical Manual*.

The temporal distribution used for the weekday was 2.4 percent for the AM, 8.7 percent for the midday, and 8.9 percent for the PM peak hour. This distribution is consistent with the rates outlined in the *Downtown Brooklyn Rezoning FEIS*. For Saturday midday, the temporal distribution used was 11.6 percent, which is based on the Institute of Transportation Engineers (ITE) *Trip Generation Handbook*.

The in/out splits for weekday destination retail trips are consistent with the *Downtown Brooklyn Rezoning FEIS*. The weekday In splits used were 61 percent for the AM, 55 percent for the midday, and 47 percent for the PM. For Saturday midday, the In split used was 55 percent, which is assumed to be the same as the weekday midday.

The modal splits (method of travel to and from the site) used for destination retail trips were based on *Downtown Brooklyn Rezoning FEIS*. The modal splits used for all time periods (weekday AM, midday, and PM and Saturday midday) was 20.0 percent travel by auto, 2.0 percent travel by taxi, 30.0 percent travel by bus, 22.0 percent travel by subway, 0.0 percent by railroad, 26.0 percent travel by walking, and 0.00 percent by other. The auto vehicle occupancy rate (2.00 persons per auto) and the taxi vehicle occupancy rate (2.00 rate persons per taxi) were based on the *Downtown Brooklyn Rezoning FEIS*.

The weekday delivery trip rate of 0.35 truck-trips per 1,000 gross square feet (gsf) was used to calculate the truck trip generation for destination retail. This rate was based on the *Downtown Brooklyn Rezoning FEIS*. For the Saturday delivery trip rate, because limited information is available for the generation of truck trips on Saturday, it is assumed that Saturday truck trip generation rates be 5 percent of the weekday rates and based on weekday patterns. As such, the Saturday delivery truck rate used was 0.02 truck trips per 1,000 gsf.

The temporal distributions for truck trip generation used for the weekday was 8.0 percent for the AM, 11.0 percent for the midday, and 2.0 percent for the PM peak hours. This distribution was based on the *Downtown Brooklyn Rezoning FEIS* and the *Atlantic Yards Arena and Redevelopment EIS*. For Saturday, midday, the temporal distribution used was 11.0 percent, which is based on the *Atlantic Yards Arena and Redevelopment Project EIS*.

### **Light Industrial**

For weekdays, a daily trip generation rate of 10.27 person trips per 1,000 gsf of development was used in the calculation of the light retail portion of the proposed actions and for Saturday, a daily trip generation rate of 1.95 per 1,000 gsf of development was used. These rates are based on the Institute of Transportation Engineers (ITE) *Trip Generation Handbook, Land Use Code 8110 (General Light Industrial)*.

The temporal distribution used for the weekday was 13.2 percent for the AM, 11.0 percent for the midday, and 14.1 percent for the PM. For Saturday midday, the temporal distribution used was 10.6 percent. These temporal distributions are based on the Institute of Transportation Engineers (ITE) *Trip Generation Handbook, Land Use Code 8110 (General Light Industrial)*.

The in/out splits for weekday light industry trips are consistent with the *Downtown Brooklyn Rezoning FEIS*. The weekday In splits used were 88 percent for the AM, 50 percent for the midday, and 12 percent for the PM. For Saturday midday the In split used was 50 percent, which is assumed to be the same as the weekday midday.

The modal splits for Light Industrial were assumed to be the same as office use. These modal splits used were 52.5 percent travel by auto, 0.5 percent travel by taxi, 6.4 percent travel by bus, 26.4 percent travel by subway, 1.4 percent by railroad, 8.3 percent travel by walking, and 4.3 percent by other.

The auto vehicle occupancy rate (1.65 persons per auto) and the taxi vehicle occupancy rate (1.40 rate persons per taxi) were assumed to be the same as office use.

The delivery trip rates of 0.16 truck-trips per 1,000 gross square feet (gsf) for weekday and 0.01 truck trips per 1,000 gsf for Saturday were used to calculate the truck trip generation for light industrial. This rate was assumed to be the same as office use.

The temporal distributions for truck trip generation used for the weekday was 7.0 percent for the AM, 7.0 percent for the midday, and 3.0 percent for the PM peak hours, 11.0 percent for the Saturday midday. This distribution was assumed to be the same as office use.

### **Community Facility**

For weekdays, a daily trip generation rate of 26.6 person trips per 1,000 gsf of development was used in the calculation of the community facility portion of the proposed actions. This rate is consistent with the *Downtown Brooklyn Rezoning FEIS*. A daily trip generation rate of 26.6 person trips per 1,000 gsf of development was also used for Saturday midday, which was also based on the *Downtown Brooklyn Rezoning FEIS*.

The temporal distribution used for the weekday was 7.2 percent for the AM, 7.1 percent for the midday, and 8.3 percent for the PM peak hour. This distribution is consistent with the *Downtown Brooklyn Rezoning FEIS*. For Saturday midday, the temporal distribution used was 7.1 percent, which was based on the assumption that the Saturday factor would be the same as weekday midday.

The in/out splits for community facility trips are consistent with the *Downtown Brooklyn Rezoning FEIS*. The weekday In splits used were 96 percent for the AM, 45 percent for the midday, and 42 percent for the PM. In addition, the Saturday midday factor was assumed to be the same as the weekday midday. As such, the Saturday midday In split used was 45 percent.

The modal splits for community facility trips were assumed to be the same as office use. The modal splits used for all time periods (weekday AM, midday, and PM and Saturday midday) were 52.5 percent travel by auto, 0.5 percent travel by taxi, 6.4 percent travel by bus, 26.4 percent travel by subway, 1.4 percent by railroad, 8.3 percent travel by walking, and 4.3 percent by other. The auto vehicle occupancy rate (1.64 persons per auto) and the taxi vehicle occupancy rate (1.40 rate persons per taxi) were also assumed to be the same as office use.

The delivery trip rates of 0.16 truck-trips per 1,000 gross square feet (gsf) for weekday and 0.01 truck trips per 1,000 gsf for Saturday were used to calculate the truck trip generation for light industrial. This rate was assumed to be the same as office use.

The temporal distributions for truck trip generation used for the weekday was 7.0 percent for the AM, 7.0 percent for the midday, and 3.0 percent for the PM peak hours, 11.0 percent for the Saturday midday. This distribution was assumed to be the same as office use.

### **Hotel**

The transportation planning factors for hotels was based on the *Atlantic Yards Arena and Redevelopment Project EIS*. As a result, a daily trip generation rate of 5.82 person trips per room was used for weekday and 8.61 person trips per room was used for Saturday.

The temporal distribution used for the weekday was 6.6 percent for the AM, 8.3 percent for the midday, 7.7 percent for the PM peak hour, and 7.5 percent for Saturday midday.

The weekday directional splits used were the same for the AM, midday, and the PM periods (50 percent entering and exiting). For Saturday midday, the split used was 55 percent entering and 45 percent exiting.

The modal splits used for all time periods (weekday AM, midday, and PM, and Saturday midday) were 30.1 percent travel by auto, 12.3 percent travel by taxi, 5.5 percent travel by bus, 18.8 percent travel by subway, 0.0 percent by railroad, 33.3 percent travel by walking, and 0.0 percent by other. The auto vehicle occupancy rate (1.60 persons per auto) and the taxi vehicle occupancy rate (1.40 rate persons per taxi) were used.

A delivery trip rate of 0.06 truck trips per 1,000 gross square feet (gsf) was used for weekday and 0.01 truck trips per 1,000 gsf was used for Saturday.

The temporal distributions for truck trip generation used for the weekday was 12.0 percent for the AM, 9.0 percent for the midday, and 0.0 percent for the PM peak hours. For the Saturday midday, the temporal distribution used was 9.0 percent, which is the same as weekday midday.

### **Trip Generation**

The total volume of person and vehicle trips that would be generated by the proposed development is shown in Table 3. The proposed actions would generate approximately 1,485, 891, 2,060, and 1,956 person trips during the weekday AM, weekday midday, weekday PM, and Saturday midday peak hours, respectively. In addition, the proposed actions would generate about 105 less, 170 less, and 82 less vehicle trips during the weekday AM, weekday midday, and weekday PM peak hours, respectively. In the Saturday midday peak hour, the proposed actions would generate approximately 126 vehicle trips.

Table 3  
Trip Generation Projections

Project Components: Size: Average Trips per Attendee:	Residential 3,211 units		Office -113,967 gsf		Local Retail 17,341 gsf		Destination Retail 17,341 gsf		Light Industrial -543,716 gsf		Community Facility 32,032 gsf		Hotel -177 gsf		All Land Uses	
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
<b>Peak Hour Trips:</b>																
AM (8-9)	2,360	-242	83	2	28	-737	61	-68	1,485	-320	61	-68	1,485	-320	61	-68
MD (12-1)	1,219	-287	507	102	102	-614	60	-86	891	-149	71	-86	891	-149	71	-86
PM (5-6)	2,775	-281	256	105	105	-785	71	-86	2,060	-339	71	-86	2,060	-339	71	-86
SAT (12-1)	1,726	-15	253	158	158	-112	60	-114	1,956	-270	60	-114	1,956	-270	60	-114
<b>Person Trips:</b>																
AM (8-9) Auto	45	-122	1	2	3	-341	31	-8	32	-8	31	-8	32	-8	31	-8
Taxi	3	-1	1	1	0	-4	0	0	0	0	0	0	0	0	0	0
Bus	17	0	1	2	1	4	1	2	4	2	1	2	4	2	1	2
Subway	3	-15	0	2	0	-2	0	2	2	4	0	2	2	4	0	2
Railroad	324	-44	2	4	2	-172	4	0	16	0	4	0	16	0	4	0
Walk	1	-3	0	0	0	-9	0	0	3	0	0	0	3	0	0	0
Other	45	-19	35	69	4	-54	3	-7	62	-23	3	-7	62	-23	3	-7
Total	470	-10	41	82	16	-649	26	-614	62	-47	60	-27	62	-47	60	-27
MD (12-1) Auto	60	-61	5	10	11	-161	14	-18	32	-26	14	-18	32	-26	14	-18
Taxi	4	-1	8	8	1	-2	2	-3	0	0	0	0	0	0	0	0
Bus	10	-7	13	25	17	-20	31	-39	2	4	2	-3	4	-5	2	-3
Subway	427	-31	15	30	12	-81	10	-162	7	16	7	-11	16	-16	7	-11
Railroad	1	-2	0	0	0	-4	0	0	0	0	0	0	0	0	0	0
Walk	59	-3	213	426	15	-26	12	-57	5	3	1	-9	5	-26	1	-9
Other	60	-5	0	0	0	-13	0	-27	1	1	0	0	1	-26	0	0
Total	621	-117	254	506	56	-307	102	-614	58	-85	26	-58	58	-85	26	-58
PM (5-6) Auto	174	-7	3	5	10	-140	21	-4	37	-24	16	-4	37	-24	16	-4
Taxi	13	0	4	4	1	-4	1	-4	0	0	0	0	0	0	0	0
Bus	28	-1	6	13	15	-17	31	-6	5	4	2	-3	5	-4	2	-3
Subway	1,239	-17	8	15	11	-25	12	-208	8	11	19	-9	16	-15	8	-15
Railroad	4	0	0	0	0	-10	0	0	1	1	0	0	1	0	0	0
Walk	172	-1	107	215	13	-8	14	-66	2	6	3	-16	6	-11	2	-8
Other	174	-11	0	0	0	-4	0	-30	4	3	2	-4	4	-30	2	-4
Total	1,804	-14	128	256	50	-394	105	-786	71	-85	29	-48	71	-85	29	-48
SAT (12-1) Auto	83	-5	3	8	17	-29	3	-9	32	-14	14	-15	32	-14	14	-15
Taxi	6	0	4	3	2	0	1	0	0	0	0	0	0	0	0	0
Bus	13	-1	7	13	26	-4	4	-7	2	4	2	-4	4	-4	2	-4
Subway	583	-2	8	15	19	-15	23	-30	7	16	9	-12	9	-9	7	-12
Railroad	2	0	0	0	0	-1	0	-2	0	0	0	0	0	0	0	0
Walk	82	-1	117	213	23	-5	19	-9	3	5	2	-21	5	-17	3	-8
Other	83	-9	0	0	0	-2	0	-5	0	0	0	0	0	0	0	0
Total	862	-9	139	253	67	-56	158	-112	58	-114	26	-64	58	-114	26	-64
AM (8-9) Auto	40	-74	0	0	2	-206	3	-234	19	-13	1	-2	19	-13	1	-2
Taxi	3	-1	1	1	0	-3	0	-3	0	0	0	0	0	0	0	0
Truck	0	-1	0	0	0	-6	0	-12	0	0	0	0	0	0	0	0
MD (12-1) Auto	53	-37	3	6	5	-98	11	-196	9	-16	11	-5	20	-16	11	-5
Taxi	4	0	4	4	1	-1	1	-2	0	0	0	0	0	0	0	0
Truck	0	-1	1	1	1	-6	1	-12	0	0	0	0	0	0	0	0
PM (5-6) Auto	152	-4	1	2	5	-30	11	-250	9	-15	13	-9	22	-6	9	-6
Taxi	1	0	1	2	0	-3	0	-6	0	0	0	0	0	0	0	0
Truck	0	-1	0	0	0	-3	0	-6	0	0	0	0	0	0	0	0
SAT (12-1) Auto	73	-3	2	4	9	-18	16	-36	9	-21	11	-9	20	-9	11	-9
Taxi	5	0	2	2	1	0	0	0	0	0	0	0	0	0	0	0
Truck	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Net Total Vehicle Trips:</b>																
AM (8-9) Auto	40	-74	0	0	2	-206	3	-234	19	-13	1	-2	19	-13	1	-2
Taxi	3	-1	1	1	0	-3	0	-3	0	0	0	0	0	0	0	0
Truck	0	-1	0	0	0	-6	0	-12	0	0	0	0	0	0	0	0
MD (12-1) Auto	53	-37	3	6	5	-98	11	-196	9	-16	11	-5	20	-16	11	-5
Taxi	4	0	4	4	1	-1	1	-2	0	0	0	0	0	0	0	0
Truck	0	-1	1	1	1	-6	1	-12	0	0	0	0	0	0	0	0
PM (5-6) Auto	152	-4	1	2	5	-30	11	-250	9	-15	13	-9	22	-6	9	-6
Taxi	1	0	1	2	0	-3	0	-6	0	0	0	0	0	0	0	0
Truck	0	-1	0	0	0	-3	0	-6	0	0	0	0	0	0	0	0
SAT (12-1) Auto	73	-3	2	4	9	-18	16	-36	9	-21	11	-9	20	-9	11	-9
Taxi	5	0	2	2	1	0	0	0	0	0	0	0	0	0	0	0
Truck	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>52</b>	<b>-172</b>	<b>224</b>	<b>224</b>	<b>2</b>	<b>-215</b>	<b>3</b>	<b>-252</b>	<b>3</b>	<b>-210</b>	<b>3</b>	<b>-12</b>	<b>3</b>	<b>-21</b>	<b>3</b>	<b>-105</b>
AM (8-9) Auto	40	-74	0	0	2	-206	3	-234	19	-13	1	-2	19	-13	1	-2
Taxi	3	-1	1	1	0	-3	0	-3	0	0	0	0	0	0	0	0
Truck	0	-1	0	0	0	-6	0	-12	0	0	0	0	0	0	0	0
MD (12-1) Auto	53	-37	3	6	5	-98	11	-196	9	-16	11	-5	20	-16	11	-5
Taxi	4	0	4	4	1	-1	1	-2	0	0	0	0	0	0	0	0
Truck	0	-1	1	1	1	-6	1	-12	0	0	0	0	0	0	0	0
PM (5-6) Auto	152	-4	1	2	5	-30	11	-250	9	-15	13	-9	22	-6	9	-6
Taxi	1	0	1	2	0	-3	0	-6	0	0	0	0	0	0	0	0
Truck	0	-1	0	0	0	-3	0	-6	0	0	0	0	0	0	0	0
SAT (12-1) Auto	73	-3	2	4	9	-18	16	-36	9	-21	11	-9	20	-9	11	-9
Taxi	5	0	2	2	1	0	0	0	0	0	0	0	0	0	0	0
Truck	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>78</b>	<b>-78</b>	<b>156</b>	<b>156</b>	<b>10</b>	<b>-18</b>	<b>18</b>	<b>-36</b>	<b>18</b>	<b>-18</b>	<b>8</b>	<b>-15</b>	<b>18</b>	<b>-33</b>	<b>6</b>	<b>126</b>

## **TRAFFIC**

The proposed actions would result in a net decrease of 105 vehicle trips in the weekday AM peak hour, 170 in the midday, and 82 in the PM peak hour. During the Saturday midday peak hour, the proposed actions would result in a net increase of 126 vehicle trips. According to the *CEQR Technical Manual*, if a proposed action in any area of the city would generate greater than 50 peak hour vehicle trip ends, there is likely a need for further traffic analysis. It is anticipated that the total projected net increment in vehicle trips would not exceed this threshold during the weekday peak hours. However, it is anticipated that the “OUT” vehicle trip ends during the weekday AM peak hour and the “IN” trip ends during the PM peak hour would exceed this threshold. As a result, traffic assignment will be conducted for each of the 26 projected development sites to determine if any intersections within the study area would exceed this threshold. For intersections that would exceed this threshold, the EIS will provide a detailed traffic analysis focusing on weekday AM and PM peak hours, and Saturday peak hour. To select the specific peak hours for analysis, existing peak traffic volumes based upon traffic counts will be used. Specific intersections to be included in the traffic study area will be determined based on the anticipated distribution of project-generated traffic.

## **Vehicle Trip Assignment**

The assignment of auto and taxi trips was based on the locations of individual projected development sites (or groups of projected development sites), and the anticipated origins and destinations of vehicle trips associated with the different uses projected for each site (e.g., residential, retail, office, etc.). The origins/destinations of office/light industrial/community facility and residential trips were determined based upon 2000 Census journey-to work data. The assignment of retail-based auto and taxi trips was developed based on trip assignment patterns from the *Atlantic Yards Arena and Redevelopment Project EIS* (Table 4).

**Table 4**  
**Auto and Taxi Trip Assignment**

<b>Land Use</b>	<b>Bronx</b>	<b>Brook-lyn</b>	<b>Man-hattan</b>	<b>Queens</b>	<b>Staten Island</b>	<b>Long Island</b>	<b>Up State</b>	<b>New Jersey</b>	<b>Total</b>
Office/ Light Industrial/ Community Facility	1%	59%	3%	12%	10%	8%	1%	7%	<b>100%</b>
Residential /Hotel	1%	33%	60%	3%	1%	1%	1%	2%	<b>100%</b>
Local Retail	0%	100%	0%	0%	0%	0%	0%	0%	<b>100%</b>
Destination Retail	1%	59%	3%	12%	10%	8%	1%	7%	<b>100%</b>

Truck trips will be assigned separately from the auto and taxi trips (see below Truck section). Truck trips are projected to travel to and from individual projected development sites (or groups of development sites) along the most direct paths using designated local and through truck routes. These routes include 3<sup>rd</sup> and 4<sup>th</sup> Avenues.

## **PARKING**

Parking demand from commercial uses typically peaks in the midday period and declines during the afternoon and evening periods. By contrast, residential and hotel parking demand typically peak in the evening and overnight periods. Therefore, the analyses will document changes in off-street parking

utilization in the future conditions within 1/4-mile of projected development sites during the weekday midday and overnight periods. On-street parking conditions (existing curbside regulations and parking utilization) within the rezoning area will also be documented for these periods.

### **TRANSIT**

To select the peak hours for analysis of transit (subway and bus), existing peak transit demand data were used. During the weekday peak commuter periods (8:00 to 9:00 AM and 5:00 to 6:00 PM) overall transit demand (and the potential for significant adverse impacts) is typically the greatest. Therefore, the analyses of transit conditions will focus on these two periods.

Six subway stations are located in proximity to the proposed actions. These include the Smith Street Station (F/G), Carroll Street Station (F/G), Bergen Street Station (F/G), 4<sup>th</sup> Avenue/9th Street Station (M/R), Union Street Station (M/R), and Pacific Street Station (D/M/N/R)/ Atlantic Avenue (B/Q/2/3/4/5/LIRR). Based on the travel demand forecast, the proposed actions would result in a net increase of 1,377 subway trips at these subway stations serving the rezoning area in the AM peak hour and 1,666 trips in the PM peak hour (see Table 3). Trips from projected development sites were assigned to individual subway stations based on proximity to station entrances and existing ridership patterns for the subway routes serving each station. As shown in Table 5, the greatest incremental increase in subway trips as a result of the proposed actions would occur at the Union Street Station (M/R) station. The proposed actions would generate an estimated 952 and 1,158 new subway trips in the AM and PM peak hours, respectively. The Carroll Street Station (F/G) would generate 417 and 499 new subway trips in the AM and PM peak hours, respectively. All other subway stations serving the rezoning area would experience a net increase of less than 200 trips in each peak hour.

**Table 5  
Net Incremental Subway Trips**

Sites	AM			PM		
	In	Out	Total	In	Out	Total
Smith Street Station	0	0	<b>0</b>	0	0	<b>0</b>
Carroll Street Station	41	376	<b>417</b>	363	137	<b>499</b>
Bergen Street Station	0	3	<b>3</b>	3	1	<b>4</b>
4th Avenue/ 9th Street Station	0	0	<b>0</b>	0	0	<b>0</b>
Union Street Station	67	885	<b>952</b>	858	300	<b>1,158</b>
Pacific Street/ Atlantic Avenue Station	0	4	<b>4</b>	4	1	<b>5</b>
<b>Total</b>	<b>108</b>	<b>1,271</b>	<b>1,377</b>	<b>1,229</b>	<b>438</b>	<b>1,666</b>

Based upon the *CEQR Technical Manual* criteria, if a proposed action in any area of the City would generate fewer than 200 peak hour subway or bus trips, it is unlikely that there would be a need for further analysis. As shown in Table 5, it is anticipated that new demand from the proposed actions would exceed this threshold in the AM and PM peak hour at the Carroll Street Station (F/G) and the Union

Street Station (M/R) stations. Peak hour conditions at the four street stairs and the fare array at each of these two stations will therefore be analyzed quantitatively in the EIS. Conditions at the remaining four stations serving the proposed rezoning area will be discussed qualitatively in the EIS.

Seven (7) MTA NYC Transit local bus routes are located within 1/4-mile of one or more projected development sites. These routes include the B37, B63, B65, B71, B75, B77, and B103. As shown in Table 3, based on the travel demand forecast, the proposed actions would generate a net decrease of 13 bus trips in the weekday AM peak hour and a net increase of 19 bus trips in the PM peak hour. As the proposed actions would result in fewer than 200 new bus trips in either the AM or PM peak hours, conditions on the various routes serving the proposed rezoning area will be discussed qualitatively in the EIS.

### **PEDESTRIAN**

To select the peak hours for analysis of pedestrian trips, assumptions were based on similar rezoning projects. Although walk-only trips from projected development sites (i.e., walk trips not associated with other modes) would be widely dispersed among pedestrian facilities throughout the proposed actions area, concentrations of new pedestrian trips are expected during peak commuter periods along specific corridors that connect the projected development sites to the area subway stations. Therefore, the pedestrian analyses will focus on the weekday (8:00 to 9:00 AM and 5:00 to 6:00 PM) peak hours when commuter walk trips to and from transit facilities is typically the highest.

Walk-only trips from projected development sites (i.e., walk trips not associated with other modes) would be widely dispersed among pedestrian facilities (sidewalks, corner areas, and crosswalks) throughout the proposed rezoning area. However, concentrations of new pedestrian trips are expected during peak periods along corridors connecting projected development sites to area subway stations. The analysis of pedestrian conditions will therefore focus on pedestrian facilities in the vicinity of the entrances to subway stations where the majority of project-generated subway demand is expected to occur – the Carroll Street Station (F/G) and the Union Street Station (M/R) station. These pedestrian facilities include sidewalks at two intersections (4th Avenue at Union Street and 4th Avenue at President Street), corner areas at the southeast and southwest corners of the 4th Avenue and Union Street intersection and the northeast and northwest corners of the 4th Avenue and President Street intersection, and crosswalks at four signalized intersections (3rd Avenue and Carroll Street, 3rd Avenue and Union Street, 4th Avenue and President Street, and 4th Avenue and Union Street) and one unsignalized intersection (Hoyt Street and President Street).