2.S CONSTRUCTION IMPACTS

INTRODUCTION

Construction activities, although temporary in nature, can sometimes result in significant adverse impacts. A project's construction activities may affect a number of technical areas analyzed for the operational period of a proposed action, such as air quality, noise, and traffic; therefore, a construction assessment relies to a significant extent on the methodologies and resulting information gathered in the analysis of these technical analyses areas.

Construction duration is often broken down into short-term (less than two years) and long-term (two or more years). Where duration of construction is expected to be short-term, any impacts resulting from such short-term construction generally do not require detailed assessment. However, there are instances where a potential impact may be of short duration, but nonetheless significant, because it raises specific issues of concern. In addition, there are technical areas, such as air quality, where the duration of construction alone is not a sufficient indicator of the need for a detailed assessment, and other factors should be considered. In such instances, a targeted assessment of the relevant technical area may be appropriate. The factors to consider in determining whether a construction impact assessment is warranted for a particular technical area, such as transportation or air quality, are discussed in more detail below.

Construction equipment is defined as machinery used, at a specified site, for the fabrication, erection, modification, demolition, or removal of any structure or facility, including all related activities such as land clearing, site preparation, excavation, cleanup, and landscaping.

As is described in detail in Chapter 1, Project Description, the Proposed Action is the approval of a package of zoning changes and special permits, including the rezoning of all or part of 11 blocks in the south central Bronx from manufacturing to residential districts and, to a lesser extent, from residential to higher density residential districts. Under the reasonable worst case development scenario presented in Chapter 1, 49 tax lots would be redeveloped by the 2022 analysis year (as opposed to 2 tax lots in the future without the Proposed Action), with a projected 2,775 housing units and 131,869 square feet of commercial space, an increment of 2635 housing units and 92,941 square feet of commercial space over the future no-action scenario. As analyzed in this chapter, this new construction would be expected to take place over a 10 year period. Slightly less than half of the development would be under the control of the project applicant. The remaining sites would be developed by others over the course of the 10 years. For that reason, it was necessary to develop a reasonable worst case development scenario, which is described below under the methodology section.

PRINCIPAL CONCLUSIONS

Traffic – Construction Peak Period Analysis

A preliminary construction traffic analysis was conducted for the Proposed Action. That analysis indicated that four intersections would potentially experience a significant construction traffic impact. These intersections are as follows:

1. Intersection 18 West Farms Road/Home Street
2. Intersection 21 Bronx Park Avenue/East 177th Street

3. Intersection 9 West Farms Road/East 173rd Street
4. Intersection 10 Boone Avenue/East 173rd Street

Further detailed analysis will be preformed between the Draft and Final EIS to specifically quantify the construction traffic impacts and to determine what mitigation measures, such as signal timing modification, daylighting and/or lane re-striping would mitigate the impacts.

Parking

The parking supply and demand analysis for the peak construction period indicated there would be 731 and 911 available spaces in the 6-7 AM and mid-day periods, respectively, after accounting for the parking demand expected from construction employees. No parking impacts during construction are expected

Transit and Pedestrians Analysis

The analysis showed that the construction bus, subway and pedestrians trips would be substantially less than that for the Proposed Action, and because the Proposed Action analyses indicated no impacts on these facilities, no construction impacts would be expected for these facilities.

Air Quality and Noise

Air Quality

Based on the preliminary construction analysis, construction activities are not likely to cause mobile source air quality impacts. Although the construction-related trucks may exceed the increment projected for the Future with Action Conditions during some hours of the day and/or short-term periods, no significant long-term adverse impacts are anticipated.

With the exception of Site 2N, any potential impacts to adjacent residences would be temporary impacts lasting less than one year. Due to its long construction period when diesel equipment would be on the site (70 weeks), the construction of Site 2N would have the potential for a significant adverse impact on air quality at the completed residential units facing it on Site 2S.

Accordingly, for this site, a more rigorous approach to reducing diesel particulate matter (DPM) emissions would be carried out, as ensured through the restrictive declaration for this site. The proposed DPM measures would be sufficient to prevent significant adverse air quality impacts because they were incorporated as part of a detailed construction analysis for the Fordham University Lincoln Center Master Plan EIS, and the Proposed Action for the Crotona Rezoning would have a lower emissions intensity than the Fordham University Lincoln Center Master Plan. The Fordham analysis concluded that no significant adverse air quality impacts would occur. Therefore, the construction best management practices adopted for Fordham would be sufficient to prevent potential construction air quality impacts for the Crotona Rezoning. A more refined analysis of potential construction air quality impacts may be carried out between the Draft and Final EIS.

Noise

Based on the preliminary construction analysis, construction activities are not likely to cause long-term impacts due to mobile noise sources, impulse noise, or noise within a narrow range of frequencies.

Even though no long-term construction noise impacts are expected to occur as a result of the Proposed Action, there are shorter periods during which very high increases in construction-noise would occur, particularly for sensitive receptors along Longfellow Avenue between East 173rd and

East 174th Streets. Accordingly, the Proposed Action would potentially result in a significant adverse impact related to construction noise.

Further analysis of construction noise affecting the receptors along Longfellow Avenue, and consideration of potential mitigation measures to reduce the severity and duration of the noise from on-site equipment, will be carried out between the Draft and Final EIS. If the further analysis confirms that a significant adverse construction noise impact would occur, and if no suitable, implementable measures that would successfully mitigate the significant adverse impact are identified, then the Proposed Action would cause an unmitigated significant adverse construction noise impact.

Other Technical Areas

Land Use and Neighborhood Character

The proposed rezoning area is already an industrial area, and generally incompatible with the residential uses to the west. The industrial nature of the construction activities would be a substitution for the industrial uses already extant. While construction of the new buildings would cause temporary impacts, particularly related to noise, it is expected that such impacts in any given area would be relatively short term (e.g., less than two years), even under the reasonable worst case construction sequencing (see the construction air and noise assessment above). While the area would experience construction disruptions to neighborhood character, their duration would not be of sufficient time as to be considered as significant. Therefore, no significant adverse construction impacts to land use and neighborhood character are expected.

Socioeconomic Conditions

During the construction period, construction activities would be dispersed throughout the proposed rezoning area and would not affect access to particular businesses over an extended duration. No other businesses are near enough to the proposed rezoning area to be affected by construction activities. In addition, a central goal of the proposed rezoning is to make the area more compatible with the more residential nature of the upland areas. The businesses now extant on the proposed rezoning area are not unique nor do they form a special economic segment in the City's economy. These businesses would be expected to relocate as development pressures made their operations less viable (see Chapter 2.B, Socioeconomic Conditions). Therefore, no significant adverse construction impacts to socioeconomic conditions are expected.

Community Facilities

There are three community facility uses (schools) that abut or are within the project area (two at the south end – Fannie Lou Hamer Freedom High School and PS 66 – and one at the north end – PS 214 - of the proposed rezoning area). No other community facilities are located within or adjacent to the proposed rezoning area. It will not be necessary to alter the entrances to the schools, nor would it be necessary to close them at any time during the construction period. There would be no direct nor indirect construction effects to any community facilities other than those considered separately under the air, noise and traffic preliminary analyses. Hence, no construction impacts would be expected to community facilities in the area.

Open Space

No open space resources would be disrupted during the construction of the project, nor would access to any publically accessible open space be impeded during construction within the proposed rezoning area. Therefore, no significant adverse impacts to open space are expected to occur.

Historic and Cultural Resources

The Proposed Action would result in potentially significant impacts to archaeological resources on projected development sites not under the control of the applicant and not subject to a restrictive declaration that would ensure the identification of any archaeological resources prior to development. The archaeological resources are a pre- and post-civil war cemetery generally in the vicinity of Boone Avenue and East 172nd Street and former privies (shafts) on sites located north of the Cross Bronx Expressway. These potential impacts are fully discussed under Chapter 2.F., Historical and Cultural Resources, and a preliminary construction assessment is not needed to disclose these potential impacts (see Chapter 2.F.).

Natural Resources

The Bronx River is a natural resource within the vicinity of the proposed rezoning area. However, it is separated by separated by a distance of 300 to 500 feet, and within that separation is the Sheridan Expressway and the West Farms Road right-of-ways. The primary concern during construction would be the possibility of sediments flowing from the construction sites into the river through sheetflow run-off, increasing turbidity and possibly biochemical oxygen demand. However, both of these roadways have their own drainage systems, so sheetflow run-off from the project sites to the river would not occur.

Finally, Section 3309.1 of the New York City Building code requires that provisions be made to control water run-off and erosion during construction and demolition activities, and NYSDEC has published a manual (New York Standards and Specifications for Erosion and Sediment Controls) which is the standard to be followed to comply with the Building Code.

Given the separation of the building sites from the Bronx River, the two intervening stormwater collections systems and the requirement for erosion and sediment control within the building code, no natural resources would be directly impacted by development which could occur as a result of the Proposed Action. (Also see Chapter 2.H. Natural Resources.) Therefore, no significant adverse construction impacts to natural resources are expected.

Hazardous Materials

The Proposed Action would avoid any a potential significant hazardous materials impact in connection with construction activities by the inclusion of "E" designations for development sites not under the control of the applicant, and by a restrictive declaration for the sites under the control of the applicant. These institutional controls would require soil testing to identify any hazardous materials and, based on the results of such testing, the development of a Construction Health and Safety Plan. The hazardous materials analysis is discussed in Chapter 2.I.

METHODOLOGY

Regulatory Framework:

The governmental oversight of construction in New York City is extensive and involves a number of city, state, and federal agencies. Table S-1 shows the main agencies involved in construction oversight and the agency's areas of responsibilities. The primary responsibilities lie with New York City agencies. The New York City Department of Buildings (DOB) has the primary responsibility for ensuring that the construction meets the requirements of the Building Code and that buildings are structurally, electrically, and mechanically safe. In addition, DOB enforces safety regulations to protect both construction workers and the public. The areas of responsibility include installation and

operation of construction equipment, such as cranes and lifts, sidewalk shed, and safety netting and scaffolding. The New York City Department of Environmental Protection (DEP) enforces the Noise Code, approves remedial action plans (RAPs) and Construction Health and Safety Plans (CHASPs), and regulates water disposal into the sewer system. The Fire Department of New York (FDNY) has primary oversight for compliance with the Fire Code and for the installation of tanks containing flammable materials. The New York City Department of Transportation (NYCDOT) reviews and approves any traffic lane and sidewalk closures. New York City Transit (NYCT) is in charge of bus stop relocations, and any subsurface construction within 200 feet of a subway. The Landmarks Preservation Commission (LPC) approves studies and testing to prevent loss of archaeological materials and to prevent damage to fragile historic structures.

The New York State Department of Environmental Conservation (NYSDEC) regulates discharge of water into rivers and streams, disposal of hazardous materials, and construction, operation, and removal of bulk petroleum and chemical storage tanks. The New York State Department of Labor (DOL) licenses asbestos workers. On the federal level, the US Environmental Protection Agency (EPA) has wide ranging authority over environmental matters, including air emissions, noise, hazardous materials, and the use of poisons. Much of the responsibility is delegated to the state level. The US Occupational Safety and Health Administration (OSHA) sets standards for work site safety and the construction equipment.

Table S-1: Regulatory Framework in New York City

Agency	Area(s) of Responsibility
New York City	
Department of Buildings	Primary oversight for Building Code and site safety
Department of Environmental Protection	Noise, hazardous materials, dewatering
Fire Department	Compliance with Fire Code, tank operation
Department of Transportation	Lane and sidewalk closures
New York City Transit	Bus stop relocation; any subsurface construction w/in 200 feet of a subway
Landmarks Preservation Commission	Archaeological and historic architectural protection
New York State	
Department of Labor	Asbestos workers
Department of Environmental Conservation	Dewatering, hazardous materials, tanks Stormwater Pollution Prevention Plan, Industrial SPDES, if any discharge into the Hudson River
United States	
Environmental Protection Agency	Air emissions, noise, hazardous materials, toxic substances
Occupational Safety and Health Administration	Worker safety

To the extent that these agencies have mandatory regulations controlling construction practices in New York City, and unless otherwise stated, such regulations have been assumed in the preliminary assessment described below.

Reasonable Worst Case Construction Sequencing

Because so many development sites within the area to be rezoned are not under the control of the applicant, it cannot be known what the timing will be for the development of those sites. It was therefore necessary to construct a reasonable worst case for the construction sequencing.

A multi-step process was followed to establish a reasonable worst case construction sequencing scenario. As described in the methodology section above, a temporal clustering of the non-applicant development sites around those of the applicant was determined to represent the reasonable worst case construction sequencing. As described further below, certain data generated by this process were also used for the air and noise preliminary assessments.

1. First, the applicant's intended phasing plan was used as a starting point.

2. A construction management firm (Triton Construction) was used for Steps 2 - 5. Because the buildings to be constructed on projected development sites controlled both by the applicant and by others have not been fully designed, estimates for construction related data were developed based on the size of the projected developments under the reasonable worst case scenario. Seven size categories (A - G) of projected buildings were established as shown below. The size categories for the various projected development sites are also shown in Figure S-1, below.

A. 25-75K SF	E. 225-275K SF
B. 75-125K SF	F. 275-325K SF
C. 125-175K SF	G. 325-375K SF
D. 175-225 K SF	

3. Next, the general phases of construction (a - g) were identified as shown below. Each phase is characterized by specific types of equipment and/or other activities that potentially would generate construction related traffic, noise or fugitive dust. Demolition and Excavation, for instance, could generate both equipment noise and fugitive dust, whereas the Building Interior Phase would have very little impact to surrounding residents.

a. Demolition	e. Building Superstructure
b. Excavation	f. Building Exterior
c. Foundations	g. Building Interior
d. Utility/Sewer connections	

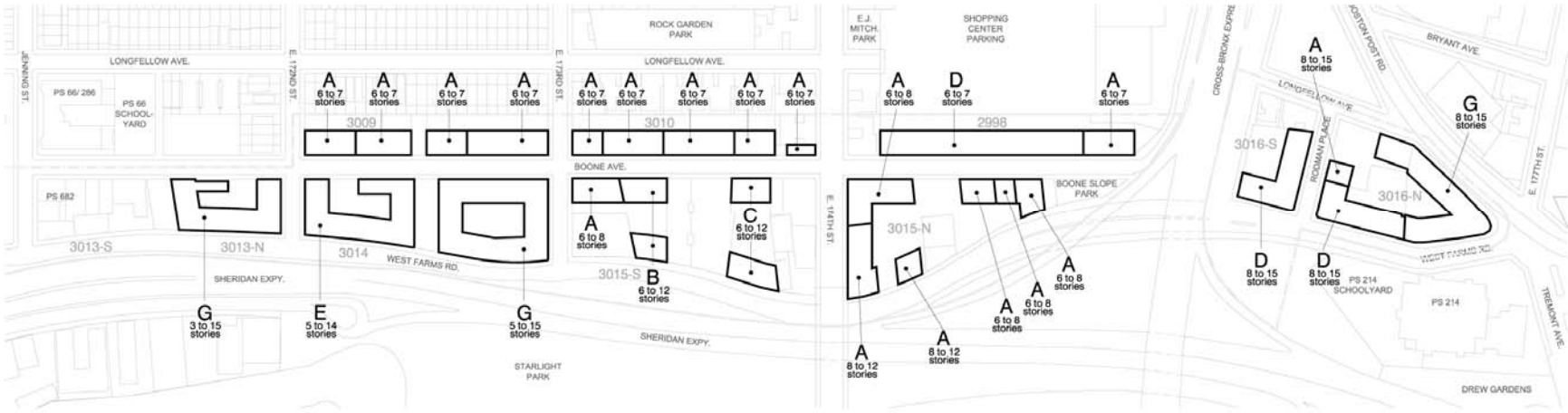
4. A generalized time line for the phasing of construction for each of the construction phases was then established by building type, including construction phase overlaps; as an example, larger buildings are projected to take longer to construct than the smaller buildings.

5. Estimates were then made of the various construction characteristics that would be applicable to each phase of construction, by building size category (also referenced herein as "building type"). These included number of construction workers, hours of work, truck trips per day (hauling out and delivery in), on site construction equipment (including number and type, typical horsepower, typical weight, and typical year of manufacture).

6. A detailed construction scenario was created using the data generated in Steps 2 - 5 for all projected development sites. Care was taken, in order to produce a reasonable worst case

construction scenario, to spatially cluster development sites not under control of the applicant as near as possible to those under the applicant's control, so that construction activity would be concentrated in geographic areas as close to the known sequenced applicant-related construction activities. This construction sequencing was then graphically displayed on a time line. See Appendix 7, Construction.

Figure S-1: Projected Development by Building Type



BUILDING TYPES

- Building Type A: 25,000 – 75,000 SF
- Building Type B: 75,000 – 125,000 SF
- Building Type C: 125,000 – 175,000 SF
- Building Type D: 175,000 – 225,000 SF
- Building Type E: 225,000 – 275,000 SF
- Building Type F: 275,000 – 325,000 SF
- Building Type G: 325,000 – 375,000 SF

CONSTRUCTION IMPACT DIAGRAM

N.T.S.

June 3, 2010

North

7. For transportation assessment purposes, cordon lines were drawn through the time line to isolate the highest construction-related vehicular trip generation periods over the entire construction period. The cordon lines were drawn to maximize construction-related traffic trip generation. For air quality, the trips identified on the cordon lines were used to compare the construction traffic with the threshold volumes in the *CEQR Technical Manual* that would mandate a mobile source analysis for either autos or trucks. For noise, the construction traffic, by vehicle class (autos, medium trucks, or heavy trucks) was used to calculate PCEs to be used in estimating relative increases in noise levels. Net new vehicular trip generation was then calculated, which included the following:

    a. Construction employee trips,

    b. Construction truck trips,

    c. Elimination of existing land use vehicular trips, and

    d. As the construction was completed, new additional vehicular trips created by the completed buildings and their occupancy.

8. The cordon line calculations were then arranged chronologically and summarized in tabular form, again for construction impact assessment.

9. For traffic, air quality and noise considerations, net new construction vehicular traffic was compared to the future with the Proposed Action net new vehicular trip generation. All of this information was then summarized in a table for purposes of construction impact assessment.

A vehicular construction analyses were undertaken following this basic methodology for employees traveling during off-peak hour analysis (conforming with the arrivals and departures of the construction employees [6:00 to 7:00 AM, and 3:30-4:30 PM]).

For the specific intersection assessment, ATR counts were used to establish intersection volumes.

Transportation-Related Analysis Assumptions

In order to complete the preliminary transportation-related analyses, the following assumptions were made.

Vehicular Trip Generation:

1. Construction Workers

    a. Daily Person Trips: According to construction phase, as described in Step 3 above, and presented in detail below under the preliminary assessments section.

    b. Temporal Distribution: According to work hours.

    c. In/Out Directional Split: All in, in the AM, all out in the PM, mid-day negligible.

    d. Mode Split for Construction Workers: Mode split for construction workers in the proposed rezoning area was assumed to be the same as those used for the action condition estimates of eliminated trips due to construction for warehousel land use, which is presented in Chapter 2.M, Table M-2).

e. Vehicle Occupancy: 1.04 (same as those used for the action condition estimates of eliminated trips due to construction warehouse land use, which is presented in Chapter 2.M, Table M-2).

2. Truck Trips: Each truck was counted as 2 PCE's; each truck delivery or haul was counted as two truck trips (one in and one out). Temporal distribution was assumed to be compressed over a 6 hour period for the work day to account for mini-surges and potential deliveries from other sites with on-going construction as "typical," and to be conservative in the estimate. Note that each building site would attempt to schedule deliveries so they did not conflict with other deliveries at that site due to off-loading constraints.

3. Eliminated Vehicular Trips from Existing Land Uses: Was the same as that used for the future with the Proposed Action condition estimates of eliminated trips from the pertinent land uses due to construction, which are presented in Chapter 2.M.

4. Added Vehicular Trips due to Completed Construction: Was the same as that used for the future with the Proposed Action condition estimates of generated vehicular trips at construction completion, which are presented in Chapter 2.M.

Air Quality-Related Analysis Assumptions

In order to complete the preliminary air quality-related analysis, the following assumptions were made.

1. Employee trips for construction would not contribute to vehicular trip generation during the peak periods analyzed for the AM and PM Peak Hour Build Condition. The construction period personnel trips would occur before 7 AM in the morning peak, and between 3:30 and 4:30 during the PM peak period.

2. Truck trips would only occur AFTER the employees arrive, or BEFORE they depart in the afternoons. Hence, they would not contribute to the employee peak trip generation figures.

3. For mobile sources, the pertinent sensitive receptors would be at mid-sidewalk along the local roadways that would experience truck traffic.

Noise-Related Analysis Assumptions

In order to complete the preliminary noise-related analysis, the following assumptions were made.

1. Based on the *CEQR Technical Manual*, monitored noise levels can be assumed to be representative of vehicular traffic passing the development sites, provided that vehicular noise levels are at least 10 dBA above levels associated with all other noise sources.

2. Noise levels associated with autos and trucks, shown below, were calculated with the following PCE values from the *CEQR Technical Manual*.

    a. Autos and SUVs: Each counts as 1 PCE.

    b. Truck Trips: Medium trucks (2 axles, 6 tires) counts as 13 PCEs, heavy trucks (3+ axles) count as 47 PCEs, and buses count as 18 PCEs.

c. The PCE values are based on the FHWA's Traffic Noise Model (TNM) assuming a speed of 25 mph and a distance of 30 feet from the roadway.

3. Equipment: Noise levels from equipment were obtained from Table 22-1 in the Construction chapter of the *CEQR Technical Manual*. As a worst case assumption, the noisiest items of equipment were used in the analysis, and they were assumed to have an Lmax at 50 feet of either 85 dBA or 90 dBA. Based on information from the construction management firm, the maximum number of diesel-powered items of equipment on-site would range from one to four, depending on the construction phase.

4. As a worst-case assumption, no mitigation measures, such as temporary noise barriers, were included in the calculations. However, a 10 decibel insertion loss was used to account for shielding of noise levels from intervening structures during some stages of construction.

ASSESSMENT OF THE NEED FOR A PRELIMINARY OR DETAILED ASSESSMENT

Transportation

According to the 2010 *CEQR Technical Manual*, the following factors should be considered before determining whether a preliminary assessment of the effect on construction should be considered:

- Whether the project's construction would be located in a Central Business District (CBD) or along an arterial or major thoroughfare;
    - If so, a preliminary assessment of the effect of construction activities on transportation should be conducted.
- Whether the project's construction activities, regardless of whether they are located in a CBD or along an arterial or major thoroughfare, would require closing, narrowing, or otherwise impeding moving lanes, roadways, key pedestrian elements (*e.g.*, sidewalks, crosswalks, corners), parking lanes and/or parking spaces in on-site or nearby parking lots and garages, bicycle routes and facilities, bus lanes or routes, or access points to transit.
- If so, would the location be particularly sensitive to such a closure, such as in an area with high pedestrian activity or near sensitive land uses such as a school or hospital, or would any sidewalks, roadways, or walkways be closed during construction that are considered to be near capacity under the future No-Action conditions identified in Chapter 16, "Transportation?
    - If 'yes', a preliminary assessment should be conducted unless this closure can be considered the type of routine closure typically fully addressed by a permit (and pedestrian access plan) required by New York City Department of Transportation (DOT) Office of Construction Mitigation and Coordination (OCMC) at the time of closure so that impacts are not expected to occur.

The Proposed Action would not be located within a CBD. However, there is one major thoroughfare (Boston Road) which is adjacent to one development site (Parcel 9C) within the Proposed Action area. This site also abuts West Farms Road, a roadway which is relatively wide but which carries relatively little traffic.

The Proposed Action would not require the closing of travel lanes or key pedestrian facilities in the area since sidewalks in the area are wide (i.e., 15 feet on both sides of Boone Avenue and along West Farms Road). If off-site staging areas would be required, they could be within the sidewalk areas. On-street parking adjacent to these areas could be temporarily suspended to allow for protected pedestrian right-of way around the staging areas. These types of closures are routine but must be approved by NYCDOT. The most critical development site in this regard and within the proposed rezoning area would be Parcel 9C. This site has access from both Boston Road and West Farms Road. It is unlikely that DOT would approve closure of even parking lanes along Boston Road when there is the alternative of using West Farms Road for construction staging activities. Hence, pedestrian access along Boston Road, which serves the West Farms subway station, would not need to be affected by construction on this site. Likewise, no travel lanes would be affected on either Boston or West Farms Roads.

The larger development sites along Boone Avenue have access from Boone Avenue and West Farms Road (i.e., Parcels 1, 2A, 2B, 4C, 4D, 6B, 6C, and 6D). For these sites, it would be sensible to place the staging areas along West Farms Road, which is a wider street with little pedestrian activity. At these locations (as well as all others), it would not be necessary to close a travel lane. Boone Avenue also now has relatively little pedestrian activity. For those sites which have access only from Boone Avenue (Parcels 3A-3E, 5A-5E, 7A-7B, 4A, and 6A), the above described sidewalk and parking lane closing and their use for staging and pedestrian passage would be possible without the need to affect any travel lanes.

No sidewalk or street closings would be necessary adjacent to any schools or transit facilities in the area.

Although the Proposed Action would not satisfy any of the criteria above under which a preliminary assessment would be required, the *CEQR Technical Manual* goes further, stating

"If all of the following conditions are present, the project can be assumed to have no significant traffic impacts, and no detailed traffic analysis would be needed:

- The construction traffic peak would generate fewer PCEs than the operational project peak, and the construction lane geometry, signal timing, and parking regulations are consistent with those of the project peak hours;

- The construction would occur during off-peak hours or during hours comparable to the project peak hours;

- The project has been determined not to produce the potential for significant adverse traffic impacts during the operational period; and

- The preliminary assessment indicates that changes to the capacity of the roadway network related to construction activities are not likely to cause a significant deterioration in local or regional traffic flow.

The Proposed Action would not meet the third condition cited above. It would result in significant adverse traffic impacts in its operational phase. Therefore, further analysis is needed.

Air Quality or Noise

The 2010 *CEQR Technical Manual* states:

An assessment of air quality and noise for construction activities is likely not warranted if the project's construction activities:

- Are considered short-term;
- Are not located near sensitive receptors;
- Do not involve construction of multiple buildings where there is a potential for on-site receptors on buildings to be completed before the final build out; and
- The pieces of diesel equipment that would operate in a single location at peak construction are limited in number.

The *CEQR Technical Manual* does not define "short-term" but it has generally been accepted that the term refers to a period of two years or less. The construction period for Type A buildings would be about 86 weeks. Construction periods for Type B through G buildings would range from 2- to 2½-years. Multiple buildings within the rezoning area could be under construction at the same time. Therefore, local residences, some of which are adjacent to the development sites, would be subjected to construction noise and air pollutant emissions for two or more years. Some of the projected development sites would be completed and ready for residency while nearby buildings are still under construction. With regard to diesel equipment, one of the construction phases could have four pieces of diesel equipment on-site at one time, and the duration could last for 6 months or more. Therefore a preliminary construction analysis is warranted.

EVALUATION CRITERIA

The 2010 *CEQR Technical Manual* states that the following information should be considered in preliminary assessments for transportation, air quality, or noise effects of construction activities.

- The construction stages and activities, including numbers and types of equipment, and the anticipated duration of each stage or activity;
- The number of daily construction vehicles (construction worker vehicles and construction trucks) and deliveries and their temporal distribution for each stage and activity, presented in PCEs; and
- The number of daily construction workers and their temporal distribution for each stage and activity.

The assessment should be targeted only to those issues where potential impacts may result from the Proposed Action's construction activities. Since the air quality and noise assessments rely heavily on transportation information, the transportation criteria also are included.

Transportation

Key elements of the preliminary assessment for construction impacts from transportation include:

- Vehicular volume generated during construction years during peak commuter traffic periods,
- Vehicular volume generated during construction years during off-peak traffic periods,

- Effects of street closures on traffic or pedestrian patterns, and
- Reduction in on-street or off-street parking capacity.

Air Quality

The primary concern for construction air quality is emissions of PM2.5 due to exhaust emissions or fugitive dust. Because a distance of 400 feet is typically used in the *CEQR Technical Manual* to identify the area of potential impact from stationary emissions sources, sensitive receptors within 400 feet of the center of the construction site will be considered in the preliminary assessment. For mobile source traffic, the sidewalks along affected roadways and intersections are the locations of interest.

Key elements of the preliminary assessment for construction impacts to air quality include:

- CO from employee vehicles,
- Disruption to normal traffic patterns caused by road closings,
- Increased truck traffic on local roads,
- Fugitive PM10 and PM2.5 from on-site vehicular movement and other activities,
- PM10, PM2.5, NOx, and SO2 from equipment exhaust.

A qualitative analysis can be prepared if the following conditions are present:

- The proposed action would not result in significant mobile source impacts,
- The vehicular trip generation from construction would be less than that of the proposed action, and
- No significant PM10/PM2.5 air quality impacts from stationary sources are anticipated under the Future with the Proposed Action.

Noise

Noise impacts may occur due to increased traffic and activities on-site. For stationary sources, construction noise is generally analyzed in detail when it would affect a sensitive receptor over a long period of time, such as two years or more.

Key elements of the preliminary analysis for construction noise would include:

- Pile driving, blasting, or demolition that would generate high levels of impulse noise,
- Noise within a narrow range of frequencies (e.g., a back-up beep or engine whine),
- Engine noise from on-site diesel-powered equipment,
- Engine noise from on-site trucks,
- Disruption to normal traffic patterns caused by road closings,
- Increased truck traffic on local roads resulting in a doubling of PCEs.

If a more detailed analysis of potential noise level impacts is warranted, the criteria for identifying a noise impact would be:

- An increase of 3 dBA where ambient noise levels are 65 dBA or greater,
- An increase of 1 to 5 dBA where ambient noise levels are 60 to 65 dBA, providing that the increase does not result in a noise level that reaches 65 dBA, and
- An increase of 3 dBA during the nighttime period from 10 pm to 7 am.

PRELIMINARY ASSESSMENT

As noted above, less than half of the projected development expected within the proposed rezoning area is under control of the applicant. While the development phases of the applicant's sites can be projected, the development of the sites not controlled by the applicant cannot be predicted. Therefore, a reasonable worst case construction scheduling plan was identified by conservatively assuming that the non-applicant sites would be developed during the same period as adjacent sites owned by the applicant. Based on the above-described methodology, the following preliminary assessment was conducted.

Preliminary Traffic Assessment

As noted in the methodology section above, a construction analysis of employee trips was conducted. Based on the above described methodology, the general phasing was established first. The future development phasing of the non-applicant sites is unknown. To create a reasonable worst case analysis, these sites were assumed to undergo development within a similar time frame as nearby sites owned by the applicant. This assumption resulted in a worst case from an air quality and noise perspective, since the construction activities are assumed to be clustered. This phasing of applicant and non-applicant sites is summarized in Table S-2, Detailed Phasing Study.

Table S-2: Detailed Phasing Study

Phasing of the Proposed Action Development							
North of Cross Bronx Expressway							
Year	**Applicant Parcels**	**Building Type**	**New Applicant SF Under Construction**	**Non Applicant Parcels**		**SF**	
1	Parcel 8 (3016 N)	D	200,000	Parcel 9C	G	280,000	
2	Parcel 8 (3016 N)		0	Parcel 9C			
3	Parcel 9D (3016 N)	D	194,000	Parcel 9E	A	39,000	
4	Parcel 9D (3016 N)		0	Built Out			
5	Built Out			Built Out			
6	Built Out			Built Out			
7	Built Out			Built Out			
8	Built Out			Built Out			
South of Cross Bronx Expressway							
Year	**Applicant Parcels**	**Building Type**	**New Applicant SF Under Construction**	**Non Applicant Parcels**	**Building Type**	**SF**	**Non App SF Needed**
1	Parcel 1	E	200,000				
3	2S	E	255,000	3A	A	72,000	124,000
		E		3D	A	49,500	74,500
		E		4A	A	50,168	24,332
		E		5E	A	27,000	-2,668
4	2S	E	0	7A	A	36,522	159,146
		E		4B	B	91,915	67,231
		E		5C	A	63,080	4,151
5	2N	G	360,000	3E	A	45,000	152,151
		G		5D	A	53,910	98,241
		G		6A	A	61,573	36,668
		G		5B	A	36,000	668
6	2N	G	0	4C	C	140,116	53,552
		G		6B	A	56,770	-3,221
7	3B	A	36,000	7B	D	180,572	9,207
		A		5A	A	5,000	4,207
8	3B	A	0	6D	A	56,773	140,434

		A		6C	A	51,138	89,296
		A		6E	A	56,060	33,236
		A		6G	A	59,546	-26,310
9	Built Out		0	No New Parcels		0	0
10	Built Out			Built Out			

Source: Stantec Consulting

Table S-3, Construction Activities by Building Type, summarizes pertinent information used to develop the analysis of construction-related and project related vehicular trips in Table S-4 below. Table S-3 shows, by building type and by construction phase, the number of employees, the number of delivery and haul trucks, the maximum noise PCEs per hour, and the number pieces of on-site construction equipment.

Table S-3: Construction Activities by Building Type

Building Type	Item*	Demo-lition	Excava-tion & Foundation	Utility & Sewer	Building Super-structure	Building Exterior	Interior Finishes
A	Daily employees	10	25	8	40	25	50
	Daily delivery trucks	10	15	1	1	1	1
	Daily haul Trucks	1	8	1	5	2	3
	Maximum trucks/hour	2	4	1	1	1	1
	Maximum Noise PCEs/hour	188	376	94	94	94	94
	On-site equipment (#)	1	2	1	1	1	1
B	Daily employees	10	25	8	40	25	50
	Daily delivery trucks	10	15	1	1	1	1
	Daily haul Trucks	1	8	1	5	2	3
	Maximum trucks/hour	2	3	1	1	1	1
	Maximum Noise PCEs/hour	188	282	94	94	94	94
	On-site equipment (#)	1	2	1	1	1	1
C	Daily employees	10	29	8	40	30	55
	Daily delivery trucks	10	18	1	1	1	2
	Daily haul Trucks	1	8	1	5	2	3
	Maximum trucks/hour	2	4	1	1	1	1
	Maximum Noise PCEs/hour	188	376	94	94	94	94
	On-site equipment (#)	1	2	1	1	1	1
D	Daily employees	10	34	8	40	35	65
	Daily delivery trucks	10	20	1	1	1	2
	Daily haul Trucks	1	11	1	5	3	3
	Maximum trucks/hour	2	5	1	1	1	1
	Maximum Noise PCEs/hour	188	470	94	94	94	67
	On-site equipment (#)	1	2	1	1	1	1
E	Daily employees	10	34	10	40	40	65

	Daily delivery trucks	10	20	1	1	1	2
	Daily haul Trucks	1	11	1	5	4	4
	Maximum trucks/hour	2	5	1	1	1	1
	Maximum Noise PCEs/hour	188	470	94	94	94	94
	On-site equipment (#)	1	2	1	1	1	1
F	Daily employees	10	34	10	40	40	70
	Daily delivery trucks	10	20	1	1	1	2
	Daily haul Trucks	1	11	1	5	4	4
	Maximum trucks/hour	2	5	1	1	1	1
	Maximum Noise PCEs/hour	188	470	94	94	94	94
	On-site equipment (#)	1	2	1	1	1	1
G	Daily employees	10	38	10	40	45	70
	Daily delivery trucks	10	25	1	1	1	3
	Daily haul Trucks	1	14	1	5	4	4
	Maximum trucks/hour	2	6	1	1	1	1
	Maximum Noise PCEs/hour	188	564	94	94	94	94
	On-site equipment (#)	1	2	1	1	1	1

**Trucks represent one-way trips. Calculation of PCEs counts each truck as two trips – one arrival and one departure. PCE's in table are for noise analyses. Source: Stantec Consulting*

To assist in developing the construction trip generation, an analysis was done which identified the reasonable worst case construction activities according to the assumed schedule reflected in Table S-2, and according to the worst case cordon lines (see Table S-4). The activities shown in that table include eliminated trips (due to the demolition of the properties), construction related trips to be added, and new development trips that would result from completed buildings (see Table S-4, Construction Activity Analysis, by Cordon Line).

The numerical characteristics of the activities shown in Table S-4, which reflect construction activities at each of the cordon lines, were then calculated in Table S-5 for the peak hour construction traffic analysis.

Table S-4: Construction Activity Analysis, By Cordon Line

End Dates (Week #)	89	121	121	216	173	180	188	204	183	197	224	239	248	336	275	282	289	289	338	336	428	460	452	480	488	496
	8(D)	9C(G)	1 (G)	2S (E)	3A (A)	3D (A)	4A (A)	9D (E)	9E (A)	5E (A)	7A (A)	4B (B)	5C (A)	2N(G)	3E (A)	5D (A)	6A (A)	5B (A)	4C (A)	6B (A)	3B (A)	7B (D)	5A (A)	6B (A)	6C (A)	6E (A)
Cordon 5 (Wk 10)																										
Delete Exist Trips	y	y	y																							
Add Construction Trips	E,F	E,F	E,F																							
Add Development Trips	n	n	n																							
Cordon 6 (WK 38)																										
Delete Exist Trips	y	y	y																							
Add Construction Trips	BS,BE,BI	BS,BE,BI	BS,BE,BI																							
Add Development Trips	n	n	n																							
Cordon 7 (WK 132)																										
Delete Exist Trips	y	y	y	y	y	y	y	y	y																	
Add Construction Trips	n	n	n	BS,BE,BI	BE	BI	F	BS,BE,BI	BS,BE,BI																	
Add Development Trips	y	y	y	n	n	n	n	n	n																	
Cordon 1 (Week 146)																										
Delete Exist Trips	y	y	y	y	y	y	y	y	y	Y																
Add Construction Trips	n	n	n	BS,BE,BI	BI	BI	BI,BE	BS,BE,BI	BI	BS,BI,BE																
Add Development Trips	Y	Y	Y	N	N	N	N	N	N	N																
Cordon 2 (Week 178)																										
Delete Exist Trips	y	y	y	y	y	y	y	y	y	y	y	y														
Add Construction Trips	n	n	n	BI	n	BI	BI	BI	BI	BI	BE,BI	EX,F														
Add Development Trips	y	y	y	n	y	n	n	n	n	n	n	n														
Cordon 3(Week 240)																										
Delete Exist Trips	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y								
Add Construction Trips	n	n	n	n	n	n	n	n	n	n	n	n	BI	BS,BI, U	BI	BE,BI	BS,BE,BI	BS,BE,BI								
Add Development Trips	y	y	y	y	y	y	y	y	y	y	y	y	n	n	n	n	n	n								
Cordon 4(Week 281)																										
Delete Exist Trips	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y								
Add Construction Trips	n	n	n	n	n	n	n	n	n	n	n	n	n	BS,BE,BI	n	BI	BI	BI	BS,BE,BI	BS						
Add Development Trips	y	y	y	y	y	y	y	y	y	y	y	y	y	N	y	N	N	N	N	N						
Cordon 8 (Week 416)																										
Delete Exist Trips	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y			
Add Construction Trips	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	B1	BS,BE, BI	BS,BE,BI			
Add Development Trips	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	n	n	n			
Cordon 9 (Week 440)																										
Delete Exist Trips	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y
Add Construction Trips	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	BI	BI	BE,BI	BS,BE,BI	BS,BE,BI
Add Development Trips	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	n	n	n	n	n

Source: Stantec Consulting

Construction Traffic Peak Hours Analysis (6:00-7:00AM and 3:30-4:30 PM)

As noted above, this analysis is focused on the peak hours when construction employees would be arriving at and departing from the Proposed Action area (e.g., 6-7 AM and 3:30-4:30 PM). This analysis is patterned after the peak hour analysis described above. The analysis includes, by the previously described Cordon Lines, estimates of construction employee vehicular trips, vehicular trips which would be eliminated due to the displacement of existing uses on the construction sites, and, as construction moves forward in time, the addition of vehicular trips associated with new construction (operational). As noted in the methodology section, eliminated vehicular trips and new development vehicular trips were estimated based on temporal distribution for different uses for the hours of 6:00-7:00AM and 3:30-4:30PM. Total volumes for the 6-7 AM period were compared to total volumes for the 7:30-8:30 PM peak period by an examination of the ATR counts which were taken in the study area, and a percentage was developed (off-peak as a percentage of peak). (This percentage or ratio was seen as indicative of the traffic level in the study area [or activity levels] over the early morning hours.) These percentages were then used to estimate the vehicular trips associated with these two categories of vehicular trips. The percentages (off-peak expressed as a percentage of peak) were 37.5 percent of the AM peak period, and 75 percent of the PM peak period.

Table S-5 below presents the results of this analysis.

Table S-5: Analysis of Construction-Related and Project-Related Off-Peak Vehicular Trips Compared to Peak Hour Volumes for Build Conditions

Cordon 5 Summary (Week 10)						
		Off Peak Vehicle Trips				
Site (Building Type)	Employees	6 - 7 AM	3:30-4:30 PM			
8 (D) Applicant	33	15	15			
9C (G)	38	17	17			
1 (G)	38	17	17			
Total Cordon Trips	109	49	49			
Construction Peak Hours:						
Cumulative Eliminated Trips**, Year 1		31	69			
Project Development Trips**		0	0			
Net New Construction-related Vehicular Trips		**18**	**-20**			
Net Build Condition Vehicular Trips Analyzed:		**242**	**326**			
**Project Generated and Eliminated trips adjusted to occur in during						
construction employee peak hours which are project Off Peak Hours						
Cordon 6 Summary (Week 38)						
		Off Peak Vehicle Trips				
Site (Building Type)	Employees	6 - 7 AM	3:30-4:30 PM			
8 (D) Applicant	140	63	63			
9C (G)	155	70	70			
1 (G)	155	70	70			
Total Cordon Trips	450	203	203			
Construction Peak Hours:						
Cumulative Eliminated Trips**, Year 1		31	69			
Project Development Trips**		0	0			
Net New Construction-related Vehicular Trips		**172**	**134**			
Net Build Condition Vehicular Trips Analyzed:		**242**	**326**			
**Project Generated and Eliminated trips adjusted to occur in during						
construction employee peak hours which are project Off Peak Hours						
Cordon 7 Summary (Week 132)						
		Off Peak Vehicle Trips				
Site (Building Type)	Employees	6 - 7 AM	3:30-4:30 PM			
2S (E)	40	18	18			
3A (A)	25	11	11			
3D (A)	50	23	23			
4A (A)	15	7	7			
9D (D) Applicant	140	63	63			
9E (A)	123	55	55			
Total Cordon Trips	393	177	177			
Construction Peak Hours:						
Cumulative Eliminated Trips**, Year 2****		53	115	Cordon 6 + all of Cordon 7		
Project Development Trips**		41	101	(Add 1,8,9C)		
Net New Construction-related Vehicular Trips		**166**	**163**			
Net Build Condition Vehicular Trips Analyzed:		**242**	**326**			
**Project Generated and Eliminated trips adjusted to occur in during						
construction employee peak hours which are project Off Peak Hours						
**** No Eliminated trips in Year 2						

Table S-5 (Continued)

Analysis of Construction-Related and Project-Related Off-Peak Vehicular Trips Compared to Peak Hour Volumes for Build Conditions

Cordon 1 Summary (Week 146)						
		Off Peak Vehicle Trips				
Site (Building Type)	Employees	6 - 7 AM	3:30-4:30 PM			
2S (E)	145	65	65			
3A (A)	50	23	23			
3D (A)	50	23	23			
4A (A)	75	34	34			
5E (A)	115	52	52			
Total Cordon Trips	435	196	196			
Construction Peak Hours:						
Cumulative Eliminated Trips**, Year 3		62	135	Add 5E to Cordon 7		
Project Development Trips**		41	101	From Cordon 7 (no new)		
Net New Construction-related Vehicular Trips		**175**	**161**			
Net Build Condition Vehicular Trips Analyzed:		**242**	**326**			
**Project Generated and Eliminated trips adjusted to occur in during						
construction employee peak hours which are project Off Peak Hours						
Cordon 2 Summary (Week 178)						
		Off Peak Vehicle Trips				
Site (Building Type)	Employees	6 - 7 AM	3:30-4:30 PM			
2S (E)	65	29	29			
3D (A)	50	23	23			
4A (A)	50	23	23			
5E (A)	50	23	23			
7A (A)	75	34	34			
4B (B)	25	11	11			
Total Cordon Trips	315	142	142			
Construction Peak Hours:						
Cumulative Eliminated Trips**, Year 4		68	149	Cordon 1 +7A,4B		
Project Development Trips**		45	110	Add 3A only to Cordon 1		
Net New Construction-related Vehicular Trips		**119**	**103**			
Net Build Condition Vehicular Trips Analyzed:		**242**	**326**			
**Project Generated and Eliminated trips adjusted to occur in during						
construction employee peak hours which are project Off Peak Hours						
Cordon 3 Summary (Week 240)						
		Off Peak Vehicle Trips				
Site (Building Type)	Employees	6 - 7 AM	3:30-4:30 PM			
5C (A) (Year 4)	50	23	23			
2N (G) (Start Year 5)	120	54	54			
3E (A) Yr 5	50	23	23			
5D (A) Yr 5	75	34	34			
6A (A) Yr 5	115	52	52			
5B (A) Yr 5	115	52	52			
Total Cordon Trips	525	237	237			
Construction Peak Hours:						
Cumulative Eliminated Trips**, Year 5		83	179	Cordon 2 +5C,2S,3E,5D,6A,5B		
Project Development Trips**		93	226	Cordon 2 + 2N,3D,2A,9D,9E,5E,7A,4B		
Net New Construction-related Vehicular Trips		**247**	**284**			
Net Build Condition Vehicular Trips Analyzed:		**242**	**326**			
**Project Generated and Eliminated trips adjusted to occur in during						
construction employee peak hours which are project Off Peak Hours						

Table S-5 (Continued)

Analysis of Construction-Related and Project-Related Off-Peak Vehicular Trips Compared to Peak Hour Volumes for Build Conditions

Cordon 4 Summary (Week 281)						
		Off Peak Vehicle Trips				
Site (Building Type)	Employees	6 - 7 AM	3:30-4:30 PM			
2S (E) (Start Year 5)	155	70	70			
5D (A) Yr 5	50	23	23			
6A (A) Yr 5	50	23	23			
5B (A) Yr 5	50	23	23			
4C (C) Yr 6	125	56	56			
6B (A) Yr 6	40	18	18			
Total Cordon Trips	470	212	212			
Construction Peak Hours:						
Cumulative Eliminated Trips**, Year 5		83	179	Cordon 3+4C,6B		
Project Development Trips**		109	263	Cordon 3 + 5C,2S,3E,5D,6A,5B		
Net New Construction-related Vehicular Trips		**238**	**295**			
Net Build Condition Vehicular Trips Analyzed:		**242**	**326**			
**Project Generated and Eliminated trips adjusted to occur in during construction employee peak hours which are project Off Peak Hours						
Cordon 8 Summary (Week 416)						
		Off Peak Vehicle Trips				
Site (Building Type)	Employees	6 - 7 AM	3:30-4:30 PM			
3B (A) (Start Year 7)	50	23	23			
7B (D)	115	52	52			
5A (A)	115	52	52			
Total Cordon Trips	280	126	126			
Construction Peak Hours:						
Cumulative Eliminated Trips**, Year 5		91	195	Cordon 4 +	3B,7B,5A	
Project Development Trips**		129	312	Cordon 4 +	2S,5D,6A,5B,4C,6B	
Net New Construction-related Vehicular Trips		**165**	**243**			
Net Build Condition Vehicular Trips Analyzed:		**242**	**326**			
**Project Generated and Eliminated trips adjusted to occur in during construction employee peak hours which are project Off Peak Hours						
Cordon 9 Summary (Week 440)						
		Off Peak Vehicle Trips				
Site (Building Type)	Employees	6 - 7 AM	3:30-4:30 PM			
7B (D)	65	29	29			
5A (A)	50	23	23			
6B (A)	75	34	34			
6C (A)	115	52	52			
6E (A)	115	52	52			
Total Cordon Trips	420	189	189			
Construction Peak Hours:						
Cumulative Eliminated Trips**, Year 5		94	204	Cordon 8 + 6B,6C,6E		
Project Development Trips**		132	317	Cordon 8 + 3B		
Net New Construction-related Vehicular Trips		**227**	**303**			
Net Build Condition Vehicular Trips Analyzed:		**242**	**326**			
**Project Generated and Eliminated trips adjusted to occur in during construction employee peak hours which are project Off Peak Hours						

From the above assessment, it was possible to isolate the peak construction employee trips. The analysis showed that the employee trips would peak during Cordon 3. At that cordon, 525 employee person trips would be expected to arrive in the 6-7 AM period, and the same number to depart during the 3:30-4:30 PM period. Employee vehicular trips would be 287 in the 6-7 AM period, and the same number departing the area in the 3:30 to 4:30 PM period. Based on the estimated vehicular trips eliminated due to previous buildings undergoing construction and displacing the uses generating those trips, estimated trips added by new construction that was already completed before the Cordon 3 time line, and underlying

network volumes in the 6-7 AM and 3:30 to 4:30 PM periods (based on ATR data taken in the area) an assessment was undertaken based on Table 6 below, which was derived from this method. As may be seen from the table, the construction impact peak hour is compared to the corresponding Proposed Action peak hour in order to assess the potential for traffic impacts in the construction employee peak periods (6-7 AM and 3:30 to 4:30 PM). Compared are No Action Volumes, the Action increment, and the Action total. The assessment follows Table 6 below.

Table S-6: Proposed Project Impact Volume and LOS and Construction Impact Volume Comparison

				Proposed Action AM Peak Hour 7:30 AM - 8:30 AM					Construction Impact AM Peak Hour 6:00 - 7:00 AM				Proposed Action PM Peak Hour 4:30 PM - 5:30 PM					Construction Impact PM Peak Hour 3:30 PM - 4:30 PM			
Intersection		Approach Movement		Volumes (in vehicles)			LOS		Volumes (1) (in vehicles)				Volumes (in vehicles)			LOS		Volumes (2) (in vehicles)			
Num	Name			NB	Build inc	Build	NB	Build	NB (1)	Const	Build	AM Construction LOS Comments	NB	Build inc	Build	NB	Build	NB (2)	Const	Build	PM Construction LOS Comments
1	East Tremont Ave at East 177th Street	EB	L	20	-	20			9	-	9	Traffic much less than Build Traffic	36	-	36			32	-	32	EB RT channelized & unopposed -- LOS OK
			T	387	6	393			174	1	175		547	2	549			492	2	494	
			R	480	261	741	C	C	216	10	226		504	41	545	C	C	454	160	614	
		WB	L	10	-	10	D	D	5	-	5	Traffic much less than Build Traffic	5	-	5	D	D	5	-	5	Traffic less than Build Traffic
			T	606	-	606			273	-	273		651	5	656			586	3	589	
			R	419	-	419	C	C	189	-	189		312	-	312	C	C	281	-	281	
		NB	L	307	-2	305	C	C	101	-	101	Traffic much less than Build Traffic	354	50	404	D	E	266	26	292	Traffic much less than Build Traffic
			T	153	-	153	C	C	50	-	50		122	-	122	C	C	92	-	92	
			R	123	-	123	C	C	41	-	41		189	-	189	C	C	142	-	142	
		SB	L	0	-	0			0	-	0	Traffic much less than Build Traffic	0	-	0			0	-	0	Traffic less than Build Traffic
			T	0	-	0			0	-	0		0	-	0			0	-	0	
			R	15	-	15	C	C	5	-	5		20	-	20	C	C	15	-	15	
		Total		2520	265	2785			1062	11	1073		2740	98	2838			2363	191	2554	
2	West Farms Road at Boston Road, East Tremont Ave	EB	L	15	-	15			7	-	7	Traffic much less than Build Traffic	10	-	10			9	-	9	Traffic less than Build Traffic
			T	317	-	317			143	-	143		416	-	416			374	-	374	
			R	56	-5	51	D	D	25	-	25		42	19	61	D	D	38	10	48	
		WB	L	164	-2	162			74	-	74	Traffic much less than Build Traffic	120	55	175			108	29	137	Traffic less than Build Traffic
			T	703	-	703			316	-	316		844	-	844			760	-	760	
			R	61	-	61	F	F	27	-	27		61	-	61	F	F	55	-	55	
		NB	L	15	1	16			5	-	5	Traffic much less than Build Traffic	5	1	6			4	-	4	Check LOS -- RT probably not critical
			T	56	19	75			18	-	18		41	4	45			31	15	46	
			R	155	239	394	E	F	51	9	60		213	33	246	E	E	160	155	315	
		NE-B	L	10	-	10			3	-	3	Traffic much less than Build Traffic	10	-	10			8	-	8	Traffic much less than Build Traffic
			T	316	30	346			104	2	106		340	11	351			255	8	263	
			R	5	2	7	F	F	2	-	2		5	4	9	F	F	4	3	7	
		SB	L	143	-	143	F	F	47	-	47	Traffic much less than Build Traffic	165	-	165	F	F	124	-	124	Traffic much less than Build Traffic
			T	77	-2	75			25	14	39		67	18	85			50	6	56	
			R	67	-1	66	F	F	22	-	22		82	3	85	E	F	62	-	62	
		Total		2160	281	2441			871	25	896		2421	148	2569			2040	226	2266	
3	West Farms Road at Rodman Place	EB	L	5	27	32			2	2	4	Traffic much less than Build Traffic	0	13	13			0	8	8	Traffic less than Build Traffic
			R	5	2	7	B	C	2	-	2		0	1	1	--	C	0	1	1	
		NB	L	5	-	5			2	-	2	Traffic much less than Build Traffic	5	2	7			4	1	5	Thru move unopposed, LOS OK
			T	221	210	431	A	A	73	6	79		259	18	277	A	A	194	157	351	
		SB	T	282	-14	268			93	14	107	OK no conflicting moves	214	48	262			161	18	179	OK no conflicting moves
			R	15	2	17	--	--	5	-	5		5	30	35	--	--	4	19	23	
		Total		533	227	760			177	22	199		483	112	595			362	204	566	
4	East 177th Street at Sheridan Expressway	EB	L	296	-6	290	E	E	133	-	133	Traffic much less than Build Traffic	309	16	325	D	E	278	6	284	Traffic less than Build Traffic
			T	88	-	88			40	-	40		127	-	127			114	-	114	
			R	5	-	5	A	A	2	-	2		5	-	5	A	A	5	-	5	
		WB	L	5	-	5			2	-	2	Traffic much less than Build Traffic	10	-	10			9	-	9	Traffic less than Build Traffic
			T	1617	-	1617	F	F	728	-	728		934	-	934	D	D	841	-	841	
			R	267	4	271	C	C	120	-	120		330	34	364	C	C	297	20	317	
		NB	L	5	-	5			2	-	2	Traffic much less than Build Traffic	10	-	10			8	-	8	Traffic less than Build Traffic
			T	20	-	20			7	-	7		26	-	26			20	-	20	
			R	10	-	10	D	E	3	-	3		26	-	26	D	D	20	-	20	
		SB	L	181	127	308			60	5	65	Traffic much less than Build Traffic	262	17	279			197	73	270	Traffic less than Build Traffic
			T	10	-	10	F	F	3	-	3		26	-	26	F	F	20	-	20	
			R	708	134	842	C	D	234	5	239		528	24	552	C	C	396	87	483	
		Total		3212	259	3471			1333	10	1343		2593	91	2684			2202	186	2388	
5	West Farms Road at Cross Bronx Expressway North Service Rd	NB	L	20	-	20			7	-	7	Traffic much less than Build Traffic	20	2	22			15	1	16	Should be close to LOS A -- Thru move probably not critical
			T	226	210	436	A	A	75	6	81		264	20	284	A	A	198	158	356	
		SB	T	272	-12	260			90	14	104	OK no conflicting moves	209	16	225			157	-	157	OK no conflicting moves
			R	15	-	15	--	--	5	-	5		5	33	38	--	--	4	19	23	
		Total		533	198	731			176	20	196		498	71	569			374	178	552	

Table S-6 (continued) - Proposed Project Impact Volume and LOS and Construction Impact Volume Comparison

6	Bronx River Ave at East 174th Street	EB	L	194	8	202			87	-	87	Traffic much less than Build Traffic	240	7	247			216	20	236	Traffic less than Build Traffic
			T	183	5	188			82	-	82		213	1	214			192	3	195	
			R	46	-	46	F	F	21	-	21		72	-	72	F	F	65	-	65	
		WB	L	77	-	77			35	-	35	Traffic much less than Build Traffic	72	-	72			65	-	65	Traffic less than Build Traffic
			T	282	-3	279	D	D	127	14	141		257	16	273	D	E	231	2	233	
			R	41	-	41	C	C	18	-	18		31	-	31	C	C	28	-	28	
		NB	L	164	-	164	B	B	54	-	54	Traffic much less than Build Traffic	230	-	230	C	D	173	-	173	Traffic less than Build Traffic
			T	220	-	220			73	-	73		291	-	291			218	-	218	
			R	31	-	31	B	B	10	-	10		36	-	36	B	B	27	-	27	
		SB	L	5	-	5			2	-	2	Traffic much less than Build Traffic	20	-	20			15	-	15	Traffic much less than Build Traffic
			T	143	-	143			47	-	47		179	-	179			134	-	134	
			R	285	-36	249	B	B	94	91	185		224	99	323	B	B	168	20	188	
		Total		1671	-26	1645			650	105	755		1865	123	1988			1532	45	1577	
7	Boone Ave at East 174th Street	EB	T	345	3	348			155	30	185	Traffic much less than Build Traffic	447	17	464			402	-	402	Traffic less than Build Traffic
			R	26	-16	10	B	A	12	60	72		36	27	63	B	B	32	-1	31	
		WB	L	312	-20	292	D	D	140	83	223	Traffic much less than Build Traffic	143	96	239	B	C	129	50	179	Traffic less than Build Traffic
			T	419	-9	410	B	A	189	-	189		568	15	583	B	B	511	1	512	
		SB	L	78	2	80			26	-	26		78	-	78			59	-	59	Traffic less than Build Traffic
			T	49	35	84			16	-	16	Traffic much less than Build Traffi	37	-7	30			28	-	28	
			R	26	-	26	D	D	9	-	9		31	-	31	D	C	23	-	23	
		Total		1255	-5	1250			546	173	719		1340	148	1488			1184	50	1234	
8	Longfellow Ave at East 174th Street	EB	L	31	-	31			14	-	14	Traffic much less than Build Traffic	102	-	102			92	-	92	Traffic less than Build Traffic
			T	228	-1	227	A	A	103	10	113		319	5	324	C	C	287	-	287	
		WB	T	425	-9	416			191	-	191	Traffic much less than Build Traffic	522	15	537			470	1	471	Traffic less than Build Traffic
			R	20	-	20	B	B	9	-	9		77	-	77	B	B	69	-	69	
		NB	L	42	-	42			14	-	14	Traffic less than Build Traffic	53	-	53			40	-	40	Traffic less than Build Traffic
			T	15	-	15			5	-	5		76	-	76			57	-	57	
			R	143	-12	131	F	F	47	80	127		164	39	203	F	F	123	-1	122	
		Total		904	-22	882			383	90	473		1313	59	1372			1138	-	1138	
9	West Farms Road at East 173rd Street	EB	L	72	92	164			32	2	34	Traffic much less than Build Traffic	41	-22	19			37	79	116	Check LT LOS
			R	59	16	75	D	F	27	27	54		47	18	65	E	E	42	25	67	
		NB	L	11	3	14			4	71	75	Traffic much less than Build Traffic -- check LT LOS	16	61	77			12	6	18	Traffic less than Build Traffic
			T	173	118	291	A	A	57	4	61		240	44	284	A	A	180	80	260	
		SB	T	240	7	247			79	5	84	OK no conflicting moves	164	10	174			123	5	128	Traffic much less than Build Traffic
			R	31	-19	12	--	--	10	9	19		42	6	48	--	--	32	-5	27	
		Total		586	217	803			209	118	327		550	117	667			426	190	616	
10	Boone Ave at East 173rd Street	EB	T	42	-14	28			19	4	23	Traffic less than Build Traffic	37	-19	18			33	-11	22	OK traffic similar to Build levels
			R	5	-1	4	C	C	2	-	2		15	1	16	B	B	14	-	14	
		WB	L	0	-	0			0	-	0	Check LOS	5	3	8			5	2	7	Traffic much less than Build Traffic
			T	42	-14	28	C	D	19	80	99		53	49	102	C	C	48	-1	47	
		SB	L	89	91	180			29	25	54	Traffic much less than Build Traffic	51	30	81			38	132	170	Check LT LOS
			T	215	-1	214			71	10	81		113	42	155			85	11	96	
			R	83	-11	72	A	A	27	-	27		52	-6	46	A	A	39	6	45	
		Total		476	50	526			168	119	287		326	100	426			261	139	400	
11	Longfellow Ave at East 173rd Street	EB	L	41	-	41			18	-	18	Traffic much less than Build Traffic	87	-	87			78	-	78	Traffic less than Build Traffic
			T	37	-2	35	A	A	17	3	20		42	4	46	A	A	38	-	38	
		WB	T	88	10	98			40	-	40	OK no conflicting moves	42	16	58			38	13	51	Traffic much less than Build Traffic
			R	37	2	39	--	--	17	80	97		63	41	104	--	--	57	-1	56	
		NB	L	15	-	15			5	-	5	Traffic much less than Build Traffic	10	-	10			8	-	8	Traffic less than Build Traffic
			T	122	-13	109			40	-	40		143	-2	141			107	-	107	
			R	10	-6	4	C	C	3	-	3		10	-	10	C	D	8	-	8	
		Total		350	-9	341			140	83	223		397	59	456			333	12	345	
12	West Farms Road at East 172nd Street	EB	L	30	59	89			14	-	14	Traffic much less than Build Traffic	36	17	53			32	19	51	OK traffic similar to Build levels
			R	46	5	51	C	D	21	-	21		31	19	50	B	C	28	12	40	
		NB	L	31	-7	24			10	10	20	Traffic much less than Build Traffic	15	23	38			11	2	13	Traffic much less than Build Traffic
			T	154	27	181	A	A	51	97	148		220	88	308	A	A	165	18	183	
		SB	T	248	20	268			82	-	82	OK no conflicting moves	195	3	198			146	23	169	Traffic less than Build Traffic
			R	51	2	53	--	--	17	2	19		16	4	20	--	--	12	-	12	
		Total		560	106	666			194	109	303		513	154	667			395	74	469	

Table S-6 (continued): Proposed Project Impact Volume and LOS and Construction Impact Volume Comparison

14	West Farms Road at Jennings Street	EB	L	36	-	36				16	-	16	Traffic much less than Build Traffic	31	-	31				28	-	28	Traffic less than Build Traffic
			R	82	-	82	C	C		37	-	37		72	-	72	B	C		65	-	65	
		NB	L	61	-6	55				20	-	20	OK traffic similar to build levels	5	-	5				4	-	4	Traffic much less than Build Traffic
			T	149	-9	140	A	A		49	105	154		204	119	323	A	A		153	23	176	
		SB	T	248	32	280				82	-	82	Traffic much less than Build Traffic	216	7	223				162	25	187	Traffic less than Build Traffic
			R	46	-	46	--	--		15	-	15		10	-	10	--	--		8	-	8	
		Total		622	17	639				219	105	324		538	126	664				419	48	467	
15	West Farms Road at Boone Ave	NB	T	210	-15	195				69	105	174	OK no conflicting moves	209	119	328				157	23	180	OK no conflicting moves
			R	10	-	10	--	--		3	-	3		31	-	31	--	--		23	-	23	
		SB	L	164	13	177				54	-	54	Traffic much less than Build Traffic	143	2	145				107	11	118	Traffic less than Build Traffic
			T	166	19	185	B	B		55	-	55		145	5	150	B	B		109	14	123	
		Total		550	17	567				182	105	287		528	126	654				396	48	444	
17	Westchester Ave at Sheridan Expressway Service Road, Whitlock Avenue	EB	T	528	-	528				238	-	238	Traffic much less than Build Traffic	644	-	644				580	-	580	Traffic less than Build Traffic
			R	82	-	82	C	C		37	-	37		36	-	36	C	C	C	32	-	32	
		WB	L	194	-	194				87	-	87	Traffic much less than Build Traffic	82	-	82				74	-	74	Traffic less than Build Traffic
			T	897	-8	889	E	E		362	43	405		640	48	688	B	B	B	576	9	585	
		SB	L	193	13	206				64	-	64	Traffic much less than Build Traffic	207	2	209				155	11	166	Traffic much less than Build Traffic
			T	552	-	552				182	-	182		343	-	343				257	-	257	
			R	368	-11	357	C	C		121	48	169		237	52	289	C	C	C	178	9	187	
		Total		2814	-6	2808				1091	91	1182		2189	102	2291				1852	29	1881	
18	West Farms Road at Home Street, Longfellow Ave (2)	NW-B (Home)	L	5	-	5				2	-	2	Check RT LOS probably not critical	5	-	5				5	-	5	Traffic much less than Build Traffic
			T	141	-	141				63	-	63		145	-	145				131	-	131	
			R	113	-19	94	F	E		51	91	142		117	100	217	F	F	F	105	18	123	
		NB (Longfel.)	L	30	-	30				10	-	10	Traffic much less than Build Traffic	30	-	30				23	-	23	Traffic much less than Build Traffic
			T	10	-	10				3	-	3		31	-	31				23	-	23	
			R	46	-	46	D	D		15	-	15		92	-	92	F	F	F	69	-	69	
		NE-B W.	L	20	-1	19				7	-	7	Traffic much less than Build Traffic	20	-	20				15	-	15	Traffic much less than Build Traffic
			T	86	-2	84	B	B		28	14	42		98	19	117	B	B	B	74	5	79	
		SW-B W.	T	100	19	119				33	-	33	Traffic much less than Build Traffic	124	5	129				93	14	107	Traffic much less than Build Traffic
			R	62	-	62	B	B		20	-	20		20	-	20	B	B	B	15	-	15	
		Total		613	-3	610				233	105	338		682	124	806				552	37	589	
19	West Farms Road at Freeman Street	EB	L	31	-	31				14	-	14	Traffic much less than Build Traffic	20	-	20				18	-	18	Traffic less than Build Traffic
			T	65	-	65				29	-	29		63	-	63				57	-	57	
			R	6	-	6	C	C		3	-	3		20	-	20	C	C		18	-	18	
		NB	T	189	-15	174				62	105	167	Traffic less than Build Traffic	220	119	339				165	23	188	Traffic much less than Build Traffic
			R	36	-	36	A	A		12	-	12		51	-	51	B	B		38	-	38	
		SB	T	156	19	175				51	-	51	Traffic much less than Build Traffic	124	5	129				93	14	107	Traffic less than Build Traffic
			R	10	-	10	A	A		3	-	3		21	-	21	A	A		16	-	16	
		Total		493	4	497				175	105	280		519	124	643				405	37	442	
21	Bronx Park Ave at East 177th Street	EB	T	280						126	5	131		350						315	73	388	Check LOS probably not critical
		WB	T	1475						664	-	664		1385						1247	20	1267	
		SB	L	71						23	-	23		205						154	-	154	
			R	503	-					166	-	166		335	-					251	-	251	
		Total		2329	-	0				979	5	984		2275	-	0				1967	93	2060	

INDICATES OVER 50 PCES in AM
INDICATES OVER 50 PCES in PM
INDICATES OVER 50 PCES in AM + PM

Notes: (1) 6-7 AM No Build Vehicles calculated from ATR Data:
Eastbound/Westbound vehicles are 45% of 7:30-8:30 AM traffic volumes.
Northbound/Southbound vehicles are 33% of 7:30-8:30 AM traffic volumes.
(2) 3:30-4:30 PM No Build Vehicles calculated from ATR Data:
Eastbound/Westbound vehicles are 90% of 4:30-5:30 PM traffic volumes.
Northbound/Southbound vehicles are 33% of 4:30-5:30 PM traffic volumes.
(3) Intersections 13, 16, and 20 are NOT included because they do not have over 50 PCEs in either offpeak construction period.

A review of the trip generation/trip assignment patterns of construction traffic indicates that 17 of the 20 study area intersections would process more than 50 PCE's during one or both of the peak construction hours (6 – 7 AM and 3:30 – 4:30 PM). One additional intersection on the edge of the study area would fall into this category. Table 6 shows a summary of the traffic and LOS conditions without and with the Proposed Action during the peak traffic hours (7:30 – 8:30 AM and 4:30 – 5:30 PM). The table also shows an estimate of the peak construction traffic which would occur earlier than the peak traffic hours and an assessment of the potential construction traffic impacts that may require further investigation.

Following is a list of 8 intersections that would have more than 50 PCE's in the morning construction peak and an assessment of the potential impacts:

#6 Bronx River Ave/E. 174th St. – an additional 91 PCE's on the SB approach would result in traffic volumes well below conditions with the Proposed Action; no further study is necessary.

#8 Longfellow Ave/E. 174th St. – an additional 80 PCE's on the NB approach would result in traffic volumes slightly below conditions with the Proposed Action; no further study is necessary.

#11 Longfellow Ave/E. 173rd St. – an additional 80 PCE's on the WB approach would result in traffic volumes greater than conditions with the Proposed Action; however there are no conflicting movements and the WB approach along with the overall intersection should continue to operate better than with the Proposed Action; no further study is necessary.

#14 West Farms Rd/Jennings St. – an additional 105 PCE's on the NB approach would result in traffic volumes slightly greater than conditions with the Proposed Action; however this approach should operate close to expected conditions with the Proposed Action (LOS A); no further study is necessary.

#15 West Farms Rd/Boone Ave. -- an additional 105 PCE's on the NB approach would result in traffic volumes somewhat below conditions with the Proposed Action; in addition there are no conflicting movements for this approach and the overall intersection should continue to operate better than with the Proposed Action; no further study is necessary.

#17 Westchester Ave/Sheridan Service Rd – an additional 91 PCE's would be processed on the WB and SB approaches; resulting traffic would be less than half of the levels with the Proposed Action; no further study is necessary.

#18 West Farms Rd/Home St. – an additional 91 PCE's on the NWB approach would result in traffic volumes that are greater than conditions with the Proposed Action; however the overall intersection would process only about one-half the levels with the Proposed Action and the affected movement would be a RT that is probably not critical; LOS analysis should be conducted for this intersection to verify extent of construction impacts.

#19 West Farms Rd/Freeman St. – an additional 105 PCE's on the NB approach would result in traffic volumes that would be slightly below conditions with the Proposed Action; no further study is necessary.

Following is a list of 6 intersections that would have more than 50 PCE's in the afternoon construction peak and an assessment of the potential impacts:

#1 East Tremont Ave/ E.177th St. – an additional 160 PCE's on the EB approach would result in traffic volumes on the RT movement that are somewhat greater than conditions with the Proposed Action; other approaches and the overall intersection would have less traffic than the Proposed Action; the EB RT movement is channelized and operates unopposed; no further study is necessary.

#2 West Farms Rd/Boston Rd. – an additional 155 PCE's on the NB approach would result in traffic volumes on the RT movement that are somewhat greater than conditions with the Proposed Action; other approaches and the overall intersection would have less traffic than the Proposed Action; LOS analysis should be conducted for this intersection to verify extent of construction impacts.

#3 West Farms Rd/Rodman Pl. -- an additional 157 PCE's on the NB approach would result in traffic volumes on the through movement that are somewhat greater than conditions with the Proposed Action; the NB through traffic is unopposed; no further study is necessary.

#4 East 177th St/Sheridan Expwy. -- an additional 73 PCE's on the SB approach would result in traffic volumes that would be slightly below conditions with the Proposed Action; no further study is necessary.

#5 West Farms Rd/Cross Bronx North Service Rd -- an additional 158 PCE's on the NB approach would result in traffic volumes that are greater than conditions with the Proposed Action; however this approach should operate close to expected conditions with the Proposed Action (LOS A); no further study is necessary.

#21 Bronx Park Ave/E. 177th St. – an additional 73 PCE's would be processed through the EB approach of this intersection; traffic and LOS analyses should be conducted for this intersection without and with the Proposed Action as well as the construction condition to identify the extent of potential construction traffic impacts during the PM period.

Following is a list of 4 intersections that would have more than 50 PCE's in the morning and afternoon construction peak periods and an assessment of the potential impacts:

#7 Boone Ave/E. 174th St. – more than 50 PCE's would be processed on the EB and WB approaches in the morning construction peak and on the WB approach in the afternoon construction peak; in all cases, resulting traffic volumes would be well below conditions with the Proposed Action; no further study is necessary.

#9 West Farms Rd/E. 173rd St. -- more than 50 PCE's would be processed on the NB approach in the morning construction peak and on the EB and NB approaches in the afternoon construction peak; traffic would be added to LT movements and may result in impacts; LOS analysis should be conducted for this intersection to verify extent of construction impacts.

#10 Boone Ave/E. 173rd St. -- more than 50 PCE's would be processed on the WB approach in the morning construction peak and on the SB approach in the afternoon construction peak; LOS analysis should be conducted for this intersection to verify extent of construction impacts.

#12 West Farms Rd/E. 172nd St. -- more than 50 PCE's would be processed on the NB approach in the morning construction peak and through the overall intersection in the afternoon construction peak; in all cases, resulting traffic volumes would be well below conditions with the Proposed Action; no further study is necessary.

In summary, this assessment indicates that potentially significant adverse traffic impacts would occur at the following intersections:

#18 West Farms Rd/Home St. – morning construction peak;

#21 Bronx Park Ave/E. 177th St. – afternoon construction peak;

#9 West Farms Rd/E. 173rd St. – morning and afternoon peaks;

#10 Boone Ave/E. 173rd St. – morning and afternoon peaks.

Further detailed analysis will be preformed between the Draft and Final EIS to specifically quantify the construction traffic impacts and to determine what mitigation measures, such as signal timing modification, daylighting and/or lane re-striping would mitigate the impacts. .

Preliminary Parking Assessment

The parking assessment considered the available parking in the area using the No Action condition as a base condition. The cordon in which the highest number of construction employees was found (Cordon 3, Week 240) was used for purposes of estimating the added parking demand due to construction employees. To be conservative, the overnight parking estimates of parking supply and demand for the No Action condition were used to represent the 6-7 AM peak hour. The estimates of mid-day parking No Action condition supply and demand in the parking study area were used for purposes of the mid-day assessment. The results of that analysis are displayed below, in Table S-7.

Table S-7: Parking Supply And Demand at the Peak Construction Cordon

	AM	Midday
Parking Study Area Capacity (1/4 mile radius)	4261	4207
No Action Demand	3293	3059
Construction Work Demand	237	237
Total Demand During Construction	3530	3296
Spaces Available During Construction (1/4 mile radius)	731	911

The parking supply and demand analysis for the peak construction period indicated there would be 731 and 911 available spaces in the 6-7 AM and mid-day periods, respectively, after accounting for the parking demand expected from construction employees. No parking impacts during construction are expected.

Preliminary Transit and Pedestrian Assessment

The analyses in Chapter 2.M. indicated no impacts would be expected for transit and pedestrians in the Action condition. To assess potential transit and pedestrian impacts during construction, the cordon in which the highest number of construction employees was found (Cordon 3, Week 240) was used for purposes of estimating the added transit and pedestrian trips due to construction employees. The estimated transit and pedestrian trips were then compared to the number of trips analyzed in the Action condition. The results of that analysis are presented below, in Table S-8.

Table S-8: Comparison of Peak Construction Bus, Subway and Walk Trips With the Proposed Action Peak Periods

	Bus	Subway	Walk
AM			
Construction Generated Person Trips	84	152	273
Project Generated Person Trips	459	820	1987
Difference	-375	-668	-1714
PM			
Construction Generated Person Trips	84	152	273
Project Generated Person Trips	663	1015	3548
Difference	-579	-863	-3275

Note: Construction trips in during AM and out during PM.

Walking Trips include Transit and Walk only Trips

The analysis showed that the construction bus, subway and walk trips would be substantially less than that for the Proposed Action, and because the Proposed Action analyses indicated no impacts on these facilities, no construction impacts would be expected on bus, subway or pedestrian facilities.

Preliminary Assessment of Air Quality and Noise

Air Quality

Actions to Minimize Impacts

Standard measures will be incorporated into the construction plans for the applicant-controlled properties to minimize potential impacts in accordance with all applicable laws, regulations, and building codes. All equipment will comply with applicable EPA regulations. To minimize fugitive dust emissions, vehicles on-site would be limited to a speed of 5 mph, and water would be used to wet working surfaces. Storage piles would be covered. Exposed areas will be stabilized after disturbance to minimize dust. Tracking pads will be established at construction exits to prevent dirt from being tracked onto roadways. Dust associated with demolition activities will be controlled with misting systems. Construction areas would be surrounded by perimeter fencing that would help contain fugitive dust emissions. Emission reduction and related construction measures will be included in the specifications of the construction contracts.

As discussed in more detail below, the construction of Site 2N, due to its relatively long construction period (2.5 years), has the potential to have a significant adverse impact on air quality with respect to the residential units to be constructed on Site 2S. To minimize the potential for impacts, the applicant has

agreed to implement a diesel particulate matter (DPM) emissions reduction program during construction of the LSGD that would include best management practice comprised of the following components:

1. *Diesel Equipment Reduction*. Construction on Site 2N would minimize the use diesel engines and maximize the use of electric engines where practical.
2. *Clean Fuel*. Ultra-low sulfur diesel fuel (ULSD) would be used exclusively for diesel engines throughout Site 2N. This would enable the use of tailpipe reduction technologies (see below) and would directly reduce DPM and sulfur oxides (SOx) emissions.
3. *Best Available Tailpipe Reduction Technologies*. Nonroad diesel engines with a power rating of 50 hp or greater and controlled truck fleets (i.e., truck fleets under long-term contract, such as concrete mixing and pumping trucks) would utilize the best available tailpipe reduction technology for reducing DPM emissions, such as diesel particle filters (DPFs).
4. *Utilization of Tier 2 or Newer Equipment*. In addition to the tailpipe controls commitments, the construction program would mandate the use of Tier 2 or later construction equipment for nonroad diesel engines greater than 50 hp.
5. *Location of Equipment*. In order to minimize their effects, some emissions sources such as concrete trucks and pumps would be located away from Site 2S to the extent practicable.
6. *Fugitive Dust.* The fugitive dust control plans described in the preceding paragraph would be required as part of contract specifications.
7. *Idle Times*. Restrictions would be placed on on-site vehicle idle times for all vehicles not using the engine to operate a loading, unloading, or processing device (e.g., concrete mixing trucks) in compliance with applicable laws.
8. *Compliance*. In addition, the applicant would take such additional measures to reduce pollutant emissions during construction of the proposed development on Site 2N as are required under all applicable laws, regulations and building codes.

Between completion of the Draft and Final EIS, the applicant will conduct a PM2.5 particulate analysis and a cumulative analysis for development sites with concurrent construction as that for Site 2N. The emissions reduction practices determined to be necessary to avoid a significant adverse air quality impact would be ensured through the LSGD restrictive declaration.

Potential for Impacts

The potential for impacts includes the cumulative effect of construction-related vehicles and equipment when multiple sites are under evaluation at the same time. For trucks and autos, the accumulation of trips on a given roadway segment accounts for the one way traffic on Boone Avenue (SB) and Longfellow Avenue (NB). As a worst case assumption, the analysis assumes that all arriving employees' vehicles would travel on West Farms Road and then turn towards Boone Avenue at the most convenient side street. For construction sites on a corner, departing vehicles would return via the same side street that they arrived on. This means that no vehicles would travel on Jennings Avenue. For construction sites that are mid-block on Boone Avenue, the departing vehicles would travel south to the nearest side street leading to West Farms Road.

The Building Exterior and Building Interior finishes phases have the least potential for air quality impacts. This is due to the relatively low volume of hourly truck trips and the fact that no diesel equipment would be on site during these phases; only an electric hoist would be used.

Employee vehicles. Based on the NYC *CEQR Technical Manual*, actions resulting in 170 or more auto trips through an intersection in the Bronx may require further analysis. Employee vehicles would arrive in

the morning and depart in the afternoon. Forty-six percent of the employees would arrive by car, and each car would have an average of 1.02 persons. They would occur before and after the hours when construction trucks would be active.

In reviewing the cumulative employee vehicles for the buildings under construction in Cordons 4 through 9, only Cordon 8.1 has the potential to exceed 170 vehicles. However, the vehicles would be distributed on several roadway segments, as shown in Table S-9. Table S-9 shows that no roadway segments would reach or exceed the 170-vehicle threshold. In addition, cumulative employee vehicles were tabulated for Air and Noise Cordons 10 and 15; they did not show potential to exceed 170 vehicles.

Road closings. No need for road closings is anticipated.

Truck traffic. NYCDEP has developed a screening analysis for potential $PM_{2.5}$ impacts based on exhaust emissions from heavy duty diesel-powered vehicles for 2008. A more detailed analysis is required if the proposed action would add emissions from trucks or mixed traffic that would be equivalent to the 2008 emissions from the volumes of heavy duty diesel vehicles (HDDV) listed below.

- 12 HDDV for paved roads with <5,000 vehicles/day,
- 19 HDDV for collector-type roads,
- 23 HDDV for principal and minor arterial roads, and
- 23 HDDV for expressways and limited-access roads.

Table S-9: Distribution of Employees' Vehicles for Air and Noise Cordons 8.1 and 8.2

Cordon	Sites/ Building Type	Construction Activities	Affected Roadways	Duration (Weeks)	Employee Vehicles
8.1	3D(A)	BI			23
	3A (A)	BI			23
	4A (A)	BE,BI			34
	5E (A)	BE,BI			34
			E. 173rd, Boone-West Farms	6	113
8.1	3A (A)	BI			23
	5E (A)	BE,BI			34
			E. 173rd, Boone-Longfellow	6	56
8.1	3A (A)	BI			23
	3D (A)	BI			23
Total			Boone, E. 172nd-E. 173rd	6	46
8.1	4A (A)	BE,BI			34
	5E (A)	BE,BI			34
			Boone, E. 173rd-E. 174th	6	68
8.1	2S (F)	S,BI,BE			23
	3D (A)	BI	E. 172nd, Boone-W. Farms	6	23
					46

Source: Sandstone Environmental Associates and Stantec Consulting

West Farms Road, a minor arterial, is a designated truck route. The screening threshold for an arterial is 23 trucks. All trucks would travel on West Farms Road and turn onto the nearest cross street to reach the construction sites. Truck traffic on West Farms Road would exceed an hourly volume of 23 vehicles only for cordon 6. This would occur for nine weeks which would therefore be only a short-term impact.

For the relevant segments of Boone Avenue and the cross streets, the roadway designations and thresholds are as follows:

- Boone Avenue, 174th Street to Jennings Street — Local street — 12 HDDV
- E. 173rd Street — Longfellow Ave. – West Farms Rd. — Local street — 12 HDDV
- E. 172nd Street — Longfellow Ave. – West Farms Rd. — Collector — 19 HDDV

Air and Noise Cordons 5 through 8.2 have the potential to exceed 12 truck trips per hour. Table S-10 shows a breakdown of average truck trips per hour on each of the affected roadway segments for these cordons. E. 173rd Street between Boone Avenue and West Farms Road is the only segment likely to exceed the threshold value for hourly truck trips. This would occur for the three-week period for Air and Noise Cordon 7, which would be a short-term impact.

In addition, truck trips were tabulated for Air and Noise Cordons 10 and 15. Although these cordons have the potential to exceed 12 truck trips per hour, none would exceed 12 truck trips per hour on an affected interior roadway segment.

Table S-10: Average Hourly Truck Trips for Air and Noise Cordons 5 through 8.1

Cordon	Sites/ Building Type	Building Activity	Daily Trucks			Affected Roadways	Cate-gory	Threshold
			One Way	Total Trips	Average Hourly Trips			
5	3D (A)	Ex	18	18	3.0			
	3A (A)	U,S	8	16	2.7			
Total			26	34	5.7	E. 173rd, Boone-W. Farms	Local	12
5	3A (A)	U,S	8	8	1.3			
	3D (A)	Ex	18	18	3.0			
Total			26	26	4.3	Boone, E. 172nd-E. 173rd	Local	12
5	1 (G)	BI	7	7	1.2	Boone, Jennings-E. 172nd	Local	12
5	2N (G)	Ex,F	11	22	3.7			
	3A (A)	U,S	8	16	2.7			
Total			19	38	6.3	E. 173rd, Boone-Longfellow	Local	12
5	2S (F)	D	11	22	3.7			
	3D (A)	Ex	18	18	3.0			
	1 (G)	BI	7	14	2.3			
Total			36	54	9.0	E. 172nd, Boone-W. Farms	Collector	19
6	3A (A)	BE, BI	7	14	2.3			
	4A (A)	Ex	17	34	5.7			
	3D (A)	U,S,BE	12	12	2.0			

Cordon	Sites/ Building	Building Activity	Daily Trucks			Affected Roadways	Cate-gory	Threshold
Total			36	60	10.0	E. 173rd, Boone-W. Farms	Local	12
6	3A (A)	BE, BI	7	14	2.3	E. 173rd, Boone-Longfellow	Local	12
	3D (A)	U,S,BE	12	12	2.0			
	3A (A)	BE, BI	7	7	1.2			
Total			19	19	3.2	Boone, E. 172nd-E. 173rd	Local	12
6	2S (F)	S	6	12	2.0			
	3D (A)	U,S,BE	12	12	2.0			
	1 (G)	BI	7	14	2.3			
Total			25	38	6.3	E. 172nd, Boone-W. Farms	Collector	19
6	4A (A)	Ex	17	17	2.8	Boone, E. 173rd-E. 174th	Local	12
7	3D (A)	BE,BI	7	7	1.2			
	3A (A)	BI	4	8	1.3			
	4A (A)	S,BE,BI	13	26	4.3			
	5E (A)	Ex,F	23	46	7.7			
Total			47	87	14.5	E. 173rd, Boone-W. Farms	Local	**12**
7	3A (A)	BI	4	8	1.3			
	5E (A)	Ex,F	23	46	7.7			
			27	54	9.0	E. 173rd, Boone-Longfellow	Local	12
	3A (A)	BI	4	4	0.7			
	3D (A)	BE,BI	7	7	1.2			
Total			11	11	1.8	Boone, E. 172nd-E. 173rd	Local	12
7	4A (A)	S,BE,BI	13	13	2.2			
	5E (A)	Ex,F	23	23	3.8			
			36	36	6.0	Boone, E. 173rd-E. 174th	Local	12
7	2S (F)	S	6	12	2.0			
7	3D (A)	BE,BI	7	7	1.2			
			13	19	3.2	E. 172nd, Boone-W. Farms	Collector	19
8	3D (A)	BE,BI	7	7	1.2			
	3A (A)	BI	4	8	1.3			
	4A (A)	BE,BI	7	14	2.3			
	5E (A)	BS	6	12	2.0			
Total			24	41	6.8	E. 173rd, Boone-W. Farms	Local	12
8	3A (A)	BI	4	8	1.3			
	3D (A)	BE,BI	7	7	1.2			
Total			11	15	2.5	Boone, E. 172nd-E. 173rd	Local	12
8	3A (A)	BI	4	8	1.3			
	5E (A)	BS	6	12	2.0			
			10	20	3.3	E. 173rd, Boone-Longfellow	Local	12
8	4A (A)	BE,BI	7	7	1.2			
	5E (A)	BS	6	6	1.0			
			13	13	2.2	Boone, E. 173rd-E. 174th	Local	12

Cordon	Sites/ Building	Building Activity	Daily Trucks			Affected Roadways	Cate-gory	Threshold
8	2S (F)	S,BI	12	24	4.0			
8	3D (A)	BE,BI	7	7	1.2			
			19	31	5.2	E. 172nd, Boone-W. Farms	Collector	19
8.1	3D (A)	BI	4	4	0.7			
	3A (A)	BI	4	8	1.3			
	4A (A)	BE,BI	7	14	2.3			
	5E (A)	BE,BI	7	14	2.3			
Total			22	40	6.7	E. 173rd, Boone-W. Farms	Local	12
8.1	3A (A)	BI	4	8	1.3			
	5E (A)	BE,BI	7	14	2.3			
			11	22	3.7	E. 173rd, Boone-Longfellow	Local	12
8.1	3A (A)	BI	4	8	1.3			
	3D (A)	BI	4	4	0.7			
Total			8	12	2.0	Boone, E. 172nd-E. 173rd	Local	12
8.1	4A (A)	BE,BI	7	7	1.2			
	5E (A)	BE,BI	7	7	1.2			
			14	14	2.3	Boone, E. 173rd-E. 174th	Local	12
8.1	2S (F)	S,BI,BE	17	34	5.7			
8.1	3D (A)	BI	4	4	0.7			
			21	38	6.3	E. 172nd, Boone-W. Farms	Collector	19
	3D (A)	BI	4	4	0.7			
	3A (A)	BI	4	8	1.3			
	4A (A)	BI	4	8	1.3			
	5E (A)	BE,BI	7	14	2.3			
Total			19	34	5.7	E. 173rd, Boone-W. Farms	Local	12

Numbers in bold type exceed the truck threshold for PM2.5 screening.

Source: Stantec Consulting and Sandstone Environmental Associates, Inc.

On-site fugitive dust and exhaust emissions. On-site speeds would be limited to 5 mph, and the surfaces would be watered periodically. Under these conditions, fugitive PM2.5 emissions from moving vehicles would be negligible, and PM10 emissions from moving vehicles would be reduced by 50%. Storage piles would be covered with tarps. Fencing around the perimeter of the development sites would help contain fugitive dust to the construction site.

Potential impacts from fugitive dust and exhaust would occur primarily on adjacent sites. Table S-11 shows the sources on each active construction site and the locations of adjacent sensitive receptors for Air and Noise Cordons 4 through 9. The potential for impacts during the Building Interior and Building Exterior stages would be minimal because: 1) the only major on-site equipment would be a stationary electric hoist, and 2) the mobile sources on-site would be an average of two trucks per hour during these construction stages.

Table S-11: On-Site Truck Trips and Diesel Equipment by Air and Noise Cordon

Cordon	Sites/ Building Type	Activi-ties	Hourly Truck Trips	Mobile Equipment On-Site (#)	Diesel Equipment On-Site (#)	Adjacent Residential Uses
4	1 (G)	BI		0	0	Corner Boone Ave. & E. 172nd St.
	3A (A)	D		2	2	Longfellow; Ave., E. 172nd-E. 173rd Sts.
Total			6	2	2	
5	2S (F)	D		2	2	Corner Boone Ave. & E. 172nd St.
	3A (A)	U,S		4	5	Longfellow; Ave., E. 172nd-E. 173rd Sts.
	3D (A)	Ex		2	2	Longfellow; Ave., E. 172nd-E. 173rd Sts.
	1 (G)	BI		0	0	Corner Boone Ave. & E. 172nd St.
Total			15	8	9	
6	2S (F)	S		4	4	Corner Boone Ave. & E. 172nd St.
	3A (A)	BE, BI		0	0	Longfellow; Ave., E. 172nd-E. 173rd Sts.
	3D (A)	U,S,BI		4	4	Longfellow; Ave., E. 172nd-E. 173rd Sts.
	1 (G)	BI		0	0	Corner Boone Ave. & E. 172nd St.
	4A (A)	Ex		2	2	No adjacent homes
Total			16	10	11	
7	2S (F)	S		4	4	Corner Boone Ave. & E. 172nd St.
	3A (A)	BI		0	0	Longfellow; Ave., E. 172nd-E. 173rd Sts.
	3D (A)	BE,BI		0	0	Longfellow; Ave., E. 172nd-E. 173rd Sts.
	4A (A)	S,BE,BI		3	4	No adjacent homes
	5E (A)	Ex,F		2	2	Longfellow; Ave., E. 173nd-E. 174th Sts.
Total			18	9	10	
8	2S (F)	S, BI		4	4	Corner Boone Ave. & E. 172nd St.
	3A (A)	BI		0	0	Longfellow; Ave., E. 172nd-E. 173rd Sts.
	3D (A)	BE,BI		0	0	Longfellow; Ave., E. 172nd-E. 173rd Sts.
	4A (A)	BE,BI		0	0	No adjacent homes
	5E (A)	S		3	4	Longfellow; Ave., E. 173nd-E. 174th Sts.
Total			12	7	8	
8.1	2S (F)	S,BI,BE		3	4	Corner Boone Ave. & E. 172nd St.
	3A (A)	BI		0	0	Longfellow; Ave., E. 172nd-E. 173rd Sts.
	3D (A)	BI		0	0	Longfellow; Ave., E. 172nd-E. 173rd Sts.
	4A (A)	BE,BI		0	0	No adjacent homes
	5E (A)	BE,BI		0	0	Longfellow; Ave., E. 173nd-E. 174th Sts.
Total			13	3	4	
8.2	2S (F)	S,BI,BE		3	4	Corner Boone Ave. & E. 172nd St.
	3A (A)	BI		0	0	Longfellow; Ave., E. 172nd-E. 173rd Sts.
	3D (A)	BI		0	0	Longfellow; Ave., E. 172nd-E. 173rd Sts.
	4A (A)	BI		0	0	No adjacent homes
	5E (A)	BE,BI		0	0	Longfellow; Ave., E. 173nd-E. 174th Sts.
Total			12	3	4	

9	2S (F)	S,BE,BI		3	4	Corner Boone Ave. & E. 172nd St.
	3A (A)	BI		0	0	Longfellow; Ave., E. 172nd-E. 173rd Sts.
	3D (A)	BI		0	0	Longfellow; Ave., E. 172nd-E. 173rd Sts.
	4A (A)	BI		0	0	No adjacent homes
	5E (A)	BI		0	0	Longfellow; Ave., E. 173nd-E. 174th Sts.
Total			11	3	4	

Source: Stantec Consulting and Sandstone Environmental Associates, Inc.

Building 1 would be in the final weeks of the BI stage during cordons 4, 5, and 6. It is across the street from the homes at the corner of Boone Avenue and E. 172nd Street and adjacent to the school on the south. No diesel equipment would be on-site, and an average of two trucks per hour would visit the site. With the building largely complete and covering most of the site, truck deliveries and pick-ups would be limited to a point near the street. Trucks would not cross the site and kick up fugitive dust. Thus, potential air quality impacts from this site would be minimal.

Site 2S would be in the Demolition construction stage in Air and Noise Cordon 5 (Week 119) and would reach the Building Interior stage in Air and Noise Cordon 11 (Week 189). The adjacent sites to the north and west are development sites in industrial use, and they are therefore not included as sensitive receptors. To the east are West Farms Road and the Sheridan Expressway, which are not sensitive receptors. To the southwest are the homes at the corner of Boone Avenue and E. 172nd Street. Any potential impacts on this residential area from Site 2S would last approximately 70 weeks, from Air and Noise Cordon 5 to Air and Noise Cordon 11, and they would be short-term in nature. Building 1 directly south of Site 2S would be occupied by Air and Noise Cordon 8 (Week 140). Any potential impacts to Building 1 would last about 49 weeks, and would be short-term. Site 3D, which is across the street from Site 2S, would be occupied by Air and Noise Cordon 11 (Week189). Minimal impacts are anticipated for this building because Site 2S would be in the Building Interior stage.

Site 3A would begin demolition in Air and Noise Cordon 4 and would reach Building Exterior and Building Interior finishes by Air and Noise Cordon 6 nineteen weeks later. Any potential impacts would occur to the residential units on the northern portion of Longfellow Avenue between E. 172nd and E. 173rd Streets. No other development site would affect this receptor location before Site 3A reaches the Building Exterior and Building Interior stages. Any impacts would be short-term in nature.

Site 3D does not become active until Air and Noise Cordon 5. It could potentially cause impacts to the residential units on the southern portion of Longfellow Avenue between E. 172nd and E. 173rd Streets. No other development sites would affect these sensitive receptors while Site 3D is active. Truck trips and on-site equipment would be highest for this site from Air and Noise Cordons 5 through 6, a period of 18 weeks. After this, the site would be in the Building Exterior and Building Interior finishes stage, when no diesel or mobile equipment would be on-site, and truck pick-ups and deliveries would average two per hour. Based on this information, any potential impacts during Air and Noise Cordons 5 through 6 would be short-term. No impacts are likely after Air and Noise Cordon 6.

Site 4A is surrounded by industrial sites that are likely to be redeveloped, and they are therefore not considered sensitive receptors. It would be completed before they become new sensitive receptors. Site 4A would be in construction from cordon 6 through Air and Noise Cordon 9, but it would reach the Building Exterior and Building Interior finishes stages after 26 weeks (Air and Noise Cordon 8.2). Any potential air quality impacts during this period would be considered short-term. However, no temporary impacts to sensitive receptors are anticipated because none are adjacent to the site.

Site 5E would start development shortly before Air and Noise Cordon 7, a time when Site 3A would be in the Building Exterior and Building Interior finishes stage. Thus, Site 5E is the only one likely to affect residences on Longfellow Avenue between E. 173rd and E. 174th Streets. This site would reach the Building Exterior and Building Interior finishes stage by Air and Noise Cordon 9, a period of 23 weeks. Thus, any potential impacts to adjacent residences would be short-term.

Air and Noise Cordons 10 and 15 also were evaluated. In Air and Noise Cordon 10, most of the buildings under construction would be in the Building Exterior and Interior phases. Only Site 4B would be in an earlier stage. It would be undergoing demolition, but it would not be adjacent to any residential sites.

During Air and Noise Cordon 15, of the buildings that would be in earlier stages, Site 5D would be in the Excavation state. It is adjacent to homes on Longfellow Avenue, but would reach the Building Interior stage within 6 weeks. Site 3E would be in the Utility and Building Superstructure stage, but would be in the Building Interior stage within 39 weeks. It is adjacent to homes on Longfellow Avenue and E. 172nd Street. Site 2N would be in the Demolition stage. It would reach the Building Interior stage by Air and Noise Cordon 20.1 about 63 weeks later. With the exception of Site 2N, any potential impacts to adjacent residences would be temporary impacts lasting less than one year.

Due to its longer construction period when diesel equipment would be operating at the site, (70 weeks), the construction of Site 2N may have a significant adverse impact on air quality at the completed residential units facing it on Site 2S. Accordingly, for this site, a more rigorous approach to reducing DPM emissions would be carried out as discussed previously in the section on Actions to Minimize Impacts. The proposed DPM measures would be sufficient to prevent significant adverse air quality impacts because they were incorporated as part of a detailed construction analysis for the Fordham University Lincoln Center Master Plan EIS, and the Proposed Action for the Crotona Rezoning would have a lower emissions intensity than the Fordham University Lincoln Center Master Plan as described below.

Emissions intensity is the pollutant emission rate per square foot for a construction area. The emissions from all construction sources for a given pollutants, such as PM2.5, are summed and divided by the square footage of the area to determine an emissions intensity in lbs/day/square foot. The emissions intensity for Parcel 2N was calculated for the 24-hour and annual averaging periods and compared with the Fordham University Lincoln Center Master Plan

For the Fordham EIS, the projected worst-case construction period was for the construction of Sites 4 and 5/5a. PM2.5 emissions from construction were expected to be greatest during a 12-month period when the Excavations and Foundations construction stage was underway. The Fordham analysis included engine exhaust from diesel-powered equipment, fugitive dust from on-site trucks and equipment, and truck exhaust emissions, and fugitive dust from on-site processing, loading and unloading activities. An 8- or 11-hour day was used, with the 11-hour shift every other day. The work week was assumed to be primarily 5 days per week but some weekend work was included in the calculations. AERMOD was used to model PM2.5 concentrations at the fenceline of the site, on a 7-foot wide sidewalk, and at nearby residential buildings 20 feet from the construction site. The Fordham analysis concluded that no significant adverse air quality impacts would occur.

The emissions intensity that can be calculated for the construction scenario described above is $1.48E^{-05}$ lbs/day/ft^2 for the short-term averaging period and $7.54E^{-06}$ lbs/day/ft^2 for the annual averaging period. This is based on a construction area for Sites 4 and 5/5a that totals 60,900 square feet. The buildings on Sites 4, 5a, and 5 would reach heights of 661 feet, 155 feet, and 381 feet, respectively.

Parcel 2N for the Crotona Rezoning EIS is 60,000 sq. ft., which is similar in surface area to the Fordham sites analyzed. However, it would be developed with three buildings that are smaller than the ones envisioned for Fordham. They would reach maximum heights of 100 to 171 feet, and would require less

on-site construction activity. An emissions intensity was calculated for Parcel 2N based on the construction stages over the worst-case 12-month period. The analysis included PM2.5 due to on-site fugitive dust and exhaust emissions. An 8-hour, six-day workweek was assumed as a worst-case analysis.

The emissions intensity calculated for Parcel 2N was 1.44^{-05} lbs/day/ft^2 for the peak 24-hour averaging period and $3.77E^{-06}$ lbs/day/ft^2 for the annual averaging period. This is lower than the emissions intensities calculated for the Fordham EIS. Therefore, the construction best management practices adopted for Fordham would be sufficient to prevent potential construction air quality impacts for the Crotona Rezoning.

Between completion of the Draft and Final EIS, the applicant will conduct a PM2.5 particulate analysis and a cumulative analysis for development sites with concurrent construction as that for Site 2N. The emissions reduction practices determined to be necessary to avoid a significant adverse air quality impact would be ensured through the LSGD restrictive declaration.

Noise

Actions to Minimize Impacts

For noise, mitigation measures would comply with Title 15 of the Rules of the City of New York, Chapter 28, Citywide Construction Noise Mitigation, which specifies requirements for a Construction Noise Mitigation Plan, required noise mitigation measures for general construction, and additional measures to be taken if DEP receives noise complaints concerning a construction site. Additional measures may include use of temporary barriers to help shield sensitive receptors from potential noise impacts. These barriers are required to be constructed of sufficiently massive material to achieve a sound transmission class (STC) rating of 30 or greater. The actual insertion loss achieved by the barrier under field conditions, however, may be lower at nearby sensitive receptors due to limits on the height of the barriers –- generally about 20 feet. However, the analysis in this chapter does not assume the use of barrier mitigation.

In addition, to help minimize potential annoyance from back-up alarms, truck routes within the applicant's sites would have one-way patterns, whenever possible, to reduce the need for backing up. For both applicant and non-applicant sites, the assumption is that trucks would avoid traveling on Boone Avenue, which is a one-way street. They would travel on West Farms Road until reaching the nearest cross street to a site on Boone Avenue. Some air quality mitigation measures that reduce the use of diesel equipment, such as activating the electrical grid during a building's superstructure, would also reduce equipment noise levels.

Potential for Impacts

The potential for noise impacts includes the cumulative effect of construction-related vehicles and equipment when multiple sites are undergoing redevelopment at the same time. Since the quantity of on-site construction equipment for each construction phase is the same for all seven building types, the potential noise levels are the same. However, the construction phases may overlap, in which case, additional equipment may be on-site at any given time. The Building Exterior and Building Interior phases have the least potential to cause noise impacts due to the relatively low volume of hourly trucks and the presence of the electric hoist, which is quieter than diesel-powered equipment.

Road closings. No need for road closings is anticipated.

Employee vehicles. Employees' vehicles would occur before and after the hours when construction trucks would be active. The highest number of vehicles from employees is 180, which would occur during Air and Noise Cordon 8.1 on West Farms Road. The more detailed breakdown in Table S-9 shows a

maximum of 113 vehicles on E. 173rd Street between Boone Avenue and West Farms Road. These additional employee vehicles would not be sufficient to cause a doubling of PCEs on the affected roadways.

Truck traffic on roadways. Hourly truck trips would be highest during cordons 5 through 8.1. Table S-12 shows the distribution of truck trips by roadway segment and the potential increase in PCEs for these worst-case cordons. The truck PCEs were added to the PCEs from traffic observed during noise monitoring periods for mid-block locations, most of which occurred during quieter, off-peak periods. The table shows that the construction truck trips would cause a potential increase of 3.2 dBA on E. 173rd Street between Boone Avenue and West Farms Road during Air and Noise Cordon 7, a period of 3 weeks. All other projected increases in noise are below 3.0 dBA. A review of truck trips for Air and Noise Cordons 10 and 15 showed no potential for noise level increases of 3 dBA or more.

Table S-12: Hourly Truck Trips and PCEs for Air and Noise Cordons 5 through 7

Cordon	Sites/ Building Type	Activities	Hourly Truck Trips	Hourly Truck PCEs	Affected Roadways	Existing PCEs	Noise Increase (dBA)
5	3D (A)	Ex	3.0	141			
	3A (A)	U,S	2.7	125			
Total			5.7	266	E. 173rd, Boone-W. Farms	634	1.5
5	3A (A)	U,S	1.3	63			
	3D (A)	Ex	3.0	141			
Total			4.3	204	Boone, E. 172nd-E. 173rd	924	0.9
5	1 (G)	BI	1.2	55	Boone, Jennings-E. 172nd	277	0.8
5	2N (G)	Ex,F	3.7	172			
	3A (A)	U,S	2.7	125			
Total			6.3	298	E. 173rd, Boone-Longfellow	932	1.2
5	2S (F)	D	3.7	172			
	3D (A)	Ex	3.0	141			
	1 (G)	BI	2.3	110			
Total			9.0	423	E. 172nd, Boone-W. Farms	881	1.7
6	3A (A)	BE, BI	2.3	110			
	4A (A)	Ex	5.7	266			
	3D (A)	U,S,BE	2.0	94			
Total			10.0	470	E. 173rd, Boone-W. Farms	634	2.4
6	3A (A)	BE, BI	2.3	110	E. 173rd, Boone-Longfellow	932	0.5
	3D (A)	U,S,BE	2.0	94			
	3A (A)	BE, BI	1.2	55			
Total			3.2	149	Boone, E. 172nd-E. 173rd	924	0.6
6	2S (F)	S	2.0	94			
	3D (A)	U,S,BE	2.0	94			
	1 (G)	BI	2.3	110			

Cordon	Sites/ Building Type	Activities	Hourly Truck Trips	Hourly Truck PCEs	Affected Roadways	Existing PCEs	Noise Increase (dBA)
Total			6.3	298	E. 172nd, Boone-W. Farms	881	1.3
6	4A (A)	Ex	2.8	133	Boone, E. 173rd-E. 174th	1500	0.4
7	3D (A)	BE,BI	1.2	55			
	3A (A)	BI	1.3	63			
	4A (A)	S,BE,BI	4.3	204			
	5E (A)	Ex,F	7.7	360			
Total			14.5	682	E. 173rd, Boone-W. Farms	634	3.2
7	3A (A)	BI	1.3	63			
	5E (A)	Ex,F	7.7	360			
			9.0	423	E. 173rd, Boone-Longfellow	932	1.6
	3A (A)	BI	0.7	31			
	3D (A)	BE,BI	1.2	55			
Total			1.8	86	Boone, E. 172nd-E. 173rd	924	0.4
7	4A (A)	S,BE,BI	2.2	102			
	5E (A)	Ex,F	3.8	180			
			6.0	282	Boone, E. 173rd-E. 174th	1500	0.7
7	2S (F)	S	2.0	94			
7	3D (A)	BE,BI	1.2	55			
			3.2	149	E. 172nd, Boone-W. Farms	881	0.7
8	3D (A)	BE,BI	1.2	55			
	3A (A)	BI	1.3	63			
	4A (A)	BE,BI	2.3	110			
	5E (A)	BS	2.0	94			
Total			7.0	321	E. 173rd, Boone-W. Farms	634	1.8
8	3A (A)	BI	0.6	63			
	3D (A)	BE,BI	1.2	55			
Total			1.8	118	Boone, E. 172nd-E. 173rd	924	0.4
8	3A (A)	BI	1.3	63			
	5E (A)	BS	2.0	94			
			3.3	157	E. 173rd, Boone-Longfellow	932	0.7
8	4A (A)	BE,BI	1.2	55			
	5E (A)	BS	1.0	47			
			2.2	102	Boone, E. 173rd-E. 174th	1500	0.3
8	2S (F)	S,BI	4.0	188			
8	3D (A)	BE,BI	1.2	55			
			5.2	243	E. 172nd, Boone-W. Farms	881	1.1

Cordon	Sites/ Building Type	Activities	Hourly Truck Trips	Hourly Truck PCEs	Affected Roadways	Existing PCEs	Noise Increase (dBA)
8.1	3D (A)	BI	0.7	31			
	3A (A)	BI	1.3	63			
	4A (A)	BE,BI	2.3	110			
	5E (A)	BE,BI	2.3	110			
Total			7.0	313	E. 173rd, Boone-W. Farms	634	1.7
8.1	3A (A)	BI	1.3	63			
	5E (A)	BE,BI	2.3	110			
			3.7	172	E. 173rd, Boone-Longfellow	932	0.7
8.1	3A (A)	BI	0.6	63			
	3D (A)	BI	0.7	31			
Total			1.3	94	Boone, E. 172nd-E. 173rd	924	0.3
8.1	4A (A)	BE,BI	1.2	55			
	5E (A)	BE,BI	1.2	55			
			2.3	110	Boone, E. 173rd-E. 174th	1500	0.3
8.1	2S (F)	S,BI,BE	5.7	266			
8.1	3D (A)	BI	0.7	31			
			6.3	298	E. 172nd, Boone-W. Farms	881	1.3
8.1	3D (A)	BI	0.7	31			
	3A (A)	BI	1.3	63			
	4A (A)	BI	1.3	63			
	5E (A)	BE,BI	2.3	110			
Total			6.0	266	E. 173rd, Boone-W. Farms	634	1.5
8.2	3A (A)	BI	1.3	63			
	5E (A)	BE,BI	2.3	110			
			3.7	172	E. 173rd, Boone-Longfellow	932	0.7
8.1	3A (A)	BI	0.6	63			
	3D (A)	BI	0.7	31			
Total			1.3	94	Boone, E. 172nd-E. 173rd	924	0.3
8.2	4A (A)	BI	0.7	31			
	5E (A)	BE,BI	1.2	55			
Total			1.8	86	Boone, E. 173rd-E. 174th	1500	0.2
8.2	2S (F)	S,BI,BE	5.7	266			
	3D (A)	BI	0.7	31			
			6.3	298	E. 172nd, Boone-W. Farms	881	1.3

Source: Sandstone Environmental Associates and Stantec Consulting

High levels of impulse noise. No blasting or sustained periods of pile driving are anticipated. Despite the potential high rock levels on Block 3014, the construction of Site 2N beginning in Air and Noise Cordon 14 is not expected to include extensive rock removal or are extraordinary pile driving activities. Impulse noise from demolition on the sites would be intermittent during a period of two to six weeks depending on the type of building under construction. Any impacts would be short-term.

Noise within a narrow range of frequencies. The equipment on-site would be expected to generate noise within a broad range of range of frequencies. Potential noise sources within a narrow range of frequencies would be the high-pitched tones typical of vehicular back-up alarms. These would occur intermittently for brief periods when the vehicles back up. Where possible, internal track paths would use a one-way traffic pattern to reduce the need for backing up. Overall, any impacts from this source would be short-term.

Noise from on-site trucks. Truck trips would be greatest during the demolition, excavations, and foundations stages, which would last from 8 to 23 weeks, depending on the type or building under construction. During these stages, trucks would have access to interior portions of a site. Once the building superstructure has been erected, which would cover most of a site, truck access onto the site would be limited to perimeter areas along street frontages, and they would be less likely to affect adjacent sensitive receptors. The potential for impacts would be similar to those previously discussed under trucks on roadways. No significant long-term adverse impacts are anticipated.

Noise from on-site equipment. Since the quantity of on-site construction equipment for each construction phase is the same for all seven building types, the potential noise levels are the same, although the length of use of each kind of equipment varies by building size. Table S-13 shows the type of estimated on-site equipment by construction phase and the projected total Leq noise level at 50 feet from the equipment. The equipment utilization and Leq noise levels at a distance of 50 feet were obtained from the *CEQR Technical Manual*.

The formula for converting the maximum noise level to an Leq is shown below:[1]

$$L_{max} + 10 \times \log (\text{operating time/project time})$$

If the equipment has an Lmax of 85 dBA at 50 feet, and it operates 40% of the time over a 1-hour period, then the Leq(1 hr) at 50 feet would be about 4 decibels less, or 85 – 4 = 81 dBA. Beyond 50 feet, the noise level would attenuate at a rate of 6 dBA per distance doubling. Thus, at 100 feet, the Leq would be 75 dBA (81 – 6 = 75).

At a distance of 50 feet, the cumulative Leq from the on-site equipment shown in Table S-13 would range from 62.0 to 85.0 dBA, depending on the construction phase. This does not include potential noise reductions that would be achieved with portable noise barriers. Based on Title 15, Chapter 28 of the Rules of the City of New York, such barriers are among the additional pathway controls to be implemented at construction sites if NYCDEP receives noise complaints.

[1] Noise and Vibration Control Engineering: Principles and Applications, edited by Leo L. Beranek and Istvan L. Ver, John Wiley & Sons, 1992, p. 652.

Table S-13: Equipment Noise (Leq) by Construction Stage

Equipment	Demolition	Excavation & Foundations	Utility & Sewer Conn.	Building Superstructure	Building Exterior	Interior Finishes
Excavator	85					
Utilization	0.4					
Leq @ 50	81.0					
Bulldozer	85					
Utilization	0.4					
Leq @ 50	81.0					
Loader 1		85				
Utilization		0.5				
Leq @ 50		82.0				
Loader 2		85				
Utilization		0.5				
Leq @ 50		82.0				
Concrete pump				82		
Utilization				0.2		
Leq @ 50				75.0		
Backhoe			80			
Utilization			0.4			
Leq @ 50			76.0			
Compressor				82		
Utilization				0.5		
Leq @ 50				79.0		
Crane				85		
Utilization				0.16		
Leq @ 50				77.0		
Generator				82		
Utilization				0.5		
Leq @ 50				79.0		
Electric Hoist					70	70
Utilization					0.16	0.16
Leq @ 50					62.0	62.0
Total Leq @ 50'	**84.0**	**85.0**	**76.0**	**83.8**	**62.0**	**62.0**

Source: Sandstone Environmental Associates, Inc., and Stantec Consulting

Existing noise levels at sites throughout the study area range from 61.8 dBA on Boone Avenue between E. 174th and 176th Streets to 82.4 dBA at Boston Road and E. Tremont Avenue. L_{10} noise levels range from 64.6 dBA to 88.0 dBA. No noise monitoring was carried out on Longfellow Avenue south of the Cross Bronx Expressway. Therefore noise levels were assumed to be similar to the parallel roadway

segment on Boone Avenue. Since Longfellow is northbound and Boone is southbound, the assumption is that southbound traffic on Boone Avenue would return via Longfellow Avenue.

Based on the above information, cumulative equipment noise that adds 62 dBA or less to Leq noise levels at the site boundary of sensitive receptors would not constitute an impact because it would not cause a doubling (increase of 3 dBA) in noise levels at most sites. As shown in Table S-13, this would occur during the Building Exterior and Building Interior phases. In addition, the electric hoists on-site during these last two construction phases would be near street frontages and at least 50 feet from nearby residences.

Construction periods for each construction phase and building type are shown in Table S-14. The total weeks during which a construction site would exceed 62 dBA is also shown in Table S-14, and they would range from 16.5 to 73.5 weeks. However, multiple sites in the vicinity of a residential area may be under construction at the same time, in which the cumulative noise from multiple construction sites would affect the residences. Table S-15 shows the sites undergoing redevelopment by cordon as well as on-site diesel equipment and cumulative equipment noise levels at 50 feet.

Table S-14: Duration of Leq Equipment Noise Levels > 62.0 dBA

Building Type	Duration (weeks) by Building Type					
	Demo-lition	Exaca-vation	Utility & Sewer Connections	Building Super-structure	Building Exterior	Total Weeks Leq> 62.0 dBA
A	2	6	1.5	7	14	16.5
B	3	8	1.5	14	17	26.5
C	4	10	1.5	21	23	36.5
D	5	12	1.5	28	36	46.5
E	6	12	1.5	35	34	54.5
F	6	13	1.5	42	34	62.5
G	6	17	1.5	49	40	73.5

Source: Sandstone Environmental Associates, Inc., and Stantec Consulting

Table S-15: On-Site Diesel Equipment by Air and Noise Cordon

Cordon	Site/Bldg-Type	Activities	Diesel Equipment (#)	Cumulative Noise @ 50 feet (dBA)
4	1 (G)	BI	0	62.0
	3A (A)	D	2	84.0
5	2S (F)	D	2	84.0
	3A (A)	U,S	5	84.5
	3D (A)	Ex	2	85.0
	1 (G)	BI	0	62.0
6	2S (F)	S	2	83.8
	3A (A)	BE, BI	0	62.0
	3D (A)	U,S,BI	5	84.5
	1 (G)	BI	0	62.0
	4A (A)	Ex	2	85.0
7	2S (F)	S	4	83.8
	3A (A)	BI	0	62.0
	3D (A)	BE,BI	0	62.0
	4A (A)	S,BE,BI	4	83.8
	5E (A)	Ex,F	2	85.0
8	2S (F)	S,BI	5	83.8
	3A (A)	BI	0	62.0
	3D (A)	BE,BI	0	62.0
	4A (A)	BE,BI	0	62.0
	5E (A)	S	4	83.8
8.1	2S (F)	S,BI,BE	4	83.8
	3A (A)	BI	0	62.0
	3D (A)	BI	0	62.0
	4A (A)	BE,BI	0	62.0
	5E (A)	BE,BI	0	62.0
8.2	2S (F)	S,BI,BE	4	83.8
	3A (A)	BI	0	62.0
	3D (A)	BI	0	62.0
	4A (A)	BI	0	62.0
	5E (A)	BE,BI	0	62.0
9	2S (F)	S,BE,BI	4	83.8
	3A (A)	BI	0	62.0
	3D (A)	BI	0	62.0
	4A (A)	BI	0	62.0
	5E (A)	BI	0	62.0

Source: Sandstone Environmental Associates, Inc.

Cumulative construction noise levels at residential areas within the rezoning area were compared with the peak AM noise levels for Existing Conditions based on the activities at active construction sites and their distances from the residential areas. Where intervening buildings would provide a barrier effect, a conservative reduction of 10 dBA was applied to the equipment noise level. In some cases, a barrier effect was present for some cordons but not others. Shaded areas represent periods when construction either has not started or has been completed. In order to capture worst-case construction noise levels, the evaluation was carried out for Air and Noise Cordons 4 through 12.1.

The cumulative noise levels for Residential Area 1 at the corner of Boone Avenue and E. 172nd Street are shown in Table S-16. The existing noise level at Residential Area 1 is an Leq 69.3 dBA. Construction noise would exceed this by 3 dBA or more for 53 consecutive weeks, primarily due to the proximity of Site 2S. Noise levels would drop substantially when Site 2S reaches the Building Interior stage.

Site 1G would be completed and ready for occupation in Air and Noise Cordon 7. At this point, it also would become a sensitive receptor. Construction noise levels at this site would be somewhat similar to those shown in Table S-16 but the duration would be shorter – 35 weeks – because no impacts would occur before Air and Noise Cordon 7 and none would occur after Air and Noise Cordon 9. In summary, the high construction noise levels for residences at the corner of Boone Avenue and E. 172nd Street would be short-term.

Table S-17 shows cumulative construction noise at Residential Area 2, which is the southern half of Longfellow Avenue between E. 172nd and E. 173rd Streets. Existing Leq noise levels are 70.2 dBA. High construction noise levels would occur during an 18-week period from Air and Noise Cordons 5 through 6, primarily due to the early construction stages of Site 3D, which is adjacent to it. Once Site 3D reaches the Building Interior stages, the only equipment on-site would the electric hoist. The hoist would be located on the Boone Avenue frontage, and the building itself would act as a barrier to noise reaching the rear yards on Longfellow Avenue. The construction noise would be short-term.

Table S-18 shows cumulative construction noise at Residential Area 3, which is the northern half of Longfellow Avenue between E. 172nd and E. 173rd Streets. Existing Leq noise levels are 70.2 dBA. High noise levels would occur for 39 weeks during Air and Noise Cordons 4 through 8, primarily due to the early construction stages on adjacent sites Site 3A, 4A, and 5E. When these sites reach the Building Interior stages, the only equipment on-site would the electric hoists located on the Boone Avenue frontage. The buildings would then act as barriers to noise reaching the rear yards on Longfellow Avenue. The construction noise for Residential Area 3 would be short-term.

Table S-19 shows cumulative construction noise at Residential Area 4, which is the southern half of Longfellow Avenue between E. 173rd and E. 174th Streets. High noise levels would occur for a total of 64 weeks, but this would not be consecutive. A period of 39 consecutive weeks (Air and Noise Cordons 4 through 8) with high noise levels would be followed by more than ten months of noise levels with an increment of less than 3.0 dBA. Then, 25 weeks of high noise levels would occur during Air and Noise Cordons 10 through 12. The high noise levels are due partly to construction at sites 3A and 5E and partly to the relatively low observed Leq noise level of 61.2 dBA. The duration of the noise levels would be considered short-term, especially given the break of 10 months between the more intense stages of construction.

Residential Area 5, a residence on E. 173rd Street between Boone and West Farms Road, has an existing Leq of 69.3 dBA. As shown in Table S-20, this site would experience high noise levels from adjacent Site 3A for 19 weeks during Air and Noise Cordons 4 and 5, then undergo redevelopment as part of Site 3A in Air and Noise Cordon 6. It would become a sensitive receptor again in Air and Noise Cordon 11, but would not experience an increase in noise of 3 dBA or more from construction on other sites.

As the buildings reach completion on Boone Avenue, they would become sensitive receptors, and the sites would no longer be a source of construction noise. The next round of significant construction activities would begin with the demolition operations on Site 2N in Air and Noise Cordon 14. It would continue through Air and Noise Cordon 21. Tables S-21 through S-25 show the equipment noise levels for sites that could experience more than 52 weeks of increases of 3 dBA or more in noise. The longest period is 70 weeks, and it would affect Buildings 2S, 3A, 5E and 4A as sensitive receptors. Also included in these tables are sites that may experience increases in noise level of 15 or more decibels due to construction activities. Residential area 4, on Longfellow Avenue between E. 173rd and E. 174th Streets, is in this category, as shown in Table S-22.

Even though no long-term construction noise impacts are expected to occur as a result of the Proposed Action, as noted above, there are shorter periods during which very high increases in construction-noise (e.g., in excess of 15 dBA) would occur, particularly for sensitive receptors along Longfellow Avenue between East 173rd and East 174th Streets, which may be determined to have the potential to result in a significant adverse impact related to construction noise (see Table S-22). The high noise levels that would be experienced at these sensitive receptors would be generated by construction activities on sites that are not under control of the applicant. Accordingly, there is a potential for a significant adverse impact due to construction noise. Further analysis of construction noise affecting these receptors and consideration of potential mitigation measures to reduce the severity and duration of the noise from on-site equipment will be carried out between the Draft and Final EIS.

Table S-16: Cumulative Construction Noise at Boone Avenue & E. 172nd Street, Air and Noise Cordons 4 – 12.1

		Noise Levels @ Residential Area 1 (Corner of Boone Avenue and E. 172nd Street) During Each Cordon													
Noise Source		**4**	**5**	**6**	**7**	**8**	**8.1**	**8.2**	**9**	**10**	**11**	**11.1**	**12**	**12.1**	**Total**
1G	Distance	65	65	65											
	Building IL	0	0	0											
	Equipment (dBA)	**59.8**	**59.8**	**59.8**											
2S	Distance		225	225	225	225	225	225	225	115	115	115	115	115	
	Building IL		0	0	0	0	0	0	0	0	0	0	0	0	
	Equipment (dBA)		**71.0**	**71.9**	**70.8**	**70.8**	**70.8**	**70.8**	**70.8**	**54.8**	**54.8**	**54.8**	**54.8**	**54.8**	
3A	Distance	540	540	635	635	635	635	635	635	635					
	Building IL	10	10	10	10	10	10	10	10	10					
	Equipment (dBA)	**53.4**	**54.3**	**30.0**	**30.0**	**30.0**	**30.0**	**30.0**	**30.0**	**30.0**					
3D	Distance		250	250	195	195	195	195	195	195					
	Building IL		10	10	10	10	10	10	10	10					
	Equipment (dBA)		**61.0**	**59.8**	**40.2**	**40.2**	**40.2**	**40.2**	**40.2**	**40.2**					
4A	Distance			750	750	750	750	750	750	750					
	Building IL			10	10	10	10	10	10	10					
	Equipment (dBA)			**51.5**	**50.3**	**28.5**	**28.5**	**28.5**	**28.5**	**28.5**					
5E	Distance				755	755	755	755	755	755	755	755			
	Building IL				10	10	10	10	10	10	10	10			
	Equipment (dBA)				**51.4**	**50.2**	**28.5**	**28.5**	**28.5**	**28.5**	**28.5**	**28.5**			
4B	Distance									900	900	900	900	900	
	Building IL									10	10	10	10	10	
	Equipment (dBA)									**49.9**	**48.7**	**26.9**	**26.9**	**26.9**	
5C	Distance										1025	1025	1025	1025	
	Building IL										10	10	10	10	
	Equipment (dBA)										**47.8**	**47.6**	**47.6**	**25.8**	
Equipment subtotal		60.7	71.8	72.5	70.8	70.8	70.8	70.8	70.8	56.2	56.4	55.6	55.6	54.8	
Existing noise @ T5		69.3	69.3	69.3	69.3	69.3	69.3	69.3	69.3	69.3	69.3	69.3	69.3	69.3	
Total noise		69.9	73.7	74.2	73.2	73.1	73.1	73.1	73.1	69.5	69.5	69.5	69.5	69.5	
Increase		0.6	4.4	4.9	3.9	3.8	3.8	3.8	3.8	0.2	0.2	0.2	0.2	0.2	
# Weeks > 3 dBA			9	9	3	8	6	6	12						53
Duration of Cordon		10	9	9	3	8	6	6	12	12	17	6	2	4	104

Source: Sandstone Environmental Associates, Inc.

Table S-17: Cumulative Construction Noise at Southern Longfellow Ave., E. 172nd to E. 173rd Streets,

		Noise Levels at Residential Area 2 (Southern half of Longfellow Ave., E. 172nd – E. 173rd Sts) During Each Cordon													
	Noise Source	**4**	**5**	**6**	**7**	**8**	**8.1**	**8.2**	**9**	**10**	**11**	**11.1**	**12**	**12.1**	**Total**
1G	Distance	180	180	180											
	Building IL	0	0	0											
	Equipment (dBA)	**50.9**	**50.9**	**50.9**											
2S	Distance		230	230	230	230	230	230	230	230	230	230	230	230	
	Building IL		10	10	10	10	10	10	10	10	10	10	10	10	
	Equipment (dBA)		**60.8**	**61.7**	**60.6**	**60.6**	**60.6**	**60.6**	**60.6**	**38.8**	**38.8**	**38.8**	**38.8**	**38.8**	
3A	Distance	185	185	185	290	290	290	290	290	290					
	Building IL	10	10	10	10	10	10	10	10	10					
	Equipment (dBA)	**62.7**	**63.6**	**40.7**	**36.8**	**36.8**	**36.8**	**36.8**	**36.8**	**36.8**					
3D	Distance		60	60	95	95	95	95	95	95					
	Building IL		0	0	10	10	10	10	10	10					
	Equipment (dBA)		**83.4**	**82.2**	**46.5**	**46.5**	**46.5**	**46.5**	**46.5**	**46.5**					
4A	Distance			425	425	425	425	425	425	425					
	Building IL			10	10	10	10	10	10	10					
	Equipment (dBA)			**56.4**	**55.2**	**33.5**	**33.5**	**33.5**	**33.5**	**33.5**					
5E	Distance				385	385	385	385	385	385	385	385			
	Building IL				10	10	10	10	10	10	10	10			
	Equipment (dBA)				**57.3**	**56.1**	**34.3**	**34.3**	**34.3**	**34.3**	**34.3**	**34.3**			
4B	Distance									580	580	580	580	580	
	Building IL									10	10	10	10	10	
	Equipment (dBA)									**53.7**	**52.5**	**30.8**	**30.8**	**30.8**	
5C	Distance										680	680	680	680	
	Building IL										10	10	10	10	
	Equipment (dBA)										**51.4**	**51.1**	**51.1**	**29.4**	
Equipment subtotal		62.9	83.5	82.3	63.1	62.0	60.8	60.8	60.8	54.7	55.1	51.5	51.4	39.8	
Existing noise @ C3		70.2	70.2	70.2	70.2	70.2	70.2	70.2	70.2	70.2	70.2	70.2	70.2	70.2	
Total noise		70.9	83.7	82.5	71.0	70.8	70.7	70.7	70.7	70.3	70.3	70.3	70.3	70.2	
Increase		0.7	13.5	12.3	0.8	0.6	0.5	0.5	0.5	0.1	0.1	0.1	0.1	0.0	
Duration (# wks > 3 dBA)			9	9											18
Duration of Cordon		10	9	9	3	8	6	6	12	12	17	6	2	4	104

Source: Sandstone Environmental Associates, Inc.

Table S-18: Cumulative Construction Noise at, Northern Longfellow Ave., E. 172nd to E. 173rd Streets,

		Noise Levels at Residential Area 3 (Northern half of Longfellow Avenue, E. 172nd – E. 173rd Streets) During Each Cordon													
	Noise Source	**4**	**5**	**6**	**7**	**8**	**8.1**	**8.2**	**9**	**10**	**11**	**11.1**	**12**	**12.1**	**Total**
1G	Distance	400	400	400											
	Building IL	10	10	10											
	Equipment (dBA)	**34.0**	**34.0**	**34.0**											
2S	Distance		280	280	280	280	280	280	280	280	280	280	280	280	
	Building IL		10	10	10	10	10	10	10	10	10	10	10	10	
	Equipment (dBA)		**59.1**	**60.0**	**58.9**	**58.9**	**58.9**	**58.9**	**58.9**	**37.1**	**37.1**	**37.1**	**37.1**	**37.1**	
3A	Distance	60	60	60	80	80	80	80	80	80					
	Building IL	0	0	0	10	10	10	10	10	10					
	Equipment (dBA)	**82.4**	**83.4**	**60.5**	**48.0**	**48.0**	**48.0**	**48.0**	**48.0**	**48.0**					
3D	Distance		125	125	125	195	195	195	195	195					
	Building IL		10	10	10	10	10	10	10	10					
	Equipment (dBA)		**67.0**	**65.9**	**44.1**	**40.2**	**40.2**	**40.2**	**40.2**	**40.2**					
4A	Distance			210	210	210	210	210	210	210					
	Building IL			0	0	0	0	0	0	0					
	Equipment (dBA)			**72.5**	**71.4**	**49.6**	**49.6**	**49.6**	**49.6**	**49.6**					
5E	Distance				110	110	110	110	110	110	110	110			
	Building IL				0	0	0	0	0	0	0	0			
	Equipment (dBA)				**78.2**	**77.0**	**55.2**	**55.2**	**55.2**	**55.2**	**55.2**	**55.2**			
4B	Distance									325	325	325	325	325	
	Building IL									10	10	10	10	10	
	Equipment (dBA)									**58.7**	**57.6**	**35.8**	**35.8**	**35.8**	
5C	Distance										385	385	385	385	
	Building IL										10	10	10	10	
	Equipment (dBA)										**56.3**	**56.1**	**56.1**	**34.3**	
Equipment subtotal		82.4	83.5	73.8	79.0	77.0	61.0	61.0	61.0	61.0	61.2	58.7	56.2	40.6	
Existing noise @ C3		70.2	70.2	70.2	70.2	70.2	70.2	70.2	70.2	70.2	70.2	70.2	70.2	70.2	
Total noise		82.7	83.7	75.4	79.6	77.9	70.7	70.7	70.7	70.7	70.7	70.5	70.4	70.2	
Increase		12.5	13.5	5.2	9.4	7.7	0.5	0.5	0.5	0.5	0.5	0.3	0.2	0.0	
Duration (# wks > 3dBA)		10	9	9	3	8									39
Duration of Cordon		10	9	9	3	8	6	6	12	12	17	6	2	4	104

Source: Sandstone Environmental Associates, Inc.

Table S-19: Cumulative Construction Noise at Southern Longfellow Ave., E. 173rd to E. 174th Streets, Air and Noise Cordons 4 – 12.1

		Noise Levels at Residential Area 4 (Southern half of Longfellow Avenue, E. 173rd – E. 174th Streets) During Each Cordon													
	Noise Source	**4**	**5**	**6**	**7**	**8**	**8.1**	**8.2**	**9**	**10**	**11**	**11.1**	**12**	**12.1**	**Total**
1G	Distance	755	755	755											
	Building IL	10	10	10											
	Equipment (dBA)	**28.5**	**28.5**	**28.5**											
2S	Distance		575	575	575	575	575	575	575	575	575	575	575	575	
	Building IL		10	10	10	10	10	10	10	10	10	10	10	10	
	Equipment (dBA)		**52.8**	**53.8**	**52.6**	**52.6**	**52.6**	**52.6**	**52.6**	**30.8**	**30.8**	**30.8**	**30.8**	**30.8**	
3A	Distance	60	60	60	80	80	80	80	80	80					
	Building IL	0	0	0	10	10	10	10	10	10					
	Equipment (dBA)	**82.4**	**83.4**	**60.5**	**48.0**	**48.0**	**48.0**	**48.0**	**48.0**	**48.0**					
3D	Distance		190	190	290	290	290	290	290	290					
	Building IL		10	10	10	10	10	10	10	10					
	Equipment (dBA)		**63.4**	**62.2**	**36.8**	**36.8**	**36.8**	**36.8**	**36.8**	**36.8**					
4A	Distance			200	200	200	200	200	200	200					
	Building IL			10	0	0	10	10	10	10					
	Equipment (dBA)			**63.0**	**71.8**	**50.0**	**40.0**	**40.0**	**40.0**	**40.0**					
5E	Distance				55	55	55	55	55	55	55	55			
	Building IL				0	0	0	10	10	10	10	10			
	Equipment (dBA)				**84.2**	**83.0**	**61.2**	**51.2**	**51.2**	**51.2**	**51.2**	**51.2**			
4B	Distance									220	220	220	220	220	
	Building IL									10	10	10	10	10	
	Equipment (dBA)									**62.1**	**60.9**	**39.2**	**39.2**	**39.2**	
5C	Distance										50	50	50	50	
	Building IL										0	0	0	10	
	Equipment (dBA)										**84.0**	**83.8**	**83.8**	**52.0**	
Equipment subtotal		82.4	83.5	67.0	84.4	83.0	62.0	55.9	55.9	62.7	84.1	83.8	83.8	52.3	
Existing noise @ C2		65.2	65.2	65.2	65.2	65.2	65.2	65.2	65.2	65.2	65.2	65.2	65.2	65.2	
Total noise		82.5	83.5	69.2	84.5	83.1	66.9	65.7	65.7	67.1	84.1	83.9	83.9	65.4	
Increase		17.3	18.3	4.0	19.3	17.9	1.7	0.5	0.5	1.9	18.9	18.7	18.7	0.2	
Duration (# wks > 3dBA)		10	9	9	3	8					17	6	2		64
Duration of Cordon		10	9	9	3	8	6	6	12	12	17	6	2	4	104

Source: Sandstone Environmental Associates, Inc.

Table S-20: Cumulative Construction Noise at E. 173rd Street, Boone Ave – West Farms Road, Air and Noise Cordons 4 – 12.1

		Noise Levels at Residential Area 5 (E. 173rd Street, Boone Avenue - West Farms Road) During Each Cordon													
	Noise Source	**4**	**5**	**6**	**7**	**8**	**8.1**	**8.2**	**9**	**10**	**11**	**11.1**	**12**	**12.1**	**Total**
1G	Distance	725	725												
	Building IL	0	0												
	Equipment (dBA)	**38.8**	**38.8**												
2S	Distance		530								400	400	400	400	
	Building IL		10								0	0	0	0	
	Equipment (dBA)		**53.5**								**44.0**	**44.0**	**44.0**	**44.0**	
3A	Distance	250	250												
	Building IL	0	0												
	Equipment (dBA)	**70.1**	**71.0**												
3D	Distance		500												
	Building IL		0												
	Equipment (dBA)		**65.0**												
4A	Distance														
	Building IL														
	Equipment (dBA)														
5E	Distance										65	65			
	Building IL										0	0			
	Equipment (dBA)										**59.8**	**59.8**			
4B	Distance										200	200	200	200	
	Building IL										10	10	10	10	
	Equipment (dBA)										**61.8**	**40.0**	**40.0**	**40.0**	
5C	Distance										310	310	310	310	
	Building IL										10	10	10	10	
	Equipment (dBA)										**58.2**	**58.0**	**58.0**	**36.2**	
Equipment subtotal		70.1	72.1								65.0	62.1	58.2	45.9	
Existing noise @ C16		69.3	69.3								69.3	69.3	69.3	69.3	
Total noise		72.7	73.9								70.7	70.1	69.6	69.3	
Increase		3.4	4.6								1.4	0.8	0.3	0.0	
Duration (# wks > 3dBA)		10	9												19
Duration of Cordon		10	9	9	3	8	6	6	12	12	17	6	2	4	104

Source: Sandstone Environmental Associates, Inc.

Table S-21: Cumulative Construction Noise at Parcel 2S, Air and Noise Cordons 4 – 12.1

		Noise Levels at Parcel 2S (Southern half of Boone Avenue, E. 172nd- E. 173rd Streets) During Cordons 14 - 21											
Noise Source		**14**	**15**	**16**	**17**	**17.1**	**18**	**19**	**20**	**20.1**	**20.2**	**21**	**Total**
2N	Distance	150	150	150	150	150	150	150	150	285	285	285	
	Building IL	0	0	0	0	0	0	0	0	10	10	10	
	Equipment (dBA)	**74.5**	**74.5**	**74.3**	**74.3**	**74.3**	**74.3**	**74.3**	**74.3**	**36.9**	**36.9**	**36.9**	
3E	Distance	95	95	95	95	95	45	45					
	Building IL	0	0	0	0	0	10	10					
	Equipment (dBA)	**79.4**	**78.3**	**56.5**	**56.5**	**56.5**	**53.0**	**53.0**					
4B	Distance	435	435	435	435								
	Building IL	10	10	10	10								
	Equipment (dBA)	**33.3**	**33.3**	**33.3**	**33.3**								
5C	Distance	560	560	560	560	560							
	Building IL	10	10	10	10	10							
	Equipment (dBA)	**31.1**	**31.1**	**31.1**	**31.1**	**31.1**							
5D	Distance		500	500	500	500	435	435	435				
	Building IL		10	10	10	10	0	0	0				
	Equipment (dBA)		**55.0**	**54.5**	**53.8**	**32.0**	**43.3**	**43.3**	**43.3**				
5B	Distance			805	805	805	720	720	720	720			
	Building IL			10	10	10	10	10	10	10			
	Equipment (dBA)			**50.9**	**49.7**	**50.3**	**28.9**	**28.9**	**28.9**	**28.9**			
4C	Distance						760	760	760	760	735	735	
	Building IL						10	10	10	10	10	10	
	Equipment (dBA)						**50.4**	**51.4**	**50.8**	**50.2**	**28.7**	**28.7**	
6A	Distance						1010	1010	1010	995			
	Building IL						0	0	0	0			
	Equipment (dBA)						**57.9**	**58.9**	**57.7**	**36.1**			
Equipment subtotal		80.6	79.8	74.4	74.4	74.4	74.5	74.5	74.4	50.6	37.5	37.5	
Existing AM noise @ C3		70.2	70.2	70.2	70.2	70.2	70.2	70.2	70.2	70.2	70.2	70.2	
Total noise		81.0	80.3	75.8	75.8	75.8	75.8	75.9	75.8	70.2	70.2	70.2	
Increase		10.8	10.1	5.6	5.6	5.6	5.6	5.7	5.6	0.0	0.0	0.0	
Duration (# wks > 3dBA)		7	6	4	8	21	9	10	5				70
Duration of Cordon		7	6	4	8	21	9	10	5	8	16	9	103

Source: Sandstone Environmental Associates, Inc.

Table S-22: Cumulative Construction Noise at Longfellow Avenue, E. 173 – E. 174 Streets, Air and Noise Cordons 14 – 21

		Noise Levels at Residential Area 4 (Southern half of Longfellow Avenue, E. 173rd - E. 174th Streets) During Cordons 14 - 21												
	Noise Source	**14**	**15**	**16**	**17**	**17.1**	**18**	**19**	**20**	**20.1**	**20.2**	**21**	**Total**
2N	Distance	335	335	335	335	335	335	335	335	190	190	190	
	Building IL	10	10	10	10	10	10	10	10	10	10	10	
	Equipment (dBA)	**57.5**	**57.5**	**57.3**	**57.3**	**57.3**	**57.3**	**57.3**	**57.3**	**40.4**	**40.4**	**40.4**	
3E	Distance	640	640	640	640	640	660	660					
	Building IL	10	10	10	10	10	10	10					
	Equipment (dBA)	**52.9**	**51.7**	**29.9**	**29.9**	**29.9**	**29.6**	**29.6**					
4B	Distance	220	220	220	220								
	Building IL	10	10	10	10								
	Equipment (dBA)	**39.2**	**39.2**	**39.2**	**39.2**								
5C	Distance	50	50	50	50	50							
	Building IL	10	10	10	10	10							
	Equipment (dBA)	**52.0**	**52.0**	**52.0**	**52.0**	**52.0**							
5D	Distance		50	50	50	50	100	100	100				
	Building IL		0	0	0	0	10	10	10				
	Equipment (dBA)		**85.0**	**84.5**	**83.8**	**62.0**	**46.0**	**46.0**	**46.0**				
5B	Distance			145	145	145	140	140	140	140			
	Building IL			10	10	10	10	10	10	10			
	Equipment (dBA)			**65.8**	**64.6**	**65.2**	**43.1**	**43.1**	**43.1**	**43.1**			
4C	Distance						310	310	310	310	195	195	
	Building IL						10	10	10	10	10	10	
	Equipment (dBA)						**58.2**	**59.2**	**58.6**	**58.0**	**40.2**	**40.2**	
6A	Distance						430	430	430	405			
	Building IL						10	10	10	10			
	Equipment (dBA)						**55.3**	**56.3**	**55.1**	**33.9**			
Equipment subtotal		59.7	85.0	84.6	83.9	67.5	62.0	62.7	62.2	58.2	43.3	43.3	
Existing AM noise @ C2		65.2	65.2	65.2	65.2	65.2	65.2	65.2	65.2	65.2	65.2	65.2	
Total noise		66.3	85.1	84.6	84.0	69.5	66.9	67.1	67.0	66.0	65.2	65.2	
Increase		1.1	19.9	19.4	18.8	4.3	1.7	1.9	1.8	0.8	0.0	0.0	
Duration (# wks > 3dBA)			6	4	8	21							39
Duration of Cordon	10	9	9	3	8	6	6	12	12	17	6	2	4	104

Source: Sandstone Environmental Associates, Inc.

Table S-23: Cumulative Construction Noise at Parcel 3A, Air and Noise Cordons 14 - 21

		Noise Levels at Parcel 3A (Boone Ave, E. 172nd – E. 173rd Streets) During Cordons 14 - 21											Total
Noise Source		**14**	**15**	**16**	**17**	**17.1**	**18**	**19**	**20**	**20.1**	**20.2**	**21**	
2N	Distance	150	150	150	150	150	150	150	150	65	65	65	
	Building IL	0	0	0	0	0	0	0	0	0	0	0	
	Equipment (dBA)	**74.5**	**74.5**	**74.3**	**74.3**	**74.3**	**74.3**	**74.3**	**74.3**	**59.8**	**59.8**	**59.8**	
3E	Distance	355	355	355	355	355	390	390					
	Building IL	10	10	10	10	10	10	10					
	Equipment (dBA)	**58.0**	**56.8**	**35.0**	**35.0**	**35.0**	**34.2**	**34.2**					
4B	Distance	200	200	200	200								
	Building IL	10	10	10	10								
	Equipment (dBA)	**40.0**	**40.0**	**40.0**	**40.0**								
5C	Distance	295	295	295	295	295							
	Building IL	10	10	10	10	10							
	Equipment (dBA)	**36.6**	**36.6**	**36.6**	**36.6**	**36.6**							
5D	Distance		205	205	205	205	150	150	150				
	Building IL		10	10	10	10	10	10	10				
	Equipment (dBA)		**62.7**	**62.2**	**61.6**	**39.8**	**42.5**	**42.5**	**42.5**				
5B	Distance			500	500	500	465	465	465	465			
	Building IL			10	10	10	10	10	10	10			
	Equipment (dBA)			**55.0**	**53.8**	**54.5**	**32.7**	**32.7**	**32.7**	**32.7**			
4C	Distance						525	525	525	525	475	475	
	Building IL						10	10	10	10	10	10	
	Equipment (dBA)						**53.6**	**54.6**	**54.1**	**53.4**	**32.5**	**32.5**	
6A	Distance						760	760	760	750			
	Building IL						10	10	10	10			
	Equipment (dBA)						**50.4**	**51.4**	**50.2**	**28.5**			
Equipment subtotal		74.6	74.8	74.6	74.5	74.3	74.4	74.4	74.4	60.7	59.8	59.8	
Existing noise @ C3		70.2	70.2	70.2	70.2	70.2	70.2	70.2	70.2	70.2	70.2	70.2	
Total noise		75.9	76.1	75.9	75.9	75.7	75.8	75.8	75.8	70.7	70.6	70.6	
Increase		5.7	5.9	5.7	5.7	5.5	5.6	5.6	5.6	0.5	0.4	0.4	
Duration (# wks > 3dBA)		7	6	4	8	21	9	10	5				70
Duration of Cordon		7	6	4	8	21	9	10	5	8	16	9	103

Source: Sandstone Environmental Associates, Inc.

Table S-24: Cumulative Construction Noise at Parcel 5E, Air and Noise Cordons 14 - 21

		Noise Levels at Parcel 5E (Northwest Corner of Boone Avenue and E. 173rd Street) During Each Cordon											
	Noise Source	**14**	**15**	**16**	**17**	**17.1**	**18**	**19**	**20**	**20.1**	**20.2**	**21**	**Total**
2N	Distance	260	260	260	260	260	260	260	260	90	90	90	
	Building IL	0	0	0	0	0	0	0	0	0	0	0	
	Equipment (dBA)	**69.7**	**69.7**	**69.5**	**69.5**	**69.5**	**69.5**	**69.5**	**69.5**	**56.9**	**56.9**	**56.9**	
3E	Distance	615	615	615	615	615	640	640					
	Building IL	10	10	10	10	10	10	10					
	Equipment (dBA)	**53.2**	**52.0**	**30.2**	**30.2**	**30.2**	**29.9**	**29.9**					
4B	Distance	100	100	100	100								
	Building IL	0	0	0	0								
	Equipment (dBA)	**56.0**	**56.0**	**56.0**	**56.0**								
5C	Distance	225	225	225	225	225							
	Building IL	0	0	0	0	0							
	Equipment (dBA)	**49.0**	**49.0**	**49.0**	**49.0**	**49.0**							
5D	Distance		70	70	70	70	15	15	15				
	Building IL		0	0	0	0	0	0	0				
	Equipment (dBA)		**82.1**	**81.6**	**80.9**	**59.1**	**72.5**	**72.5**	**72.5**				
5B	Distance			370	370	370	325	325	325	325			
	Building IL			10	10	10	10	10	10	10			
	Equipment (dBA)			**57.6**	**56.4**	**57.1**	**35.8**	**35.8**	**35.8**	**35.8**			
4C	Distance						415	415	415	415	345	345	
	Building IL						10	10	10	10	10	10	
	Equipment (dBA)						**55.6**	**56.6**	**56.1**	**55.5**	**35.3**	**35.3**	
6A	Distance						630	630	630	625			
	Building IL						10	10	0	0			
	Equipment (dBA)						**52.0**	**53.0**	**61.8**	**40.1**			
Equipment subtotal		70.0	82.3	81.9	81.3	70.1	74.4	74.4	74.6	59.3	57.0	57.0	
Existing noise @ T3		68.9	68.9	68.9	68.9	68.9	68.9	68.9	68.9	68.9	68.9	68.9	
Total noise		72.5	82.5	82.1	81.5	72.6	75.4	75.5	75.6	69.4	69.2	69.2	
Increase		3.6	13.6	13.2	12.6	3.7	6.5	6.6	6.7	0.5	0.3	0.3	
Duration (# wks > 3dBA)		7	6	4	8	21	9	10	5				70
Duration of Cordon		7	6	4	8	21	9	10	5	8	16	9	103

Source: Sandstone Environmental Associates, Inc.

Table S-25: Cumulative Construction Noise at Parcel 4A, Air and Noise Cordons 14 - 21

		Noise Levels at Building 4A (Northeast Corner of Boone Avenue and E. 173rd Street) During Each Cordon											Total
	Noise Source	**14**	**15**	**16**	**17**	**17.1**	**18**	**19**	**20**	**20.1**	**20.2**	**21**	
2N	Distance	210	210	210	210	210	210	210	210	65	65	65	
	Building IL	0	0	0	0	0	0	0	0	0	0	0	
	Equipment (dBA)	**71.6**	**71.6**	**71.4**	**71.4**	**71.4**	**71.4**	**71.4**	**71.4**	**59.8**	**59.8**	**59.8**	
3E	Distance	630	630	630	630	630	650	650					
	Building IL	10	10	10	10	10	10	10					
	Equipment (dBA)	**53.0**	**51.8**	**30.0**	**30.0**	**30.0**	**29.8**	**29.8**					
4B	Distance	20	20	20	20								
	Building IL	0	0	0	0								
	Equipment (dBA)	**70.0**	**70.0**	**70.0**	**70.0**								
5C	Distance	140	140	140	140	140							
	Building IL	0	0	0	0	0							
	Equipment (dBA)	**53.1**	**53.1**	**53.1**	**53.1**	**53.1**							
5D	Distance		125	125	125	125	70	70	70				
	Building IL		0	0	0	0	0	0	0				
	Equipment (dBA)		**77.0**	**76.5**	**75.9**	**54.1**	**59.1**	**59.1**	**59.1**				
5B	Distance			355	355	355	300	300	300	300			
	Building IL			10	10	10	10	10	10	10			
	Equipment (dBA)			**58.0**	**56.8**	**57.5**	**36.5**	**36.5**	**36.5**	**36.5**			
4C	Distance						335	335	335	335	285	285	
	Building IL						10	10	10	10	10	10	
	Equipment (dBA)						**57.5**	**58.5**	**58.0**	**57.3**	**36.9**	**36.9**	
6A	Distance						858	858	858	580			
	Building IL						10	10	10	10			
	Equipment (dBA)						**49.3**	**50.3**	**49.1**	**30.8**			
Equipment subtotal		73.9	78.8	78.4	78.0	71.7	71.8	71.9	71.8	61.7	59.8	59.8	
Existing noise @ T3		68.9	68.9	68.9	68.9	68.9	68.9	68.9	68.9	68.9	68.9	68.9	
Total noise		75.1	79.2	78.9	78.5	73.5	73.6	73.6	73.6	69.7	69.4	69.4	
Increase		6.2	10.3	10.0	9.6	4.6	4.7	4.7	4.7	0.8	0.5	0.5	
Duration (# wks > 3dBA)		7	6	4	8	21	9	10	5				70
Duration of Cordon		7	6	4	8	21	9	10	5	8	16	9	103

Source: Sandstone Environmental Associates, Inc.

Preliminary Assessment of other Impact Areas

Land Use and Neighborhood Character

According to the *CEQR Technical Manual*, a construction impact analysis of land use and neighborhood character is typically needed if construction would require continuous use of property for an extended duration, thereby having the potential to affect the nature of the land use and character of the neighborhood. A land use and neighborhood character assessment for construction impacts looks at the construction activities that would occur on the site (or portions of the site) and their duration. The analysis determines whether the type and duration of the activities would affect neighborhood land use patterns or neighborhood character. For example, a single property might be used for staging for several years, resulting in a "land use" that would be industrial in nature. Depending on the nature of existing land uses in the surrounding area, this use of a single piece of property for an extended duration and its compatibility with neighboring properties may be assessed to determine whether it would have a significant adverse impact on the surrounding area.

The proposed rezoning area is already an industrial area, and generally incompatible with the residential uses to the west. The industrial nature of the construction activities would be a substitution for the industrial uses already extant. While construction of the new buildings would cause temporary impacts, particularly related to noise, it is expected that such impacts in any given area would be relatively short term (e.g., less than two years), even under the reasonable worst case construction sequencing, and therefore not create a neighborhood character impact (see the construction air and noise assessment above). Therefore, no significant construction impacts to land use and neighborhood character are expected.

Socioeconomic Conditions

According to the 2010 *CEQR Technical Manual*, construction impacts to socioeconomic conditions are possible if the proposed project would entail construction of a long duration that could affect the access to and therefore viability of a number of businesses, and if the failure of those businesses has the potential to affect neighborhood character. During the construction period, construction activities would be dispersed throughout the proposed rezoning area and would not affect access to particular businesses over an extended duration. No other businesses are near enough to the proposed rezoning area to be affected by construction activities. A key goal of the proposed rezoning is to make the area more compatible with the more residential nature of the upland areas. In fact, it is an objective of the Proposed Action to eliminate this industrial strip, and enhance the area's neighborhood character by replacing the industrial uses with uses more compatible with that of the surrounding area. The businesses now extant within the proposed rezoning area are not unique nor do they form a special economic segment in the City's economy. These businesses would be expected to relocate as development pressures made their operations less viable. Therefore, construction impacts to socioeconomic conditions are not expected.

Community Facilities

According to the 2010 *CEQR Technical Manual*, construction impacts to community facilities are possible if community facility would be directly affected by construction (*e.g.*, if construction would disrupt services provided at the facility or close the facility temporarily, *etc.*). There are three community facility uses (schools) that abut or are within the project area (two at the south end – Fannie Lou Hamer Freedom High School and PS 66 – and one at the north end – PS 214 - of the proposed rezoning area). No other community facilities are located within or adjacent to the proposed rezoning area. It will not be necessary to alter the entrances to these facilities, nor will it be necessary to close them at any time during the construction period. There would be no direct nor indirect construction effects to any community

facilities other than those considered separately under the air, noise and traffic preliminary construction analyses discussed above. Hence, no construction impacts would be expected to community facilities in the area, and a further preliminary assessment is not needed for the disclosure of potential impacts to community facilities.

Open Space

According to the 2010 *CEQR Technical Manual*, construction impacts to open space are possible if the open space is taken out of service for a period of time during the construction process. No open space resources would be disrupted during the construction of the project, nor would access to any publically accessible open space be impeded during construction within the proposed rezoning area. No construction impacts related to open space are expected and a further preliminary assessment is not needed for the disclosure of potential impacts to open space resources.

Historic and Cultural Resources

According to the guidelines in the CEQR Technical Manual, construction impacts may occur on historic and cultural resources if in-ground disturbances or vibrations associated with project construction could undermine the foundation or structural integrity of nearby resources. No impacts to historic resources are expected as a result of approval of the Proposed Action. The Proposed Action would result in potentially significant impacts to archaeological resources on projected development sites not under the control of the applicant and not subject to a restrictive declaration that would ensure the identification of any archaeological resources prior to development. The archaeological resources are a pre- and post-civil war cemetery generally in the vicinity of Boone Avenue and East 172nd Street and former privies (shafts) located north of the Cross Bronx Expressway. These potential impacts are fully discussed under Chapter 2.F., Historical and Cultural Resources, and a preliminary construction assessment is not needed to disclose these potential impacts (see Chapter 2.F.).

Natural Resources

According to the *CEQR Technical Manual*, natural resources may be affected during construction, particularly during such activities as excavation; grading; site clearance or other vegetation removal; cutting; filling; installation of piles, bulkheads or other waterfront structures; dredging; dewatering; or soil compaction from construction vehicles and equipment. A preliminary construction assessment is not required for natural resources unless the construction activities would disturb a site or be located adjacent to a site containing natural resources.

The Bronx River is a natural resource within the vicinity of the proposed rezoning area. However, it is separated by separated by a distance of 300 to 500 feet, and within that separation is the Sheridan Expressway and the West Farms Road right-of-ways. The primary concern during construction would be the possibility of sediments flowing from the construction sites into the river through sheetflow run-off, increasing turbidity and possibly biochemical oxygen demand. However, both of these roadways have their own drainage systems, so sheetflow run-off from the project sites to the river would not occur.

Finally, Section 3309.1 of the New York City Building code requires that provisions be made to control water run-off and erosion during construction and demolition activities, and NYSDEC has published a manual (New York Standards and Specifications for Erosion and Sediment Controls) which is the standard to be followed to comply with the Building Code.

Given the separation of the building sites from the Bronx River, the two intervening stormwater collections systems and the requirement for erosion and sediment control within the building code, no natural resources would be directly impacted by development which could occur as a result of the Proposed Action. Therefore, no significant construction impacts to natural resources are expected. A

further preliminary assessment is not needed for the disclosure of potential impacts to natural resources. (Also see Chapter 2.H. Natural Resources.)

Hazardous Materials

According to the guidelines in the *CEQR Technical Manual*, any impacts from in-ground disturbance that are identified in hazardous materials studies should be identified in this chapter as well. Institutional controls such as (E) designation or restrictive declarations should be disclosed here as well. If the impact identified in hazardous materials studies is fully mitigated or avoided, no further analysis of the effect from construction activities on hazardous materials is needed.

Any potential impact would be avoided by the inclusion of "E" designations for development sites not under the control of the applicant, and by a restrictive declaration for the sites under the control of the applicant. These institutional controls would require soil testing to identify any hazardous materials and, based on the results of such testing, the development of a Construction Health and Safety Plan. The full assessment of hazardous materials is presented in Chapter 2.I.