

GREATER EAST MIDTOWN REZONING
DRAFT SCOPE OF WORK
FOR AN ENVIRONMENTAL IMPACT STATEMENT

CEQR NO. 17DCP001M
ULURP NOS.
Pending

August 22, 2016

A. INTRODUCTION

This Draft Scope of Work (the “Draft Scope”) outlines the technical areas to be analyzed in the preparation of an Environmental Impact Statement (EIS) for the Greater East Midtown Rezoning proposal (the “Proposal”) consisting of zoning map and zoning text amendments (collectively, the “Proposed Action”) affecting an approximately 78 block area within the East Midtown area of Manhattan Community Districts 5 and 6. The affected area is generally bounded by East 39th Street to the south, East 57th Street to the north, Second and Third Avenue to the east and Fifth Avenue to the west (refer to Figure 1). Currently, the affected area is comprised of high-density commercial zoning districts (C5 and C6). This document provides a description of the Proposed Action and associated development, and includes task categories for all technical areas to be analyzed in the EIS.

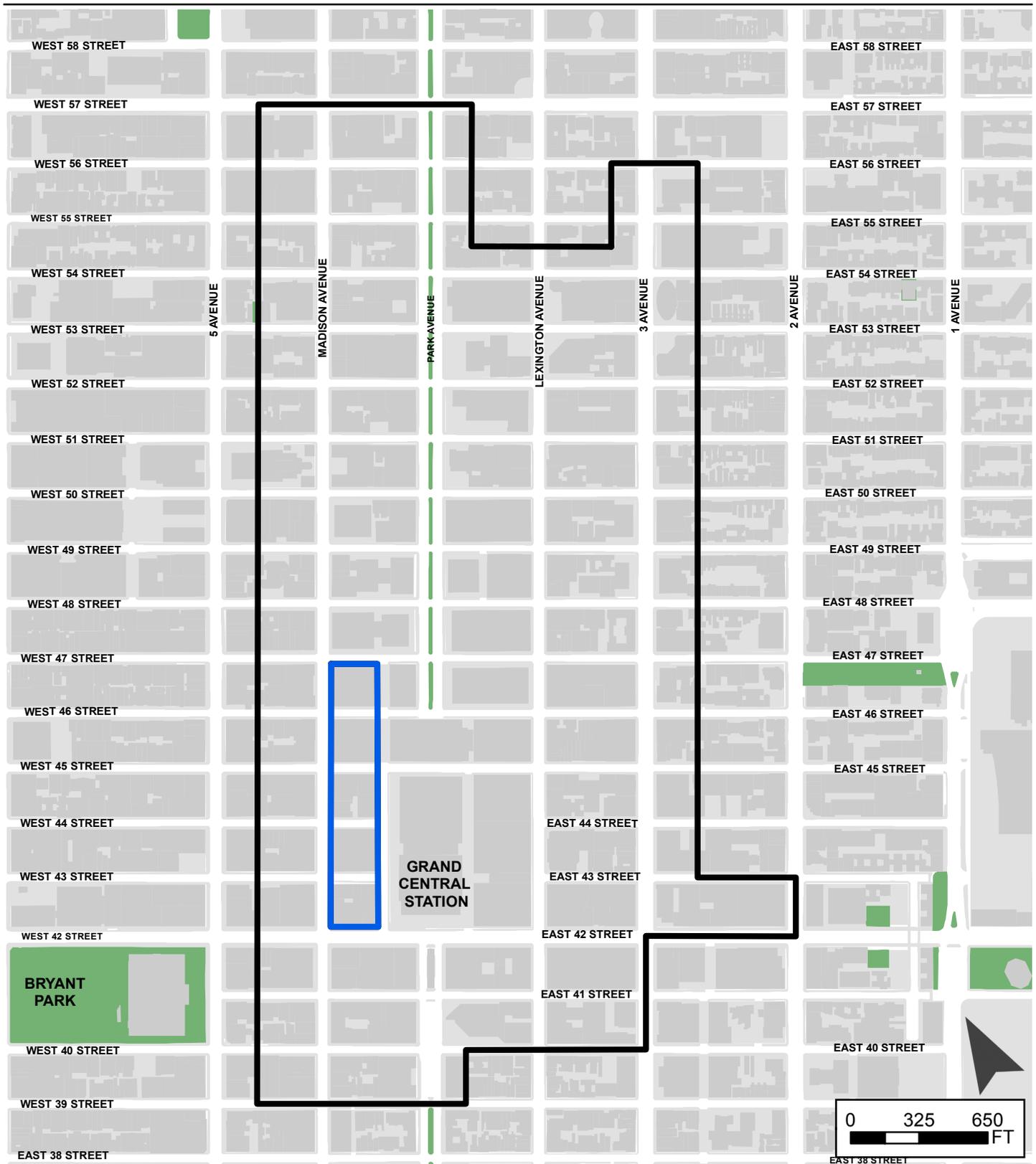
The New York City Planning Commission (CPC) has determined that an EIS for the Proposed Action will be prepared in conformance with City Environmental Quality Review (CEQR) guidelines, with the Department of City Planning (DCP) acting on behalf of the CPC as the lead agency. The environmental analyses in the EIS will assume a development period of 20 years for the reasonable worst-case development scenario (RWCDs) for the Proposed Action (i.e., analysis year of 2036), 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 with involved and interested agencies.

B. REQUIRED APPROVALS AND REVIEW PROCEDURES

The Proposed Action encompasses discretionary actions that are subject to review under the Uniform Land Use Review Procedure (ULURP), as well as pursuant to Section 200 of the City Charter. The discretionary actions include: (1) a zoning text amendment to establish the East Midtown Subdistrict (the “Subdistrict”) within the Special Midtown District which will supersede and subsume the existing Grand Central Subdistrict; and (2) a zoning map amendment to change an existing C5-2 district to a C5-3 district and to extend the Special Midtown District and the East Midtown Subdistrict over the proposed C5-3 district.

City Environmental Quality Review and Scoping

The Proposed Action is a Type I action, as defined under 6 NYCRR 617.4 and 43 RCNY 6-15, subject to environmental review in accordance with CEQR guidelines. An Environmental Assessment Statement



-  Proposed Greater East Midtown Rezoning Boundary
-  Vanderbilt Corridor (Area Excluded from the Proposed Action)

(EAS) was completed on August 19, 2016. A Positive Declaration, issued on August 22, 2016, established that the Proposed Action may have a significant adverse impact on the environment, thus warranting the preparation of an EIS.

The CEQR scoping process is intended to focus the EIS on those issues that are most pertinent to the Proposed Action. The process allows other agencies and the public a voice in framing the scope of the EIS. The scoping document sets forth the analyses and methodologies which will be utilized to prepare the EIS. During the period for scoping, those interested in reviewing the draft scope of work may do so and give their comments to the lead agency. The public, interested agencies, Manhattan Community Boards 5 and 6, and elected officials, are invited to comment on this Draft Scope, either in writing or orally, at a public scoping meeting to be held on Thursday, September 22, 2016 in the Municipal Building, Mezzanine Level, 1 Centre Street, New York, NY 10007; access through the North Entrance. The meeting will be held in two sessions with the first session starting at 2:00pm and the second starting at 6:00pm. Comments received during the draft scope's public meeting, and written comments received through Tuesday, October 4, 2016 will be considered and incorporated as appropriate into a final scope of work. The lead agency will oversee preparation of a final EIS scope, which incorporates all relevant comments made on the draft scope and revises the extent or methodologies of the studies, as appropriate, in response to comments made during scoping. The Draft EIS (DEIS) will be prepared in accordance with the Final Scope of Work for an EIS.

Once the lead agency is satisfied that the DEIS is complete, the document will be made available for public review and comment. A public hearing will be held on the DEIS in conjunction with the CPC hearing on the land use applications to afford all interested parties the opportunity to submit oral and written comments. The record will remain open for 10 days after the public hearing to allow additional written comments on the DEIS. At the close of the public review period, a Final EIS (FEIS) will be prepared that will incorporate all substantive comments made on the DEIS, along with any revisions to the technical analysis necessary to respond to those comments. The FEIS will then be used by the decision makers to evaluate CEQR findings, which address project impacts and proposed mitigation measures, before deciding whether to approve the requested discretionary actions, with or without modifications.

C. DESCRIPTION OF PROPOSED ACTION

Background and Existing Conditions

The Greater East Midtown business district is one of the largest job centers in New York City and one of the highest-profile business addresses in the world. The area between Second and Fifth Avenues, and East 39th and East 57th Streets contains more than 70 million square feet of office space, more than a quarter million jobs and numerous Fortune 500 companies.

This area is centered upon Grand Central Terminal (the "Terminal" and "Grand Central"), one of the city's major transportation hubs and famous civic spaces. Around the Terminal and to the north, some of the city's most iconic office buildings, such as Lever House and the Chrysler Building, line the major avenues – Park, Madison, and Lexington Avenues – along with a mix of other landmarks, civic structures and hotels.

The area's transportation network is currently under expansion through two major public infrastructure projects: East Side Access and the Second Avenue subway. East Side Access will, for the first time, permit Long Island commuters one-seat access to East Midtown through a new below-grade station adjacent to Grand Central. Construction is expected to be completed in 2022. The Second Avenue subway—whose first phase from East 63rd to East 96th Streets is currently under construction—is expected to alleviate

congestion on the Lexington Avenue subway line which runs through the Greater East Midtown office district.

Current Status and Recent Trends

Greater East Midtown continues to be one of the most sought-after office addresses in the New York City metropolitan region. The area straddles two Midtown office submarkets – Grand Central and the Plaza districts. The Grand Central district is typically considered an older submarket, with a higher vacancy rate and lower rents than the overall Midtown market. The Plaza district, centered on the upper reaches of Park and Madison Avenues is one of the most expensive submarkets in the country, and generally has more recent construction.

The area's tenants have historically included financial institutions and law firms, with some of the country's largest banks headquartered here. Recent trends have both reinforced and altered this role. First, the area has become home to the city's hedge fund and private equity cluster – thanks, in part, to the area's cachet and easy access to the Grand Central 42nd Street subway station and the Metro-North Railroad. Given this, rents for high-quality space in the area's top buildings have greatly increased as this industry competes for these spaces. Conversely, as rents dropped with the economic downturn beginning in 2008, the area has developed a more diverse roster of tenants, as tenants who were previously priced out of the Greater East Midtown office market have moved in. This trend, where new non-profits, technology, and media firms have been able to move into Greater East Midtown has led to a more diverse office market. Both trends have helped the area recover from the 2008 recession, with vacancy rates beginning to fall to within a more stable range.

Other recent trends have affected the overall level of employment in the area – which has dropped over the last decade. In 2000, approximately 255,000 people worked in the area. Since then, employment has dropped by some 20,000 persons, to 235,000 working in the area in 2009 (2000, 2009 NYS Bureau of Labor Statistics Quarterly Census of Employment and Wages), with vacancy rates for office space remaining at consistent levels. These numbers represent a significant drop in employment in the area and one with no single cause, though likely reasons include ever-increasing use of technology in office space and a move toward greater professionalization of the work force. Overall, this has led to an increase in the amount of floor area per employee in the area's buildings.

Additionally, the area has experienced a shift from a singular high travel period—typically at a rush 'hour'—toward an overall more dispersed daily ridership. This has resulted in part from people working more flexible and varied hours; a trend which has been seen throughout the city.

Purpose and Need for Proposed Action

While this area currently continues to perform strongly today as an office district, in terms of overall cachet, rents, and vacancy rates, the DCP has identified a number of long-term challenges that must be addressed in order for Greater East Midtown to remain one of the region's premier job centers and one of the most attractive business districts in the world. A primary challenge is the area's office building stock, which the DCP is concerned may not—in the long run—offer the kinds of spaces and amenities that are desired by tenants, and which can only be provided through new construction. In addition to its aging office stock, Greater East Midtown faces challenges that the DCP believes may compromise its long-term competitiveness as a premier business district. These include limited recent office development and few available office development sites, public realm challenges, and the existing zoning framework, which limits new office development. Each of these long-term challenges are discussed in detail below. In light of these factors, the DCP has projected that the area's importance as a premiere Class A office district could diminish over time and the large investment in transit infrastructure, including the East Side Access and

Second Avenue subway projects, will fail to generate its full potential of jobs and tax revenue for the city and region.

Aging Building Stock

The Greater East Midtown area contains approximately 475 buildings, of which more than 300 are more than 50 years old; the average age of office buildings in the area is approximately 75 years. For an office district competing for tenants regionally and globally, this is a comparatively aged building stock.

This high average age makes it more likely that the space in the area's office buildings is or may become outdated in relation to tenant needs. Today, this is seen in the area with office buildings more than 50 years old having noticeably higher vacancy rates and lower rents. Reasons for this include limited technology and amenity offerings which can at least partially be ameliorated through full-scale renovations of the buildings. However, some of the most challenging features cannot be dealt with through renovations, particularly low floor-to-floor heights and interior columns.

Tenants looking for office space in Midtown today desire large expanses of column-free space in order to have flexibility in creating office layouts, which are trending toward more open organization. Columns and low floor-to-floor heights cannot accommodate such flexible open layouts and thus, older buildings with such features are not desirable. With such a large amount of the office stock having these outdated features, the DCP is concerned this area's buildings cannot offer the kinds of space and amenities that new construction offers and therefore can no longer compete for the occupants who have typified the Greater East Midtown area.

Instead, the DCP believes that in the long term the area's outdated office buildings may begin to convert to other uses—particularly residential buildings and/or hotels. Given the area's concentration of rail public transit infrastructure and the current expansion of this network, this outcome does not align with the city's long-term economic goals. While the DCP has undertaken many initiatives over the last decade to accommodate new office construction in the city; including at Hudson Yards, Downtown Brooklyn, and Long Island City; all of these were predicated on East Midtown remaining a center for office jobs and none contemplated the diminishment of this area as one of the city's premier business districts.

Finally, since most of the area's buildings were constructed before sustainability and energy efficiency became key features of office building design and operation, many of the area's buildings are far less efficient than new construction.

Limited Recent Office Development and Few Available Office Development Sites

With much of the Greater East Midtown's existing office stock aging, the area has also experienced little new office development. Only three office buildings have been constructed in this area since 2001, which represents a significant drop from preceding decades. Of the 70 million square feet of office space currently in the area, less than 5 percent was constructed within the last two decades. Whereas the area had an overall annual space growth rate of 1 percent between 1982 and 1991, the area's growth rate began to drop off in the next decade, with an annual growth rate of 0.14 percent. Over the last decade, this has continued to fall to an annual growth rate of only 0.06 percent between 2002 and 2011. Since 1982, the area's average age of buildings increased from 52 years to over 70 years. Three major office developments are currently underway or in the planning stages. The most prominent of these, 1 Vanderbilt Avenue, will be a 30-FAR office building directly west of Grand Central Terminal, and is being developed pursuant to the 2015 Vanderbilt Corridor text amendment's provisions. In exchange for bonus floor area, the development provided over \$200 million in transit improvements, a new marquee public space on a pedestrianized portion of Vanderbilt Avenue and an on-site transit hall with connections to commuter rail. The other two

underway developments, 425 Park Avenue and 380 Madison Avenue, are replacing existing office buildings in kind and add no additional office floor area to East Midtown.

The area is highly built up and contains few remaining development sites based on typical “soft site” criteria, i.e., sites where built FAR is less than half of the permitted base FAR, excluding landmarks. Of the possible development sites that do exist, few would accommodate a major new office building. Beyond the difficulty of assembling appropriately-sized sites, there are a number of other challenges to new development. These include the need to vacate existing tenants which, depending on existing leases, can be a long, multi-year process that is not economically viable for many property owners. Large existing buildings must then be demolished, further extending the period during which the property produces no revenue. These issues have led to very limited new office construction in the area and many owners attempting instead to renovate their buildings, often on a piecemeal basis, to compete in the overall market.

Public Realm Challenges – Pedestrian Realm and Transit Network

East Midtown contains some of the city’s best known public and civic spaces, including Grand Central Terminal’s main hall, the Seagram Building Plaza, and Park Avenue itself. The public realm, however, encompasses more than just iconic or grand civic spaces—it exists both above and below grade, and includes sidewalks, roadways, parks and open spaces, indoor and outdoor privately-owned public spaces (POPS) as well as publicly-accessible transit-related infrastructure. An example of the below-grade public realm is the extensive subterranean pedestrian network that connects Grand Central Terminal to the Grand Central 42nd Street subway station and to surrounding streets and buildings, allowing for a more efficient distribution of pedestrians in the area.

East Midtown is one of the most transit-rich locations in the city, and the public realm, both above and below grade, is one of the area’s unique assets. However, the area faces a number of challenges to creating a pedestrian network that matches the area’s role as a premier business district, and allows pedestrians to easily access its public spaces, transit amenities, office buildings and institutions. Specifically, challenges to the above and below grade public realm include:

- The area’s below-grade transit system is heavily utilized. For example, Grand Central 42nd Street subway station is one of the busiest in the entire system with nearly half a million daily users. Like other stations in the area, Grand Central 42nd Street experiences pedestrian circulation constraints, including platform crowding and long dwell times for the Lexington Avenue line (Nos. 4, 5, and 6), which limits train through-put, creating a subway system bottleneck. The transit upgrades associated with 1 Vanderbilt will help alleviate pressure on the Lexington Line at the Grand Central 42nd Street station. However, the Flushing line at Grand Central 42nd Street is in need of critical upgrades, and the area’s other two transit hubs, at Lexington Avenue-51st/53rd Streets and Fifth Avenue-53rd Street stations, require targeted improvements to improve pedestrian circulation and transfers between train lines.
- Several stations outside the Subdistrict boundaries serve East Midtown, through transfers or as final destinations. These stations face a similar series of connectivity and circulation-related challenges that make it difficult for users to access the area.
- The area’s sidewalks and pedestrian circulation spaces can be crowded during the workweek. Vehicular congestion feels pronounced in the area, especially during rush hours, which exacerbates these negative aspects of the pedestrian experience. These include issues such as the sidewalks of Madison and Lexington Avenues, which are extremely narrow—both are less than 12 feet wide. Effective widths (the unobstructed area available to pedestrians) are even narrower, when subway grates and other sidewalk furniture are considered. The Department of Transportation (DOT)

implemented protected sidewalk extensions at key pedestrian crossings on the west side of Lexington Avenue, adjacent to Grand Central which have helped improve pedestrian safety. However, similar measures are needed throughout the area's north-south corridors, particularly near transit-hubs, which tend to be highly trafficked by pedestrians. Transit modes are not well-integrated above grade and can have a precarious relationship, whether it's between bicyclists, vehicles and pedestrians, or between pedestrians and the bus system. Many intersections are crowded and challenging to cross.

- Given the area's built density, there are seemingly limited avenues to expand its open spaces or public spaces oriented towards passive activities. The city is working to address this issue in publicly owned property through the creation of Vanderbilt Place and the planned pedestrianization of Pershing Square. Over 40 developments in the area contain POPS. Since 2007, nine of these spaces have been redesigned, and one new one has been built. POPS are a key component of East Midtown's above-grade public realm, but the current zoning and built-out fabric yield few opportunities to further supplement these spaces on private property.

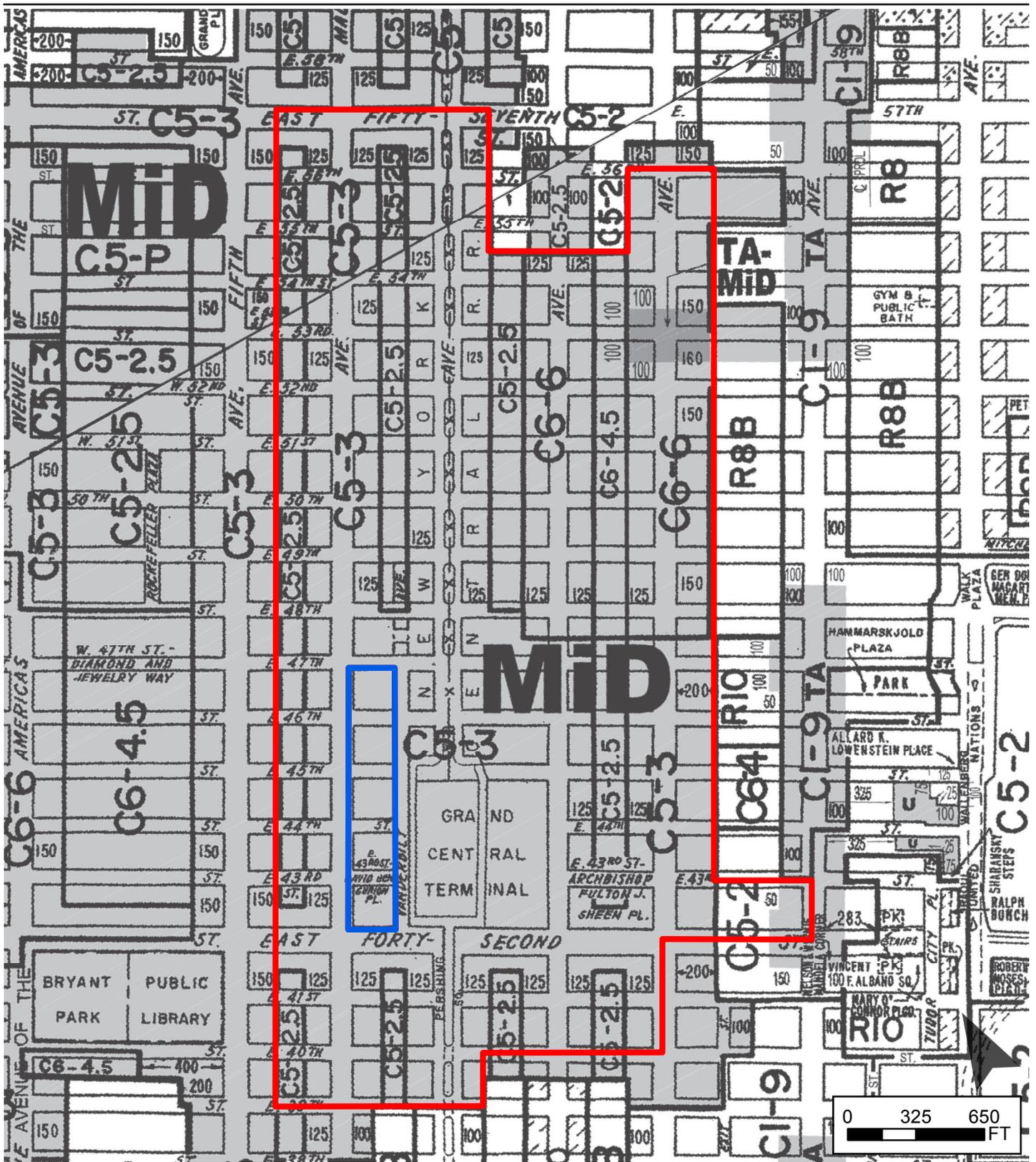
Challenges of Current Zoning

East Midtown's current zoning framework is broadly intended to strengthen the area's role as a central business district and to promote and incentivize high-density development where appropriate. However, the DCP has identified a number of issues with the current framework that serve to limit new construction. One of the most prominent challenges is with permitted density. The increment between a building's maximum permitted FAR and built FAR is a driving factor in whether redevelopment is feasible. The more underbuilt a site is, the more feasibly it can be redeveloped.

East Midtown is generally zoned C5-3 along wide streets and in Grand Central's vicinity, and C5-2.5 along midblocks. The entire area, save a small portion of Block 1316, is located within the Special Midtown District. The C5-3 districts permit a maximum as-of-right FAR of 15.0 and the C5-2.5 districts permit 12.0. Existing Zoning is shown in Figure 2.

Existing built densities are commonly higher than the 15.0 and 12.0 permitted, which makes new construction of office space a challenge. As a whole, the area contains approximately 2.3 million square feet more than which is currently permitted under existing zoning. This is particularly an issue for buildings which were constructed before 1961, when floor area ratios were first instituted under the Zoning Resolution, and contain more floor area than would be permitted today. As discussed above, many of these "overbuilt" buildings contain obsolete features that make them less marketable, but the lower amount of square footage that could be constructed in a new building on the site presents a significant disincentive to new construction. Under current zoning, up to 75 percent of the floor area could be removed and reconstructed as modern office space, but this would still leave a building with 25 percent of floor space below contemporary standards, and the construction issues caused by this requirement make it extremely challenging to undertake. As indicated, two buildings, 425 Park Avenue and 390 Madison Avenue, are being redeveloped in this manner at great cost. These two redevelopments, however, are in-kind replacements and add no new office space to the area.

There are two main options for a development site to increase its on-site density without changing its underlying zoning. One is to transfer and incorporate unused development rights from area landmarks, and the second is to pursue a floor area bonus through either an as-of-right or discretionary zoning action. In practice, however, it can be difficult for development sites in East Midtown to successfully utilize these mechanisms.



- Proposed Greater East Midtown Rezoning Boundary
- Vanderbilt Corridor (Area Excluded from the Proposed Action)

Greater East Midtown Rezoning
Manhattan, New York

Existing Zoning

Figure
2



East Midtown's landmarked properties hold considerable reserves of unused development rights—approximately 3.5 million square feet in total. In particular, Grand Central Terminal, St. Patrick's Cathedral and St. Bartholomew's Episcopal Church each contain between 850,000 and 1.2 million square feet of unused development rights. As-of-right, granting sites may only transfer development rights to contiguous receiving sites. However, Section 74-79 of the Zoning Resolution allows landmarked properties to transfer unused development rights to receiving sites across the street via CPC special permit. In high-density locations, the CPC can require public improvements as a condition to the special permit's approval, such as public open spaces and plazas, arcades or below-grade connections to public transit. Even with this expanded range of potential receiving sites, only two developments in East Midtown (610 Lexington Avenue and 120 Park Avenue) have successfully utilized this action, and the majority of the area's landmark development rights remain unused with limited prospects for transfer.

The Grand Central Subdistrict of the Special Midtown District was adopted in 1992, in part to address this issue by permitting the transfer of development rights from Grand Central Terminal and other nearby landmarks to a wider range of surrounding development sites, and to create an improved pedestrian realm in the area. In the Core area of the subdistrict (between Madison and Lexington Avenues, from East 41st to East 48th Streets) the maximum permitted FAR through transfer is 21.6 and requires a special permit from the CPC that finds that a significant pedestrian improvement is being provided as part of the project. Only one building, 383 Madison Avenue, has taken advantage of this provision. Additionally, 1.0 FAR transfers are permitted through a certification process in the Core and a larger area which includes the other sides of Madison and Lexington Avenues. This mechanism has been used three times since 1992. In total, more than 1.2 million square feet of development rights remain unused on the Grand Central block.

Besides Section 74-79 and the Grand Central Subdistrict mechanisms, the current zoning framework provides two land use actions that permit increased density. First, subway bonuses are permitted for sites directly adjacent to subway entrances (up to 20 percent more than the permitted base FAR) through the provision of an improvement to the subway network (pursuant to Sections 81-292 and 74-634 of the Zoning Resolution). The geographic applicability, discretionary nature of the action and long-term collaboration requirement with the Metropolitan Transportation Authority (MTA) make this mechanism comparatively difficult to pursue. To date, two developments over 20 years apart, 599 Lexington Avenue and 885 Third Avenue, have been granted this special permit.

In the portions of East Midtown outside the Grand Central Subdistrict, as-of-right bonuses of 1.0 FAR are permitted through the provision of public plazas.

The Special Midtown District formerly provided a 20 percent bonus via special permit for the provision of publicly accessible Covered Pedestrian Spaces (CPS) pursuant to Section 74-87. This permit was responsible for notable indoor public spaces at the Sony/ATT building (550 Madison Avenue), and IBM building (590 Madison Avenue). In 1998, this typology was prohibited in the Special Midtown District along with the Through Block Arcade, another type of bonusable public space that was popular during the 1970s and 1980s.

Beyond density regulations, the provisions governing height and setback in the Special Midtown District can limit new development. The District has two alternative sets of as-of-right height and setback regulations—daylight compensation and daylight evaluation. They were developed over thirty years ago in 1982 in response to concerns that midtown's built density and future development would compromise the public's access to light and air. These regulations were crafted with larger, regularly shaped development sites in mind, and have proven restrictive on smaller or irregular sites, particularly for the development of high-density office buildings.

Consequences of Long Term Challenges

The DCP believes that the long-term consequence of failing to address the aging of the existing office stock, the lack of replacement office development, the area's public realm issues and the challenges of its current zoning would be a decline in the diverse and dynamic business district in East Midtown. The needs of the full range of tenants that East Midtown serves today would be unmet if current challenges are not addressed. In particular, tenants of state-of-the-art Class A office space, who have been attracted to the area in the past, would begin to look elsewhere for space. This would likely not only affect the top of the market, but also the Class B and C office space since tenants in these buildings would lose proximity to other important businesses in their cluster. As a result, Class B and C buildings would become ripe for conversion to other uses. In sum, East Midtown would become less desirable as a business district and the significant public investment in the area's transit infrastructure would fail to maximize its full potential to generate jobs and tax revenues for the city.

2013 East Midtown Rezoning Proposal

Acknowledging the challenges discussed above, in order to reinforce the area's standing as a premier business district, the city created the 2013 East Midtown rezoning proposal (the "2013 EMT Proposal"). It was developed to encourage new, predominantly office development in East Midtown. To do so, it proposed modified zoning regulations for a 70-block area of the Special Midtown District to be known as the East Midtown Subdistrict, which would have superseded the Grand Central Subdistrict. The East Midtown Subdistrict's primary features included the following:

- Focused new commercial development on large sites with full block frontage on avenues around Grand Central Terminal and its concentration of transit access by permitting the highest as-of-right densities for these sites and slightly lower densities allowed along the Park Avenue corridor and elsewhere.
- Provided a District Improvement Bonus mechanism to generate funding for area-wide pedestrian network improvements through new development.
- Streamline the process for landmarked buildings to transfer their unused floor area.

The 2013 EMT Proposal was approved by the CPC in September 2013, but was withdrawn by the City in November of that year before reaching the City Council vote. After taking office in 2014, Mayor Bill de Blasio committed the City to developing a new plan to ensure the area's long-term success as a business district. This included a stakeholder-driven process to determine a new framework for the overall East Midtown area.

Despite the 2013 application's withdrawal, there was broad consensus and agreement with the DCP's analysis that the current zoning impedes replenishment of office space and that without a change in outdated zoning, the office stock will continue to age and the overall competitiveness of the business district will gradually decline, eroding one of the most important job centers and tax bases in the city. The key concerns raised by stakeholders during the public review process included:

- While there was overall agreement that infrastructure improvements were critically needed in the area, there were concerns raised about the effectiveness of the District Improvement Bonus in delivering area improvements, and uncertainty over which above and below grade public realm improvements the public could expect.
- The need to balance new development with preservation of the area's existing buildings, and to identify ways for the area landmarks to transfer their unused development rights.

- The specific uses that should be allowed in new development in the area, with particular concern about as-of-right hotel development.

The Vanderbilt Corridor

In 2014, the DCP sought to address the above challenges in a more targeted area. The five-block area along the west side of Vanderbilt Avenue between East 42nd and East 47th Streets, (the “Vanderbilt Corridor”) was the subject of a 2015 zoning text amendment (N 150127 ZRM). In particular, the text amendment created mechanisms to increase density in exchange for substantial public realm improvements, and permitted greater transfer of unused landmark development rights in order to allow them to be a primary driver of growth. Sites in the corridor could apply for one or a combination of both special permits to achieve a maximum of 30.0 FAR. Creation of the Vanderbilt Corridor also included a City Map amendment (C 140440 MMM) to designate the portion of Vanderbilt Avenue between East 42nd and East 43rd Streets as a “public place” dedicated to pedestrian uses, in part to alleviate the public realm challenges identified earlier.

The Vanderbilt Corridor plan addressed a number of development sites along Vanderbilt Avenue that offer the opportunity to provide modern commercial space in the immediate vicinity of Grand Central Terminal, and created a special permit mechanism linking new commercial development to significant transit and public realm improvements in the overall Grand Central area. In particular, this process facilitated the development of One Vanderbilt Avenue, a new 30 FAR, 1.3 million square foot commercial tower that received a special permit floor area bonus for the provision of approximately \$225 million in improvements to the Grand Central Terminal. Construction is underway on this new building. While the Vanderbilt Corridor area would be included in the proposed East Midtown Subdistrict, the Proposal does not contemplate any modifications to the provisions currently applicable in the corridor.

East Midtown Steering Committee

Following the withdrawal of the 2013 EMT Proposal, Mayor de Blasio established the East Midtown Steering Committee in May 2014 and requested that the Manhattan Borough President and local City Council member serve as co-chairs. The Steering Committee included representatives from Community Boards 5 and 6, real estate and business interests, citywide civic and labor organizations. It was tasked with developing a new planning agenda for the future of East Midtown that would inform future rezoning, funding and capital commitments, and other policy decisions there.

The Steering Committee met 19 times between 2014 and 2015 and issued a set of recommendations intended to serve as a framework for the Proposed Action. Their recommendations covered the following topics:

- Land Use and Density:
 - Higher as-of-right densities should be permitted dependent upon both the location of a development site (such as proximity to transit), and upon proposed improvements to transit and the wider public realm.
 - Designated landmarks should be permitted to transfer their existing unused development rights throughout the entire district on an as-of-right basis.
 - A percentage of the sale of landmark transfer development rights (TDR) would be made as a contribution to an “Improvement Fund” for area-wide public realm improvements, with a per-square-foot minimum contribution.

- Improvement Fund and Place-making:
 - Revenue secured through a percentage of sale of landmark TDRs should be held in the Improvement Fund. A Governing Group with appointees from the Mayor, local elected officials and representation by Community Boards and other stakeholders should set planning and project management priorities, as well as the use of funding for specific projects once available.
 - Parameters should be employed to ensure funding for both above- and below-grade improvements over time.
 - Key corridors should receive special attention for place-making and pedestrian improvements.
- Landmark Designation:
 - The New York City Landmarks Preservation Commission (LPC) should calendar for landmarks designation as many historic resources as it deems appropriate and do so by the certification date of the rezoning of Greater East Midtown.

In response to the Steering Committee’s recommendations, the DCP, in concert with other city agencies and the MTA collaborated to produce an interagency proposal for Greater East Midtown, of which the Proposed Action is a main component. These included:

- LPC reviewed the area’s buildings and calendared 12 buildings within the proposed Subdistrict, and intends to designate all 12 before the end of 2016.
- MTA studied the area’s transit network to identify its primary issues, and conducted extensive engineering and costing analyses to deliver a list of feasible transit improvements to address them.
- DOT examined the Steering Committee’s recommendations regarding sidewalks, roadways and similar elements of the above-grade public realm. Their study provided cost estimates and a list of improvements and place-making strategies.

Description of the Proposed Action

The City’s vision for Greater East Midtown is that it will continue to be a premier central business district that complements office development throughout the city to facilitate the long-term expansion of its overall stock of office space. The addition of new office buildings would reinforce the area’s standing, support the preservation and continued maintenance of cherished landmarks, and provide for public realm improvements essential for both a functional and dynamic commercial district. It is envisioned that the majority of buildings would remain in their current office uses and only a small portion would convert to residential and hotel uses. Specifically, the goals of this Proposal are to develop a largely as-of-right framework that produces predictable results that:

- Protect and strengthen Greater East Midtown as a regional job center and premier central business district by seeding the area with new modern and sustainable office buildings;
- Help preserve and maintain landmarked buildings by permitting their unused development rights to transfer within the district’s boundary;
- Permit overbuilt buildings to retain their non-complying floor area as part of a new development on the site;

- Upgrade the area’s public realm through improvements that create pedestrian friendly public spaces and that facilitates safer, more pleasant pedestrian circulation within the transit stations and the street network; and
- Maintain and enhance key characteristics of the area’s built environment such as access to light and air, active retail corridors, and the iconic street wall character in the area surrounding Grand Central Terminal.

To accomplish these goals, a zoning text amendment and a zoning map amendment (collectively the “Proposed Action”) would be required. Figure 3 shows the Proposed Zoning Change. The DCP proposes a new East Midtown Subdistrict (the “Subdistrict”) within the Special Midtown District. Sites located in the Subdistrict that meet certain criteria, described further below, will be able to achieve higher densities, up to specified maximum allowances, through three as-of-right mechanisms (Figures 4 and 5 illustrate the Existing and Proposed Subdistricts). Specifically:

1. Underbuilt landmark sites that are within the Subdistrict or whose lot borders the Subdistrict’s boundary will be permitted to transfer their unused development rights throughout the Subdistrict.
2. Floor area of pre-1961 buildings that exceeds the maximum permitted base FAR would be permitted to be utilized in a new development on the site without retaining 25 percent of the current building.
3. New developments in close proximity to transit nodes would be required to complete pre-identified transit infrastructure projects in exchange for a portion of the permitted floor area.

Each mechanism will generate improvements to the public realm. In cases where a new development is employing landmark development rights and/or floor area from an overbuilt building, a contribution to a public realm improvement fund will be required. This fund; administered by elected officials, community boards, and city agencies; would be utilized to finance districtwide public realm improvement projects. In the case of the transit infrastructure projects described in (3), the public realm improvements will be constructed by the new development.

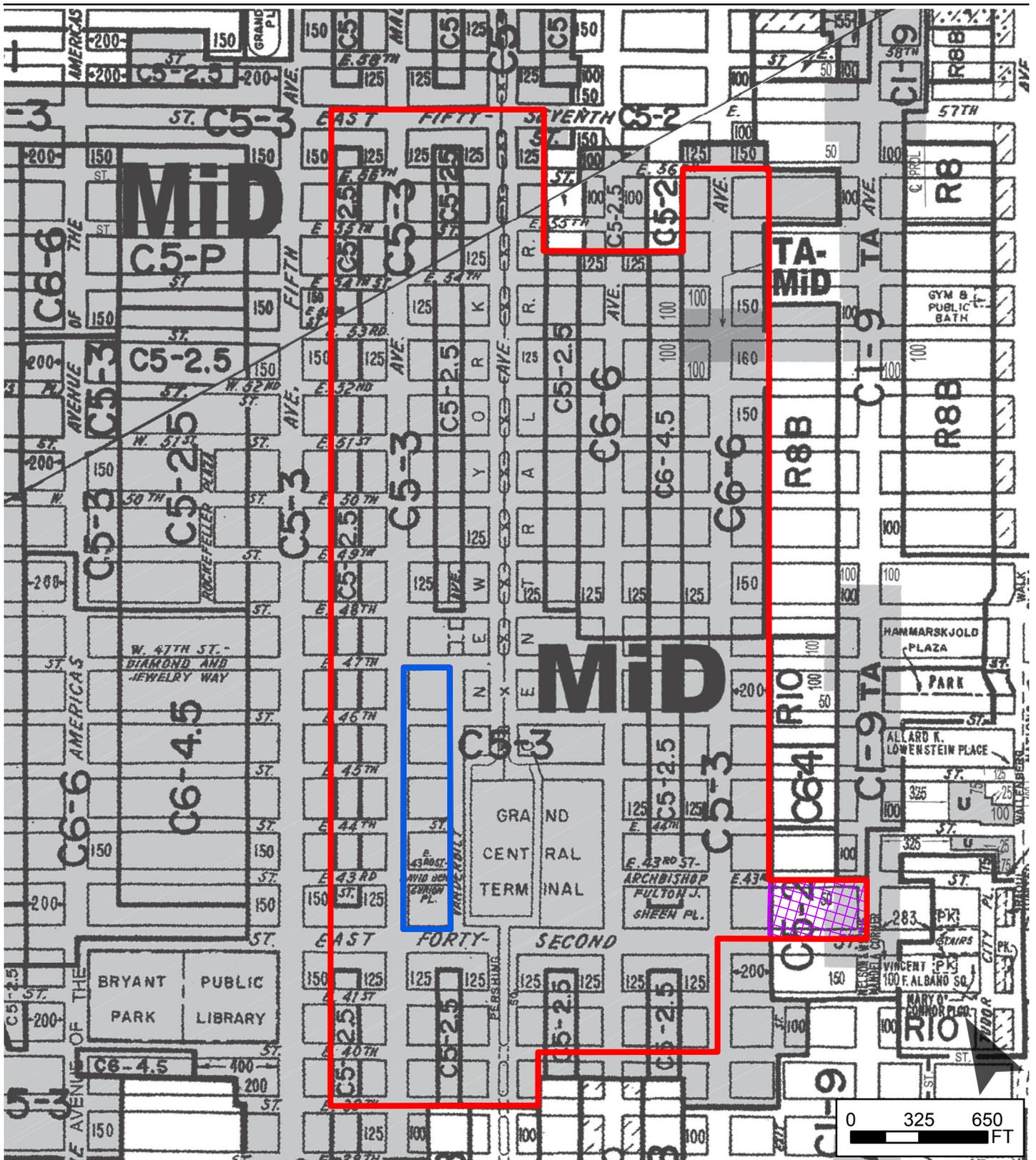
It is expected that enactment of the Proposed Action would lead to the development of approximately 16 new predominantly office buildings in the coming decades. These buildings would occur throughout the Subdistrict with concentrations along Madison Avenue between East 39th and 46th Streets, and around the Lexington Avenue-51st/53rd Streets subway station. A more limited number of developments are projected along Park Avenue and east of Grand Central Terminal. This construction would utilize all of the unused floor area from the Subdistrict’s landmarked sites and provide significant funding for public realm improvements to address key challenges in the area. New construction permitted through the Proposed Action would translate into an increase of less than 6.5 percent above the approximately 90 million square feet of total space in the Subdistrict today.

Requested Actions

To facilitate the proposed Subdistrict, the following actions are required:

Zoning Text Amendment

The proposed zoning text amendment (the “Amendment”) would establish a Greater East Midtown Subdistrict (the “Subdistrict”) within the Special Midtown District. This new Subdistrict would supersede and subsume the existing Grand Central Subdistrict. Most existing zoning would remain in place and the Amendment would focus new development on sites that are near transit stations and along wide streets. The greatest as-of-right density would be around Grand Central Terminal with lower densities dissipating out from the Grand Central core. Development generated through the proposed mechanisms would



- Proposed Greater East Midtown Rezoning Boundary
- Vanderbilt Corridor (Area Excluded from the Proposed Action)
- Proposed Zoning Map Change*

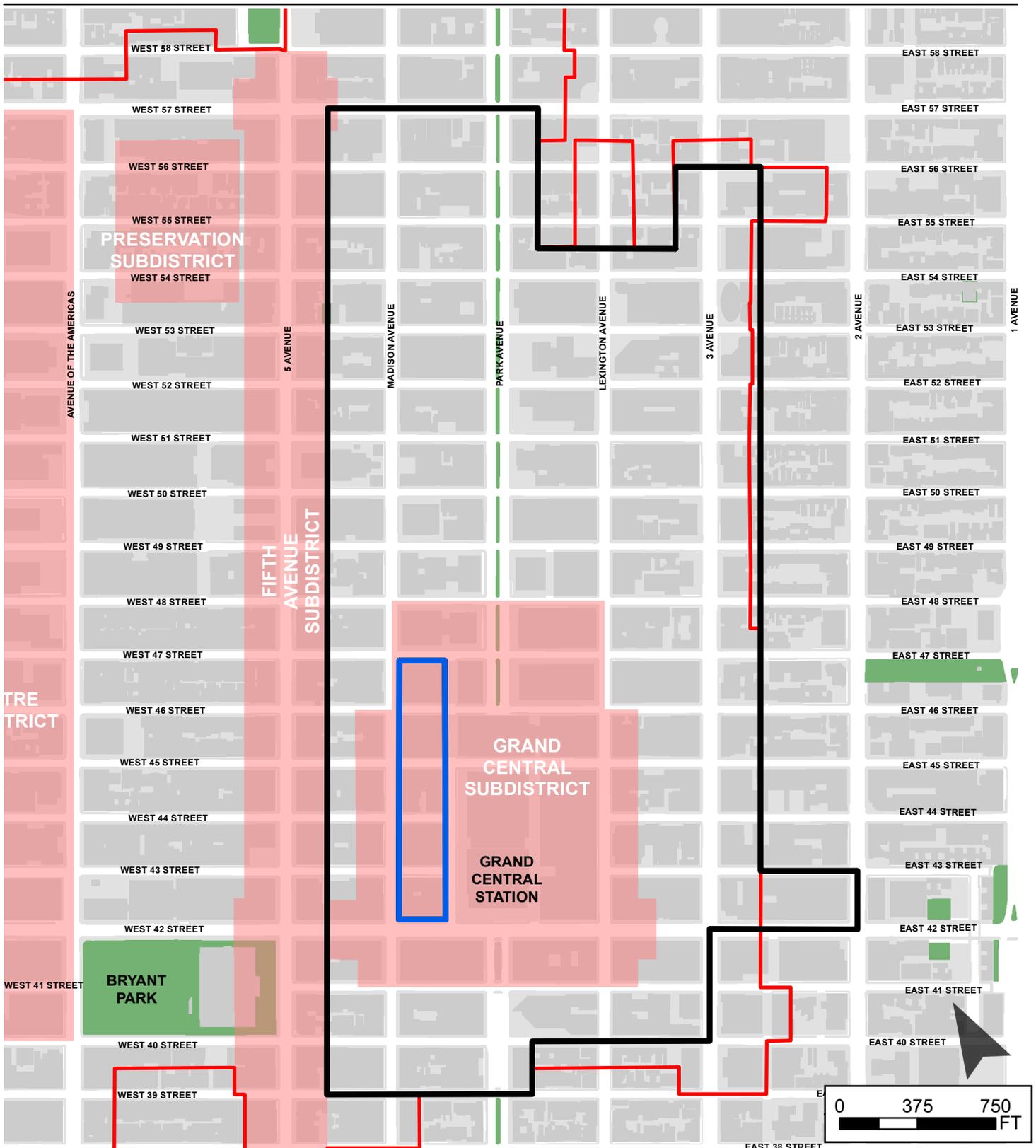
*Extension of C5-3 and Special Midtown Zoning Districts

Greater East Midtown Rezoning
Manhattan, New York

Proposed Zoning
Map Change

Figure
3





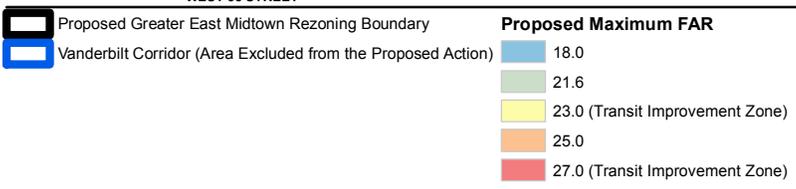
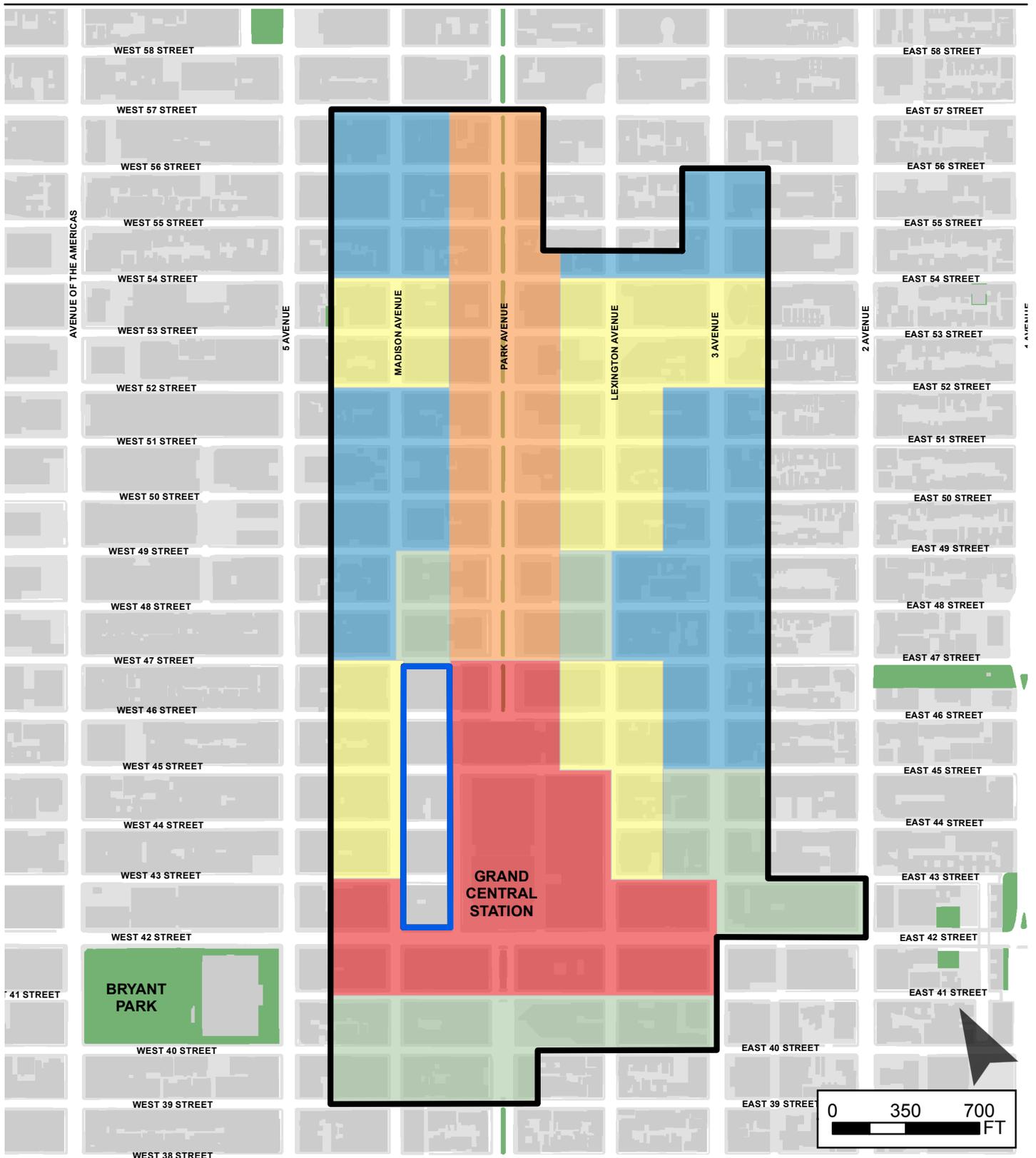
- Proposed Greater East Midtown Rezoning Boundary
- Vanderbilt Corridor (Area Excluded from the Proposed Action)
- Special Midtown District Boundary
- Special District Subdistrict Boundary

Greater East Midtown Rezoning
Manhattan, New York

Existing Subdistricts

Figure
4





provide greater opportunity for landmarks to transfer unused development rights throughout the Subdistrict and would provide district-wide public realm improvements.

Density Framework to Permit and Promote New Development

This Proposal addresses the development challenges associated with the sometimes lengthy and unpredictable special permit process and limited growth potential due to the current maximum permitted FARs through a primarily as-of-right framework. This framework permits additional density by varying degrees based on locational criteria such as proximity to transit and adjacency to wide streets. This creates a scenario whereby the public can be assured that the densest new developments will be appropriately located (i.e., near transit and along wide streets) and whereby the predictable as-of-right process and increased permitted densities will serve as incentives for developers to undergo the resource intensive effort associated with redevelopment projects in the area. The as-of-right process is elaborated upon throughout this section of the document and the proposed maximum densities are detailed here.

The area around Grand Central Terminal is mapped as a C5-3 zoning district on both wide and narrow streets. This designation permits a maximum of 15.0 FAR. The remainder of the area is mapped with C5-3 and C6-6 districts along the avenues, which permit a maximum of 15.0 FAR, and C5-2.5 and C6-4.5 districts along the midblocks, which permit a maximum of 12.0 FAR. This Proposal would enable sites to utilize the three as-of-right mechanisms to achieve specific maximum densities in excess of the base FARs.

New as-of-right maximum densities proposed for the Subdistrict range from 18.0 to 27.0 FAR based on geography. Broadly, this translates to higher permitted FARs in locations proximate to transit nodes and along Park Avenue, an especially wide street. In the area immediately surrounding Grand Central Terminal, the as-of-right maximum density would be 27.0 FAR. This would be the highest as-of-right density allowance in the East Midtown Subdistrict, reflecting the DCP's planning policy of focusing density in areas with excellent access to transit. In the area east and west of the Grand Central core and the area surrounding the Fifth Avenue-53rd Street and Lexington Avenue-51st/53rd Streets subway stations, the as-of-right maximum density would be 23.0 FAR. These areas of the district with a 23.0 or 27.0 FAR are further defined as Transit Improvement Zones, explained in further detail below. In the area encircling the Grand Central Transit Improvement Zone, the as-of-right maximum density would be 21.6 FAR for the blocks nearest Grand Central Terminal's below-grade network and 18.0 FAR for blocks further away. Generally, the area's that flank the Fifth Avenue-53rd Street and Lexington Avenue-51st/53rd Streets Transit Improvement Zones would have as-of-right maximum densities of 18.0 FAR. The exception is along Park Avenue where the as-of-right maximum density would be 25.0 FAR.

Qualifying Site Requirements

Development of new high-quality office space requires appropriate sites. Consequently, sites that are eligible for the proposed Subdistrict's as-of-right framework must have cleared frontage along a wide street, dedicate no more than 20 percent of the building's floor area for residential use, and comply with environmental performance standards in order to be considered a Qualifying Site.

Transfer of Landmark Development Rights

Under existing regulations, a landmark is only permitted to transfer its unused floor area to adjacent sites via a special permit. Adjacency is defined, pursuant to Zoning Section 74-79 which governs landmark transfers, as those lots that abut the landmark's zoning lot or are located across a street. This Proposal

would permit those development rights by allowing landmarks the ability to transfer to development sites anywhere in the Subdistrict. This mechanism would allow for the redistribution of unused floor area for the construction of office space, support the restoration and continued maintenance of landmarks, and generate funds for public realm improvements.

Redistribution of unused commercial floor area – Unused floor area from landmark sites could conceivably be built in the Subdistrict but is not due to regulations that curtail modifications to landmarked structures. The redistribution of this unused floor area presents an opportunity to require that transferred floor area from these sites be developed for office use in the most appropriate portions of the Subdistrict.

Landmark restoration and maintenance – As is the procedure under Zoning Section 74-79, landmarks that transfer development rights will be required to develop a restoration and continuing maintenance plan that is approved by LPC. The sale of development rights will aid landmark property owners in funding these preservation plans and help to ensure that landmarked structures continue their significant contribution to the Subdistrict's overall character.

Public realm improvements – Each landmark development rights transfer transaction will generate a contribution to the public realm improvement fund that will facilitate improvements to the area. The contribution rate will be a percentage of the sale of each development rights transfer from a landmark. Currently, an appraisal of the development rights value in the area is being conducted, the findings of which will inform the minimum contribution rate required for each square foot of transferred floor area. This will help to ensure that new developments appropriately support public realm improvements. This as-of-right mechanism alleviates the need for a discretionary process by CPC to require improvements as part of floor area transfers in high density locations, which is the only mechanism available under current zoning.

Existing Overbuilt Buildings

There are a number of pre-1961 buildings in East Midtown that do not comply with current zoning regulations, particularly in regard to the amount of floor area permitted. This Proposal would allow for the amount of floor area that exceeds the base FAR to be utilized as-of-right in a new development on the site and in conjunction with a contribution to the public realm improvement fund, which is detailed below.

Rebuilding non-complying floor area – This Proposal would eliminate the requirement that 25 percent of a building's structure be retained in order to utilize the building's non-complying (i.e., overbuilt) floor area as part of a new development. Instead, it would allow the amount of overbuilt floor area to be utilized in a new development as-of-right, and would permit additional floor area to be attained through a landmark development rights transfer and/or a transit infrastructure project. All floor area would be subject to the Proposal's use regulations.

Public realm improvements – The amount of non-complying floor area rebuilt on these sites would also be subject to a contribution to the public realm improvement fund. This will facilitate improvements to the area that are designed to address the increased density generated by these new developments, which traditionally have lower vacancy rates and more efficient floor layouts that allow for a greater number of workers per square foot than the existing building they would replace. The contribution rate will be informed by the appraisal of development rights value being conducted in conjunction with this Proposal.

Pre-identified Transit Improvements

The Subdistrict is one of the most transit-rich in the city due to its access to Metro-North Railroad and Grand Central 42nd Street subway station, the Fifth Avenue-53rd Street subway station, and Lexington

Avenue-51st/53rd Streets subway station. Three additional stations also function as critical components of Greater East Midtown's interdependent transit network by serving as stations from which riders enter and exit the Subdistrict on foot and as stations from which riders transfer to and from trains that are entering and exiting the Subdistrict. These subway stations include 42nd Street Bryant Park-Fifth Avenue, 47th-50th Streets-Rockefeller Center, and Lexington Avenue-59th Street. The MTA is identifying and prioritizing specific improvements that would most benefit the East Midtown area's office workers, visitors, and residents. These projects will address current issues that impact the area's transit network and anticipate potential needs of the area based on future development. Types of projects would relate to handicap accessibility, circulation between platforms, and new points of access into subway stations from street level. While these improvements could be funded through the public realm improvement fund, the Proposal includes requirements for sites in close proximity to the area's transit nodes to construct pre-identified improvements so that construction on these sites come with significant improvements to the area.

Transit Improvement Zone (TIZ) – As stated earlier, part of this Proposal's planning rationale for allowing additional density in certain areas of the Subdistrict is related to an area's proximity to transit nodes. These areas are the blocks or portions of blocks directly above the Grand Central Terminal's below-grade network, the blocks or portions of blocks flanking Grand Central Terminal's below-grade network to the east and west (collectively the "Grand Central TIZ"), and the blocks or portions of blocks directly above the below grade networks of the Fifth Avenue-53rd Street (the "Fifth Avenue-53rd Street TIZ") and Lexington Avenue-51st/53rd Streets (the "Lexington Avenue-51st/53rd Streets TIZ") subway stations (collectively the "Transit Improvement Zones").

New developments built pursuant to this proposed framework that are located in Transit Improvement Zones would be required to generate between 10 and 20 percent of the development's maximum permitted floor area through direct transit improvements. For developments in 23.0 FAR districts this would equate to between 2.3 and 4.6 FAR of transit improvements and for developments in the 27.0 FAR district this would equate to between 2.7 and 5.4 FAR of transit improvements. All permitted floor area above these amounts would be through the transfer of unused floor area from the area's landmarks. Development sites located outside of the TIZs would not be required, or permitted, to undertake transit improvements.

Projects on the transit improvement list – to be provided by MTA following completion of its preliminary feasibility analysis – will be included in the zoning text and undergo the public review process as part of the Proposal. The projects will be prioritized based on their scope and benefit to the public, which takes into account improvements to the level of service and quality of commuter experience. Improvements will be assigned a specified amount of floor area. New developments will be required to select projects from the transit improvement list in the following order:

1. Local improvements – Priority will be given to local transit improvements, defined as improvements that are within that development site's TIZ;
2. Improvements on same route – Development sites would then select transit improvements that would impact a route that passes through its TIZ (e.g., a development site in the Lexington Avenue-51st/53rd Streets TIZ could select a project at Lexington Avenue-59th Street since the 4-5-6 line passes through both stations); and
3. District-wide improvements – Development sites would then select from the full list of transit improvements (e.g., a development site in the Lexington Avenue-51st/53rd Streets TIZ could select a project at 42nd Street Bryant Park-Fifth Avenue).

Public Realm Improvements

One of the primary long-term challenges facing East Midtown is the creation of a pedestrian realm and transit network fully matching the area's role as one of the city's and world's premier office districts. In order to ameliorate this, new developments that utilize the proposed framework would finance improvements to the public realm either directly, as is the case for new developments in Transit Improvement Zones, or through a contribution to the public realm improvement fund (the "Fund"), as is the case for developments utilizing landmark development rights and/or floor area from an overbuilt building. The Fund would finance capital expenditures for projects that meet the goals and objectives of above- and below-grade improvements as identified by the MTA and DOT (the "Concept Plan"). Below-grade improvements (i.e., transit infrastructure projects) financed through the Fund would be from the list of improvements that would also be fundable by developments in the TIZs. This would provide two methods for financing transit improvements in the area thus providing greater assurance that the transit network would receive the necessary investment. Above-grade improvements (i.e., pedestrian network projects) financed through the Fund may include projects such as neck-downs, bus bulb-outs, shared streets, and publicly accessible open space. The Fund would provide the flexibility to finance improvements from the Concept Plan taking into account the public benefit of a project, location of new development, and the amount of funds available. The Fund will be managed by a governing group consisting of elected officials, community members, and mayoral appointees.

Height and Setback Modifications

Compliance with the Special Midtown District's height and setback regulations is based on calculation of the amount of daylight and openness to the sky made available to pedestrians through the proposed building's design. Under the Section 74-79 landmark transfer special permit, as well as the permits available in the Grand Central Subdistrict, modifications to these regulations are allowed to accommodate the higher FAR made available through the floor area transfer. To extend this flexibility to the as-of-right framework included in the Proposal, limited modifications to the underlying height and setback regulations would be granted to Qualifying Sites so as to permit as-of-right development at the levels allowed through the proposed framework and to better take account of the smaller development sites and higher street walls found in the East Midtown area.

Other Modifications Affecting Entire Subdistrict

Hotel use – Hotels in Greater East Midtown provide a vital service to the business community. To ensure that new development, conversion, or enlargement of hotels in the Subdistrict will provide on-site amenities and services that support the area's role as a business district, hotel uses will be permitted only through special permit.

Stacking rules – In order to enliven the program of future buildings the 'stacking' rules will be relaxed. Under the existing 'stacking' rules, non-residential uses are not permitted above or on the same story as residential uses, limiting the ability to develop such uses in mixed-use buildings with residential uses. In order to permit these active uses, the Proposal would allow restaurants, observation decks, and other similar uses to be developed above residential uses as-of-right, provided that the residential and non-residential uses above are not accessible to each other on floors above the ground level.

Urban design and height and setback controls – The Special Midtown District contains a series of requirements tailored to the unique conditions of the area. These include special street wall, pedestrian circulation space, and loading requirements. These requirements would be modified to ensure appropriate

as-of-right development in the East Midtown Subdistrict, and would include elements such as the following:

- Sidewalk widening requirement - While existing street wall requirements for Madison and Lexington Avenues permit sidewalk widenings of up to 10 feet along these streets, full-frontage sites would now be required to provide sidewalk widenings that would translate into sidewalks with a minimum width of 20 feet along these streets.
- Retail continuity - Existing retail requirements on wide streets (including Madison and Lexington Avenues) would be maintained, but developments in the area around Grand Central Terminal would also be required to devote a minimum of 50 percent of their side street frontage to retail uses.
- Park Avenue - The underlying Midtown height and setback regulations require calculations based on the street widths that a zoning lot fronts upon. However, compliance can only be measured on three possible street widths – 60-foot, 80-foot, and 100-foot wide streets. Today, calculations for sites on Park Avenue use the 100-foot wide street requirements but do not reflect the actual width of the street – at 140 feet it is the widest street in Midtown. The DCP believes this causes developments on the relatively-small sites found on Park Avenue to be taller, narrower and less economically viable than would be required if the street’s full width were taken into account. To allow the development of modern commercial buildings on the street while maintaining the overall Midtown district’s standards of access to light and air, developments on Park Avenue would be able to calculate their compliance with the existing height and setback controls taking into account the full width of the street.

Discretionary Actions

While the vast majority of this Proposal provides an as-of-right framework to achieve the development and public realm improvements desired for the area, there are limited scenarios in which a special permit, subject to a separate public review process (i.e., ULURP), is the most appropriate mechanism. This is the case for projects that would include any of the following improvements or uses. In addition to the below discretionary actions, it is possible that the Proposed Action would include mechanisms to allow for waivers of various provisions of the Special Midtown District, including height and setback.

Public Concourse special permit – Public space is at a premium throughout Greater East Midtown. The Concept Plan envisions opportunities for above-grade public realm improvements on city-owned land, however, private property can also play a vital role in providing publicly accessible space. To allow for this, a special permit similar to that of the current Covered Pedestrian Space bonus, pursuant to Zoning Sections 74-87, will be created within the proposed Subdistrict. The design guidelines would allow these spaces to be enclosed or unenclosed and would reflect contemporary best practices in urban design. This special permit would allow a 20 percent increase of the maximum permitted base FAR in exchange for providing a covered publicly accessible area within a new development site. This bonus of up to 3.0 FAR would be in addition to the proposed as-of-right maximum FAR.

Transit improvement special permits – As new developments are realized over the coming decades, it is feasible that these projects may want to expand upon the transit infrastructure projects listed within the Concept Plan or construct improvements that are not currently identified in the Concept Plan. To allow for this, the existing Subway Station Improvements bonus, pursuant to Zoning Sections 74-634 and 81-292, will be permitted within the Transit Improvement Zones of the proposed Subdistrict. These special permits allow a 20 percent increase of the maximum permitted FAR in exchange for improvements to transit

infrastructure. This bonus of up to 3.0 FAR would be in addition to the proposed as-of-right maximum FAR.

Hotel special permit – Hotels in Greater East Midtown must appropriately serve the needs of the business community by providing business-oriented amenities and services, such as conference facilities and advanced telecommunication tools, at a scale proportionate to the needs of the area. To ensure that new floor area for hotel use in the Subdistrict meet these requirements, a special permit similar to that of the current Special Permit for Transient Hotels, pursuant to Zoning Section 81-65, will be created within the proposed Subdistrict.

Zoning Map Amendment

The rezoning area is currently zoned predominantly as high density commercial (zoning districts C5 and C6) within the Special Midtown Subdistrict. The area between Second and Third Avenues along East 42nd Street is entirely commercial in character, with a number of existing aging office buildings with potential for redevelopment. The Special Midtown Subdistrict generally follows the boundary of Midtown's commercial areas and thus this area would more appropriately be located in the Midtown Subdistrict, and additionally as part of the Greater East Midtown Subdistrict. By incorporating the area into Midtown, the Special Subdistrict regulations, including height and setback and streetscape requirements, would become applicable. These are more tailored to the needs of the area than the generic 1961 high-density commercial zoning provisions that now apply.

In order to do this, the rezoning would replace the existing C5-2 district (10.0 FAR) with a C5-3 district (15.0 FAR), and extend the Special Midtown District and the Greater East Midtown Subdistrict over the proposed C5-3 district, in the area bounded by East 43rd Street to the north, East 42nd Street to the south, Second Avenue to the east, and a line 200 feet easterly of Third Avenue to the west. As both the existing and proposed designations are C5 districts, they share the same permitted uses.

Affected Area

The proposed Project Area is generally bounded by East 57th Street to the north, East 39th Street to the south, a line 200 feet easterly of Third Avenue to the east, and a line 250 feet westerly of Madison Avenue to the west.

- Block 1316 is included in the rezoning area in its entirety.
- The portion of Block 895 beginning 125 feet east of Park Avenue is excluded from the rezoning area.
- The portion of Block 1311 beginning 125 feet east of Park Avenue is excluded from the rezoning area.
- The portion of Block 1310 125 feet east of Park Avenue and 100 feet west of Third Avenue is excluded from the rezoning area.
- The portion of Block 1309 is excluded, beginning 125 feet east of the intersection of the westerly side of Park Avenue and the southerly side of E. 55th Street, running thence:
 - 100.42 feet southerly, parallel to Park Avenue;
 - Running thence along the midline of Block 1309, parallel to East 55th Street, approximately 685 feet to a point 100 feet west of Third Avenue;
 - Running north thence 100.42 feet to a point 100 feet west of the intersection formed by the westerly side of third Avenue the southerly side of East 55th Street;

- Running thence to the point or place of beginning.
- Blocks 920, 1314, 1315 and 1330 are excluded from the rezoning area.

The rezoning excludes the five-block area between East 42nd Street, East 47th Street, Vanderbilt Avenue and Madison Avenue known as the Vanderbilt Corridor.

The tax blocks and lots within the proposed rezoning area are detailed in the following table:

Table 1: Blocks and Lots within the Rezoning Area

Block	Lot
869	16, 20, 22, 24, 25, 26, 27, 34, 49, 54, 58, 61, 64, 66, 74, 7501
895	1
1275	6, 8, 11, 12, 14, 16, 23, 27, 44, 50, 59, 60, 61, 63, 64, 66, 143
1276	1, 22, 23, 24, 33, 42, 51, 58, 65, 66, 999
1277	6, 8, 14, 20, 27, 46, 52, 67
1278	1, 8, 14, 20, 62, 63, 64, 65
1279	6, 9, 17, 23, 24, 25, 28, 45, 48, 57, 63, 65, 69, 7501
1280	1, 10, 30, 54, 90, 154, 7501
1281	1, 9, 21, 30, 56, 59, 61, 62, 64, 65, 66, 7501
1282	1, 17, 21, 30, 34, 64, 7501
1283	7, 8, 9, 10, 11, 12, 13, 14, 15, 17, 21, 58, 61, 62, 63, 64
1284	7, 12, 13, 14, 17, 21, 26, 33, 52, 55, 56, 59, 60, 152, 7501
1285	13, 15, 21, 36, 46, 59, 7501
1286	1, 21, 30, 35, 43, 53
1287	8, 9, 10, 14, 21, 27, 28, 33, 52, 58, 61, 62, 63, 7501
1288	6, 7, 10, 11, 21, 24, 27, 33, 51, 56, 63
1289	6, 8, 14, 21, 23, 24, 28, 36, 45, 52, 59, 65, 67, 107, 149
1290	6, 14, 15, 16, 17, 21, 27, 28, 31, 36, 37, 44, 50, 52, 56, 61, 62, 115, 127, 7501, 7502
1291	10, 21, 28, 38, 45, 47, 51, 127, 7501
1292	8, 15, 33, 37, 41, 42, 47, 48, 52, 64, 66, 7501
1295	1, 17, 20, 23, 33, 40, 58
1296	1, 14, 7501, 7502
1297	23, 27, 31, 33
1298	23, 28, 33, 34, 36, 37, 38, 40, 41, 45, 127, 136
1299	22, 23, 27, 33, 37, 38, 40, 41, 48, 7501
1300	1, 6, 14, 20, 21, 23, 24, 25, 26, 33, 42, 44, 46, 47, 50, 122, 124, 145, 146
1301	1, 23, 33
1302	21, 22, 23, 24, 25, 27, 28, 29, 30, 33, 43, 51, 123, 127, 7501
1303	1, 14, 30, 33, 41, 45, 46, 53, 7501, 7502
1304	1, 14, 30, 33, 41, 45, 46, 53, 7501, 7502
1305	1, 13, 20, 23, 28, 32, 33, 40, 60, 128, 7501
1306	1, 23, 33, 42, 50
1307	1, 14, 23, 29, 43, 59, 7501
1308	33, 7501, 7502
1309	1, 5, 6, 7, 8, 23, 32, 39, 41, 69, 72, 107, 7502
1310	1, 33, 34, 35, 36, 37, 38, 39, 40, 133, 140
1311	1, 5, 65
1316	1, 12, 23, 30, 7501
1317	1, 7
1318	1, 43, 44, 143
1319	1, 2, 3, 7, 8, 11, 47, 103, 104, 7503
1320	46, 7503, 7506
1321	1, 42, 47

1322	1, 7, 8, 9, 42, 43, 44, 107, 143
1323	1, 8, 42, 43, 47
1324	1, 9, 42, 47, 48, 49
1325	1, 47, 48, 50, 7503, 7504
1326	1, 7, 41, 140
1327	1, 37, 7501
1328	1
1329	1

D. ANALYSIS FRAMEWORK

Reasonable Worst-Case Development Scenario (RWCDs)

In order to assess the possible effects of the Proposed Action, a Reasonable Worst-Case Development Scenario (RWCDs) was established using both the current zoning (future No-Action) and proposed zoning (future With-Action) conditions projected for the build year of 2036 (the year by which the projected development predicted by the proposed zoning would be in place). The incremental difference between the future No-Action and future With-Action conditions is the basis of the impact category analyses of the DEIS. To determine the With-Action and No-Action conditions, standard methodologies have been used following the 2014 *CEQR Technical Manual* guidelines employing reasonable assumptions. These methodologies have been used to identify the amount and location of future development, as discussed below.

Development Site Criteria

In projecting the amount and location of new development, several factors have been considered in identifying likely development sites. These include known development proposals, past development trends, and the development site criteria described below. Generally, for area-wide rezonings, new development can be expected to occur on selected, rather than all, sites within the rezoning area. The first step in establishing the development scenario was to identify those sites where new development or conversion could reasonably occur. The following site criteria were used to assess different aspects of the Proposal and long-term trends in the area.

Given the challenges for new development in East Midtown, considering its existing density and built character, the typical development site criteria utilized for development scenarios in other contexts would not be practical in East Midtown. For example, limiting the assessment of development sites to only those that are built to less than 50 percent of permitted FAR would produce few development sites in East Midtown given its already built-up character. It is anticipated that the proposed increases in maximum proposed FAR would be sufficient to incentivize redevelopment of sites built well over this 50 percent threshold. Therefore, site criteria more reflective of existing area conditions and development history were developed. To identify sites within the East Midtown rezoning area that could utilize the new zoning mechanisms of the Proposed Action, an assessment of all existing buildings in the area was undertaken. All the following were then excluded from the analysis:

- LPC-designated landmarks
- Condominiums, co-ops, or residential buildings that contain six or more rent-stabilized units. Discretion was given to site assemblages that contained in sum more than six rent stabilized units, but that provided considerable land use rationale for inclusion within the analysis.¹

¹ Projected Site 14 and Potential Site C contain more than six rent stabilized dwelling units. Site 14 warrants inclusion because it is built to less

- Post-1982 buildings (given their recent construction).
- All other buildings over 1 million sf, or towers with 35 stories or more (given their size and the difficulties inherent in emptying and demolishing the structure).

The sites were then assessed, conservatively, to see whether the existing built FAR was less than 85 percent of what could be constructed based on the proposed maximum as-of-right FAR permitted under the proposed East Midtown Subdistrict. Sites with existing built FAR greater than 85 percent were removed.

New Construction Development Assumptions

To produce a reasonable conservative estimate of future growth with and without the Proposed Action (With-Action and No-Action conditions, respectively) and based on recent trends, the RWCDs assumes that both projected and potential sites would develop to the maximum developable square footage pursuant to current zoning in the future without the Proposed Action. Potential development sites are less likely to be developed because they are not easily assembled into single ownership, have an irregular shape, are in active use, reflect a significant amount of relatively recent renovation or alteration, or have some combination of these features. The development sites are distributed throughout the rezoning area.

Developments were assumed to have 1.0 FAR of retail on the ground floor and office floor area occupying all above stories. Ground floor retail on developments with less than 40,000 square feet of lot area was assumed to be 100 percent local retail. Development sites with more than 40,000 square feet of lot area were assumed to include 0.5 FAR of local retail and 0.5 FAR of destination retail. Mechanical space is assumed to account for approximately 15 percent of gross floor area for office developments. Residential developments are assumed to have a mechanical space rate of 5 percent. For mixed residential and commercial developments, the entire building is assumed to utilize 15 percent of gross floor area for mechanical space. Accessory off-street parking in East Midtown is permitted, but not required. Subsequently, recent commercial development trends in the wider the area indicate a shift away from providing off-street parking. Development sites are therefore assumed not to provide accessory off-street parking. Building heights and massing are dictated by either of the Special Midtown District’s alternative height and setback regulations, daylight evaluation and daylight compensation. Under either framework, developments are assumed to develop up to the tallest permissible limits of their envelope.

Landmarks Preservation Commission (LPC) Calendared Buildings

LPC has identified twelve (12) buildings within the rezoning area as calendared for consideration as landmarks. For the purposes of this analysis, it is assumed that all the sites would be designated as landmarks prior to the Proposed Action’s analysis year. At the time of the publication of the Draft Scope of Work, a public hearing had already been held on five of the 12 buildings. The remaining seven buildings have upcoming hearings planned, and it is anticipated that LPC will be voting on whether to designate the properties as landmarks in December 2016. In the event that any of the sites are not designated by LPC, the RWCDs framework and the analysis would be updated as needed.

Projected and Potential Development Sites

To produce a reasonable, conservative estimate of future growth, the development sites were further divided into two categories (i.e., projected development sites and potential development sites). The

than 20 percent of its proposed maximum floor area—the lowest figure among all sites. The upside of its redevelopment potential was considered sufficient to overcome the costs associated with relocating residential rental tenants. Site C is also considerably underbuilt given the surrounding context, and contains seven rent stabilized dwelling units, which is considered only marginally greater than the cutoff of six. The site’s location and the age and construction of its existing structures render it a reasonable candidate for redevelopment.

projected development sites are considered more likely to be developed within the analysis period for the Proposed Action, while potential sites are considered less likely to be developed over the same period. The process utilized to determine which development sites were projected versus potential is discussed below. Sites were assessed and ranked based on a variety of criteria in order to determine which would be most likely to develop, and hence be classified as projected development sites. These were:

- Age of existing buildings (older buildings were considered more likely to be development sites);
- Ratio of existing built FAR to proposed new maximum as-of-right FAR (sites with lower built-to max ratios were considered more likely development sites); and
- Number of lots required for assemblage (sites made up of fewer lots were considered more likely development sites).

Sites that exhibited the strongest combination of these factors were considered those most likely to utilize the new proposed new zoning mechanisms, and were considered to be Projected Development Sites (Projected Sites). The remainder were determined to be Potential Development Sites (Potential Sites). Any selected site with more than six rent stabilized units was automatically determined to be a Potential Site given the difficulties in vacating tenants. In determining Projected vs. Potential Sites, some discretion was used to account for geographic distribution of development.

The number of Projected Sites (versus Potential Sites) was constrained by the fixed amount of available unused landmark development rights available for transfer, since this would be the primary mechanism to allow a site to develop to its maximum permitted FAR. There are approximately 3.6 million sf of unused landmark development rights within the Subdistrict.

The amount of development rights necessary to reach the as-of-right maximum FAR was calculated for the 16 highest ranked sites according to the criteria listed in the previous section. Included in this calculation was the fact that sites with Transit Improvement Zones would be required to undertake transit infrastructure projects before being permitted to utilize landmark development rights. These improvements would generate floor area equivalent to not less than 10 and no more than 20 percent of the site's maximum floor area (i.e., a maximum of 5.4 in a 27.0 FAR area, or 4.6 FAR in a 23.0 FAR area, and a minimum of 2.7 or 2.3 FAR, respectively). Sites located within designated mandatory transit improvement areas were assumed to undertake improvements ranging from 2.3 FAR to 5.4 FAR. Accounting for these transit improvements, the highest-ranked 16 Projected Sites would use all 3.6 million sf of available landmark development rights.

Summary

Thirty development sites (16 projected and 14 potential) have been identified in the rezoning area. Figure 6 shows these projected and potential development sites, and Appendix A (Tables 1A and 1B) identifies the uses expected to occur on each of those sites under future No-Action and future With-Action conditions. Table 2 below provides a summary of the RWCDs for each analysis scenario.

The environmental review will assess both density-related and site specific potential impacts from the development on all projected development sites. Density-related impacts are dependent on the amount and type of development projected on a site and the resulting impact on traffic, air quality, and open space.

Site-specific impacts relate to individual site conditions and are not dependent on the density of projected development. Site-specific impacts typically include potential noise impacts from development, the effects on historic resources, and the possible presence of hazardous materials. Development is not anticipated on the potential development sites within the foreseeable future; therefore, these sites have



-  Proposed Greater East Midtown Rezoning Boundary
-  Vanderbilt Corridor (Area Excluded from the Proposed Action)

RWCDS Sites (w/ I.D. Label)

-  Projected Development Sites
-  Potential Development Sites

not been included in the density-related impact assessments. However, a number of potential development sites could be developed under the Proposed Action in lieu of one or more of the projected development sites in accommodating the development anticipated during the foreseeable future as the result of the Proposed Action. The potential development sites are therefore addressed in the EIS for site-specific effects in order to ensure a conservative analysis.

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

In the future without the Proposed Action (No-Action condition), given the existing zoning and land use trends in the area, it is anticipated that the rezoning area would experience negligible growth in commercial uses and modest growth in residential uses over the next 20-year period. Anticipated development on the projected and potential sites identified in the RWCDs in the future without the Proposed Action is presented in Appendix A, Tables 1A and 1B.

As discussed above, the RWCDs projects that sites currently zoned to permit commercial use would develop pursuant to current zoning in the No-Action condition. As shown in Table 2 below, it is anticipated that, in the future without the Proposed Action, there would be a total of approximately 163 residential units, 6.8 million gross square feet (gsf) of office space, and 0.4 million gsf of retail space on the 16 projected development sites.

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

In the future with the Proposed Action, higher density commercial development is expected to occur throughout the rezoning area. The Proposed Action is expected to result in new development, including 119 dwelling units, 14.2 million gsf of commercial space, including 13.4 gsf of office space and 0.6 million gsf of total retail space on the 16 projected development sites. This estimate is based on the above soft-site criteria and the available sites within the rezoning area. In addition, some uses on the projected development sites that are expected in the future without the Proposed Action would be redeveloped, although in most cases such No-Action uses would remain. No parking spaces are projected to be constructed on the development sites. The projected incremental (net) change, between the No-Action and With-Action condition would be a decrease of 0.8 million gsf of hotel use, a decrease of 78,000 gsf of residential use and a reduction of 564 parking spaces.

The projected development sites, with project No-Action and With-Action development, are summarized in Table 2, and also presented in Appendix A, Table 1A. A total of 14 sites were considered less likely to be developed within the foreseeable future, and were thus considered potential development sites (Table 1B in Appendix A lists all 14 potential development sites).

Table 2: RWCDs and Population Summary for Projected Development Sites

USE	Existing Conditions (GSF)	Future No-Action Condition (GSF)	Future With-Action Condition (GSF)	No-Action to With-Action Increment (GSF)
Office	6,856,059	6,763,274	13,394,777	6,631,503
Retail	467,202	446,812	601,899	155,087
Hotel	810,171	810,171	0	-810,171
<i>Hotel Rooms</i>	1,246	1,246	0	-1,246
Residential	50,813	316,120	237,841	-78,279
<i>Residential Units</i>	68	163	119	-44
Parking	158,441	158,441	0	-158,441
<i>Parking Spaces</i>	564	564	0	-564
POPULATION / EMPLOYMENT⁽¹⁾	Existing Conditions	Future No-Action Condition	Future With-Action Condition	No-Action to With-Action Increment

Residents	111	266	194	-72
Workers	29,311	28,883	55,390	26,507
<small>(1) Assumes 1.63 persons per DU (based on 2014 American Community Survey data for rezoning area), 200 SF per parking space, 650 SF per hotel room, 1 employee per 250 SF of office, 3 employees per 1000 SF of retail, 1 employee per 2.67 hotel rooms, 1 employee per 25 DUs, and 1 employee per 10,000 SF of parking floor area.</small>				

The potential sites are deemed less likely to be developed because they did not closely meet the criteria listed above. However, as discussed above, the analysis recognizes that a number of potential sites could be developed under the Proposed Action in lieu of one or more of the projected sites in accommodating the development anticipated in the RWCDs. The potential sites are therefore also addressed in the environmental review for site-specific effects.

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

Conceptual Analysis of the Special Permits

The Proposed Action, as discussed above, would establish or modify provisions related to several special permits (refer to Section C, above, for a full description of the special permits). A special permit would be created to allow on-site, publicly accessible areas to be integrated into a new development site in exchange for up to a 20 percent increase of the maximum permitted base FAR. The existing Subway Station Improvements special permit, pursuant to Zoning Sections 74-634 and 81-292, will be modified in order to allow it to be utilized by new developments in the Subdistrict that are within close proximity to transit nodes. This will permit a bonus of up to 20 percent of the maximum permitted base FAR. As new hotel uses will not be permitted as-of-right within the Subdistrict, a new special permit that would allow for the development, conversion, or enlargement of hotels within the Subdistrict will be created. It is possible that the Proposed Action would also include mechanisms to allow for waivers of various provisions of the Special Midtown District including height and setback.

Because it is not possible to predict whether one or more special permit would be pursued on any one site in the future, the RWCDs does not include specific development sites that would include a new or enlargement of hotel use and/or achieve the higher maximum FAR. Instead, a conceptual analysis will be presented to generically assess the potential environmental impacts that could result from development at higher FARs pursuant to the special permit(s). The conceptual analysis will consider the potential environmental effects of the use of these new special permits, and include a comparison of those effects with those found under the RWCDs for the Proposed Action.

E. PROPOSED SCOPE OF WORK FOR THE EIS

As the Proposed Action would affect various areas of environmental concern and has been found to have the potential for significant adverse impacts, pursuant to the EAS and Positive Declaration, an EIS will be prepared for the Proposed Action. The EIS will analyze the RWCDs associated with the Proposed Action for all technical areas of concern.

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

- A description of the Proposed Action and its environmental setting;

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

The EIS will analyze the projected developments for all technical areas of concern and also evaluate the effects of the potential developments for site-specific effects such as archaeology, shadows, hazardous materials, air quality, and noise. Based on the preliminary screening assessments outlined in the *CEQR Technical Manual* and detailed in the EAS document, all the CEQR impact categories aside from community facilities and natural resources would require analysis in the EIS.

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

Task 1. Project Description

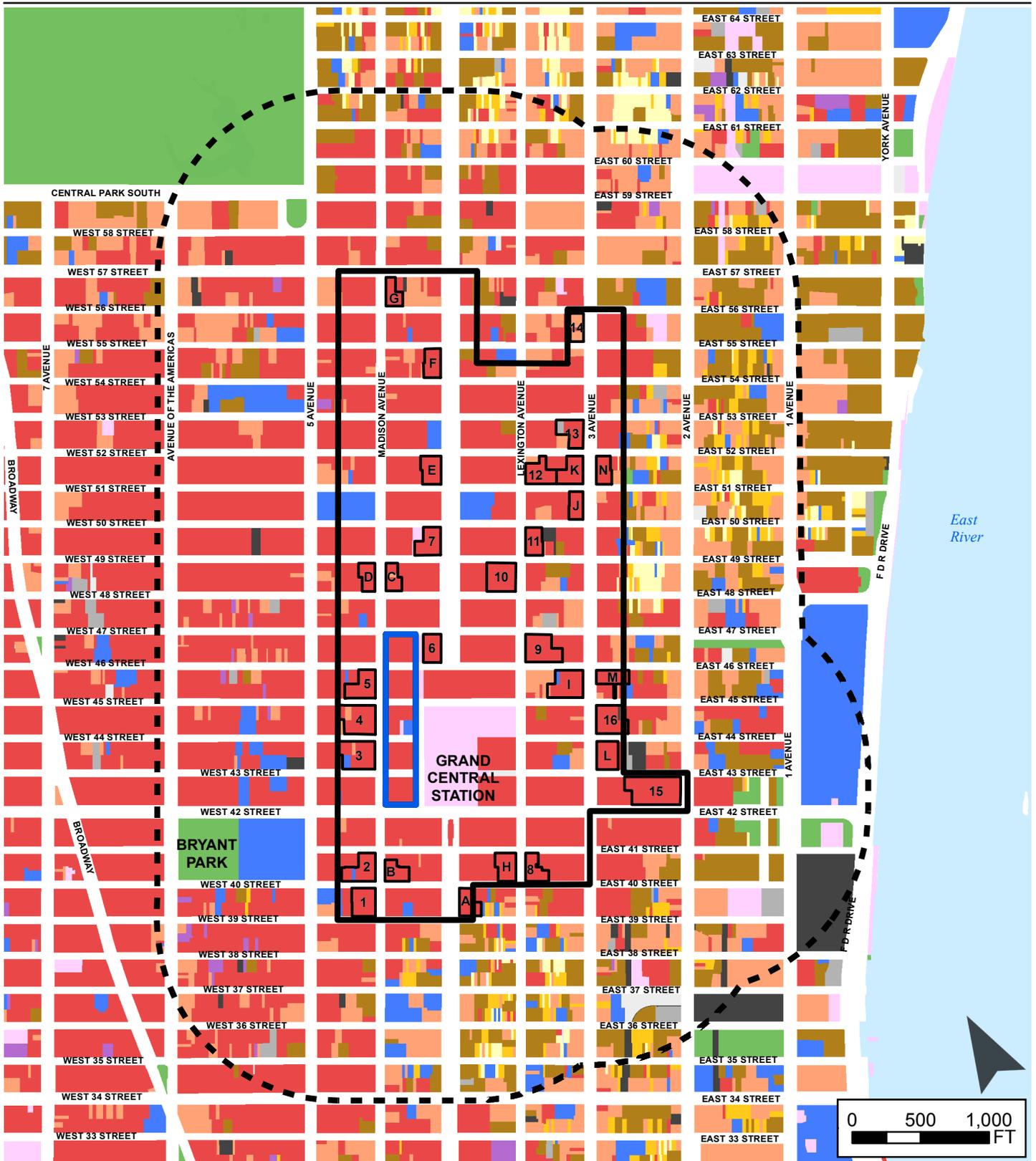
The first chapter of the EIS introduces the reader to the Proposed Action and sets the context in which to assess impacts. The chapter contains a description of the Proposed Action: its location; the background and/or history of the project; a statement of the purpose and need; key planning considerations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

In addition, the project description chapter will present the planning background and rationale for the actions being proposed and summarize the RWCDs for analysis in the EIS. The section on approval procedures will explain the ULURP process, its timing, and hearings before the Community Board, the Borough President's Office, the 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 Action on land use, zoning, and public policy, pursuant to the methodologies presented in the *CEQR Technical Manual*. The primary land use study area will consist of the rezoning area, where the potential effects of the Proposed Action will be directly experienced (reflecting the proposed rezoning and resultant RWCDs). The secondary land use study area will include the neighboring areas within a quarter-mile distance from the rezoning area, as shown in Figure 7 which could experience indirect impacts. Subtasks will include the following:

- Provide a brief development history of the rezoning area and surrounding study area.
- Provide a description of land use, zoning, and public policy in the study areas discussed above (a more detailed analysis will be conducted for the rezoning area). This task will be closely coordinated with Task 3, "Socioeconomic Conditions," which will provide a qualitative analysis of the Proposed



- Greater East Midtown Rezoning Boundary
- Quarter-Mile Study Area
- Vanderbilt Corridor *Area Excluded from the Proposed Action but Included in Study Area*
- RWCDS Sites (w/ I.D. Label)**
- Projected Development Sites
- Potential Development Sites

- One & Two Family Buildings
- MultiFamily Walkup Buildings
- MultiFamily Elevator Buildings
- Mixed Commercial/Residential Buildings
- Commercial/Office Buildings
- Industrial/Manufacturing
- Transportation/Utility
- Public Facilities & Institutions
- Open Space
- Parking Facilities
- Vacant Land
- All Others or No Data

Greater East Midtown Rezoning
Manhattan, New York

Land Use Study Area

Figure 7



Action's effect on businesses and employment within the rezoning area. Recent trends in the rezoning area will be noted. Other public policies that apply to the study area will also be described, including: Applicable 197-a plans, Historic Districts and Business Improvement Districts within the study area, and the City's sustainability/PlaNYC/OneNYC policies. The directly affected area is not located within the boundaries of the City's Coastal Zone. Therefore, an assessment of the Proposed Action's consistency with the City's Waterfront Revitalization Program is not required.

- Based on field surveys and prior studies, identify, describe, and graphically portray predominant land use patterns for the balance of the study areas. Describe recent land use trends in the study areas and identify major factors influencing land use trends.
- Describe and map existing zoning and recent zoning actions in the study areas.
- Prepare a list of future development projects in the study areas that are expected to be constructed by the 2036 analysis year and may influence future land use trends. Also, identify pending zoning actions or other public policy actions that could affect land use patterns and trends in the study areas. Based on these planned projects and initiatives, assess future land use and zoning conditions without the Proposed Action (No-Action condition).
- Describe proposed zoning changes, and the potential land use changes based on the Proposed Action's RWCDs (With-Action condition).
- Discuss the Proposed Action's potential effects related to issues of compatibility with surrounding land use, the consistency with zoning and other public policies, and the effect of the Proposed Action on ongoing development trends and conditions in the study areas.
- If necessary, mitigation measures to avoid or reduce potential significant adverse land use, zoning, and/or public policy impacts will be identified.

Task 3. Socioeconomic Conditions

The socioeconomic character of an area includes its population, housing, and economic activity. Socioeconomic changes may occur when a project directly or indirectly changes any of these elements. Although socioeconomic changes may not result in impacts under CEQR, they are disclosed if they would affect land use patterns, low-income populations, the availability of goods and services, or economic investment in a way that changes the socioeconomic character of the area. This chapter will assess the Proposed Action's potential effects on the socioeconomic character of the study area, which is expected to conform to the quarter-mile land use study area described in Task 2.

Pursuant to Section 310 of Chapter 5 of the *CEQR Technical Manual*, the socioeconomic study area boundaries are expected to be similar to those of the land use study area, and will be dependent on the size and characteristics of the RWCDs associated with the Proposed Action. A socioeconomic assessment seeks to assess the potential to change socioeconomic character relative to the study area population. For projects or actions that result in an increase in population, the scale of the relative change is typically represented as a percent increase in population (i.e., a project that would result in a relatively large increase in population may be expected to affect a larger study area). Therefore, consistent with the *CEQR Technical Manual*, the socioeconomic study area would be expanded to a half-mile radius, if the RWCDs associated with the Proposed Action would increase the population by five percent compared to the expected No-Action condition population in a quarter-mile study area.

As the Proposed Action would affect a large area comprising approximately 78 blocks of East Midtown, it may be appropriate to create subareas for analysis if the action affects different portions of the study area in different ways. For example, if an action concentrates development opportunities in one portion of the

study area, and would result in higher increases in population in that portion, it may be appropriate to analyze the subarea most likely to be affected by the concentrated development. Distinct sub-areas will be based on recognizable neighborhoods or communities in an effort to disclose whether the Proposed Action may have disparate effects on distinct populations that would otherwise be masked or overlooked within the larger study area.

Pursuant to the *CEQR Technical Manual*, the five principal issues of concern with respect to socioeconomic conditions are whether a proposed action would result in significant adverse impacts due to: (1) direct residential displacement; (2) direct business and institutional displacement; (3) indirect residential displacement; (4) indirect business and institutional displacement; and (5) adverse effects on specific industries. As detailed below, the Proposed Action warrant an assessment of socioeconomic conditions with respect to all but two of these principal issues of concern—direct and indirect residential displacement. According to the *CEQR Technical Manual*, direct displacement of fewer than 500 residents would not typically be expected to alter the socioeconomic characteristics of a neighborhood. As shown in the RWCDs Summary in Table 2, there would be an incremental displacement of 72 residents which is below the threshold for triggering a direct residential displacement analysis. Therefore, the Proposed Action would not result in significant adverse impacts due to direct residential displacement. As to indirect residential displacement, the Proposed Action would forestall conversion of office to residential space resulting in a net reduction of residential units compared to the No-Action condition, and would therefore not introduce a trend that could potentially result in changing socioeconomic conditions for the residents within the rezoning area. Therefore, an assessment of indirect residential displacement would not be warranted for the Proposed Action.

In conformance with the *CEQR Technical Manual* guidelines, the assessment of the three remaining areas of concern will begin with a preliminary assessment to determine whether a detailed analysis is necessary. Detailed analyses will be conducted for those areas in which the preliminary assessment cannot definitively rule out the potential for significant adverse impacts. The detailed assessments will be framed in the context of existing conditions and evaluations of the future No-Action and With-Action conditions in 2036 including any population and employment changes anticipated to take place by the analysis year of the Proposed Action.

Direct Business Displacement

For direct business displacement, the type and extent of businesses and workers to be directly displaced by the RWCDs associated with the Proposed Action will be disclosed. According to the *CEQR Technical Manual*, if a project would directly displace more than 100 employees, a preliminary assessment of direct business displacement is appropriate. It is expected that the Proposed Action would exceed the *CEQR Technical Manual* analysis threshold of 100 displaced employees, and therefore, a preliminary assessment pursuant to CEQR guidelines will be provided in the EIS.

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

Indirect Business Displacement

The indirect business displacement analysis is to determine whether the Proposed Action may introduce trends that make it difficult for those businesses that provide products or services essential to the local economy or those subject to regulations or publicly adopted plans to preserve, enhance, or otherwise protect them to remain in the area. The purpose of the preliminary assessment is to determine whether a proposed action has potential to introduce such a trend. As shown in the RWCDs Summary in Table 2, the Proposed Action would introduce more than 5 million square feet of new commercial uses to the area. This exceeds the CEQR threshold of 200,000 square feet for “substantial” new development warranting a preliminary assessment. The preliminary assessment will entail the following subtasks:

- Identify and characterize conditions and trends in employment and businesses within the study area. This analysis will be based on field surveys, employment data from the New York State Department of Labor and/or Census, and information from real estate brokers.
- Determine whether the Proposed Action would introduce enough of a new economic activity to alter existing economic patterns.
- Determine whether the Proposed Action would add to the concentration of a particular sector of the local economy enough to alter or accelerate an ongoing trend to modify existing economic patterns.
- Determine whether the Proposed Action would directly displace uses of any type that directly support businesses in the area or bring people to the area that form a customer base for local businesses.
- Determine whether the Proposed Action would directly or indirect displace residents, workers, or visitors who form the customer base of existing businesses in the area.

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

Adverse Effects on Specific Industries

The analyses of direct business displacement will provide sufficient information to determine whether the Proposed Action could have any adverse effects on a specific industry, compared with the No-Action condition. The analysis will determine:

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

Task 4. Open Space

Open space is defined as publicly or privately owned land that is publicly accessible and operates, functions, or is available for leisure, play, or sport, or set aside for the protection and/or enhancement of the natural environment. An analysis of open space is conducted to determine whether or not a proposed action would have direct effects resulting from the elimination or alteration of open space, and/or an indirect effects resulting from overtaxing available open space.

The analysis will assess the potential direct and indirect effects of the Proposed Action. The Proposed Action's directly affected area is not located within an underserved or well-served area and, as such, the threshold for when an open space assessment is required is when an action would generate more than 200 residents and 500 employees. The Proposed Action would generate more than 26,000 employees; therefore, a non-residential open space assessment would be warranted. The increment between the future without the Proposed Action and the future with the Proposed Action would be a net decrease of approximately 72 residents within the directly affected area. Therefore, a residential open space assessment is not warranted.

As the Proposed Action would introduce workers in excess of the CEQR threshold, the open space analysis will assess open space resources and calculate open space ratios within a non-residential (quarter-mile radius) study area. As recommended in the *CEQR Technical Manual*, the study area comprises all census tracts that have 50 percent of their area located within quarter-mile radius of the rezoning area (see Figure 8). The detailed open space analysis in the EIS will include the following subtasks.

- Determine characteristics of the open space user group. The number of workers and other daytime users in the study area will be calculated based on reverse journey-to-work census data and other appropriate data sources. This information will be updated based on an annual growth rate derived from a comparison of New York State Department of Labor (NYSDOL) private sector employment data for zip codes comprising the approximately half-mile area surrounding the rezoning area for the third quarter of 2000 and the 3rd quarter of 2010. Additionally, the daytime population estimate will be adjusted to include the student population of major colleges/universities in each study area.
- Inventory existing active and passive open spaces within the open space study area. The condition and usage of existing facilities will be described based on the inventory and field visits. Jurisdiction, features, user groups, quality/condition, factors affecting usage, hours of operation, and access will be included in the description of facilities. Acreage of these facilities will be determined and total study area acreage will be calculated. The percentage of active and passive open space will also be calculated. A map showing the locations of open spaces keyed to the inventory will be provided.
- Based on the inventory of facilities and study area populations, open space ratios will be calculated for the residential and daytime populations, and compared to City guidelines to assess adequacy. As per the *CEQR Technical Manual*, open space ratios are expressed as the amount of open space acreage per 1,000 users.
- Assess expected changes in future levels of open space supply and demand in the 2036 analysis year, based on other planned development projects within the open space study areas. Any new open space or recreational facilities that are anticipated to be operational by the analysis year will also be accounted for. Open space ratios will be calculated for future No-Action condition and compared with existing ratios to determine changes in future levels of adequacy.
- Assess the effects on open space supply and demand resulting from increased worker populations added by the RWCDs. The assessment of the Proposed Action's impacts will be based on a comparison of open space ratios for the future No-Action versus future With-Action conditions. In addition to the quantitative analysis, qualitative analysis will be performed to determine if the changes resulting from the Proposed Action constitute a substantial change (positive or negative) or an adverse effect to open space conditions. The qualitative analysis will assess whether or not the study area is sufficiently served by open spaces, given the type (active vs. passive), capacity, condition, and distribution of open space, and the profile of the study area population.
- According to the *CEQR Technical Manual*, projects that may result in significant quantitative impacts on open space resources, or projects that would exacerbate an existing underserved area in relation



- Greater East Midtown Rezoning Boundary
- 1/4-Mile Radius
- Open Space Study Area
- Study Area Census Tract (with Tract No.)
- Open Space and Recreation
- Privately-Owned Public Space
- Vanderbilt Corridor
- Area Excluded from the Proposed Action but Included in Study Area*



to open space, are typically further assessed in a qualitative assessment to determine the overall significance of the impact. Therefore, a qualitative assessment will be prepared if warranted.

Task 5. Shadows

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

The Proposed Action would permit development of buildings of greater than 50 feet in height, and therefore has the potential to result in shadow impacts in the areas to be rezoned. Various sunlight-sensitive resources are located within the rezoning area, including historic resources with sunlight sensitive features such as St. Bartholomew's Church and Community House, the St. Patrick's Cathedral and the Christ Church United Methodist buildings. The EIS will assess the RWCDs on a site-specific basis for potential shadowing effects of new developments or enlargements at both the projected and potential development sites on sunlight-sensitive features, and disclose the range of shadow impacts that are likely to result from the Proposed Action. The shadows analysis in the EIS will include the following subtasks:

- The EIS will provide a preliminary shadows screening assessment to ascertain whether the projected and potential developments' shadows may potentially reach any sunlight-sensitive resources at any time of year.
- Pursuant to CEQR, a Tier 1 Screening Assessment will be conducted to determine the longest shadow study area for the projected and potential developments, which is defined as 4.3 times the height of any new structures including building enlargements (the longest shadow that would occur on December 21, the winter solstice). A base map that illustrates the locations of the projected and potential developments in relation to the sunlight-sensitive resources will be developed.
- A Tier 2 Screening Assessment will be conducted if any portion of a sunlight-sensitive resource lies within the longest shadow study area. The Tier 2 assessment will determine the triangular area that cannot be shaded by the projected and potential developments, which in New York City is the area that lies between -108 and +108 degrees from true north.
- If any portion of a sunlight-sensitive resource is within the area that could be potentially shaded by the projected or potential developments, a Tier 3 Screening Assessment will be conducted. The Tier 3 Screening Assessment will determine if shadows resulting from the projected and potential developments can reach a sunlight-sensitive feature through the use of three-dimensional computer modeling software with the capacity to accurately calculate shadow patterns. The model will include a three-dimensional representation of the sunlight-sensitive resource(s), a three dimensional representation of the projected and potential development sites identified in the RWCDs, and a three-dimensional representation of the topographical information within the area being analyzed. Shadow analyses will be conducted for four representative days of the year to determine the extent and duration of new shadows that would be cast on sunlight-sensitive resources as a result of the Proposed Action.

- If the screening analysis does not rule out the possibility that the Proposed Action-generated shadows would reach any sunlight-sensitive features, a detailed analysis of potential shadow impacts on sunlight-sensitive features of publicly-accessible open spaces or historic resources resulting from new construction or enlargement identified in the RWCDs (both projected and potential development sites) will be provided in the EIS. The detailed shadow analysis will establish a baseline condition (No-Action condition) which will be compared to the future condition resulting from the Proposed Action (With-Action condition) to illustrate the shadows cast by existing or future buildings and distinguish the additional (incremental) shadow cast by the projected and potential developments. The detailed analysis will include the following tasks:
 - Document the analysis with graphics comparing shadows resulting from the No-Action condition with shadows resulting from the Proposed Action, with incremental shadow highlighted in a contrasting color.
 - Provide a summary table listing the entry and exit times and total duration of incremental shadow on each applicable representative day for each affected resource.
 - Assess the significance of any shadow impacts on sunlight-sensitive features.
 - If the results of the detailed analysis identify a potential for a significant impact, discuss potential mitigation measures.

Task 6. Historic and Cultural Resources

The *CEQR Technical Manual* identifies historic resources as districts, buildings, structures, sites, and objects of historical, aesthetic, cultural, and archaeological importance. This includes LPC-designated landmarks; properties calendared for consideration as landmarks by the 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. Because the Proposed Action would induce development that could result in new in-ground disturbance and construction of a building type not currently permitted in the affected area, it has the potential to result in impacts to archaeological and architectural resources.

Impacts on historic resources are considered on the affected sites and in the area surrounding identified development sites. The historic resources study area is therefore defined as the area to be rezoned plus a 400-foot radius, as per the guidance provided in the *CEQR Technical Manual*. 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 in the rezoning area, and include projected as well as potential development sites that would entail additional in-ground disturbance compared to the No-Action condition. This chapter will include an overview of the study area's history and land development. Subtasks will include:

Architectural Resources

- Research and describe history of land use and architecturally sensitive locations in the rezoning area and surrounding 400-foot study area.
- In consultation with LPC, identify, map and describe LPC-designated, S/NR-listed, and LPC- and S/NR-eligible architectural resources in the study area.
- Identify and assess the probable impacts of development resulting from the Proposed Action on architectural resources on or adjacent to the projected and potential development sites.

- If applicable, develop mitigation measures to avoid any adverse impacts on architectural resources in consultation with LPC.

Archaeological Resources

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 in the rezoning areas, 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 on the site, requiring further study. Subtasks will:

- Research and describe history of land use and archaeologically sensitive locations.
- In consultation with LPC, identify those areas thought to be archaeologically sensitive within the areas to be rezoned.
- Identify projected and potential development sites where new in-ground disturbance is expected to occur as a result of the Proposed Action.
- If there are projected or potential development sites identified by LPC or other record searches as archaeologically sensitive, prepare Phase IA Archaeological Documentary Report. The Phase IA will document the site history, its development and uses, and the potential for the site to host significant archaeological features. The EIS will summarize the results of the Phase IA analyses. The full Phase IA report will be submitted to LPC for review.

Task 7. Urban Design and Visual Resources

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

As the Proposed Action would rezone some areas to allow higher density by creating new bulk, height and setback regulations to be mapped with the study area, a preliminary assessment of urban design and visual resources will be provided in the EIS. In addition, an assessment of whether a pedestrian wind analysis would be warranted will be provided in the EIS as channelized wind pressure from between tall buildings and/or parallel tall buildings may cause winds that jeopardize pedestrian safety. If an analysis is found to be warranted, it will be conducted in accordance with *CEQR Technical Manual* guidelines.

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

- Based on field visits, describe the project site and the urban design and visual resources of the rezoning area and adjacent study area, using text, photographs and other graphic material as necessary to identify critical features, use, bulk, form, and scale.

- Discuss specific relationships between the proposed rezoning area and adjacent areas regarding light, air, and views.
- In coordination with the land use task, describe the changes expected in the urban design and visual character of the study area due to planned development projects in the future without the Proposed Action (No-Action condition).
- Describe the potential changes that could occur in the urban design character of the study area as a result of the Proposed Action (With-Action condition). For the projected and potential development sites, the analysis will focus on general building types for the sites that are assumed for development as well as elements such as street wall height, setback, and building envelope. Photographs and/or other graphic material will be utilized, where applicable, to assess the potential effects on urban design and visual resources, including views of/to resources of visual or historic significance (landmark structures, historic districts, parks, etc.).

A detailed analysis will be prepared if warranted based on the preliminary assessment. As described in the *CEQR Technical Manual*, examples of projects that may require a detailed analysis are those that would make substantial alterations to the streetscape of a neighborhood by noticeably changing the scale of buildings, potentially obstruct view corridors, or compete with icons in the skyline. The detailed analysis would describe the projected and potential development sites and the urban design and visual resources of the surrounding area. The analysis would describe the potential changes that could occur to urban design and visual resources in the With-Action condition, in comparison to the No-Action condition, focusing on the changes that could negatively affect a pedestrian's experience of the area. If necessary, mitigation measures to avoid or reduce potential significant adverse impacts will be identified. As noted above, a screening assessment for the Proposed Action on pedestrian wind conditions will be conducted as part of the EIS. Construction of large buildings at locations that experience high wind conditions may result in an exacerbation of wind conditions due to 'channelization' or 'downwash' effects that may affect pedestrian safety. Factors that may be considered in making this determination include, but are not necessarily limited to: locations that could experience high wind conditions, such as along the waterfront, or other locations where winds from the waterfront are not attenuated by buildings or natural features; size, orientation, and number of buildings that may be constructed as the result of the Proposed Action; and, the surrounding pedestrian context of the affected area. A detailed pedestrian wind analysis will be prepared if warranted as a result of the screening assessment.

Task 8. 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 per the *CEQR Technical Manual*, for some proposed projects (e.g., area-wide rezonings), portions of the typical scope for a Phase I Environmental Site Assessment, such as site inspections, may not be possible. The Proposed Action is an area-wide rezoning, and none of the identified projected and potential development sites are in City ownership. As such, pursuant to the *CEQR Technical Manual* and Chapter 24 of Title 15 of New York City Department of Environmental Protection (DEP) rules governing the placement of (E)² designations, a preliminary screening assessment will be conducted for the projected and potential development sites to determine which sites warrant an (E) designation. The hazardous materials assessment will include the following tasks:

² 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 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.

- A review of Sanborn Fire Insurance Maps and City directories for the projected and potential development sites, to develop a profile on the historical uses of properties.
- A review of regulatory agency database listings will also be conducted within a 400 foot radius around each site.
- Review and evaluate relevant existing data 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.

Task 9. Water and Sewer Infrastructure

The *CEQR Technical Manual* outlines thresholds for analysis of a project's water demand and its generation of wastewater and stormwater. For the Proposed Action, an analysis of water supply is warranted as the RWCDs associated with the Proposed Action would result in a demand of more than one million gallons per day (gpd), as noted in the EAS. Therefore, this chapter will analyze the Proposed Action's potential effects on water, wastewater and stormwater infrastructure. DEP will be consulted during the preparation of the assessment.

Water Supply

- The existing water distribution system serving the rezoning area will be described based on information obtained from the DEP's Bureau of Water Supply and Wastewater Collection.
- Water demand generated by the projected development sites identified in the RWCDs will be projected. As disclosed in the EAS, water demand is projected to exceed 1.4 million gallons per day.
- The effects of the incremental demand on the City's water supply system will be assessed to determine if there would be impacts to water supply or pressure. The incremental water demand will be the difference between the water demand of the projected development sites in the With-Action condition and the demand in the No-Action condition.

Wastewater and Stormwater Infrastructure

A preliminary assessment of the Proposed Action's effects on wastewater and stormwater infrastructure is warranted because the RWCDs for the Proposed Action would result in the development of more than 5 million sf of commercial space, exceeding the CEQR threshold of 250,000 sf of commercial space in Manhattan. The Proposed Action's directly affected area is located within the service area of the Newtown Creek Wastewater Treatment Plant (WWTP). The analysis will be conducted for this WWTP service area, using the following *CEQR Technical Manual* methodology.

- Establish an appropriate study area for the assessment in accordance with the guidance of the *CEQR Technical Manual* and in consultation with DEP.
- The existing stormwater drainage system and surfaces (pervious or impervious) on the projected development sites will be described, and the amount of stormwater generated on those sites will be estimated using DEP's volume calculation worksheet. Drainage areas with direct discharges and overland flow will be presented.
- The existing sewer system serving the rezoning area will be described based on records obtained from DEP. Records obtained will include sewer network maps, drainage plans, capacity information for sewer infrastructure components, and other information as warranted. The existing flows to the

WWTP that serve the rezoning area will be obtained for the latest available 12-month period, and the average dry weather monthly flow will be presented.

- Any changes to the stormwater drainage system and surface area expected in the future without the Proposed Action will be described. Any changes to the sewer system that are expected to occur in the future without the Proposed Action will be described based on information provided by DEP.
- Quantify future stormwater generation from the projected development sites and assess the Proposed Action's potential to create impacts. Changes to the projected development sites' proposed surface area (pervious or impervious) will be described, and runoff coefficients and runoff for each surface type/area will be presented. Volume and peak discharge rates of stormwater from the sites will be determined based on the DEP volume calculation worksheet.
- Sanitary sewage generation for the projected development sites identified in the RWCDs will be estimated. The effects of the incremental demand on the system will be assessed to determine if there will be any impact on operations of the WWTP.
- Based on the assessment of future stormwater and wastewater generation, the change in flows and volumes to the combined sewer system and/or waterbodies due to the Proposed Action will be determined.

A more detailed assessment may be required if increased sanitary or stormwater discharges from the Proposed Action are predicted to affect the capacity of the existing sewer system, exacerbate Combined Sewer Overflow (CSO) volumes/frequencies or contribute greater pollutant loadings in stormwater discharged to receiving water bodies. The scope of a more detailed analysis, if necessary, will be developed based on conclusions from the preliminary infrastructure assessment and coordination with DEP.

Task 10. Solid Waste and Sanitation Services

A solid waste assessment determines whether an action has the potential to cause a substantial increase in solid waste production that may overburden available waste management capacity or otherwise be inconsistent with the City's Solid Waste Management Plan or with stated policy of the City's integrated solid waste management system. The Proposed Action would induce new development that would require sanitation services. According to the *CEQR Technical Manual*, if a project's generation of solid waste in the With-Action condition would not exceed 50 tons per week, it may be assumed that there would be sufficient public or private carting and transfer station capacity in the metropolitan area to absorb the increment, and further analysis generally would not be required. As the Proposed Action is expected to result in a net increase of more 172 tons per week, as noted in the EAS, exceeding the CEQR threshold of 50 tons per week, compared to No-Action condition, an assessment of solid waste and sanitation services is warranted. 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 under existing conditions and the No-Action condition.
- Forecast solid waste generation by the projected developments induced by the Proposed Action based on CEQR guidelines.
- Assess the impacts of the Proposed Action's solid waste generation (projected developments) on the City's collection needs and disposal capacity.
- The Proposed Action's consistency with the City's Solid Waste Management Plan will also be assessed.

Task 11. Energy

According to the *CEQR Technical Manual*, an EIS must include a discussion of the effects of a proposed action on the use and conservation of energy, if applicable and significant. In most cases, an action does not need a detailed energy assessment, but its operational energy is projected. A detailed energy assessment is limited to actions that may significantly affect the transmission or generation of energy.

For other actions, in lieu of a detailed assessment, the *CEQR Technical Manual* recommends disclosure of the estimated amount of energy that would be consumed annually as a result of the day-to-day operation of the buildings and uses resulting from an action.

Although significant adverse energy impacts are not anticipated for the Proposed Action, the EIS will disclose the projected amount of energy consumption during long-term operation resulting from the Proposed Action. As noted in the EAS, the Proposed Action's energy use is estimated at 1,281,570 million BTU's. The projected amount of energy consumption during long-term operation will be estimated based on the average annual whole-building energy use rates for New York City (per Table 15-1 of the *CEQR Technical Manual*). The assessment will also describe any planned "green measures" to reduce energy consumption that may be realized with the Proposed Action.

Task 12. Transportation

The objective of a transportation analysis is to determine whether a proposed action may have a potential significant impact on traffic operations and mobility, public transportation facilities and services, pedestrian elements and flow, safety of all roadway users (pedestrians, bicyclists and vehicles), on- and off-street parking, or goods movement. The Proposed Action is expected to induce primarily new commercial (office and retail) development which would generate additional vehicular travel as well as additional subway and bus riders and pedestrian traffic. These new trips have the potential to affect the area's transportation systems. Therefore, the transportation analyses will be a critical focus of the EIS.

A Draft Transportation Planning Factors (TPF) technical memorandum has been prepared and is included in Appendix B. The TPF memo summarizes the transportation planning factors to be used for the analyses of traffic, transit, pedestrian and parking conditions for the EIS, including trip generation rates, temporal distributions, modal splits, plus estimates of the projected travel demand of the Proposed Action for the weekday AM, midday and PM peak hours. As discussed in the TPF memo, the Proposed Action is anticipated to generate a net increase of 13,893, 18,979 and 16,875 person trips in the AM, midday and PM peak hours, respectively, primarily reflecting commuter trips in the AM and PM commuter peak hours and trips to local eateries and other retail establishments in the midday peak hour. In addition to the travel demand forecast, detailed vehicle, pedestrian and transit trip assignments (a Level-2 screening assessment) will be prepared to validate the intersections and pedestrian/transit elements selected for quantified analysis.

Traffic

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

The RWCDs exceeds the minimum development density screening thresholds specified in Table 16-1 of the *CEQR Technical Manual*. Therefore, a trip generation forecast is required to determine if the Proposed Action would generate 50 or more vehicle trips in any peak hour. As detailed in the Draft TPF technical memorandum included in Appendix B, based on a preliminary travel demand forecast for the RWCDs, the

Proposed Action is expected to generate 1,465, 891 and 1,499 vehicular trips in the weekday AM, midday, and PM peak hours. The following outlines the anticipated scope of work for conducting a traffic impact analysis for the EIS:

- Select peak hours for analysis and 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.
- Obtain traffic counts at traffic analysis locations. Where applicable, available information from recent studies in the vicinity of the study area will be compiled, including data from such agencies as DOT and DCP. If required, a supplemental count program will be conducted for traffic analysis locations that will include the required mix of automatic traffic recorder (ATR) machine counts, video turning movement counts, manual intersection turning movement counts, vehicle classification counts and travel time studies (speed runs) as support data for air quality and noise analyses. The turning movement counts will be supplemented by seven days of ATR counts, and vehicle classification counts that will be conducted on one weekday. The turning movement, vehicle classification counts and travel time studies will be conducted concurrently with the ATR counts.
- Inventory physical data at each of the analysis intersections, including street widths, number of traffic lanes and lane widths, pavement markings, turn prohibitions, bicycle routes and curbside parking regulations. Signal phasing and timing data for each signalized intersection included in the analysis will be obtained from DOT.
- Determine existing traffic operating characteristics at each analysis intersection including capacities, volume-to-capacity (v/c) ratios, average vehicle delays, and levels of service (LOS) per traffic movement and per intersection approach. This analysis will be conducted using the latest approved Synchro analysis software.
- Based on available sources, Census data and standard references including the *CEQR Technical Manual*, estimate the travel demand for projected development sites in the future without the Proposed Action (No-Action condition), as well as the demand from other significant development sites planned in the vicinity of the study area by the 2036 analysis year. This will include daily and hourly person trips, and a modal distribution to estimate trips by auto, taxi, and other modes. A truck trip generation forecast will also be prepared based on data from the *CEQR Technical Manual* and previous studies conducted in this area of Manhattan. Mitigation measures accepted for all No-Action projects and other DOT initiatives will be included in the future No-Action network, as applicable.
- Compute the future 2036 No-Action traffic volumes based on an approved background traffic growth rate for the study area (it is anticipated that the background growth rate will be stepped down for the latter years of the analysis period) and demand from any other significant development projects expected to be completed in the future without the Proposed Action. Incorporate any planned changes to the roadway system anticipated by 2036, and determine the No-Action v/c ratios, delays and LOS at analyzed intersections.
- Based on available sources, Census data and standard references including the *CEQR Technical Manual*, develop a travel demand forecast for projected development sites based on the net change in uses compared to the No-Action condition as defined in the RWCDs. Determine the net change in vehicle trips expected to be generated by projected development sites under the Proposed Action as described in the TPF technical memorandum and approved by DCP in consultation with DOT, 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 2036 future with the Proposed Action condition for each

analyzed peak hour. Determine the resulting v/c ratios, delays, and LOS at analyzed intersections for the With-Action condition, and identify significant adverse traffic impacts in accordance with *CEQR Technical Manual* criteria.

- Identify and evaluate traffic improvements needed to mitigate significant traffic impacts, where practicable. Development of these measures will be coordinated with DOT and other agencies as necessary. Where impacts cannot be mitigated, they will be described as unavoidable adverse impacts.

Transit

According to the general thresholds used by the MTA and specified in the *CEQR Technical Manual*, detailed transit analyses are generally not required if a Proposed Action is projected to result in fewer than 200 peak hour rail or bus transit trips. If a proposed action would result in 50 or more bus trips being assigned to a single bus line (in one direction), or if it would result in an increase of 200 or more trips at a single subway station or on a single subway line, a detailed bus or subway analysis would be warranted. As detailed in the Draft TPF technical memorandum included in Appendix B, the Proposed Action's RWCDs is expected to generate a net increase of 8,865, 2,299 and 10,441 subway trips and bus trips in the weekday AM, midday and PM peak hours, and would therefore require detailed transit analyses based on *CEQR Technical Manual* criteria.

Subway

There are approximately eight subway stations or complexes located within proximity to projected development sites. Assignments of trips to individual subway stations and selection of analysis locations will be prepared in cooperation with MTA-New York City Transit (NYCT). The detailed subway analysis for the EIS will include the following subtasks:

- A detailed analysis of subway station stairways and entrance control areas will be conducted at the affected stations in the weekday AM and PM peak hours.
- The analysis will be based on counts conducted at those control areas and/or pedestrian circulation elements that would be traversed by significant concentrations of project-generated trips. Where available, turnstile and pedestrian count information from recent studies in the vicinity of the study area will be compiled, including data from agencies such as DOT, DCP, and MTA-NYCT.
- Conditions and volumes in the future without the Proposed Action will be determined using background growth rates obtained from the MTA Regional Transit Forecasting Model (RTFM) and accounting for any trips expected to be generated by No-Build developments. The RTFM also accounts for the effects of overall regional growth and MTA capital improvements anticipated to be completed by 2036, which include the Long Island Rail East Side Access and Second Avenue Subway (Phase 1) projects.
- Conditions and volumes in the future with the Proposed Action will be determined based on the assignment of project-generated subway trips.
- Any potential significant adverse impacts at station stairways and entrance control areas will be identified using *CEQR Technical Manual* impact criteria. Mitigation measures will be identified in conjunction with the lead agency and MTA-NYCT, as appropriate.

If the Proposed Action would generate 200 or more new subway trips in one direction on one or more of the various subway routes serving the rezoning area, an analysis of subway line haul conditions would be warranted and included in the EIS.

Bus

The proposed rezoning area is served by approximately 15 MTA-NYCT local bus routes and Select Bus Service (SBS) on the 34th Street and Second Avenue corridors that connect the proposed rezoning area with other parts of Manhattan, as well as over 50 express bus routes connecting the area with New York City's outer boroughs, Long Island and Westchester County.

According to the general thresholds used by the MTA and specified in the *CEQR Technical Manual*, a detailed analysis of bus conditions is generally not required if a proposed action is projected to result in fewer than 50 peak hour trips being assigned to a single bus line (in one direction), as this level of new demand is considered unlikely to result in significant adverse impacts. As shown in the Draft TPF technical memorandum in Appendix B, based on the level of new bus demand generated by the RWCDS, it is estimated that some local bus routes could experience 50 or more trips in one direction through the peak load point and potentially result in significant adverse impacts to bus transit services based on *CEQR Technical Manual* criteria; therefore a detailed bus analysis would be warranted. The EIS will include a quantitative analysis of local bus conditions in the weekday AM and PM peak hours, and for that analysis, trips will be assigned to each route based on proximity to individual projected development sites and current ridership patterns.

Other Public Transit Systems

The proposed rezoning area is served by the MTA's Metro-North service and will, in the future, also be served by the Long Island Rail Road through the MTA East Side Access project. As appropriate, the EIS will evaluate potential impacts of the Proposed Action to Long Island Rail Road and Metro-North commuter rail service at Grand Central Terminal. Commuter rail trips to Penn Station via New Jersey Transit would be expected to take secondary modes to access the study area (e.g., subway or walk) and will be accounted for in those respective analyses.

The MTA East Side Access project is currently scheduled for completion in 2022 and will be included in the future without the Proposed Action analyses. As Phase 3 of the Second Avenue Subway (63rd Street to Houston Street) and a direct connection of Amtrak between Penn Station and Grand Central Terminal are not anticipated to occur by the 2036 analysis year for the Proposed Action, they will not be considered in the future without the Proposed Action analyses.

Pedestrians

Pedestrian Level of Service Analyses

According to *CEQR Technical Manual* criteria, projected pedestrian volume increases of less than 200 persons per hour at any pedestrian element (sidewalks, corner areas and crosswalks) would not typically be considered a significant impact, since that level of increase would not generally be noticeable and therefore would not require further analysis. As shown in the Draft TPF technical memorandum in Appendix B, based on the level of new pedestrian demand generated by the RWCDS, it is anticipated that project-generated pedestrian trips would potentially exceed the 200- trip *CEQR Technical Manual* analysis threshold at one or more locations in one or more peak hours.

In the weekday AM and PM peak hours, new pedestrian trips would be most concentrated on sidewalks and crosswalks adjacent to projected development sites as well as along corridors connecting these sites to area subway station entrances, commuter rail station entrances and bus stops. In the midday, pedestrian trips would tend to be more dispersed, as people travel throughout the area for lunch, shopping or errands.

Given the relatively large numbers of pedestrian trips that would be generated by the Proposed Action, a quantitative pedestrian analysis will be provided in the EIS. The analysis will focus on sidewalks, corner areas and crosswalks where new pedestrian demand would be most concentrated and most likely to exceed the 200-trip *CEQR Technical Manual* analysis threshold in one or more peak hours.

Pedestrian counts will be obtained at each of these locations, and levels of service determined for the existing, No-Action and With-Action conditions. Where applicable, available pedestrian count information from recent studies in the vicinity of the study area will be compiled, including data from such agencies as DOT and DCP. The specific pedestrian facilities to be analyzed will be determined once the assignment of project-generated pedestrian trips has been finalized.

Vehicular and Pedestrian Safety

This assessment, per *CEQR Technical Manual* guidelines, would principally focus on the effect of the Proposed Action's generated demand at existing high-crash locations or at locations that may become unsafe due to the Proposed Action. Traffic accidents involving pedestrians as well as bicyclists at key study area intersections will be researched and documented. The EIS will also describe existing bicycle facilities and bicycle-related regulations plus any potential modifications that may take place to those by the 2036 analysis year. The potential for the Proposed Action to have significant pedestrian and/or bicycle impacts will be identified and possible remedies and/or improvements will be proposed for DOT consideration.

Parking

The parking analyses will document changes in the off-street parking utilization in proximity to projected development sites under the No-Action and With-Action conditions based on accepted background growth rates, projected demand from No-Action projects in the vicinity of the study area, and projected demand from No-Action and With-Action development on projected development sites. Off-street parking conditions will be assessed within a quarter-mile of the rezoning area during the weekday midday period (when parking in a business area is frequently at peak occupancy). On-street parking conditions (existing curbside regulations and parking utilization) in the vicinity of projected development sites will also be documented for this period.

Parking demand from office and retail uses will be derived from the forecasts of daily auto trips from these uses. Future parking demand will account for net reductions in demand associated with the projected development sites' No-Action land uses displaced under the Proposed Action. The forecast of new parking supply will be based on the net change in parking spaces on projected sites, consistent with the RWCDs.

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

Task 13. Air Quality

The development of the projected sites within the proposed Greater East Midtown Rezoning, as compared with the No-Action condition, would likely exceed the 140 vehicle trip screening threshold for conducting a quantified analysis of carbon monoxide (CO) emissions from mobile sources. The proposed development is also expected to exceed the particulate matter (PM) emission screening threshold discussed in Chapter 17, Sections 210 and 311 of the *CEQR Technical Manual*. Therefore, an analysis will be performed to determine whether the net increase in traffic would have the potential for a significant adverse impact on air quality at the local level. The U.S. Environmental Protection Agency's (EPA) MOVES model will be used to calculate CO and PM emissions. The EPA CAL3QHC intersection model will be used to predict 1-hour

and 8-hour average CO concentrations. CAL3QHCR, with 5 years of the most recent available meteorological data, will be used for the PM microscale analysis of 24-hour and annual average concentrations. The predicted level will be compared with the national ambient air quality standards and the City's CO and PM_{2.5} *de minimis* criteria. Intersections will be selected for analysis based on the change in traffic due to the project, levels of service, and overall traffic volumes.

In the event that steam heat sources are not available to serve all or part of the proposed rezoning area, the development contemplated in the RWCDs could also result in impacts from heating, ventilation and air conditioning (HVAC) systems on criteria pollutant levels (i.e., sulfur dioxide, PM and/or nitrogen dioxide concentrations). Screening analyses will be performed to determine whether emissions from on-site fuel-fired HVAC system equipment (e.g., boilers/hot water heaters) are significant. An initial screening analysis will be performed using the procedures outlined in the *CEQR Technical Manual*. The procedure involves determining the distance (from the exhaust point) within which potential significant impacts may occur on elevated receptors (such as open windows, air intake vents, etc.) that are of an equal or greater height when compared with the height of the buildings' HVAC stack(s). The distance within which a significant impact may occur is dependent on a number of factors, including the height of the discharge, type(s) of fuel burned and development size. In addition, a screening analysis will be performed to determine whether there are any potential significant adverse impacts with respect to the 1-hour nitrogen dioxide (NO₂) and 1-hour sulfur dioxide (SO₂) ambient air quality standards.

If the proposed development's HVAC system(s) fails the screening analysis, a detailed stationary source analysis will be performed using EPA's AERMOD dispersion model. Five years of meteorological data with surface data from LaGuardia Airport and concurrent upper air data from Brookhaven, New York, will be used for the modeling study. Concentrations of nitrogen dioxide and PM_{2.5} (as well as sulfur dioxide and particulate matter if burning fuel oil) will be determined and the predicted values will be compared to national and state ambient air quality standards and other relevant criteria. In the event that a violation of the standards is predicted, design measures will be examined to reduce potential concentrations of applicable pollutants to acceptable levels.

If existing major sources (those located at Title V facilities that require Prevention of Significant Deterioration permits) or large sources (those located at facilities that require a State facility permit) are identified near the proposed rezoning area, a stationary source assessment would be performed to determine whether the emissions from such existing sources would have the potential for a significant adverse impact on the air quality on all or part of the expected RWCDs development.

For industrial source (air toxics) analysis, field survey and search of federal and state air permits and DEP files will be used to determine if there are permits for any sources of toxic air compounds from industrial/commercial processes. If such facilities are identified, an industrial source air quality analysis will be performed in accordance with the *CEQR Technical Manual*.

The complete detailed protocol for the analyses of mobile-and stationary source air pollution is presented in Appendix C (Draft Air Quality Protocol).

Task 14. Greenhouse Gas Emissions and Climate Change

Increased greenhouse gas (GHG) emissions are changing the global climate, which is predicted to lead to wide-ranging effects on the environment, including rising sea levels, increases in temperature, and changes in precipitation levels. Although this is occurring on a global scale, the environmental effects of climate change are also likely to be felt at the local level. As the RWCDs associated with the Proposed Action exceeds the 350,000 sf development threshold, GHG emissions generated by the Proposed Action will be quantified and an assessment of consistency with the City's established GHG reduction goal will be

performed as part of the EIS in accordance with the *CEQR Technical Manual*. The assessment will examine GHG emissions from the Proposed Action's operations, mobile sources, and construction, as outlined below. As stated in the EAS, the rezoning area is not susceptible to storm surge and coastal flooding, and an assessment of climate change is not warranted.

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

Task 15. Noise

Noise related to the Proposed Action would primarily be generated by mobile (vehicular) sources. Potential noise impacts are likely to be generated from either vehicular noise from project-generated traffic on sensitive receptors (residential, commercial, and institutional facilities) in the community, or ambient noise impacts (from existing local and highway traffic, ventilation equipment, trains, stationary sources, etc.) on the projected and potential development sites.

Given the high ambient noise levels from existing sources, the trip generation resulting from the incremental development of the Proposed Action would likely result in low levels of additional noise. As a result, as fully detailed in Appendix D (Draft Noise Analysis Protocol), it is expected that the greatest project-generated impacts would be related to the impact of existing and future noise generators on future noise sensitive uses. To evaluate this potential, the noise analysis will follow procedures and assumptions contained in the *CEQR Technical Manual*. Specifically, the noise analysis program will include the following subtasks:

- Noise measurement sites will be selected at representative noise locations, and data available from other relevant CEQR documents in or near the study area will be referenced as well. The noise measurement sites will be selected to provide adequate geographic coverage across the rezoning area and to ensure that a sufficient number of locations are selected to determine ambient noise levels over the large and diverse study area.
- Noise measurements will coincide with weekday peak traffic hour AM, Midday, and PM time periods. At each noise measurement site, noise levels will be measured for duration of 20 minutes per time period and include appropriate noise descriptors as per the *CEQR Technical Manual*.

- At each of the noise measurement sites a PCE noise analysis, in accordance with CEQR requirements, will be completed to determine noise levels under future conditions with and without the Proposed Action. All projections will be made with L_{eq} noise descriptor.
- A screening analysis will be conducted to determine whether the Proposed Action could result in exceedances of noise guidelines.

Based on predicted With-Action L_{10} noise levels, the noise analysis will result in a determination of the required wall attenuation values for each of the proposed development sites.

- If appropriate, an assessment for reduction of noise levels based on building heights may be conducted for certain development sites due to high street level noise values (i.e., noise adjustment due to height).

The complete Draft Noise Analysis Protocol is presented in Appendix D.

Task 16. Public Health

According to the *CEQR Technical Manual*, public health is the organized effort of society to protect and improve the health and wellbeing of the population through monitoring; assessment and surveillance; health promotion; prevention of disease, injury, disorder, disability and premature death; and reducing inequalities in health status. The goal of CEQR with respect to public health is to determine whether adverse impacts on public health may occur as a result of a proposed project, and if so, to identify measures to mitigate such effects.

According to the guidelines of the *CEQR Technical Manual*, a public health assessment may be warranted if an unmitigated significant adverse impact is identified in other CEQR analysis areas, such as air quality, hazardous materials, or noise. If unmitigated significant adverse impacts are identified in any of these technical areas and the lead agency determines that a public health assessment is warranted, an analysis will be provided for the specific technical area or areas.

Task 17. 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 Action directly affected area is composed of primarily high-density commercial office buildings. Additionally, the area contains a number of hotels, located primarily along Lexington Avenue, and small pockets of residential buildings on side streets. The area also contains a series of civic buildings and private clubs.

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

- Based on the other EIS chapters, describe the predominant factors that contribute to defining the character of the neighborhood, including land use, zoning, and public policy; socioeconomic conditions; open space; historic and cultural resources; urban design and visual resources; transportation; and noise.

- Summarize changes in the character of the neighborhood that can be expected in the future No-Action condition based on planned development projects, public policy initiatives, and planned public improvements, as applicable.
- Summarize changes in the character of the neighborhood that can be expected in the future 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 Action on neighborhood character.

Task 18. 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. For the purposes of assessing potential construction impacts, a conceptual construction phasing and schedule for the RWCDs will be developed for the EIS to illustrate how development of the rezoning area could occur. It will conservatively assume that construction of all projected development sites would be completed by the end of the 2036.

Construction impacts are usually important when construction activity has the potential to affect transportation conditions, archaeological resources and the integrity of historic resources, noise affecting a sensitive community, air quality conditions, or disturb hazardous materials. According to the *CEQR Technical Manual*, multi-site projects with overall construction periods lasting longer than two years and which are near to sensitive receptors should undergo a preliminary impact assessment. This chapter of the EIS will provide a preliminary impact assessment following the guidelines in the *CEQR Technical Manual*. The preliminary assessment will evaluate the duration and severity of the disruption or inconvenience to nearby sensitive receptors. If the preliminary assessments indicate the potential for a significant impact during construction, a detailed construction impact analysis will be undertaken and reported in the EIS in accordance with guidelines contained in the *CEQR Technical Manual*. Technical areas to be assessed include the following:

- **Transportation Systems.** This assessment will qualitatively consider losses in lanes, sidewalks, and other transportation services on the adjacent streets during the various phases of construction, and identify the increase in vehicle trips from construction workers and equipment. If warranted under CEQR guidelines, a travel demand forecast for the RWCDs' construction period will be prepared and, if the applicable threshold levels are exceeded, a quantitative analysis will be conducted.
- **Air Quality.** The construction air quality impact section will consider and evaluate mobile air source emissions from construction equipment and worker and delivery vehicles, and fugitive dust emissions. If warranted by the results of the preliminary assessment, the effects of particulate matter emissions from the construction site and earthmoving equipment will be analyzed. This analysis will assume emission control measures required by law or regulation and will consider additional measures to reduce emissions if necessary.
- **Noise Impacts.** The construction noise impact section will assess noise from construction activity. If a detailed analysis is warranted, it will look at the specific activities, types of equipment, and duration of activities planned for specific locations and the effects of construction noise on nearby sensitive receptors
- **Hazardous Materials.** In coordination with the work performed for hazardous materials, above, summarize actions to be taken during project construction to limit exposure of construction workers to potential contaminants.

- Socioeconomic Conditions. The EIS will consider whether construction conditions as a result of the Proposed Action and associated RWCDs would affect access to existing businesses, the potential consequences concerning their continued viability, and the potential effects of their loss, if any, on the character of the area.
- Historic and Cultural Resources: In coordination with the work performed for historic and cultural resources above, identify the potential for construction-period impacts, and summarize actions to be taken during project construction to protect adjacent historic resources from potential construction impacts.
- Neighborhood Character. This assessment will consider potential impacts during the construction period to the character of the surrounding neighborhood.
- Other Technical Areas. As appropriate, the assessment will discuss the other areas of environmental concern, including Land Use, Zoning and Public Policy, Open Space, Community Facilities, and Infrastructure, for potential construction-related impacts.

Task 19. Mitigation

Where significant adverse project impacts have been identified in Tasks 2 through 18, 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, DOT, and DEP. Where impacts cannot be mitigated, they will be described as unavoidable adverse impacts.

Task 20. Alternatives

The purpose of an alternatives section in an EIS is to examine development options that would tend to reduce project-related impacts. The alternatives will be defined once the full extent of the Proposed Action's impacts has been identified. Typically for area-wide actions such as the Proposed Action, the alternatives will include a No-Action Alternative, a no impact or no significant adverse impact alternative, and a lesser density alternative. The alternatives analysis will be qualitative, except where significant adverse impacts of the Proposed Action have been identified. The level of analysis provided will depend on an assessment of project impacts determined by the analysis connected with the appropriate tasks.

Task 21. Conceptual Analysis

As noted above, the Proposed Action would establish or modify provisions related to several special permits. A special permit would be created to allow on-site, publicly accessible areas to be integrated into a new development site in exchange for an increase of the maximum permitted base FAR. The existing Subway Station Improvements special permit, pursuant to Zoning Sections 74-634 and 81-292, will be modified in order to allow it to be utilized by new developments in the Subdistrict that are within close proximity to transit nodes. As new hotel uses will not be permitted as-of-right within the Subdistrict, a new special permit that would allow for the development, conversion, or enlargement of hotels within the Subdistrict will be created. It is possible that the Proposed Action would also include mechanisms to allow for waivers of various provisions of the Special Midtown District including height and setback.

Because it is not possible to predict whether one or more special permit would be pursued on any one site in the future, the RWCDs does not include specific development sites that would include a new or enlargement of hotel use and/or achieve the higher maximum FAR. Therefore, a conceptual analysis will be provided to generically assess the potential environmental impacts that could result from development pursuant to the special permits. The conceptual analysis will consider the potential effects of establishing

these new special permits and the potential environmental effects as compared to those described for the Proposed Action.

Task 22. Summary EIS Chapters

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

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

Task 23. Executive Summary

The executive summary will utilize relevant material from the body of the EIS to describe the Proposed Action, its environmental impacts, measures to mitigate those impacts, and alternatives to the Proposed Action.

Appendix A

RWCDS Tables for Projected and Potential Development Sites

Appendix A: Table 1A

	Site Data					Existing Conditions								No-Action Condition											
	Address	BBL	Block	Lot	Lot Area	Building Area gsf	Commercial Area gsf (Office, Retail and Hotel floor area)	Residential Area gsf	Office Area gsf (usable)	Retail Area gsf	Hotel Area gsf	# of Residential Units	Parking sf	Changes	Building Floor Area gsf (including mechanical)*	Commercial Floor Area gsf (Office, Retail and Hotel floor area)	Residential Floor Area gsf	Office Floor Area gsf (usable)	Retail Floor Area gsf	Hotel Floor Area gsf	# of Residential Units	# of hotel rooms, conversion or new construction	Parking sf	Mechanical gsf	
Projected Site 1	266 MADISON AVENUE	1008690016	869	16	14,220	217,317	217,317		205,317	12,000				no change	217,317	217,317		205,317	12,000						
	274 MADISON AVENUE	1008690058	869	58	5,370	91,212	91,212		85,212	6,000				no change	91,212	91,212		85,212	6,000						
	278 MADISON AVENUE	1008690061	869	61	6,480	74,186	74,186		68,186	6,000				no change	74,186	74,186		68,186	6,000						
	16 EAST 40 STREET	1008690064	869	64	7,400	89,423	89,423		83,423	7,000				no change	89,423	89,423		82,423	7,000						
	TOTAL				33,470	472,138	472,138	-	442,138	31,000	-	-	-	-	472,138	472,138	-	441,138	31,000	-	-	-	-	-	-
Projected Site 2	7 EAST 40 STREET	1012750008	1275	8	7,406	79,738	79,738		73,188	6,550				no change	79,738	79,738		73,188	6,550						
	13 EAST 40 STREET	1012750011	1275	11	2,450	11,951	11,951		11,951	-				no change	11,951	11,951		11,951	-						
	15 EAST 40 STREET	1012750012	1275	12	5,100	57,643	57,643		51,292	6,351				no change	57,643	57,643		51,292	6,351						
	284 MADISON AVENUE	1012750014	1275	14	4,735	102,079	102,079		102,079	-				no change	102,079	102,079		102,079	-						
	290 MADISON AVENUE	1012750016	1275	16	4,750	36,681	36,681		30,111	6,570				no change	36,681	36,681		30,111	6,570						
	292 MADISON AVENUE	1012750059	1275	59	9,250	170,230	170,230		164,420	5,810				no change	170,230	170,230		164,420	5,810						
	22 EAST 41 STREET	1012750060	1275	60	2,479	7,255	7,255		3,855	3,400				no change	7,255	7,255		3,855	3,400						
	TOTAL				36,170	465,577	465,577	-	436,896	28,681	-	-	-	-	465,577	465,577	-	436,896	28,681	-	-	-	-	-	-
Projected Site 3	3 EAST 43 STREET	1012780008	1278	8	5,690	36,616	36,616		36,616	-				no change	36,616	36,616		36,616	-						
	340 MADISON AVENUE	1012780014	1278	14	32,500	558,124	558,124		533,524	24,600				no change	558,124	558,124		533,524	24,600						
	14 EAST 44 STREET	1012780062	1278	62	2,513	11,550	11,550		5,400	4,750				Develops as residential building	94,991	7,539	87,452	7,539	-	-	44	-	-	-	
	12 EAST 44 STREET	1012780063	1278	63	2,513	17,668	17,668		12,868	4,800															
	10 EAST 44 STREET	1012780064	1278	64	2,513	16,629	16,629		13,329	3,300															
	6 EAST 44 STREET	1012780065	1278	65	5,020	62,918	62,918		-	-	62,918			no change	62,918	62,918		-	-	62,918					
	TOTAL				50,749	703,505	703,505	-	601,737	37,450	62,918	-	-	-	752,649	665,197	87,452	570,140	32,139	62,918	44	-	-	-	-
Projected Site 4	7 EAST 44 STREET	1012790009	1279	9	8,133	110,999	110,999		104,999	6,000				no change	110,999	110,999		104,999	6,000						
	346 MADISON AVENUE	1012790017	1279	17	13,125	122,600	122,600		50,325	72,275				no change	122,600	122,600		50,325	72,275						
	352 MADISON AVENUE	1012790057	1279	57	18,800	380,766	380,766		344,482	36,284				no change	380,766	380,766		344,482	36,284						
	10 EAST 45 STREET	1012790063	1279	63	4,522	15,023	15,023		-	15,023				no change	15,023	15,023		-	15,023						
	6 EAST 45 STREET	1012790065	1279	65	5,020	79,280	79,280		74,280	5,000				no change	79,280	79,280		74,280	5,000						
	TOTAL				49,600	708,668	708,668	-	574,086	134,582	-	-	-	-	708,668	708,668	-	574,086	134,582	-	-	-	-	-	-
Projected Site 5	9 EAST 45 STREET	1012810009	1281	9	2,513	18,933	18,933		14,833	4,100				no change	18,933	18,933		14,833	4,100						
	366 MADISON AVENUE	1012810056	1281	56	6,025	84,518	84,518		78,589	5,929				no change	84,518	84,518		78,589	5,929						
	18 EAST 46 STREET	1012810059	1281	59	6,025	87,016	87,016		77,716	9,300				no change	87,016	87,016		77,716	9,300						
	360 MADISON AVENUE	1012817501	1281	7501	19,581	323,029	323,029		318,943	-	4,086			no change	323,029	323,029		318,943	-	4,086					
	TOTAL				34,144	513,496	513,496	-	490,081	19,329	4,086	-	-	-	513,496	513,496	-	490,081	19,329	4,086	-	-	-	-	-
Projected Site 6	250 PARK AVENUE	1012820034	1282	34	24,969	444,628	444,628		434,628	10,000				no change	444,628	444,628		434,628	10,000						
TOTAL				24,969	444,628	444,628	-	434,628	10,000	-	-	-	-	444,628	444,628	-	434,628	10,000	-	-	-	-	-	-	
Projected Site 7	300 PARK AVENUE	1012850036	1285	36	34,050	645,483	645,483		613,397	32,086				no change	645,483	645,483		613,397	32,086						
TOTAL				34,050	645,483	645,483	-	613,397	32,086	-	-	-	-	645,483	645,483	-	613,397	32,086	-	-	-	-	-	-	
Projected Site 8	363 LEXINGTON AVENUE	1012950020	1295	20	10,419	118,587	118,587		108,587	10,000				no change	42,214	42,214		40,276	1,938						
	355 LEXINGTON AVENUE	1012950023	1295	23	14,044	225,000	225,000		209,000	16,000				no change	236,665	236,665		228,665	8,000						
	TOTAL				24,463	343,587	343,587	-	317,587	26,000	-	-	-	-	278,879	278,879	-	268,941	9,938	-	-	-	-	-	-
Projected Site 9	485 LEXINGTON AVENUE	1013010023	1301	23	46,125	743,789	700,621		674,979	25,642		43,168		no change	743,789	700,621	-	674,979	25,642				43,168		
TOTAL				46,125	743,789	700,621	-	674,979	25,642	-	-	43,168	-	743,789	700,621	-	674,979	25,642	-	-	-	-	43,168	-	
Projected Site 10	111 EAST 48 STREET	1013030014	1303	14	41,170	427,611	427,611		-	-		427,611		no change	427,611	427,611		-	-				427,611		
TOTAL				41,170	427,611	427,611	-	-	-	-	-	427,611	-	427,611	427,611	-	-	-	-	427,611	-	-	-	-	
Projected Site 11	541 LEXINGTON AVENUE	1013040020	1304	20	24,725	317,496	317,496		-	1,940		315,556		no change	317,496	317,496		-	1,940				315,556		
TOTAL				24,725	317,496	317,496	-	-	1,940	315,556	-	-	-	317,496	317,496	-	-	1,940	315,556	-	-	-	-	-	
Projected Site 12	575 LEXINGTON AVENUE	1013060023	1306	23	32,625	584,429	584,429		564,429	20,000		34,874		no change	584,429	584,429		564,429	20,000				34,874		
TOTAL				32,625	584,429	584,429	-	564,429	20,000	-	-	34,874	-	584,429	584,429	-	564,429	20,000	-	-	-	-	34,874	-	
Projected Site 13	866 3 AVENUE	1013077501	1307	7501	25,100	163,466	163,466		132,909	24,953				no change	163,466	163,466		132,909	24,953						
	154 EAST 53 STREET	1013070043	1307	43	5,020	38,602	-	-	-	-				no change	38,602	-		-	-				38,602		
	TOTAL				30,120	202,068	163,466	-	132,909	24,953	-	-	38,602	-	202,068	163,466	-	132,909	24,953	-	-	-	38,602	-	
Projected Site 14	914 3 AVENUE	1013100033	1310	33	1,912	8,006	1,912	6,094	1,912		8			Develops as residential building	245,914	19,517	226,397	-	19,517	-	113.20	-	-	-	
	916 3 AVENUE	1013100034	1310	34	1,875	7,500	1,500	6,000	1,500		8														
	918 3 AVENUE	1013100035	1310	35	1,875	7,500	2,250	5,250	2,250																

Appendix A: Table 1B

	Site Data					Existing Conditions								No-Action Condition											
	Address	BBL	Block	Lot	Lot Area	Building Area gsf	Commercial Area gsf (Office, Retail and Hotel floor area)	Residential Area gsf	Office Area gsf (usable)	Retail Area gsf	Hotel Area gsf	# of Residential Units	Parking sf	Changes	Building Floor Area gsf (including mechanical)*	Commercial Floor Area gsf (Office, Retail and Hotel floor area)	Residential Floor Area gsf	Office Floor Area gsf (usable)	Retail Floor Area gsf	Hotel Floor Area gsf	# of Residential Units	# of Hotel Rooms, Conversion or New Construction	Parking sf	Mechanical gsf	
Potential Site A	99 PARK AVENUE	1008950001	895	1	25,675	530,900	515,000		494,475	20,525			15,900	no change	530,900	515,000		494,475	20,525					15,900	
	TOTAL				25,675	530,900	515,000	-	494,475	20,525	-	-	15,900		530,900	515,000	-	494,475	20,525	-	-	-	-	15,900	-
Potential Site B	279 MADISON AVENUE	1012750023	1275	23	21,825	407,127	407,127		386,052	21,075				no change	407,127	407,127	-	386,052	21,075						
	TOTAL				21,825	407,127	407,127	-	386,052	21,075	-	-	-		407,127	407,127	-	386,052	21,075	-	-	-	-	-	-
Potential Site C	413 MADISON AVENUE	1012840021	1284	21	11,675	228,064	228,064	-	213,924	14,140				no change	228,064	228,064	-	213,924	14,140						
	425 MADISON AVENUE	1012840052	1284	52	6,484	102,519	102,519	-	97,519	5,000				no change	102,519	102,519	-	97,519	5,000						
	423 MADISON AVENUE	1012840152	1284	152	2,180	8,740	4,165	4,575	-	4,165		7		no change	8,740	4,165	4,575	-	-	4,165		7			
	TOTAL				20,339	339,323	334,748	4,575	311,443	23,305	-	7	-		339,323	334,748	4,575	311,443	23,305	-	7	-	-	-	-
Potential Site D	410 MADISON AVENUE	1012840014	1284	14	7,164	58,395	58,395		51,555	6,840				no change	58,395	58,395		51,555	6,840						
	418 MADISON AVENUE	1012840017	1284	17	3,275	46,167	46,167		40,967	5,200				no change	46,167	46,167		40,967	5,200						
	422 MADISON AVENUE	1012840055	1284	55	1,750	8,119	8,119		4,869	3,250				no change	8,119	8,119		4,869	3,250						
	424 MADISON AVENUE	1012840056	1284	56	4,375	62,237	62,237		60,065	2,172				no change	62,237	62,237		60,065	2,172						
	22 EAST 49 STREET	1012840059	1284	59	2,553	16,224	16,224		11,590	4,634				no change	16,224	16,224		11,590	4,634						
	20 EAST 49 STREET	1012840060	1284	60	2,513	14,060	14,060		11,717	2,343				no change	14,060	14,060		11,717	2,343						
	TOTAL				21,630	205,202	205,202	-	180,763	24,439	-	-	-		205,202	205,202	-	180,763	24,439	-	-	-	-	-	-
Potential Site E	350 PARK AVENUE	1012870033	1287	33	27,925	535,700	535,700		517,700	18,000				no change	535,700	535,700		517,700	18,000						
	TOTAL				27,925	535,700	535,700	-	517,700	18,000	-	-	-		535,700	535,700	-	517,700	18,000	-	-	-	-	-	-
Potential Site F	400 PARK AVENUE	1012900036	1290	36	12,552	214,392	214,392		147,007	67,385				no change	214,392	214,392		147,007	67,385						
	410 PARK AVENUE	1012900037	1290	37	11,715	236,665	236,665		228,665	8,000				no change	236,665	236,665		228,665	8,000						
	TOTAL				24,267	451,057	451,057	-	375,672	75,385	-	-	-		451,057	451,057	-	375,672	75,385	-	-	-	-	-	-
Potential Site G	571 MADISON AVENUE	1012920052	1292	52	20,075	385,347	385,347		371,081	14,266		20,025		no change	385,347	385,347		371,081	14,266				20,025		
	TOTAL				20,075	385,347	385,347	-	371,081	14,266	-	20,025			385,347	385,347	-	371,081	14,266	-	-	-	20,025	-	
Potential Site H	354 LEXINGTON AVENUE	1012950017	1295	17	12,359	238,294	238,294	-	228,274	10,000				no change	238,294	238,294		228,274	10,000						
	364 LEXINGTON AVENUE	1012950058	1295	58	14,812	246,605	246,605		233,287	13,298				no change	246,605	246,605		233,287	13,298						
	TOTAL				27,171	484,899	484,899	-	461,561	23,298	-	-	-		484,899	484,899	-	461,561	23,298	-	-	-	-	-	-
Potential Site I	141 EAST 45 STREET	1013000026	1300	26	2,008	5,468	5,468	-	-	5,468				no change	5,468	5,468	-	-	5,468						
	730 3 AVENUE	1013000033	1300	33	38,168	665,110	665,110		615,379	25,904	23,827			no change	665,110	665,110		615,379	25,904	23,827					
	158 EAST 46 STREET	1013000042	1300	42	3,314	6,632	6,632		-	6,632				no change	6,632	6,632		-	6,632						
	154 EAST 46 STREET	1013000044	1300	44	3,213	18,810	18,810		18,810	-				no change	18,810	-		18,810	-						
	TOTAL				46,703	696,020	696,020	-	634,189	38,004	23,827	-	-		696,020	696,020	-	634,189	38,004	23,827	-	-	-	-	-
Potential Site J	155 EAST 50 STREET	1013050033	1305	33	10,744	159,582	159,582	-	-	-	159,582			no change	159,582	159,582	-	-	-	159,582					
	830 3 AVENUE	1013050040	1305	40	10,041	135,000	135,000		128,150	6,850				no change	135,000	135,000	-	128,150	6,850						
	TOTAL				20,785	294,582	294,582	-	128,150	6,850	159,582	-	-		294,582	294,582	-	128,150	6,850	159,582	-	-	-	-	-
Potential Site K	850 3 AVENUE	1013060033	1306	33	31,632	574,675	574,675		568,217	6,458				no change	574,675	574,675		568,217	6,458						
	TOTAL				31,632	574,675	574,675	-	568,217	6,458	-	-	-		574,675	574,675	-	568,217	6,458	-	-	-	-	-	-
Potential Site L	685 3 AVENUE	1013170001	1317	1	31,129	559,755	559,755		533,565	26,190				no change	559,755	559,755		533,565	26,190						
	TOTAL				31,129	559,755	559,755	-	533,565	26,190	-	-	-		559,755	559,755	-	533,565	26,190	-	-	-	-	-	-
Potential Site M	733 3 AVENUE	1013190047	1319	47	25,768	405,399	405,399		378,170	27,229				no change	405,399	405,399		378,170	27,229						
	TOTAL				25,768	405,399	405,399	-	378,170	27,229	-	-	-		405,399	405,399	-	378,170	27,229	-	-	-	-	-	-
Potential Site N	845 3 AVENUE	1013250001	1325	1	21,100	321,452	321,452	-	308,397	13,055				no change	321,452	321,452	-	308,397	13,055						
	TOTAL				21,100	321,452	321,452	-	308,397	13,055	-	-	-		321,452	321,452	-	308,397	13,055	-	-	-	-	-	-

Appendix A: Table 1B

	With-Action Condition															Increment									
	Changes	Proposed Maximum FAR	Zoning Square Feet	Building Floor Area gsf (including mechanical)*	Usable Floor Area (gross square feet, excluding mechanical)	Commercial Floor Area gsf (Office, Retail and Hotel floor area)	Residential Floor Area gsf	Office Floor Area gsf (usable)	Retail Floor Area gsf	Hotel Floor Area gsf	# of Residential Units	# of hotel rooms, conversion or new construction	Parking sf	Mechanical gsf	Retail Breakdown-Neighborhood retail	Retail Breakdown-Destination retail	Building Floor Area gsf (including mechanical)*	Commercial Floor Area gsf (Office, Retail and Hotel floor area)	Residential Floor Area gsf	Office Floor Area gsf (usable)	Retail Floor Area gsf	Hotel Floor Area gsf	# of Residential Units	Parking sf	
Potential Site A	Develops as Office Building	21.6	554,580	637,767	582,309	582,309	-	556,634	25,675					55,458	25,675										
			554,580	637,767	582,309	582,309	-	556,634	25,675	-	-	-	-	55,458	25,675	-	106,867	67,309	-	62,159	5,150	-	-	(15,900)	
Potential Site B	Develops as Mixed Office/Residential Building	21.6	471,420	542,133	494,991	395,993	98,998	374,168	21,825		49.5			47,142	21,825										
			471,420	542,133	494,991	395,993	98,998	374,168	21,825	-	49.5	-	-	47,142	21,825	-	135,006	(11,134)	98,998	(11,884)	750	-	49	-	
Potential Site C	Develops as Office Building	21.6	439,322.40	505,221	461,289	461,289		440,950	20,339					43,932	20,339										
			439,322.40	505,221	461,289	461,289	-	440,950	20,339	-	-	-	-	43,932	20,339	-	165,898	126,541	(4,575)	129,507	(2,966)	-	(7)	-	
Potential Site D	Develops as Office Building	18	389,340	447,741	408,807	408,807		387,177	21,630					38,934	21,630										
			389,340	447,741	408,807	408,807	-	387,177	21,630	-	-	-	-	38,934	21,630	-	242,539	203,605	-	206,414	(2,809)	-	-	-	
Potential Site E	Develops as Office Building	25	698,125	802,844	733,031	733,031		705,106	27,925					69,812	27,925										
			698,125	802,844	733,031	733,031	-	705,106	27,925	-	-	-	-	69,812	27,925	-	267,144	197,331	-	187,406	9,925	-	-	-	
Potential Site F	Develops as Office Building	25	606,675	697,676	637,009	637,009		612,742	24,267					60,668	24,267										
			606,675	697,676	637,009	637,009	-	612,742	24,267	-	-	-	-	60,668	24,267	-	246,619	185,952	-	237,070	(51,118)	-	-	-	
Potential Site G	Develops as Office Building	18	361,350	415,553	379,418	379,418		359,343	20,075					36,135	20,075										
			361,350	415,553	379,418	379,418	-	359,343	20,075	-	-	-	-	36,135	20,075	-	30,205	(5,930)	-	(11,739)	5,809	-	-	(20,025)	
Potential Site H	Develops as Office Building	21.6	586,893.60	674,928	616,238	616,238		589,067	27,171					58,689	27,171										
			586,893.60	674,928	616,238	616,238	-	589,067	27,171	-	-	-	-	58,689	27,171	-	190,029	131,339	-	127,506	3,873	-	-	-	
Potential Site I	Develops as Office Building	20.323	949,145.07	1,091,517	996,602	996,602		949,899	46,703					94,915	23,352	23,352									
			949,145.07	1,091,517	996,602	996,602	-	949,899	46,703	-	-	-	-	94,915	23,352	23,352	395,497	300,582	-	315,710	8,699	(23,827)	-	-	
Potential Site J	Develops as Office Building	18	374,130	430,250	392,837	392,837		372,052	20,785					37,413	20,785										
			374,130	430,250	392,837	392,837	-	372,052	20,785	-	-	-	-	37,413	20,785	-	135,668	98,255	-	243,902	13,935	(159,582)	-	-	
Potential Site K	Develops as Office Building	19.11	604,488	695,161	634,712	634,712		603,080	31,632					60,449	31,632										
			604,488	695,161	634,712	634,712	-	603,080	31,632	-	-	-	-	60,449	31,632	-	120,486	60,037	-	34,863	25,174	-	-	-	
Potential Site L	Develops as Office Building	21.6	672,386.40	773,244.36	706,005.72	706,005.72		674,876.72	31,129					67,238.64	31,129										
			672,386.40	773,244.36	706,005.72	706,005.72	-	674,876.72	31,129	-	-	-	-	67,238.64	31,129	-	213,489	146,251	-	141,312	4,939	-	-	-	
Potential Site M	Develops as Mixed Office/Residential Building	18	463,824	533,397.60	487,015.20	389,612.16	97,403.04	363,844.16	25,768		48.70			46,382.40	25,768										
			463,824	533,397.60	487,015.20	389,612.16	97,403.04	363,844.16	25,768	-	48.70	-	-	46,382.40	25,768	-	127,999	(15,787)	97,403	(14,326)	(1,461)	-	49	-	
Potential Site N	Develops as Office Building	18	379,800	436,770	398,790	398,790		377,690	21,100					37,980	21,100										
			379,800	436,770	398,790	398,790	-	377,690	21,100	-	-	-	-	37,980	21,100	-	115,318	77,338	-	69,293	8,045	-	-	-	

Appendix B
Draft Transportation Planning Factors (TPF)
Technical Memorandum



To: New York City Department of City Planning

Date: August 1, 2016

CC: Nancy Doon, Celeste Evans, Molly MacQueen and Tammy Petsios – VHB

Project #: 29878.00

Memorandum

From: Erik Metzger

Re: Greater East Midtown Rezoning EIS – Draft Transportation Planning Factors

This memorandum summarizes the transportation planning factors to be used for the analysis of transportation (traffic, transit, pedestrians and parking) conditions for the *Greater East Midtown Rezoning EIS*. It provides a description of the Proposed Action and travel demand factors used to determine the number of trips generated by the project in the weekday AM, midday and PM peak hours.

PROPOSED ACTION

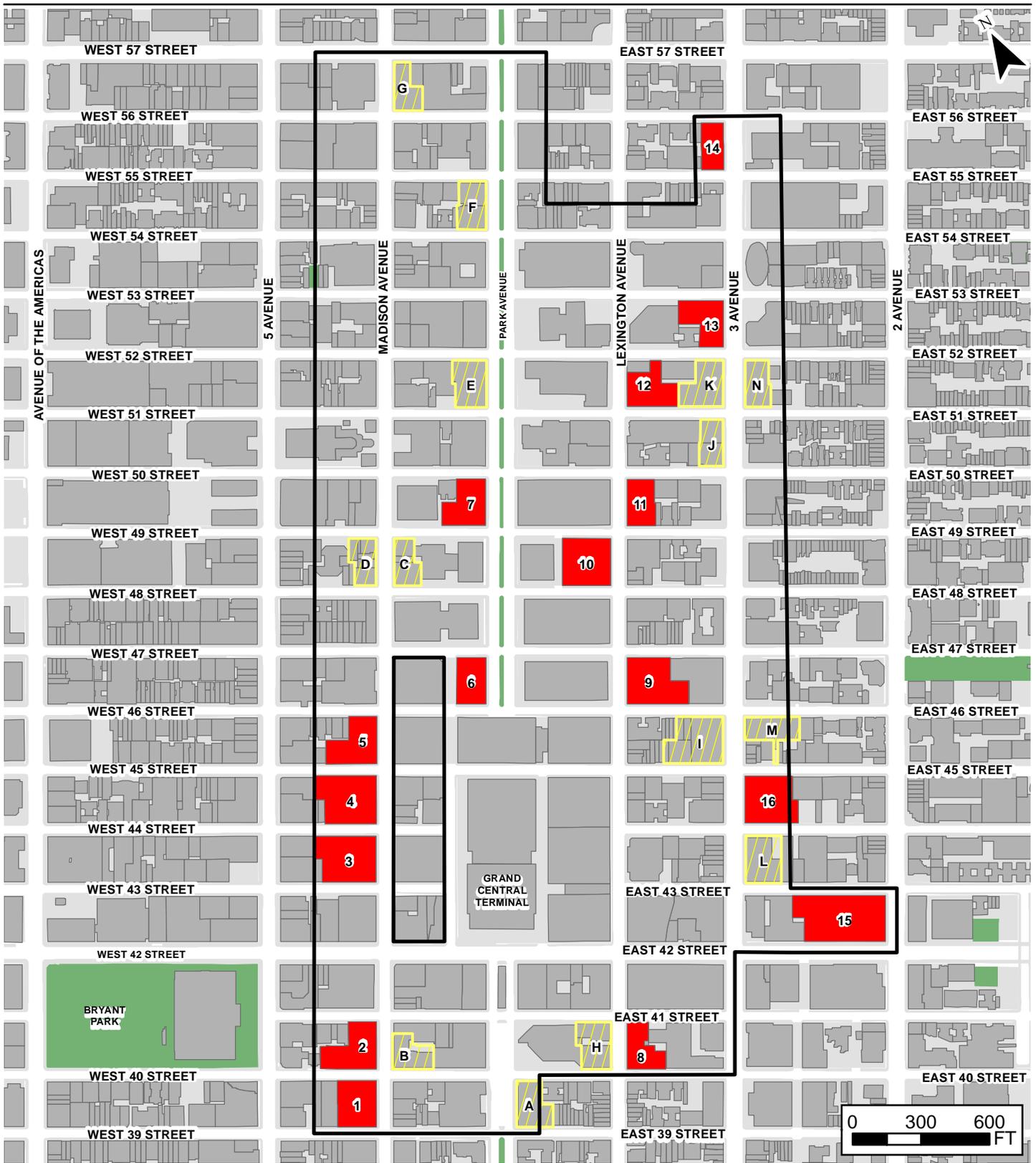
The Proposed Action includes zoning map amendments and zoning text amendments affecting a 78 block area in East Midtown generally bounded by East 57th Street to the north, East 39th Street to the south, a line 200 feet easterly of Third Avenue to the east and a line 250 feet westerly of Madison Avenue to the west (see Figure 1). The general objective of the Proposed Action is to facilitate both the construction of new office space and replacement of outdated office stock within East Midtown by increasing density through an as-of-right framework. This framework would also provide direct funding for transit and above-grade public realm infrastructure improvements and bolster landmarks preservation within the Subdistrict.

In order to assess the possible effects of the Proposed Action, a Reasonable Worst-Case Development Scenario (RWCDs) was established using both the current zoning (future No-Action) and proposed zoning (future With-Action) conditions projected to the build year of 2036 (the year by which the projected development predicted by the proposed zoning would be in place). The RWCDs identifies 16 projected development sites (those sites considered more likely to be developed within the 20-year analysis period) and 14 potential development sites (those sites considered less likely to be developed within the same period); the locations of these development sites are shown in Figure 1. Only projected development sites are considered for the purposes of the transportation analyses.

The incremental difference between the future No-Action and future With-Action conditions are the basis of the transportation impact analyses of the EIS. Table 1 summarizes the future No-Action, future With-Action and incremental net change of component sizes by land use for the RWCDs. As shown in the table, between the future No-Action and future With-Action conditions there would be a net increase in office and retail space and a net decrease in hotel rooms, residential dwelling units and parking spaces.

Table 1 – RWCDs Summary for Projected Development Sites

Land Use	No-Action Condition	With-Action Condition	Net Increment
Office	6,763,274 gsf	13,394,777 gsf	+6,631,503 gsf
Local Retail	374,537 gsf	448,076 gsf	+73,539 gsf
Destination Retail	72,275 gsf	153,823 gsf	+81,548 gsf
Hotel	1,246 rooms	0 rooms	-1,246 rooms
Residential	163 dwelling units	119 dwelling units	-44 dwelling units
Parking Spaces	564	0	-564



Proposed Greater East Midtown Rezoning Boundary

RWCD Sites (w/ I.D. Label)

Projected Development Sites

Potential Development Sites

TRANSPORTATION PLANNING FACTORS

The transportation planning factors used to forecast weekday travel demand for the land uses in the RWCDs are summarized in Table 2 and discussed below. The trip generation rates, temporal distributions and in/out splits, modal splits, vehicle occupancies and truck trip factors were primarily based on rates cited in the 2014 *City Environmental Quality Review (CEQR) Technical Manual*, factors developed for the 2013 *East Midtown Rezoning and Related Actions FEIS* and American Community Survey journey-to-work and reverse journey-to-work data for census tracts in the rezoning area. Factors are provided for the weekday AM and PM peak hours (the typical peak periods for commuter travel demand) and the weekday midday peak hour (the typical peak period for retail establishments such as local eateries and shops).

Office

Trip generation rates and temporal distributions for offices were based on factors cited in the *CEQR Technical Manual*. In/out splits were obtained from the *East Midtown Rezoning and Related Actions FEIS*. Weekday AM and PM peak hour modal splits were derived from 2006-2010 American Community Survey reverse journey-to-work data for workers arriving between 7:30 am and 9:59 am at workplaces located within census tracts in the rezoning area (Manhattan Census Tracts 80, 82, 88, 90, 92, 94, 98, 100, 102, 108, 112.02 and 112.03). Trips made by taxi were assumed to be evenly distributed between yellow cabs and black cars as per the *East Midtown Rezoning and Related Actions FEIS*. Weekday midday modal splits were obtained from the *East Midtown Rezoning and Related Actions FEIS*. Vehicle occupancies for autos were derived from 2006-2010 American Community Survey reverse journey-to-work data and vehicle occupancy rates for taxis were obtained from the *East Midtown Rezoning and Related Actions FEIS*. Truck trip generation assumptions were based on the rates cited in the *CEQR Technical Manual*.

Local Retail

Local retail would primarily attract trips from worker populations at new office development and other land uses in the surrounding area. It is therefore anticipated that the majority of these trips would be via the walk mode and that many would be “linked” trips (e.g., a trip with multiple purposes, such as stopping at a retail store while commuting to or from work or at lunchtime) and would therefore not represent the addition of new discrete trips. The proportion of “linked” trips assumed is 25 percent based on the *CEQR Technical Manual*. Weekday travel demand forecasts for local retail uses were based on the trip generation rates and temporal distributions cited in the *CEQR Technical Manual*. In/out splits, modal splits and vehicle occupancy rates were obtained from the *East Midtown Rezoning and Related Actions FEIS*. Truck trip generation assumptions were based on the rates cited in the *CEQR Technical Manual*.

Destination Retail

Destination retail differs from local retail in that it more often represents a primary trip purpose to the study area, as is reflected in the mode split. Weekday travel demand forecasts for destination retail uses were based on the trip generation rates and temporal distributions cited in the *CEQR Technical Manual*. In/out splits, modal splits and vehicle occupancy rates were obtained from the *East Midtown Rezoning and Related Actions FEIS*. Truck trip generation rates were obtained from the *East Midtown Rezoning and Related Actions FEIS*.

Table 2 – Transportation Planning Factors

Land Use:	Office		Local Retail		Destination Retail		Hotel		Residential	
Trip Generation:	(1)		(1)		(1)		(1)		(1)	
	Weekday		Weekday		Weekday		Weekday		Weekday	
Daily Person Trips	18.0		205		78.2		9.4		8.075	
Net Daily Person Trips*	18.0		154		78.2		9.4		8.075	
	per 1,000 gsf		per 1,000 gsf		per 1,000 gsf		per room		per dwelling unit	
Temporal Distribution:	(1)		(1)		(1)		(1)		(1)	
AM	12%		3%		3%		8%		10%	
MD	15%		19%		9%		14%		5%	
PM	14%		10%		9%		13%		11%	
In/Out Splits:	(2)		(2)		(2)		(2)		(2)	
	In	Out	In	Out	In	Out	In	Out	In	Out
AM	96%	4%	50%	50%	61%	39%	39%	61%	15%	85%
MD	48%	52%	50%	50%	55%	45%	54%	46%	50%	50%
PM	5%	95%	50%	50%	47%	53%	65%	35%	70%	30%
Modal Splits:	(3)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(4)	
	AM/PM	MD	AM/MD/PM		AM/PM	MD	AM/PM	MD	AM/MD/PM	
Auto	7.6%	2.0%	2%		9.0%	9%	9%	8%	8.6%	
Taxi (Yellow Cab)	1.1%	1.5%	3%		4.0%	4%	18%	15%	4.1%	
Taxi (Black Car)	1.1%	1.5%	-		-	-	-	-	-	
Bus	14.8%	6.0%	6%		8.0%	8%	3%	3%	7.9%	
Subway	48.2%	6.0%	6%		26.5%	20%	24%	13%	29.2%	
Railroad	19.2%	0.0%	0%		2.0%	0%	0%	0%	3.1%	
Walk	7.8%	83.0%	83%		50.5%	59%	46%	61%	45.6%	
Other	0.2%	0.0%	0%		0.0%	0%	0%	0%	1.5%	
	100.0%	100.0%	100%		100.0%	100%	100%	100%	100.0%	
Vehicle Occupancy:	(2,3)		(2)		(2)		(2)		(2,4)	
Auto	1.15		1.65		2.00		1.40		1.14	
Taxi (Yellow Cab)	1.40		1.40		2.00		1.80		1.40	
Taxi (Black Car)	1.40		-		-		-		-	
Truck Trip Generation:	(1)		(1)		(2)		(2)		(1)	
	Weekday		Weekday		Weekday		Weekday		Weekday	
	0.32		0.35		0.35		0.06		0.06	
	per 1,000 gsf		per 1,000 gsf		per 1,000 gsf		per room		per dwelling unit	
	(1)		(1)		(2)		(2)		(1)	
AM	10%		8%		8%		12%		12%	
MD	11%		11%		11%		9%		9%	
PM	2%		2%		2%		1%		2%	
	In	Out	In	Out	In	Out	In	Out	In	Out
	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%

Note:

* Includes 25% credit for linked trips to local retail

Sources:

- 1 CEQR Technical Manual (2014)
- 2 East Midtown Rezoning and Related Actions FEIS (2013)
- 3 U.S. Census Bureau, American Community Survey 2006-2010 Five-year estimates. Special Tabulation: Census Transportation Planning Reverse Journey-to-Work Data for Tracts 80, 82, 88, 90, 92, 94, 98, 100, 102, 108, 112.02 and 112.03 for workers arriving between 7:30-9:59 am
- 4 U.S. Census Bureau, American Community Survey 2010-2014 5-Year Estimates Journey-to-Work Data for Tracts 80, 82, 88, 90, 92, 94, 98, 100, 102, 108, 112.02 and 112.03

Hotel

Travel demand forecasts for hotels were based on the trip generation rates and temporal distributions cited in the *CEQR Technical Manual* and the in/out splits, modal splits and vehicle occupancies presented in the *East Midtown Rezoning and Related Actions FEIS*. Truck trip generation rates were obtained from the *East Midtown Rezoning and Related Actions FEIS*.

Residential

Residential trip generation rates and temporal distributions were based on factors cited in the *CEQR Technical Manual* and in/out splits were obtained from the *East Midtown Rezoning and Related Actions FEIS*. Modal splits were derived from 2010-2014 American Community Survey journey-to-work data for workers residing within census tracts in the rezoning area. Although residential-based trips in the midday would likely be more local in nature than in the peak commuter hours (and therefore have a higher walk share, for example), the residential modal split based on journey-to work data was conservatively assumed for all time periods. Vehicle occupancies for autos were derived from 2010-2014 American Community Survey journey-to-work data and vehicle occupancy rates for taxis were obtained from the *East Midtown Rezoning and Related Actions FEIS*. Truck trip generation assumptions were based on the rates cited in the *CEQR Technical Manual*.

TRIP GENERATION

The incremental difference in person and vehicle trips expected to result from the Proposed Action by the build year of 2036 were derived based on the net change in land use component sizes in Table 1 and the transportation planning factors in Table 2. Table 3 provides an estimate of the incremental net change of peak hour trips (versus the No-Action condition) that would occur in 2036 with implementation of the Proposed Action.

As shown in Table 3, the Proposed Action would generate an increase of approximately 13,893 total person trips during the weekday AM peak hour, 18,979 total person trips during the weekday midday peak hour and 16,875 total person trips during the weekday PM peak hour. Person trips by auto and taxi modes would increase by a net total of approximately 1,192, 699 and 1,354 during the AM, midday and PM peak hours, respectively. Peak hour bus trips would increase by a net total of approximately 2,127, 1,198 and 2,543 during the AM, midday and PM peak hours, respectively, while peak hour subway trips would increase by a net total of approximately 6,738, 1,101 and 7,898, respectively. Peak hour railroad trips would increase by a net total of approximately 2,755, 2 and 3,223 during the weekday AM, midday and PM peak hours, respectively. Trips solely made by the walk mode would increase by approximately 1,054, 15,979 and 1,826 during the AM, midday and PM peak hours, respectively.

Table 3 – Travel Demand Forecast

Project Components:		Office	Local Retail	Destination Retail	Hotel	Residential									
Size:		6,631,503 gsf	73,539 gsf	81,548 gsf	-1,246 rooms	-44 dwelling units									
Peak Hour Trips:															
AM		14,326	340	195	-935	-33									
MD		17,898	2,162	575	-1,642	-14									
PM		16,717	1,138	576	-1,520	-36									
Person Trips:												Net			
		In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	Total	
AM	Auto	1,044	46	4	4	11	7	-33	-51	0	-3	1,026	3	1,029	
	Taxi	303	12	6	6	3	3	-66	-103	0	-1	246	-83	163	
	Bus	2,036	83	10	10	10	8	-11	-17	0	-2	2,045	82	2,127	
	Subway	6,626	277	10	10	31	19	-87	-137	-2	-9	6,578	160	6,738	
	Railroad	2,642	110	0	0	4	0	0	0	0	-1	2,646	109	2,755	
	Walk	1,074	46	140	140	60	39	-168	-262	-1	-14	1,105	-51	1,054	
	Other	27	0	0	0	0	0	0	0	0	0	27	0	27	
	Total	13,752	574	170	170	119	76	-365	-570	-3	-30	13,673	220	13,893	
MD	Auto	172	185	22	22	28	23	-71	-61	-1	-1	150	168	318	
	Taxi	258	280	33	33	13	11	-133	-114	0	0	171	210	381	
	Bus	514	557	66	66	25	21	-26	-23	-1	-1	578	620	1,198	
	Subway	514	557	66	66	64	52	-116	-98	-2	-2	526	575	1,101	
	Railroad	0	0	0	0	0	0	0	0	1	1	1	1	2	
	Walk	7,133	7,728	894	894	187	151	-540	-460	-4	-4	7,670	8,309	15,979	
	Other	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Total	8,591	9,307	1,081	1,081	317	258	-886	-756	-7	-7	9,096	9,883	18,979	
PM	Auto	63	1,206	10	10	25	28	-89	-48	-2	-1	7	1,195	1,202	
	Taxi	22	351	15	15	11	12	-178	-95	-1	0	-131	283	152	
	Bus	126	2,349	35	35	21	25	-30	-15	-2	-1	150	2,393	2,543	
	Subway	403	7,651	35	35	70	81	-237	-129	-8	-3	263	7,635	7,898	
	Railroad	162	3,048	0	0	6	7	0	0	0	0	168	3,055	3,223	
	Walk	68	1,237	474	474	136	154	-454	-245	-13	-5	211	1,615	1,826	
	Other	0	31	0	0	0	0	0	0	0	0	0	31	31	
	Total	844	15,873	569	569	269	307	-988	-532	-26	-10	668	16,207	16,875	
Vehicle Trips:												Total Balanced			
		In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	Total	
AM	Auto	908	36	1	1	4	4	-23	-36	0	-2	890	3	893	
	Taxi	214	2	4	4	4	0	-36	-56	0	-1	186	186	372	
	Truck	105	105	-1	-1	0	0	-4	-4	0	0	100	100	200	
	Total	1,227	143	4	4	8	4	-63	-96	0	-3	1,176	289	1,465	
MD	Auto	151	162	13	13	15	11	-51	-43	-1	-1	127	142	269	
	Taxi	184	202	24	24	7	4	-74	-62	0	0	199	199	398	
	Truck	116	116	-1	-1	0	0	-3	-3	0	0	112	112	224	
	Total	451	480	36	36	22	15	-128	-108	-1	-1	438	453	891	
PM	Auto	56	1,049	5	5	12	13	-64	-34	-2	-1	7	1,032	1,039	
	Taxi	12	252	10	10	6	7	-99	-53	-1	0	207	207	414	
	Truck	23	23	0	0	0	0	0	0	0	0	23	23	46	
	Total	91	1,324	15	15	18	20	-163	-87	-3	-1	237	1,262	1,499	

Note:

Taxi trips were balanced on a site-by-site basis for each of the projected development sites

Table 3 also provides an estimate of the incremental net change in peak hour vehicle trips (auto, taxi and truck) that would occur in 2036 with implementation of the Proposed Action. Inbound and outbound taxi (yellow cab and black car) trips were balanced to reflect that they consist of two trip ends (one in, one out) and that some taxis arrive or depart empty. As the rezoning area is located within the vicinity of Grand Central Terminal, 75 percent of inbound full yellow cabs were assumed to be available for outbound demand given the presence of the intermodal facility (e.g., taxis dropping off passengers at adjacent office buildings in the AM peak period could pick up passengers arriving at the train station); this assumption is based on guidance in the *CEQR Technical Manual*. For black cars, 90 percent of inbound full vehicles were assumed to be available for outbound demand (these vehicles are dispatched and do not pick up passengers via street hails) based on the *East Midtown Rezoning and Related Actions FEIS*. As shown in Table 3, total vehicle trips generated by the proposed action would increase by approximately 1,465, 891 and 1,499 during the AM, midday and PM peak hours, respectively.

ANALYSIS PERIODS

According to the *CEQR Technical Manual*, a quantified traffic analysis is typically required if a proposed action would result in more than 50 peak hour vehicle trip ends. As shown in Table 3, the Proposed Action is expected to result in more than 50 total vehicle trips during the AM, midday and PM peak hours. These peak hours, therefore, will be selected for the quantitative analysis of traffic conditions. The standard peak hours for this area of Manhattan are 8-9 AM, 12-1 PM and 5-6 PM.

The analysis of transit (bus and subway) conditions typically focuses on the AM and PM commuter peak hours, as these are the time periods when the incremental transit demand from the Proposed Action are highest and there is also the greatest potential for significant impacts. Therefore, quantitative analyses of transit conditions will focus on the AM and PM peak hours.

According to the *CEQR Technical Manual*, a quantified analysis of pedestrian conditions is typically required if a proposed action would result in 200 or more peak hour pedestrian trips. As shown in Table 3, the Proposed Action is expected to result in more than 50 total person trips during the AM, midday and PM peak hours.¹ For this reason, quantitative analyses of pedestrian conditions will focus on the AM, midday and PM peak hours.

¹ Pedestrian trips refer not only to trips made solely by the walk mode, but also to the pedestrian component associated with walking between projected development sites and other modes of travel, such as subway or rail stations, bus stops and parking facilities.

Appendix C
Draft Air Quality Protocol



East Midtown Rezoning EIS
Draft Air Quality Analysis Protocol
August 11, 2016

Introduction

The Proposed Rezoning Action will affect residential and commercial developments in the study area by altering traffic volumes and patterns as well as land uses. Ambient air quality may be affected by air pollutants produced by motor vehicles, referred to as “mobile sources,” by fixed facilities, usually referenced as “stationary sources,” or by a combination of both.

The purpose of this memorandum is to describe the air quality analysis approach for the proposed development sites for the East Midtown Rezoning EIS. Air quality analyses will be conducted following the procedures outlined in the *2014 CEQR Technical Manual* to determine whether the proposed redevelopment of East Midtown Rezoning (“Proposed Project”) would result in exceedances of the National Ambient Air Quality Standards (NAAQS) or the city’s *de minimis* criteria.

This draft methodology is divided into a section considering operational long-term effects, and construction phase short-term effects.

Proposed Methodology for Operational Phase effects

The key air quality issues that would be addressed are:

- The potential for changes in vehicular travel associated with proposed development activities to result in significant mobile source (vehicular-related) air quality impacts;
- The potential for emissions from the heating, ventilation and air conditioning (HVAC) systems of the proposed development buildings to significantly impact other proposed development buildings (project-on-project impacts);
- The potential for emissions from the HVAC systems of the proposed development buildings to significantly impact existing land uses (project-on-existing impacts);
- The potential combined impacts from clusters of HVAC emissions (i.e., HVAC emissions from proposed development buildings of approximately the same height that are located in close proximity to one another) to significantly impact existing land uses. and other proposed development sites;



- The potential for significant air quality impacts on the proposed development sites from air toxic emissions generated by nearby existing industrial/commercial sources; and
- The potential for significant air quality impacts from the HVAC systems of existing “major” emission sources (Title V Facilities) or any “large” emission sources (State Facility Permit) on the proposed developments.

Mobile Source Analysis

Pollutants of Concern

The microscale analysis will evaluate the potential impact that the proposed rezoning will have on localized CO, PM_{2.5} and PM₁₀ levels in the study area as a result of adding project-generated vehicles to currently congested intersections. Selected sites will be analyzed based on the RWCDs. The RWCDs is defined as the full build out of the proposed actions that includes both projected and potential development sites.

Screening Analysis

A screening analysis of mobile source emissions of CO and particulate matter (PM) on ambient pollutant levels in the study area will be conducted per *CEQR Technical Manual* guidance. If the number of project-generated vehicle trips exceeds the *CEQR Technical Manual* screening thresholds, detailed analyses of mobile source emissions of CO and particulate matter (PM) will be performed for up to six intersections. For the project’s study area, the threshold for conducting an analysis of CO emissions corresponds to 140 project-generated vehicles at a given intersection in the peak hour. The need for conducting an analysis of PM emissions is based on the number of project-generated peak hour heavy-duty diesel vehicles (or its equivalency in vehicular PM_{2.5} emissions) as determined using the worksheet provided on page 17-12 of the *CEQR Technical Manual* (Autos will be assumed to be LDGT1 in the worksheet).

Detailed Analysis

It is assumed that the *CEQR Technical Manual* screening thresholds will be exceeded at up to six intersections and a detailed CO analysis will be conducted at three of these intersections based on the highest volumes and worse LOS, as detailed below. It is also assumed that a detailed PM analysis will be required at up to three intersections (which would be the intersections where the highest CO levels will be estimated).

For the purpose of this proposal, it is assumed that three peak-hour time periods will be modeled at each location – weekday AM [7 to 8 AM], midday [12 to 1 PM], and PM [5 to 6 AM]. Resulting concentrations will be compared to the National Ambient Air Quality Standards (NAAQS) and the city’s *de minimis* criteria to determine the potential for a significant adverse impact. If exceedances are predicted, mitigation measures will be identified and applied.



Emission Factors

Vehicular cruise and idle CO and Particulate Matter (PM_{2.5} and PM₁₀) emission factors to be utilized in the dispersion modeling will be computed using EPA's mobile source emissions model, the Motor Vehicle Emission Simulator – MOVES¹. The emissions model is capable of calculating engine emission factors for various vehicle types, based on the fuel type (gasoline, diesel, or electricity), meteorological conditions, vehicle speeds, vehicle age, roadway types, number of starts per day, engine soak time, and various other factors that influence emissions, such as inspection maintenance programs. Project specific traffic data obtained through field studies and default input files (e.g., fuel data, county-specific hourly temperature and relative humidity data, etc.) obtained from the New York State Department of Environmental Conservation (NYSDEC) will be used in the latest version of the model – MOVES2014a.

In order to account for the suspension of fugitive road dust in the air from vehicular traffic in the local microscale analyses, PM_{2.5} and PM₁₀ emission factors will include fugitive road dust in local microscale analyses. However, fugitive road dust will not be included in the neighborhood scale PM_{2.5} analyses, since the New York City Department of Environmental Protection (NYCDEP) considers it to have an insignificant contribution on that scale. Road dust emission factors were calculated according to the latest procedure delineated by EPA² and the CEQR Technical Manual.

Dispersion Modeling

The 1-hr CO mobile source analysis will be conducted using the Tier 1 CAL3QHC model Version 2.0³ at all intersections identified. The CAL3QHC model employs a Gaussian (normal distribution) dispersion assumption and includes an algorithm for estimating vehicular queue lengths at signalized intersections. CAL3QHC calculates emissions and dispersion of CO from idling and moving vehicles. The queuing algorithm includes site-specific traffic parameters, such as signal timing and delay, saturation flow rate, vehicle arrival type, and signal actuation characteristics to project the number of idling vehicles.

Following the Environmental Protection Agency (EPA) guidelines⁴, CAL3QHC computations will be performed using a wind speed of 1 meter per second, and the neutral stability class D. In order to ensure that reasonable worst-case meteorology will be used in estimating impacts, concentrations will be calculated for all wind directions and will use an assumed surface roughness of 3.21 meters. The 8-hour average CO concentrations will be estimated from the predicted 1-hour average CO concentrations using a factor of 0.7 to account for the persistence of meteorological conditions and fluctuations in traffic volumes.

¹EPA MOVES2014a User Guide (<https://www3.epa.gov/otag/models/moves/>)

² EPA, Compilations of Air Pollutant Emission Factors AP-42, Fifth Edition, Volume I: Stationary Point and Area Sources, Ch. 13.2.1, NC, <http://www.epa.gov/ttn/chief/ap42>, January 2011.

³ EPA, User's Guide to CAL3QHC, A Modeling Methodology for Predicted Pollutant Concentrations Near Roadway Intersections, Office of Air Quality, Planning Standards, Research Triangle Park, North Carolina, EPA-454/R-92-006.

⁴ Guidelines for Modeling Carbon Monoxide from Roadway Intersections, EPA Office of Air Quality Planning and Standards, Publication EPA-454/R-92-005.



If maximum predicted CO concentrations result in a potential impact, a refined (Tier 2) version of the model, CAL3QHCR, will be used at affected intersections. CAL3QHCR is an extended module of the CAL3QHC model which allows for the incorporation of hourly traffic and meteorological data. Five years of meteorological data from La Guardia Airport and concurrent upper air data from Brookhaven, New York will be used in the refined modeling. Off-peak traffic volumes will be determined by adjusting the peak period volumes by the 24-hour distributions of actual vehicle counts collected at appropriate locations. Off-peak will be determined by adjusting the peak period volumes into the appropriate 24-hour distributions as applicable. Current EPA guidance⁵ requires the use of CAL3QHCR (Tier 2) for microscale analysis of PM_{2.5}.

Multiple receptors will be modeled at each of the selected sites; receptors will be placed along approach and departure links at spaced intervals at a pedestrian height of 1.8 meters.

For the annual neighborhood-scale PM_{2.5} grid modeling, receptors will be placed at a distance of 15 meters from the nearest moving lane at each analysis location.

Stationary Source Analysis

Pollutants of Concern

The United States Environmental Protection Agency (EPA) has identified several pollutants, which are known as criteria pollutants, as being of concern nationwide. It is assumed that the proposed development sites would use No. 2 fuel oil, or natural gas in their HVAC systems. The criteria pollutants associated with No. 2 fuel oil combustion would be SO₂, NO₂ and PM_{2.5}, and the criteria pollutants associated with natural gas combustion would be NO₂ and PM_{2.5}.

Applicable Air Quality Standards and Criteria

National Ambient Air Quality Standards (NAAQS)

As required by the Clean Air Act, National Ambient Air Quality Standards (NAAQS) have been established for the criteria pollutants by EPA. The NAAQS are concentrations set for each of the criteria pollutants in order to protect public health and the nation's welfare. In addition to the NAAQS, the *CEQR Technical Manual* requires that projects subject to CEQR apply a PM_{2.5} interim guidance criteria to determine whether potential adverse PM_{2.5} impacts would be significant. If the estimated impacts of a proposed project are less than the incremental thresholds, the impacts are not considered to be significant.

This analysis will address the compliance of the potential impacts of the Proposed Project with the 1-hour SO₂ NAAQS, the 1-hour and annual NO₂ NAAQS, the 24-hour PM₁₀ NAAQS, and the 24-hour and annual

⁵ EPA, Transportation Conformity Guidance for Quantitative Hot-spot Analyses in PM_{2.5} and PM₁₀ Nonattainment and Maintenance Areas, EPA-420/B-10-040.



PM_{2.5} *de minimis* criteria thresholds specified in the *CEQR Technical Manual*. The current standards that will be applied to this analysis, together with their health-related averaging periods, are presented in Table 1. New York has adopted the NAAQS as the State ambient air quality standards.

Table 1 - Applicable National Ambient Air Quality Standards

Pollutant	Averaging Period	National and State Standards
SO ₂	1 Hour	75 ppb (196.5 µg/m ³)
NO ₂	1 Hour	0.10 ppm (188 µg/m ³)
	Annual	0.053 ppm (100 µg/m ³)
PM _{2.5}	24 Hour	35 µg/m ³
	Annual	12 µg/m ³
PM ₁₀	24 Hour	150 µg/m ³
Source: US Environmental Protection Agency, "National Primary and Secondary Ambient Air Quality Standards." (49 CFR 50) (www.epa.gov/air/criteria.html) and New York State Department of Environmental Conservation (http://www.dec.ny.gov/chemical/8542.html). Notes: ppm = parts per million µg/m ³ = micrograms per cubic meter		

PM_{2.5} *de minimis* Criteria

CEQR guidance includes the following criteria for evaluating potential 24-hour PM_{2.5} impacts:

1. 24-hour average PM_{2.5} concentration increments that, if predicted to be greater than one half of the difference between the NAAQS and the average of the latest three years of background monitored concentrations from a nearby monitoring location at a discrete receptor location, would be considered a significant adverse impact on air quality under operational conditions (i.e., a permanent condition predicted to exist for many years regardless of the frequency of occurrence); and,
2. Annual average PM_{2.5} concentration increments that are predicted to be greater than 0.3 µg/m³ at a discrete receptor location (elevated or ground level).



Actions under CEQR predicted to increase PM_{2.5} concentrations by more than the above interim guidance criteria are considered to have a potential significant adverse impact.

The above CEQR interim guidance criteria will be used to evaluate the significance of predicted impacts of the Proposed Action on PM_{2.5} concentrations and determine the need for mitigation measures.

HVAC Analysis

Emission Rate and Stack Parameters

According to the *CEQR Technical Manual* guidance, emission rate of the proposed buildings' HVAC systems will be calculated using general building information to be provided by DCP, the energy consumption data from U.S. Energy Information Administration (EIA), and emission factors from AP-42 (see Table 2). Stack parameters such as stack diameter, stack exhaust temperature and exhaust velocity will be estimated based on calculated boiler size and the DEP boiler database. A few assumptions are listed as follows:

- For residential developments, 0.40 gal/ft²-year and 54.9 ft³/ft²-year would be used for # 2 fuel oil and natural gas, respectively⁶; and for commercial developments, 0.11 gal/ft²-year and 44.0 ft³/ft²-year would be used for # 2 fuel oil and natural gas, respectively⁷;
- Short-term emission rates will be estimated based on an assumption that all fuel will be consumed in 100 days (3 coldest months of the year or 2,400 hours) of winter heating season, with no emissions for the rest of the year;
- Annual emission rates will be obtained by adjusting the short-term emission rates to account for seasonal variation in heat and hot water demand;
- 1-hour NO₂ concentrations will be estimated using AERMOD's Tier 3 Plume Volume Molar Ration Method (PVMRM) option to account for NO₂/NO_x conversion. An in-stack ratio of 0.1 and the default equilibrium NO₂/NO_x ratio of 0.9 will be assumed;
- Annual NO₂ concentrations from heating and hot water sources will be estimated using a NO₂/NO_x conversion ratio of 0.75, as describe in EPA's Guideline on Air Quality Models at 40 CFR part 51 Appendix W, Section 5.2.4⁸;
- It is assumed that exhaust stacks would be located three feet above roof height.

⁶ U.S. Energy Information Administration (EIA), Table CE1.2
(<https://www.eia.gov/consumption/residential/data/2009/index.cfm?view=consumption>);
AP-42 Table 1.4.1 (<https://www3.epa.gov/ttnchie1/ap42/>)

⁷ U.S. Energy Information Administration (EIA), Table C35 and Table C25
(<https://www.eia.gov/consumption/commercial/data/2012/index.cfm?view=consumption>)

⁸ http://www.epa.gov/scram001/guidance/guide/appw_05.pdf



Table 2 - Emission Factors of Applicable Criteria Pollutants from HVAC Systems

Parameters	# 2 Fuel oil	Natural Gas
SO ₂ Emission Factor	0.213 ¹ lb/1000 gal	0.6 lb/10 ⁶ ft ³
NO _x Emission Factor	20 lb/1000 gal	100 lb/10 ⁶ ft ³
PM _{2.5} Emission Factor	2.13 ² lb/1000 gal	7.6 lb/10 ⁶ ft ³
PM ₁₀ Emission Factor	2.38 ² lb/1000 gal	7.6 lb/10 ⁶ ft ³

Source: EPA Compilation of Air Pollutant Emission Factors, AP-42, Fifth Edition, Volume I: Stationary Point and Area Sources. (<https://www3.epa.gov/ttnchie1/ap42/>)

Notes:

¹The emission factor for SO₂ is calculated based on a maximum fuel oil sulfur content of 0.0015 percent (based on use of ultralow sulfur No.2 oil) using the AP-42 formula.

²The emission factors for PM_{2.5} and PM₁₀ are calculated by combining filterable PM and condensable PM together using the AP-42 formula.

Meteorological Data

All analyses will be conducted using the latest five consecutive years of meteorological data (2011-2015). Surface data were obtained from La Guardia Airport and upper air data were obtained from Brookhaven station, New York. Data will be processed using the current EPA AERMET version 15181 and the EPA procedure. These meteorological data provide hour-by-hour wind speeds and directions, stability states, and temperature inversion elevations over the 5-year period.

Receptor Locations

Receptors will be identified and placed at operable windows or at air intakes at worst-case locations for sensitive receptors that are at the same height or taller than the proposed building.

Background Concentrations

Appropriate background concentrations values (see Table 3) will be added to modeling results to get the total concentration for 1-hour SO₂, 1-hour and annual NO₂, and 24-hour PM₁₀. Predicted values will be compared with the NAAQS. To develop background levels, concentration measured at the nearest NYSDEC ambient monitoring station over the latest five-year period (2011-2015) will be used for annual average NO₂, the latest available three-year period (2013-2015) will be used for the 1-hour SO₂ and 1-hour NO₂, and the latest 2015 data will be used for 24-hour PM₁₀ background concentration.

The PM_{2.5} 24-hour average background concentration of 26.2 µg/m³ will be used to establish the *de minimis* value, consistent with the guidance provided in the *CEQR Technical Manual*. The PM_{2.5} annual average impacts will be assessed on an incremental basis and compared with the PM_{2.5} *de minimis* criteria threshold of 0.3 µg/m³, without considering the annual background.

Table 3 - Background Concentrations

Pollutant	Averaging Period	Location	Concentration ($\mu\text{g}/\text{m}^3$)
SO ₂	1 Hour	IS 52, Manhattan	36.9
NO ₂	1 Hour	IS 52, Manhattan	120.9
	Annual	IS 52, Manhattan	38.3
PM _{2.5}	24 Hour	PS 19, Manhattan	26.2
PM ₁₀	24 Hour	Division Street, Manhattan	44

Source: NYSDEC Ambient Air Quality Report, 2015, <http://www.dec.ny.gov/chemical/29310.html>

Notes:

- 1) 1-hour SO₂ background concentration is based on the maximum 99th percentile concentration averaged over three years of data from NYSDEC (2013-2015).
- 2) 1-hour NO₂ background concentration is based on three-year average (2013-2015) of the 98th percentile of daily maximum 1-hour concentrations from available monitoring data from NYSDEC.
- 3) Annual NO₂ background concentration is based on the maximum annual average from the latest five years of available monitoring data from NYSDEC (2011-2015).
- 4) 24-hour PM₁₀ is based on the highest second max value from the latest three years of available monitoring data from NYSDEC (2013-2015).
- 5) The 24-hour PM_{2.5} background concentration is based on maximum 98th percentile concentration averaged over three years of data from NYSDEC (2013-2015).

Individual HVAC Analysis

The potential for emissions from the HVAC systems of individual proposed buildings to result in stationary source pollutants that would significantly impact existing land uses (project-on-existing impacts) and other proposed buildings (project-on-project impacts) will be conducted utilizing a stepped analysis procedure following the sequence listed below:

1. Impacts would be initially analyzed using the CEQR nomographic procedures assuming the use of No. 2 fuel oil.
2. If the nomographic screening results fail with the use of No. 2 fuel oil, screening procedures will be utilized assuming a cleaner burning fuel (natural gas).
3. If the nomographic screening results fail with natural gas, a more detailed analysis will be conducted utilizing the EPA AERMOD model.
4. If the HVAC systems of the analyzed development sites still show violation of the NAAQS or the city's *de minimis* criteria after modeling impacts with the AERMOD model, the use of the Con Edison steam would be proposed for the HVAC systems.



5. If the screening analysis fails for No. 2 fuel oil, an air quality E-designation would be proposed for the site, providing the fuel type restriction that would be required to avoid a significant adverse air quality impact.

For individual HVAC analysis, the nearest existing building and/or proposed building of a similar or greater height will be analyzed as the potential receptor. Building downwash will be considered to account for downwash effects on plume dispersion if a refined modeling is required.

HVAC Cluster Analysis

A cumulative HVAC impact analysis will be performed for projected and/or potential sites with buildings at a similar height located in close proximity to one another (i.e., site clusters). The proposed rezoning area will be studied to determine the cluster selection. Development cluster sites will be grouped based on the following criteria:

- Density and scale of development;
- Similarity of building height; and
- Proximity to other nearby buildings of a similar or greater height.

Recommendations for the specific cluster locations to be analyzed will be submitted to DCP for approval, after a review of the selected RWCDs. It is assumed that up to three clusters in total will be analyzed.

The HVAC cluster analysis will be first performed using the most recent version of the AERSCREEN Model. The AERSCREEN model is a screening version of the AERMOD refined model and will be used for determining the maximum concentrations from a single source using predefined meteorological conditions. The AERSCREEN analysis will be performed to identify potential impacts of SO₂, NO₂, PM₁₀, and PM_{2.5} emissions. Clusters will be considered as a point source. The emission rate of each boiler stack will be combined as the total emission rate of the cluster. The total stack area will be combined as the new point source stack area.

The AERSCREEN model will be used to predict impacts based on unitary runs. In order to predict pollutant concentrations over longer periods of time, EPA-referenced persistence factors would be used consisting of 0.6 and 0.1 for 24-hour and annual averaging periods, respectively.

The distance from the source clusters to the nearest buildings will be used in the modeling analysis. The results of the analysis will be added to background concentrations to determine whether impacts are below NAAQS or the city's *de minimis* criteria. In the event that an exceedance of a standard for a specific pollutant is predicted, a refined modeling analysis using the AERMOD model will be performed. Buildings within the cluster will be modeled individually since the AERMOD model is capable of analyzing impacts from multiple pollutant sources by creating source groups. The model will be performed for both downwash and no-downwash options. In the event that violations of standards are predicted, an air quality E-designation would be proposed for the site, describing the fuel type restriction that would be required to avoid a significant adverse air quality impact.



Industrial Source Analysis

In accordance with DCP/DEP guidance, the potential impacts on the proposed developments from existing processing or manufacturing emission sources that have current air permits issued by DEP have to be estimated.

A survey of existing land uses within 400 feet of the development sites was conducted using the New York City Open Accessible Space Information System (OASIS) and GIS shape files to identify potential processing/manufacturing sites. A list of existing sites with potential air toxics concerns was recently sent to DCP for DEP's review. Once VHB receives the permit data from DEP, a field survey will be performed to confirm the operational status of the sites identified in the permit search, and to identify if any additional sites have sources of emissions that would warrant an analysis. If any such sources are identified, further consultation will be made with DCP/DEP to determine procedures for estimating emissions from these sources.

Cumulative analysis for each toxic pollutant will be conducted from all sources. NYSDEC Annual Guideline Concentration (AGC) and Short-term Guideline Concentration (SGC) will be used as the thresholds to determine impact significance. A refined modeling analysis using the AERMOD model will be performed in association with the latest available five-year meteorological data to determine if significant air quality impacts on proposed sensitive development sites would result from existing toxic emissions sources.

Health Risk Assessment

Potential cumulative impacts will be evaluated based on EPA's Hazard Index Approach for non-carcinogenic compounds and EPA's Unit Risk Factors for carcinogenic compounds. Both methods are based on equations that use EPA's health risk information at referenced concentration for individual compounds to determine the level of health risk posed by an expected ambient concentration of these compounds at a sensitive receptor. For non-carcinogenic compounds, EPA considers a concentration-to-reference dose level ratio of less than 1.0 to be acceptable. For carcinogenic compounds, the EPA unit risk factors represent the concentration at which an excess cancer risk of one-in-one million is predicted. In cases where an EPA reference dose or unit risk factor does not exist, the NYSDEC AGC will be used.

"Large" or "Major" Source Analysis

A review of NYSDEC Title V permits and State Facility permits database will be performed to identify any federal or state-permitted facilities within 1,000 feet of the development sites to determine the potential impacts of emissions from a "large" or "major" sources. An analysis of these sources will be performed to assess their potential effects on projected and potential development sites. Pollutant concentrations will be predicted using the EPA AERMOD and compared with applicable NAAQS and the city's *de minimis* criteria for criteria pollutants, and the NYSDEC AGC and SGC for non-criteria pollutants. The latest five years of meteorology (2011-2015) will be utilized.

Proposed Methodology for Construction Phase effects

According to the *CEQR Technical Manual*, the detailed analysis of potential impacts to air quality levels during construction would be considered if the duration of the construction activities are longer than two years, would involve multiple development sites simultaneously under construction, and would be adjacent (fewer than 1,500 feet) to sensitive receptor locations.

As the Proposed Project's construction schedule is estimated to last almost two decades and involve multiple buildings, the proposed quantitative air quality analysis will determine whether construction activities for the Proposed Project would comply with applicable air quality requirements. Specifically, the analysis will determine whether the projected construction operations would cause or exacerbate violations of applicable NAAQS, or cause impacts greater than the city's *de minimis* criteria threshold values.

Construction activities could affect air quality because of engine emissions from on-site construction equipment and dust-generating activities. In general, much of the heavy equipment used in construction has diesel-powered engines, which produce relatively high levels of nitrogen oxides and particulate matter. Gasoline engines produce relatively high levels of carbon monoxide. Construction activities also generate fugitive dust emissions. As a result, the air pollutants analyzed for construction activities include nitrogen dioxide (NO₂), particulate matter with an aerodynamic diameter of less than or equal to 10 micrometers (PM₁₀), particulate matter with an aerodynamic diameter of less than or equal to 2.5 micrometers (PM_{2.5}), and carbon monoxide (CO).

Since ultra-low-sulfur diesel (ULSD) would be used for all diesel engines in the construction of the proposed project, sulfur oxides (SO_x) emitted from those construction activities would be negligible, and an analysis of SO_x emissions is not warranted.

The proposed evaluation to be performed assumes combination of emissions reduction measures, which are mandated by law, common practice in large-scale NYC construction projects, and follow the requirements included in NYC Law 77 and NYC Air Pollution Control Code. This proposed evaluation will consider the inclusion of the following components:

- **Fugitive dust control plans** –In compliance with NYC Air Pollution Control Code regarding control of fugitive dust; contractors would be required that all trucks carrying loose material would use water as a dust suppression measure, that wheel-washing stations be established for all trucks exiting the construction site; that trucks hauling loose material will be equipped with tight fitting tailgates and their loads securely covered prior to leaving the site, that streets adjacent to the site would be cleaned as frequently as needed by the construction contractor, and that water sprays will be used for all transfer of spoils to ensure that materials are dampened as necessary to avoid the suspension of dust into the air. These common practice measures are anticipated to reduce dust generation by more than 50 percent.



- **Clean Fuel** – Ultra Low Sulfur Diesel (ULSD) would be used exclusively for all diesel engines throughout construction. This is a legal federal requirement since 2010, and enables the use of tailpipe reduction technologies and would directly reduce diesel particulate matter (DPM) and SO_x emissions.
- **Diesel Equipment Reduction** – Small equipment such as lifts, compressors, welders, and pumps would use electric engines that operate on grid power instead of diesel power engines. This is a common practice that achieves wider use as technology improves.
- **Restrictions on Vehicle Idling** - will follow local law restricting unnecessary idling. On-site vehicle idle time will be restricted to three minutes for all equipment and vehicles that are not using their engines to operate a loading, unloading, or processing device (e.g., concrete mixing trucks) or otherwise required for the proper operation of the engine.
- **Best Available Tailpipe Reduction Technologies for diesel engines** – NYC Local Law 77 (which applies to publically funded City projects), requires Nonroad diesel engines with a power rating of 50 horsepower (hp) or greater, and controlled truck fleets (i.e., truck fleets under long-term contract, such as concrete mixing and pumping trucks) to utilize the best available tailpipe technology for reducing DPM emissions. Diesel particulate filters (DPFs) have been identified as being the tailpipe technology currently proven to have the highest reduction capability for DPM emissions. The use of DPF in Tier 3 (model year 2000 to 2008 or newer) construction diesel equipment achieves the same emission reductions as a Tier 4 engine. Given the timeframe of the construction of the proposed action (year 2021-2036), equipment meeting the more restrictive Tier 4 (model year 2008–2015 or newer) would be common and in wide use, and expected to be part of the contractors fleet. The combination of Tier 4 and Tier 3 engines with DPF (required in all publicly funded projects) will achieve DPM reduction of close to 90% when compared to older uncontrolled engines.

Construction Air Quality Analysis Methodologies

The analysis will include the evaluation of the peak cumulative emissions for each proposed building site during the full multi-year period by quarter. The quarter with the highest PM_{2.5} emissions from all building sites under construction was selected as the period with the highest potential PM_{2.5} effects.

A dispersion analysis—considering the on-site (construction equipment and fugitive dust) and off-site (trucks and other motor vehicles) to determine potential air quality effects during the peak emission construction period for the proposed building sites under simultaneous construction—will be performed for all applicable pollutants.

The analysis will follow the EPA and *CEQR Technical Manual* suggested procedures and analytical tools (as further discussed below) to determine source emission rates. The estimated emission rates will be used as input to an air quality dispersion model to determine potential impacts.



Emission Estimation Process

Construction Data

Because the level of construction activities would vary from month to month, the approach includes a determination of worst-case emission periods based on an estimated quarterly construction work schedule, the number of each equipment type, and rated horsepower of each unit.

Given the lack of a specific developer, and detailed construction data for the proposed building sites; the worst-case short-term emissions (e.g., maximum daily emissions) and the maximum annual emissions (based on a 12-month rolling average) will be determined based on the construction schedule, and equipment used, in a typical large (over 2 million gross square feet) midtown building which has been evaluated in the last few years.

Using a large prototypical building as a benchmark, the magnitude and duration of each phase of construction for each proposed building site will be scaled to this prototypical building by the magnitude of construction, and duration of activities for each phase of each proposed building site. The scaling system will consider three main phases of construction: Demolition/Excavation/Foundations, Superstructure/Exterior, and Interior Fit-out.

For each proposed building site, the magnitude of Demolition/Excavation/Foundations, Superstructure/Exterior, and Interior Fit-out will be applied to the emissions estimates for such building.

The specific construction information to be used to calculate emissions generated from the construction process of the prototypical building includes the following:

- The number of units and fuel-type of construction equipment to be used
- Rated horsepower for each piece of equipment
- Utilization rates for equipment
- Hours of operation on-site
- Excavation and processing rates
- Average distance traveled on-site by dump trucks

Engine Exhaust Emissions

Emission factors for NO_x, PM₁₀, PM_{2.5}, and CO from the combustion of ULSD fuel for on-site construction equipment will be developed using the latest EPA NONROAD Emission Model (Version 2009). The model is based on source inventory data accumulated for specific categories of off-road equipment. The emission factors for each type of equipment were calculated from the output files for the NONROAD model (i.e., calculated from regional emissions estimates).



Emission rates from combustion of fuel for on-site dump trucks, concrete trucks, and other heavy trucks were developed using the EPA MOVES2014a Model. New York City restrictions placed on idling times will be employed for the dump trucks and other heavy trucks. Short-term and annual emission rates will be adjusted from the peak-hour emissions by applying usage factors for each equipment unit. Usage factors will be determined using the construction equipment schedule.

Fugitive Emission Sources

Road dust emissions from vehicle travel will be calculated using equations from EPA's AP-42, Section 13.2.2 for unpaved roads. PM₁₀ emissions will be estimated for dump trucks traveling in and out of the construction area. Average vehicle weights (i.e., unloaded going in and loaded going out) will be used in the analysis and a reasonably conservative round trip distance was estimated for on-site travel. Dust control measures (described previously) would provide at least a 50-percent reduction in PM₁₀ and PM_{2.5} emission. Also, since on-site travel speeds would be restricted to 5 miles per hour, on-site travel for trucks would not be a significant contributor to PM_{2.5} fugitive emissions.

Particulate matter emissions could also be generated by material handling activities (i.e., loading/drop operations for debris). Estimates of PM₁₀ and PM_{2.5} emissions from these activities will be developed using EPA's AP-42 Sections 13.2.4. Excavation rates used for the analysis will be based on information obtained from the prototypical midtown building used as a basis for all others.

Construction Activity Emissions Intensity Assessment

Overall, construction of the proposed rezoning is expected to occur over a period of almost two decades. To determine which construction periods constitute the worst-case periods for the pollutants of concern, construction-related emissions will be calculated throughout the duration of construction on a quarterly basis using peak daily emissions for PM_{2.5}.

PM_{2.5} will be selected as the worst-case pollutant because, as compared to other pollutants, PM_{2.5} has the highest ratio of emissions to affect criteria. Therefore, PM_{2.5} will be used for determining the worst-case periods for analysis of all pollutants. Generally, emission patterns of other pollutants would follow PM_{2.5} emissions, since most pollutant emissions are proportional to diesel engines by horsepower. CO emissions may have a somewhat different pattern, but generally would also be highest during periods when the highest activity would occur. Based on the resulting multiyear profiles by quarter, a worst-case period will be identified for the modeling of annual and short-term (i.e., 24-hour and 8-hour) averaging periods.

Impacts Assessment

The effects of construction emissions on the surrounding environment for the relevant air pollutants will be quantified using dispersion computer models. Due to the proximity of several sites under simultaneous construction, the proposed impact analysis will include clusters of buildings in close proximity with overlapping construction periods.



In order to address the possible cumulative effects from off-site emissions (trucks and general traffic), the intersection with the highest construction traffic increment will be selected for the off-site modeling analysis.

On-site Dispersion Modeling

Potential impacts from on-site construction equipment were evaluated using the EPA AERMOD dispersion model (version 15181). AERMOD is a steady-state plume model that incorporates current concepts about flow and dispersion in complex terrain, including updated treatments of the boundary layer theory, understanding of turbulence and dispersion; it also includes handling of terrain interactions. The AERMOD model calculates pollutant concentrations based on hourly meteorological data.

Source Simulation

During construction, various types of construction equipment would be used at different locations throughout the site. Some of the equipment is mobile and would operate throughout the site, while some would remain stationary on-site at distinct locations during short-term periods (i.e., daily and hourly). Stationary emission sources include (but are not limited to) air compressors, cranes, and concrete pumps. Equipment such as excavators, bobcats, concrete trowels, and dump trucks would operate throughout the site.

Given the lack of a specific developer and specific building design for the proposed rezoning sites, all construction equipment sources will be simulated as area sources for the purpose of the modeling analysis; their emissions will be distributed evenly across each construction site. In the event that violations of the NAAQS or the city's de minimis criteria are predicted for area source simulation, a refined analysis would be conducted assuming that all stationary sources that idle in a single location will be modeled as point sources providing reasonable assumptions for where the equipment would be located based on previous evaluation of similar large buildings..

Receptor Locations

Discrete receptors will be placed along sidewalks and residential/commercial buildings and other general-public uses. Sidewalk receptors were placed in the middle of the sidewalk and spaced 25 feet apart with a height of 1.8 meters (6 feet). For sidewalks in front of the construction areas, where a typical 10-foot wooden fence was erected, the height was adjusted to account for the vertical difference. Receptors will be placed at the nearest residential/commercial building at worst-case locations with operable windows/air intakes facing the construction site. These receptors will be located at ground level (sidewalk) and elevated portions of the building façades representing operable windows and potential air intakes of buildings adjacent to the proposed sites.

Meteorological Data

The meteorological data set consisted of the latest five years of data that are available: surface data collected at LaGuardia Airport (2011–2015) and concurrent upper air data collected at Brookhaven, New York as described in the air quality operational impact methodology.



Off-site Dispersion Modeling

The analysis of off-site mobile source impacts will include the impacts of construction-phase vehicles on the roadway network as well as the effects of anticipated changes in street configurations as a result of lane closures during the peak construction year.

The CAL3QHC dispersion model will be applied for the CO analysis, and the CAL3QHCR version will be applied for both the PM analyses. The modeling procedures and assumptions for this analysis will follow the mobile source air quality analysis methodology, as described in the operational impact section.

In order to evaluate the potential cumulative effect of the on-site and off-site emissions, the off-site analysis will place receptors on the same locations used on the AERMOD on-site dispersion analysis.

Background Concentrations

Where needed to determine potential air quality impacts from the construction of the project, background ambient air quality data for criteria pollutants will be added to the predicted off-site concentrations. The background data representing the latest available five years of data is described in detail in the air quality operational impacts section.

Appendix D
Draft Noise Analysis Protocol

To: NYCDP
From: STV Incorporated
Date: August 15, 2016
Project: Greater East Midtown Rezoning EIS
Reference: Draft Noise Analysis Protocol

A noise analysis will be conducted for the Greater East Midtown Rezoning Environmental Impact Statement (EIS), and will primarily involve the assessment of project-related mobile sources. The purpose of this memorandum is to describe the noise analysis approach for the proposed development sites for the Greater East Midtown Rezoning EIS.

A total of 16 Projected and 14 Potential have been identified within the rezoning area. Under the reasonable worst case development scenario (RWCDS) for the Proposed Actions, when compared to the No-Action condition, the With-Action scenario would consist of a net increase of over 5.9 million sf of total floor area. The analysis year is 2036.

The following outline of procedures and assumptions is based on guidelines contained in the 2014 *CEQR Technical Manual*.

It is assumed that noise impacts could result primarily from one of two sources:

1. Vehicular noise from project-generated traffic on sensitive receptors in the community
2. Ambient noise impacts (from existing local and highway traffic, ventilation equipment, trains, stationary sources, etc.) on proposed uses (projected and potential development sites).

Given the high ambient noise levels from existing sources in the general midtown area, in particular the high vehicular volumes on many of the major north / south streets (e.g., Madison Avenue, Park Avenue, Lexington Avenue and 3rd Avenue), the trip generation resulting from the incremental development of the Proposed Actions would likely result in a low level of additional noise. The exceptions to this may occur on other less traveled east / west streets in the project area. While these areas will be examined, it is assumed that the greatest concern for project-generated impacts would be related to the impact of existing and future noise generators on future commercial uses.

Noise Monitoring

Mobile Sources

To determine baseline noise levels within the study area, noise monitoring is proposed. Noise monitoring locations will be selected based on their proximity to Projected and Potential development sites described in the RWCDs, as well as their potential to experience a doubling in traffic volume, or Passenger Car Equivalents (PCEs), from project-induced traffic. Care will also be taken to select sites that would result in the most representative assessment of the existing noise environment. Monitoring will be conducted during the peak Weekday AM (8-9 AM), Midday (12-1 PM), PM (5-6 PM) for locations near destination commercial and retail uses. For the purposes of the construction analyses, noise monitoring will also be conducted at one early morning weekday period (6-7 AM) location, representative of a worst case construction cluster scenario. All noise monitoring will be conducted for 20-minute intervals. Noise monitoring will include the use of A-weighted sound levels, and the L1, L10, L50, L90, Lmin, Lmax and LEQ noise descriptors. It is also proposed that the aircraft flight noise would not be removed from the noise measurements. As a result, acceptable building interior noise levels to be recommended would take the aircraft noise component into account.

The instruments used for the monitoring will be Type I Sound Level Meters (SLM) according to ANSI Standard S1.4-1983 (R2006). Each SLM will have a valid laboratory calibration certificate when measurements occur. All measurement procedures will be based on the guidelines outlined in ANSI Standard S1.13-2005.

The proposed noise monitoring sites are listed below in Table 1 and shown in Figure N-1. Noise locations were selected based on potential and proposed locations on the RWCDs and existing field conditions. They represent approximate locations where noise monitoring would be conducted.

Table 1
Proposed Street Level Noise Monitoring Locations (DRAFT)*

Receptor	Location
1	Corner Vanderbilt Avenue and 47 th Street
2	East 45 th Street between Madison and Fifth Avenues
3	Corner of Madison Avenue and East 46 th Streets
4	Corner of East 44 th Street and Madison Avenue ¹
5	Corner of Second Avenue and East 42 nd Street
6	Corner of Third Avenue and East 45 th Street
7	Corner of Lexington Avenue and East 49 th Street
8	Corner of Park Avenue and East 50 th Street
9	Corner of Third Avenue and East 52 nd Street
10	Corner of Madison Avenue and East 56 th Street
11	Corner of Lexington Avenue and East 40 th Street
12	Corner of Madison Avenue and East 40 th Street

*Once detailed trip generation is completed, monitoring locations may require updating

¹ Includes monitoring during the 6-7AM peak hour

When required, to represent existing noise levels at elevated locations, existing ground level noise monitoring data will be adjusted according to basic noise attenuation principles, methodology utilized by other comparable noise studies, and guidance on NYC noise drop-off rates contained within the *CEQR Technical Manual*.

Stationary Sources

It is not anticipated that a significant singular source of stationary noise will be identified and, therefore, no monitoring of stationary sources will be conducted. In addition, it is assumed that building mechanical systems (i.e., HVAC systems) for all buildings associated with the project will be designed to meet all applicable noise regulations (i.e., Subchapter 5, Sec. 24-227 of the New York City Noise Control Code and the New York City Department of Buildings Code). However, if stationary source analyses are required for loud existing noise sources, sound levels at nearby sensitive receptors will be predicted using the distance attenuation equation provided in the *CEQR Technical Manual*.

Detailed Analysis Procedures

Vehicular Noise

The selected noise monitoring locations will be used to assess the noise impacts of project-induced vehicles. For traffic-induced noise impacts, projected increases in noise will be based on the *CEQR Technical Manual*, depending on the traffic noise levels projected for the No-Action condition. A screening analysis will be conducted to evaluate the Proposed Action.

Ambient Noise Analysis

Based on predicted With-Action L_{10} noise levels, the noise analysis will result in a determination of the required attenuation values for each of the proposed development sites, as follows:

- Initially, the selected noise monitoring locations will be assessed to determine what their future L_{10} noise levels will be.
- Future noise from traffic will be calculated by converting traffic into PCEs for existing, No-Action and With-Action conditions, using logarithmic calculations and PCE traffic volumes.
- Predicted L_{eq} noise levels will be converted to L_{10} noise levels. The conversion assumes the difference in decibels between the L_{eq} and L_{10} for monitored noise levels will be the same relative to future noise levels. The calculation to determine the decibel difference is conducted between the existing and No Action traffic condition and between No Action and With-Action traffic condition
- For the AM, midday and PM peak traffic periods, each projected and potential development site will then be assigned a future noise level based on their proximity to one of the worst case monitored noise sites.
- Based on this selected future With-Action noise level, the degree to which window/wall attenuation would provide acceptable interior noise levels will be assessed and (e) designations will be proposed as required.

Models for Analysis

The logarithmic proportional modeling procedure will be used to predict future L_{eq} noise levels. No modeling with the FHWA's TNM model is anticipated.

Analysis Periods

The analyses of mobile sources will predict future noise levels for the existing, No-Action condition, and With-Action condition. One build year will be studied, identified as 2036. The peak hours will be weekday AM, Midday, and PM.

Mitigation

If the analysis of future noise results in any of the studied locations exceeding the CEQR thresholds, mitigation measures in the form of window/wall attenuation will be proposed. Mitigation measures will be based on the required level of attenuation.

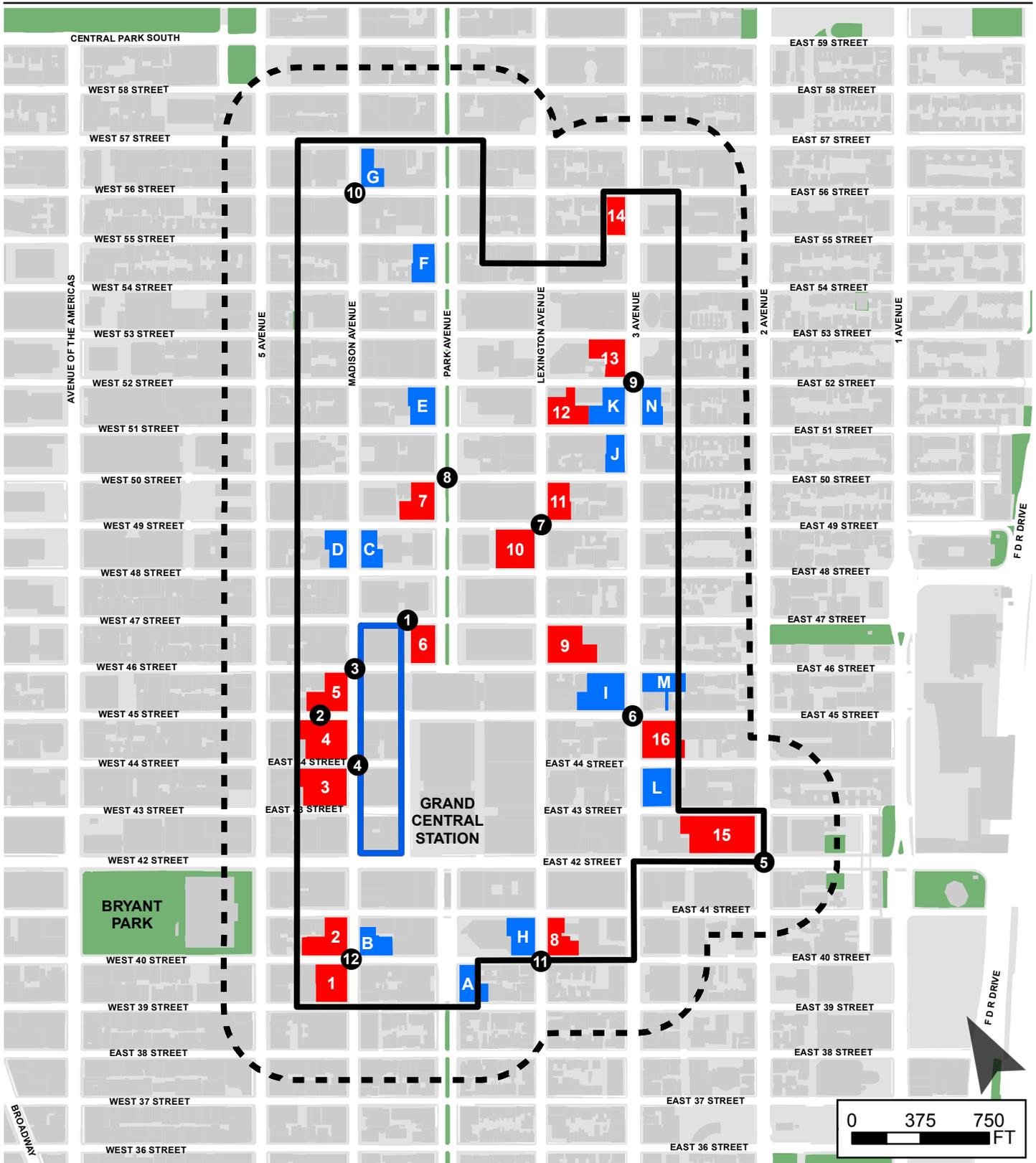
Construction Noise and Vibration

Noise

Construction would last for more than two years. Noise from construction site would result from machinery, equipment vehicles and associated activities. It is assumed that a quantitative construction noise assessment will be conducted for the worst-case period at potentially affected sensitive receptors. Sensitive receptors would be representative of commercial/residential uses and open spaces such as parks and sidewalks. The assessment will look at the specific activities, types of equipment, and duration of activities planned for the worst-case cumulative construction for projected or potential locations in close proximity to one another. The combined effects of mobile and stationary noise on nearby sensitive receptors will be addressed. The worst-case cluster which includes projected sites 4 and 5, will be examined for construction impacts. The cluster identification was based on the proximity of projected and potential sites to one another and information related to construction scheduling and assumed equipment usage. The CadnaA Model will be utilized to determine noise equipment source levels and to assess the potential for noise impact at sensitive ground level, and elevated receptors nearby the project construction site. Noise equipment sound power levels for each of the studied pieces of equipment will be derived within Cadna A utilizing L_{max} reference sound levels and distances (see CEQR TM Table 22-1) as a basis for conversion. Construction noise emissions from trucks will be modeled using the TNM module within the same Cadna A run. The combined mobile and stationary source modeled results will be compared to existing noise levels and the recommended construction noise criteria according to CEQR. If impacts are identified, control measures which would reduce or eliminate the impacts would be recommended.

Vibration

Potential impacts from construction-related vibration will also be assessed with respect to both human annoyance and structural building damage. Of most concern are those buildings located immediately adjacent or across the street from a proposed development site. The Federal Transit Administration (FTA) general assessment methodology and criteria will be used for the analyses. It is assumed that construction schedule, phasing, activity and equipment data will be utilized for the assessment, in particular with respect to activities such as impact pile driving and demolition, if applicable which represent the two of the more severe vibration causing activities.



- Proposed Greater East Midtown Rezoning Boundary
- Vanderbilt Corridor *Area Excluded from the Proposed Action but Included in Study Area*
- 400-Foot Study Area Radius
- Noise Monitoring Location (w/ I.D. Label)

- RWCDS Sites (w/ I.D. Label)**
- Projected Development Sites
 - Potential Development Sites

Greater East Midtown Rezoning
Manhattan, New York

Noise Monitoring Locations

Figure
N-1

