2.M TRANSPORTATION

INTRODUCTION

This chapter provides a discussion of potential impacts that new traffic, transit and pedestrian trips and parking generated by the Proposed Action will have on the operating conditions of the traffic, transit, pedestrian, and parking facilities in the study area. It also identifies significant adverse impacts associated with the Proposed Action that would require mitigation.

As described in Chapter 1, Project Description, the Proposed Action is the approval of the rezoning of all or part of eleven blocks in the Crotona Park East area of the Bronx essentially along the strip of land between Boone Avenue and West Farms Road, between Freeman Street on the south, and Boston Post Road on the north, as well as zoning text amendments, the grant of special permits for a large-scale general development and the disposition of a City-owned property. Under the reasonable worst case development scenario (RWCDS) presented in Chapter 1, 49 tax lots would be redeveloped by the 2022 analysis year (as opposed to 2 in the future without the Proposed Action), resulting in an incremental increase of 2,635 housing units, 93,000 square feet of commercial space and a 12,000 square foot child care center over the future without the Proposed Action scenario.

The analysis contained in this chapter describes existing (2009) conditions of the traffic network, transit elements (subway station pedestrian circulation elements), street level pedestrian elements (sidewalks, corner reservoirs, and crosswalks), and parking elements (on-street and off-street) in study area. This is followed by a presentation of the analysis of the anticipated conditions under the No Action (2022) condition. The No Action condition includes demand generated by planned development within the study area, demand generated by background growth, and any changes to transportation facilities and services expected by 2022. This is followed by a presentation of the analysis of the anticipated conditions under the Future with the Proposed Action (2022) condition.

PRINCIPLE CONCLUSIONS

The Proposed Action would result in the development of residential, retail, and daycare components, resulting in an increase in the number of trips into and out of the development site's study area. A total of 20 intersections (ten signalized and ten unsignalized), two subway stations, nine bus lines and 52 pedestrian elements were selected for detailed traffic and transit and pedestrian analysis. All transportation facilities were analyzed for weekday AM, weekday midday, and weekday PM peak hour conditions.

Existing condition traffic analyses indicated that most intersections in the traffic study area operate at overall acceptable levels during the three analysis peak hours. However of the 75 approach movements analyzed, 15, 9 and 15 movements currently operate at mid-LOS D or worse during the AM, midday and PM peak hours, respectively. On-street parking is available within the primary study area, with most on-street parking designated as alternate side of the street parking regulations. One off-street parking facility located within a quarter of a mile of the project site was surveyed.

Under the 2022 with Action conditions, there would be significant traffic impacts on eight, nine and nine approach movements during the AM, midday, and PM peak hours, respectively. The approaches which would have impacts in the 2022 with Action conditions are listed in Table M-1 below by time period. On-street parking demand continues to be below the available supply within the study area. Transit and pedestrian analyses indicate that all elements continue to operate at LOS C or better for all peak periods.

Table M-1: Summary of Significantly Impacted Intersections

Intersection	AM	MD	PM
East Tremont Ave at East 177th Street			NB-L
West Farms Rd at Boston Road, East Tremont Avenue	NB-LTR(West Farms Rd)**, NEB-LTR(Boston Rd)**, SB-DefL(Boston Rd)**	WB-LTR(E Tremont Ave), NEB-LTR(Boston Rd), SB-DefL(Boston Rd)	WB-LTR(E Tremont Ave)**, NB-LTR (West Farms Rd)**, NEB-LTR(Boston Rd)**, SB-TR(Boston Rd)**
East 177th Street at Sheridan Expressway	NB-LTR (Bus Depot Entr)**, SB-LT (E 177th St)**	EB-L (Sheridan Off-Ramp), NB-LTR (Bus Depot Entr), SB-LT (E 177th St)	SB-LT (E 177th St)
Bronx River Avenue at East 174th Street	EB-LTR	EB-LTR	
Boone Avenue at East 174th Street	SB-LTR		
Longfellow Avenue at East 174th Street		NB-LTR	NB-LTR
West Farms Road at East 173rd Street	EB-LR**		EB-LR**
West Farms Road at Home Street, Longfellow Avenue		NWB-LTR (Home St)	NWB-LTR (Home St)

Note: ** Proposed Mitigations at these locations not yet accepted by NYCDOT

Mitigation has been proposed by the applicant that, if fully implemented, would mitigate all impacts. However, as of the point of the publication of this DEIS, NYCDOT has not approved all of the proposed mitigation measures. Between Draft EIS and Final EIS, additional coordination between NYCDOT and NYCDCP will occur to complete the evaluation of the proposed mitigation measures as detailed in Chapter 3, Mitigation. If the proposed mitigation measures are not approved, then the applicant will explore other mitigation measures suitable for those intersections and provide those for evaluation by NYCDOT and NYCDCP.

Existing conditions transit and pedestrian analyses indicate that all elements operate at Level of Service (LOS) A or B for all peak periods. Analysis of transit elements included subway stations (stairways and turnstiles); a bus load analysis was not required according to the 2010 *CEQR Technical Manual* Level 2 Screening assessment. Analysis of pedestrian elements included street-level elements (sidewalks, crosswalks, and corner reservoirs). Therefore, there will be on significant adverse transit or pedestrian impacts associated with the Proposed Action.

Future parking conditions with the Proposed Action are expected to change in terms of both supply and demand. Overall the parking supply would increase from 3828 spaces to 4418 spaces in the midday and from 4261 spaces to 4851 spaces in the overnight period. In the midday, the demand will decrease by 115 spaces. Overnight the demand will increase by 729 spaces. Final demand with the Proposed Action will be 2944 parking spaces and 4022 parking spaces in the midday and overnight, respectively. Utilization

would decrease in the midday from 80% to 67% and increase in the overnight from 77% to 83%. This is less than half of the available spaces needed to indicate a significant impact. Therefore, there are no parking significant impacts associated with the Proposed Action.

METHODOLOGY

Table 16-1 in *the CEQR Technical Manual* suggests that a numerical analysis for traffic impacts may be required if certain thresholds for the size of the Proposed Action are exceeded. The Proposed Action in that table classifies the area of the Proposed Action as "Zone 2." According to that table, , actions proposed in the Bronx that would result in 200 new residential dwelling units, 20,000 gsf of retail space 25,000 gsf of community facility, or 85 new parking spaces in an off-street parking facility require a two-tiered preliminary traffic analysis to determine whether a detailed analysis of any technical areas of the transportation system is necessary. Under the RWCDS, the Proposed Action would result in 2,635 new housing units, 93,000 square feet of local retail space, and an 11,888 square foot daycare facility compared to the future without action condition. Further, the *2010 CEQR Technical Manual* states that if a project involves a mix of land uses, it is appropriate to prepare a preliminary trip generation analysis. Therefore a preliminary trip generation analysis was prepared.

Preliminary Trip Generation Analysis

The two-tiered preliminary trip generation analysis set forth in the *CEQR Technical Manual* consists of Level 1 Trip Generation Screening Assessment followed by a Level 2 Trip Assignment Screening Assessment.

Level 1 Screening Assessment:

The *CEQR Technical Manual* indicates that if the number of person trips by mode as well as vehicle trips for all peak hours are exceeded, further analysis is needed. The Manual states that, except in unusual circumstances, a further quantified analysis would typically not be needed for a technical area if the proposed development would result in fewer than:

- 50 peak hour vehicle trips;
- 200 peak hour subway/rail or bus transit riders; or
- 200 peak hour pedestrian trips.

Trip Generation

In accordance with the 2010 *CEQR Technical Manual*, a variety of existing information was used (in accordance with Section 16-310 of the *Manual*) to develop trip generation projections for the Proposed Action: the *2010 CEQR Technical Manual*; Boris Pushkarev and Jeffrey Zupan's *Urban Space for Pedestrians*; the Institute of Transportation Engineers' *Trip Generation, Eighth Edition*; the United States Census Bureau's *American Community Survey*; and a number of relevant studies, particularly the *Lower Concourse Rezoning and Related Actions FEIS*. Trip generation rates were assigned for the various Proposed Action development program elements (residential, local retail, and daycare) to project total numbers of daily trips associated with the Proposed Action. The total daily trips for the development sites were then broken down into the peak hours being studied using a temporal distribution. The weekday morning, mid-day, and late afternoon peak hours encompass the time periods where future activities attributed to the Proposed Action would be the greatest.

Modal Split

The total person trips for the Proposed Action for each period was then broken down into the various modes of available transportation. This distribution of trips by type is known as modal split. For the study area, available transportation modes include automobile, taxi, bus, subway and walking.

A summary of the trip generation rates, temporal distributions, directional splits, modal splits and vehicle occupancies used in the preliminary screening analysis be found in **Table** M-2 below.

Table M-2: Transportation Assumption Factors

Land Use	**Residential**		**Local Retail**		**Light Industrial**		**Warehouse**		**Automotive**		**Daycare**	
Trip Generation	per DU		per 1,000 gsf		per 1,000 gsf		per 1,000 gsf		per 1,000 gsf		per 1,000 gsf	
	(1,2)		(1)		(6)		(2)		(2)		(6)	
	Weekday		**Weekday**		**Weekday**		**Weekday**		**Weekday**		**Weekday**	
Daily Person Trips	8.075		205		11.5		5.8		19.4		138	
Temporal Distribution	(1)		(1)		(7,10)		(2)		(2)		(6)	
AM (7:30-8:30)	10.0%		3.0%		13.0%		17.0%		13.2%		16.0%	
MD (1:00-2:00)	5.0%		19.0%		10.0%		14.0%		11.0%		5.0%	
PM (5:00-6:00)	11.0%		10.0%		14.0%		13.0%		14.2%		19.0%	
In / Out Directional Split	(1,2)		(2,3)		(6)		(2)		(2)		(13,14)	
	In	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**
AM (7:30-8:30)	15%	85%	50%	50%	88%	12%	83%	17%	65%	35%	53%	47%
MD (1:00-2:00)	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%
PM (5:00-6:00)	70%	30%	50%	50%	12%	88%	25%	75%	50%	50%	47%	53%
Modal Split												
	(4)		(2)		(5)		(2)		(2)		(7)	
Mode	**AM/MD/PM**		**AM/MD/PM**		**AM/MD/PM**		**AM/MD/PM**		**AM/MD/PM**		**AM/MD/PM**	
Auto	31%		3%		52%		46%		85%		15%	
Taxi	1%		2%		1%		2%		5%		5%	
Bus	21%		10%		16%		16%		1%		10%	
Subway	40%		5%		22%		29%		1%		20%	
Walk	7%		80%		9%		7%		8%		50%	
Vehicle Occupancy	(2,4)		(2)		(2)		(2)		(2)		(6)	
Auto	1.50		1.60		1.65		1.04		1.30		1.65	
Taxi	1.40		1.20		1.40		2.00		1.30		1.40	
Truck Trip Generation	(1)		(1)		(6)		(2)		(2)		(6)	
	Weekday		**Weekday**		**Weekday**		**Weekday**		**Weekday**		**Weekday**	
Daily Vehicle Trips	0.06		0.35		0.52		0.67		0.89		0.07	
	per DU		per 1,000 gsf		per 1,000 gsf		per 1,000 gsf		per 1,000 gsf		per 1,000 gsf	
Temporal Distribution	(1)		(1)		(6)		(2)		(2)		(6)	
AM (7:30-8:30)	12.0%		8.0%		14.0%		14.0%		14.0%		9.6%	
MD (1:00-2:00)	9.0%		11.0%		8.6%		9.0%		9.0%		11.0%	
PM (5:00-6:00)	2.0%		2.0%		1.0%		1.0%		1.0%		1.0%	
	(2)		(2)		(2)		(2)		(2)		(6)	
In / Out Directional Split	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**
	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%
Truck PCE Factor	2.0		2.0		2.0		2.0		2.0		2.0	

Sources:
(1) 2010 CEQR Technical Manual
(2) Lower Concourse Rezoning and Related Actions FEIS (June 2009)
(3) Pushkarev & Zupan "Urban Space for Pedestrians" 1975
(4) 2000 US Journey to Work Data for Census Tracts in Study Area
(5) 2000 US Reverse Journey to Work Data for Census Tracts in Study Area
(6) No. 7 Subway Extension - Hudson Yards Rezoning and Development Program FEIS
(7) Department of City Planning

An analysis of the Proposed Action's trip generation by mode, using the factors expressed in **Table** M-2 above, indicated that it would far exceed the above described thresholds for a Level 2 trip generation analysis, for all modes of travel. Therefore, the analysis was taken to the second tier of trip generation analysis indicated as appropriate in the *2010 CEQR Technical Manual*.

Level 2 Screening Assessment: Trip Assignment

The *CEQR Technical Manual* provides that if a Proposed Action exceeds 50 peak hour vehicle trip ends or 200 peak hour pedestrian or transit trips as determined by the Level 1 Screening Assessment, a Level 2 Project Generated Trip Assignment Screening Assessment should be prepared to assign trips to specific intersections, bus routes, subway lines or parking spaces.

Based on the Census Journey to work information, three percent of trips were out of state. Based on the location of the Project, these trips were assumed to be to/from New Jersey and were routed the most direct path to the Cross Bronx Expressway. The Census also indicated that 43 percent of all journey to work trips stayed within the county: 23 percent were assumed to be local trips and were routed out of the study area via West Farms Road, Westchester Avenue, Tremont Avenue and Boston Road; 20 percent were assumed to travel further from the study area and were assigned via local access routes to the highway system. The remaining 54 percent (out-of-county) of the trips were distributed to Manhattan (25 percent), Queens/Brooklyn (19 percent) and Westchester (10 percent). These out of county trips were distributed on the local roads to the closest highway access point. Half of the Manhattan trips used the Cross Bronx Expressway and the other half used the Sheridan Expressway.

The residential development resulting from the Proposed Action is assumed to include onsite parking garages. Trips were assigned to the anticipated garage entry sites, which were assumed to be at mid-block locations. In order to simplify trip generation and assignments for the Proposed Action, parking garage entrance/exit locations have been numbered and are proposed in the following locations shown in Table M-3.

Table M-3: Proposed Garage Entrance/Exit Locations

Entrance / Exit Number	Planned Location of Garage Entrance / Exit
1	Boone Ave between 174th Street and 173rd Street
2	Boone Ave between 173rd Street and 172nd Street
3	173rd Street between Longfellow Ave and Boone Ave
4	173rd Street between Boone Ave and West Farms Road
5	172nd Street between Longfellow Ave and Boone Ave
6	174th Street between Boone Ave and West Farms Road
7	Boone Ave North of 174th Street
8	Rodman Place West of West Farms Road
9	Cross Bronx Expressway Service Road West of West Farms Road
10	172nd Street between Boone Ave and West Farms Road
11	West Farms Road North of Rodman Place
12	West Farms South of 172nd Street
13	West Farms South of 173rd Street

Determination of Need for Detailed Analysis

Based upon results of the Level 2 trip generation screening analyses, the lead agency determines whether a detailed traffic, transit, pedestrian or parking analysis is required. Based upon the vehicle trip

assignment, intersections with fewer than 50 vehicle trip ends may likely be screened out, and no further analysis would be needed for those intersections. However, the lead agency may identify congested intersections generating fewer than 50 peak hour vehicle trips to be included in the analysis based on operational or safety concerns. If a detailed traffic analysis is warranted, a detailed parking analysis may likely be warranted.

If, based upon the screening analysis, a Proposed Action would result in 50 or more bus passengers being assigned to a single bus line in one direction, or if it would result in an increase in passengers at a single subway station or on a single subway line of 200 or more, a more detailed bus or subway analysis would be warranted.

Based upon the Level 2 Screening Trip Assignment, projected pedestrian volume increases of less than 200 pedestrians per hour at any sidewalk, crosswalk or intersection corner would not typically be considered a significant impact and would not require a detailed analysis because that level of increase would not generally be perceptible. However, detailed analysis is necessary if the project results in pedestrian volume increases of 200 pedestrians or more per hour at any sidewalk, crosswalk or intersection corner, or proposes to remove or reduce capacity of a pedestrian element such as reducing the width of a sidewalk.

The Level 2 Screening analysis indicated that the threshold for a detailed transportation analysis was necessary for the traffic, parking, transit and pedestrian trip generation. Below is a discussion of the parameters of the Detailed Transportation Analyses for the facilities exceeding the level 2 Screening Trip Assignment screening threshold, resulting from the Level 2 screen.

If a detailed traffic analysis is warranted, a detailed parking analysis may likely be warranted.

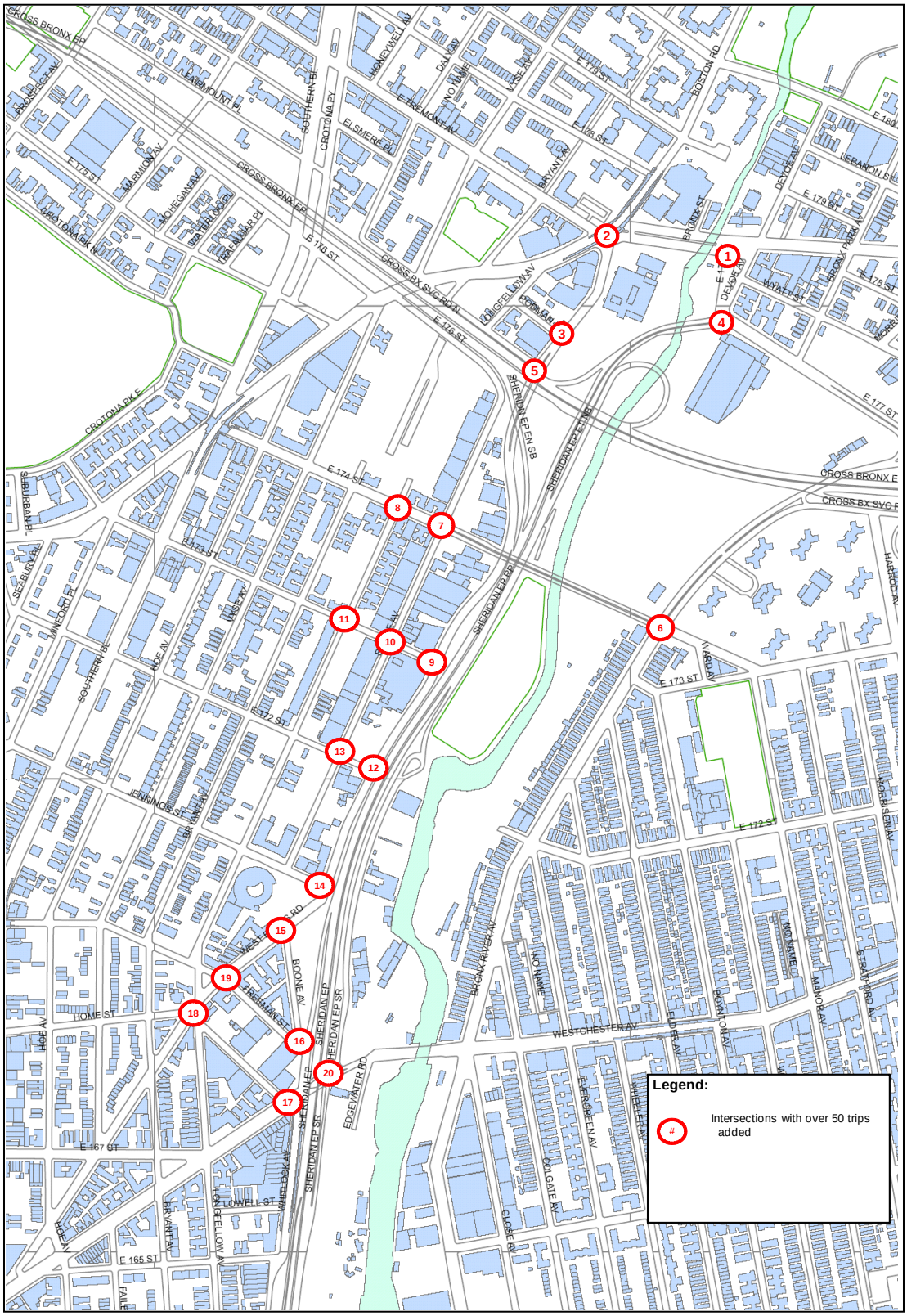
Detailed Transportation Analysis Parameters and Criteria for Impact Analyses

Traffic Overview

Traffic Study Area

The traffic study area for traffic analysis is located in the South Bronx. It is bounded on the west by Southern Boulevard, Westchester Avenue in the South, East Tremont Avenue in the North and Bronx River Avenue in the east. The study area extends a ½ mile outside the proposed rezoning area. A total of 10 signalized and 10 unsignalized intersections were selected for analysis within the traffic study due to CEQR guidelines of a minimum of an additional 50 vehicle trips added from the Proposed Action. These 20 intersections were analyzed for the vehicular traffic for typical a weekday for three peak periods, morning, mid-day, and afternoon. Figure M-1 shows a map of the study area and indicates the intersections which are to be studied.

Figure M-1: Crotona Park Traffic Study Area and Study Intersections



Traffic Peak Periods

Turning movement counts were collected at these 20 intersections and 10 ATR counts were also undertaken to determine the network peak periods. These peak periods occurred at 7:30- 8:30 AM, 1:00 – 2:00 PM, and 4:30 – 5:30 PM. These periods were determined to have the heaviest network traffic volumes from ATR and traffic counts conducted in the area.

Traffic Analysis

The intersection operations analysis used in this study were based on the methodology used in the Highway Capacity Manual (HCM) using HCS Software. HCS version 4.1f was used for these analyses. The operation of signalized intersections in the study area was analyzed in accordance with CEQR guidelines by applying the methodologies presented in the 2000 Highway Capacity Manual (HCM). This procedure evaluates signalized intersections for average delay per vehicle and LOS.

LOS for the signalized intersections is based on the average stopped delay per vehicle for the various lane group movements within the intersection. This delay is the basis for an LOS determination for individual lane groups (grouping of movements in one or more travel lanes), the approaches, and the overall intersection. The levels of service are defined in Table M-4.

Table M-4: Intersection Level of Service Criteria

Level of service	Signalized Intersections	Unsignalized Intersections
A	? 10.0 seconds	? 10.0 seconds
B	> 10.0 and ? 20.0 seconds	> 10.0 and ? 15.0 seconds
C	> 20.0 and ? 35.0 seconds	> 15.0 and ? 25.0 seconds
D	> 35.0 and ? 55.0 seconds	> 25.0 and ? 35.0 seconds
E	> 55.0 and ? 80.0 seconds	> 35.0 and ? 50.0 seconds
F	> 80.0 seconds	> 50.0 seconds

Source: 2000 Highway Capacity Manual

Although the HCM methodology calculates a volume-to-capacity (v/c) ratio, there is no strict relationship between v/c ratios and LOS as defined in the HCM. A high v/c ratio indicates substantial traffic passing through an intersection, but a high v/c ratio combined with low average delay actually represents the most efficient condition in terms of traffic engineering standards, where an approach or the whole intersection processes traffic close to its theoretical maximum with minimal delay. However, very high v/c ratios, especially those approaching or greater than 1.0, are often correlated with a deteriorated LOS. Other important variables affecting delay include cycle length, progression, and green time. LOS A and B indicate good operating conditions with minimal delay. At LOS C, the number of vehicles stopping is higher, but congestion is still fairly light. LOS D describes a condition where congestion levels are more noticeable and individual cycle failures (a condition where motorists may have to wait for more than one green phase to clear the intersection) can occur. The mid-point of this service level (45 seconds of delay for signalized intersections and 30 seconds for unsignalized intersections) is considered the threshold of acceptable operating conditions. Conditions at LOS E and F reflect poor service levels, and cycle failures are frequent. The HCM methodology provides for a summary of the total intersection operating conditions by identifying the two critical movements (the worst-case from each roadway) and calculating a summary of critical v/c ratio, delay, and LOS.

Impact Criteria -- Traffic

According to the criteria presented in the *CEQR Technical Manual for* signalized intersections, if the LOS under the With-Action condition deteriorates to worse than mid-LOS D, then the determination of whether the impact is considered significant is based on a sliding scale that varies with the No-Action LOS. This sliding scale can be summarized as follows:

If a lane group under the With-Action condition is within LOS A, B or C, or marginally acceptable LOS D, the impact is not considered significant; LOS changes within this range could affect neighborhood character and should be disclosed. If a lane group under the No-Action condition is within LOS A, B or C, then deterioration under the With-Action condition to worse than mid-LOS D should be considered a significant impact.

- For a lane group with LOS D under the No-Action condition, an increase in projected delay of 5.0 or more seconds should be considered significant if the With-Action delay exceeds mid-LOS D.
- For a lane group with LOS E under the No-Action condition, an increase in projected delay of 4.0 or more seconds should be considered significant.
- For a lane group with LOS F under the No-Action condition, an increase in projected delay of 3.0 or more seconds should be considered significant.

For unsignalized intersections the same criteria as for signalized intersections would apply. For the minor street to trigger significant impacts, 90 PCE's must be identified in the future With-Action conditions in any peak hour.

Transit Overview

Based on criteria specified in the *2010 CEQR Technical Manual*, it was determined that quantified assessments of transit station operations and street-level pedestrian circulation would be required. The criteria for a detailed analysis in the Manual is more than 200 riders for a transit analysis, and more than 200 pedestrians for a pedestrian analysis. A detailed discussion of the trip-making characteristics of the various components of the Proposed Action can be found in the traffic analysis section. For both transit stations and street-level pedestrian circulation, detailed analyses were conducted for the weekday AM, MD, and PM peak periods, when demand generated by the Proposed Action would be greatest.

The following sections summarize the various aspects of the transit and pedestrian analyses, including the study areas, analysis methodologies, and future trip projections, and set the framework for the existing and future analyses.

Transit Study Area

The transit study area for the Proposed Action includes four subway stations in its vicinity. These stations include:

- East Tremont Ave – West Farms Square (serving subway lines 2 and 5)
- East 174th Street (serving subway lines 2 and 5)
- Freeman Street (serving subway lines 2 and 5)
- Whitlock Avenue (6)

Subway trips generated by the Proposed Action were assigned to the subway station nearest the development from which that originated. Due to proximity to the development, all trips were routed to the East Tremont Ave – West Farms Square station and the East 174th Street station. Both of these stations reached the threshold for additional trips (i.e., more than 200 trips subway trips in the peak hour) to warrant of detailed analysis. For the 2009 existing condition and 2022 No Action and Proposed Action

conditions a total of 12 subway station elements were studied during the AM, MD, and PM peak hours including 6 stairways and 6 high entry/exit (HEET) arrays. A line haul analysis is also necessary for the subway routes passing through the stations being analyzed. For the East Tremont Ave – West Farms Square station and the East 174th Street station, line haul analyses were performed for the No. 2 subway and the No. 5 subway. Though the Whitlock Avenue Station, which serves the No. 6 train, is within the study area boundaries, no project-generated trips were assigned to this station. Therefore, a line haul analysis was not conducted for the No. 6 train.

Nine bus lines operate within the study area. These bus lines include the Bx 4, Bx 9, Bx 11, Bx 21, Bx 27, Bx 36, Bx 40, Bx 42, and Q 44. The buses in the study area have stops along Boston Road, Southern Boulevard, East Tremont Avenue, East 174th Street, East 172nd Street, West Farms Road and Westchester Avenue.

Transit peak periods

The peak hours analyzed for transit circulation are the same as those used in the traffic analysis and are:

- Weekday AM (7:30 AM to 8:30 AM)
- Weekday Midday (1:00 PM to 2:00 PM)
- Weekday PM (4:30 PM to 5:30 PM)

The transit analyses reflect peak 15-minute conditions within each peak hour.

Transit Operation Analysis

Subway station operations were assessed according to methods and evaluation criteria presented in the *2010 CEQR Technical Manual*. The methodology for assessing subway stairway, escalator, and control area (turnstile arrays, high entry/exit turnstile arrays, service gates, etc.) operations compares the demand volume to the element's design capacity, resulting in a volume-to-capacity (v/c) ratio. For stairways, the design capacity considers the effective width of a tread, which accounts for railings or other obstructions, the friction between upward and downward moving patrons, and the average required area for circulation. For escalators, processing capacity is determined by the speed and the available pedestrian lane(s), the latter of which depends on the width of the escalator tread. For control area elements, capacity is measured by the number and width of an element and the New York City Transit (NYCT) optimum capacity per element. For stairways, escalators and control area elements, volumes and capacities are presented for peak 15-minute intervals.

The estimated v/c ratio is compared to NYCT criteria to determine a level-of-service (LOS) for the operation of an element. Table M-5 shows the LOS and corresponding v/c ratios for stairways, escalators, and control area elements.

Table M-5: Level of Service Criteria for Subway Station Elements

LOS	V/C Ratio	
	Stairways	Escalators & Turnstiles/Gates
A	0.00 to 0.45	0.00 to 0.20
B	0.45 to 0.70	0.20 to 0.40
C	0.70 to 1.00	0.40 to 0.60
D	1.00 to 1.33	0.60 to 0.80
E	1.33 to 1.67	0.80 to 1.00
F	Greater than 1.67	Greater than 1.00

Source: New York City Mayor's Office of Environmental Coordination, *2010 CEQR Technical Manual*.

For stairways, at LOS A and B, there is sufficient area to allow pedestrians to freely select their walking speed and bypass slower pedestrians. When cross and reverse flow movement exists, only minor conflicts may occur. At LOS C, movement is fluid although somewhat restricted. While there is sufficient room for standing without personal contact, circulation through queuing areas may require adjustments to walking speed. At LOS D, walking speed is restricted and reduced. Reverse and cross flow movement is severely restricted because of congestion and the difficult passage of slower moving pedestrians. At LOS E and F, walking speed is restricted, there is insufficient area to bypass others, and opposing movement is difficult. Often, forward progress is achievable only through shuffling, with queues forming.

NYCT's minimum standard for pedestrian conditions has traditionally been established as the breakpoint between LOS C and LOS D (v/c of 1.00). A v/c ratio of 1.00 is used to determine the design capacity of station elements during peak travel periods.

Impact Criteria -- Transit

The determination of significant impacts for station elements varies based on their type and use. For turnstiles, service gates, and escalators, for elements with a No Action v/c ratio less than 1.00, an increase in volume that results in a v/c of greater than 1.00 is considered significant, since a value of 1.00 represents the design capacity of the element. For elements with a No Action v/c ratio greater than 1.00, an increase in volume that results in an increase in v/c ratio of greater than 0.01 is considered significant.

For stairways, impacts are considered significant based on the minimum amount of additional capacity required to return the location to its No Action condition or to acceptable operating conditions, also called the width increment. For a location with a future with the Proposed Action LOS D, a width increment threshold (WIT) of 6 inches or more is considered significant; for a future with the Proposed Action LOS E, a WIT of 3 inches or more is considered significant; and for a future with the Proposed Action LOS F, a WIT of 1 inch or more is considered significant.

For line haul analyses, if the Proposed Action causes the subway to operate overcapacity and the Proposed Action adds more than 5 passengers per car in the peak hour, the impact is considered significant.

Pedestrian Overview

Pedestrian Study Area

The pedestrian study area includes numerous sidewalks, corner reservoirs, and crosswalks in the study area. These pedestrian facilities, extending primarily from East 172nd Street to East Tremont Avenue and from West Farms Road to Southern Boulevard, represent locations where the most project-generated trips are anticipated.

The pedestrian study area is comprised of 17 intersections. A total of 52 pedestrian elements were analyzed during the weekday AM, weekday midday, and weekday PM peak hours including 18 sidewalks, 5 corner reservoirs, and 29 crosswalks. These pedestrian facilities, extending primarily from East 172nd Street to East Tremont Avenue and from West Farms Road to Southern Boulevard, represent locations where the most project-generated trips are anticipated.

Pedestrian peak periods

The peak hours analyzed for pedestrian circulation are the same as those used in the traffic analysis and are:

- Weekday AM (7:30 AM to 8:30 AM)
- Weekday Midday (1:00 PM to 2:00 PM)
- Weekday PM (4:30 PM to 5:30 PM)

The pedestrian analyses reflect peak 15-minute conditions within each peak hour.

Pedestrian Analysis Elements

The adequacy of the study area's sidewalk, crosswalk, and corner reservoir capacities in relation to the demand imposed on them by the Proposed Action was assessed using the methodologies presented in the *Highway Capacity Manual 2000 (HCM).* Sidewalks were analyzed in terms of pedestrian flow. Average pedestrians per foot per minute of effective walkway width is the basis for sidewalk LOS analysis. To account for the tendency of pedestrians to move in congregated groups, platoon LOS criteria is applied to the calculation of pedestrian flow to more accurately estimate the dynamics of walking. This procedure generally results in a LOS one level poorer than the average flow.

Crosswalks and street corners are not easily measured in terms of free pedestrian flow, as they are influenced by the effects of pedestrian queuing caused by traffic signals. Street corners must be able to provide sufficient space for a mix of standing pedestrians (queued to cross a street) and circulating pedestrians (crossing the perpendicular street or moving around the corner). The HCM methodologies apply a measure of time and space availability based on the area of the corner, the timing of the intersection signal, and the estimated space used by circulating pedestrians. The net total "time-space" available for these activities is the effective area of the corner (in square feet) multiplied by the cycle length and expressed in square foot minutes. The analysis then determines the total circulation time for all pedestrian movements at the corner (expressed as pedestrian minutes). The net time-space divided by total circulation time provides the LOS measurement of square feet per pedestrian.

Crosswalk LOS is also a function of time and space. Similar to the street corner analysis, crosswalk conditions are first expressed as a measurement of the available area (the crosswalk width multiplied by the crosswalk length) and the permitted crossing time. This measure is expressed in square feet per minute. The time-space calculation for crosswalks, however, is slightly different. The available area of the crosswalk is multiplied by result of the total green time minus the crosswalk length divided by two times the crossing speed. The ratio of time-space available in the crosswalk to the total crosswalk occupancy time (based on the effective green time needed to clear an intersection crossing) is the LOS measurement

of available square feet per pedestrian. The LOS analysis also accounts for conflicting vehicular turning movements that traverse the crosswalk and impede pedestrian crossing.

Table M-6 shows the LOS standards for sidewalks, corner reservoirs, and crosswalks. The descriptions of these LOS are similar to those described above for subway station elements.

Table M-6: Level of Service Criteria for Pedestrian Elements

LOS	Sidewalks Average LOS	Corner Reservoirs and Crosswalks
A	5 PFM or less	60 SFP or more
B	5 to 7 PFM	40 to 60 SFP
C	7 to 10 PFM	24 to 40 SFP
D	10 to 15 PFM	15 to 24 SFP
E	10 to 15 PFM	8 to 15 SFP
F	Greater than 23 PFM	Less than 8 SFP

Notes: PFM = pedestrians per foot per minute;
SFP = square feet per pedestrian
Source: New York City Mayor's Office of Environmental Coordination, *2010 CEQR Technical Manual*

Impact Criteria -- Pedestrians

The *2010 CEQR Technical Manual* specifies that an LOS D condition or better is considered reasonable for sidewalks, corner reservoirs, and crosswalks. For sidewalks, an average LOS D condition requires a maximum of 15 pedestrians per foot per minute (PFM) and a platoon LOS D condition requires a maximum of 11 PFM. For crosswalks and corner reservoirs, an LOS D condition requires a minimum of 15 square feet per pedestrian (SFP).

Project-related sidewalk impacts are considered significant and require examination of mitigation measures when an increase in volume results in an increase of greater than 2 PFM over a No Action condition characterized by flow rates of 15 PFM or greater. For corners and crosswalks, an increase in volume that results in a decrease of 1 SFP below a No Action condition with area occupancy less than 15 SFP (the breakpoint between LOS D and LOS E).

Parking Overview

On-street parking surveys are needed to be performed to determine number of legal on-street parking spaces that exist in the study area by critical times of parking. These critical times of parking are likely at periods of the highest demand. Parking demand is also needed to be tabulated during the same periods in order to determine utilization rates for parking. Details of parking regulations in the study area need to be collected.

Off-street parking surveys are needed to determine availability of off street parking in the study area. Demand for off street parking in the study area is also needed. Demand can be determined by occupancy surveys of the off street parking facilities.

Impact Significance – Parking

If the Proposed Action creates more parking demand than it provides, this shortfall of spaces may be considered significant. The location of the project and the availability of spaces within a quarter mile

radius of the Proposed Action are necessary in making the determination of the impact significance. According to Map 16-2, "Parking Zones" from the *2010 CEQR Technical Manual* the area of the Proposed Action falls outside of parking zones 1 and 2. According to Section 16-450 of the *2010 CEQR Technical Manual*, for proposed projects located in residential or commercial areas not designated as parking zones 1 and 2, a project's parking shortfall that exceeds more than half the available on-street and off-street parking spaces within 0.25 miles of the site can be considered significant.

Safety Overview

The traffic study area should also consider intersections or locations that may be problematic from a safety viewpoint. High-crash locations, if any, should be identified in consultation with DOT and the traffic study area should include these intersections. A high crash location is one where there were 48 or more total crashes (reportable and non-reportable) or five or more pedestrian/bicycles injury crashes in any consecutive 12 months of the most recent 3-year period for which data is available.

The key issue to be resolved in safety analyses is the extent to which vehicular and pedestrian exposure to crashes may reasonably be expected to increase with the proposed project in place. Detailed safety impact analyses may be needed for projects that significantly redesign one or more streets, those located near sensitive land uses (hospitals, schools, nursing homes, parks, elderly housing or study intersections located in SFPA's) that could be affected by increased traffic and pedestrian volumes generated by the proposed project. Increased pedestrian crossings at documented high-accident locations may result in increasingly unsafe conditions. Generating measurable pedestrian crossings at non-controlled locations may also lead to unsafe conditions (example new school where a principal access path traverses a high crash location).

Assessment of safety impacts should indicate the nature of the impact, volumes affected by or affecting such impacts (types of vehicles, including trucks; age group of pedestrians such as elderly or children; accident types and severity). Potential remedies for problematic intersections with safety concerns should be developed and described.

EXISTING CONDITIONS

Data Collection

Collection of data on existing traffic conditions was undertaken in June 2009. Manual turning movement counts were completed at 35 intersections, including the 20 intersections subsequently identifies as requiring detailed analysis and an additional 15 intersections. ATR (Automated Traffic Recorder) counts were done for a full week at 10 locations in the study area. Vehicle classification counts were done at 11 intersection approaches. Speed runs were done at two intersections deemed to be critical intersections in the study area. Physical inventories were conducted in the field to record of parking regulations, lane configurations and other physical and operational characteristics of the street network. Signal timing plans were signalized intersections in the study area were obtained from the New York City Department of Transportation (NYCDOT). Parking utilization surveys were conducted in November 2009 for both on and off street parking located within a quarter mile of the proposed rezoning action.

Traffic

Street Network Characteristics

The study area street network includes local streets, arterials, and two expressways allowing travel between the Bronx and the neighboring boroughs as well as New Jersey and Westchester County. The major arterials passing through the area are described below:

East Tremont Avenue is an east-west arterial that runs through the northern part of the study area. It runs from the Grand Concourse to the southeastern edge of the Bronx. East Tremont Avenue has two main intersections in the study area, a five way intersection with Boston Road and West Farms Road and an intersection with East 177th Street. In the study area, it provides three travel lanes in each direction to the East and two travels lanes and a parking lane in each direction to west.

East 177th Street is a short arterial with termini at East Tremont Avenue and the Bronx River Parkway, where it separates into the Cross Bronx Expressway North and South Service Roads. East 177th Street acts as feeder for traffic entering the Cross Bronx Expressway, the Sheridan Expressway Southbound, and Northbound on the Bronx River Parkway. Traffic exiting the Sheridan Expressway Northbound and the Bronx River Parkway Southbound can directly access East 177th Street along with traffic traveling westbound on the North Cross Bronx Expressway Service Road.

West Farms Road runs north-south through the middle of the study area along the proposed development. It provides a link between East Tremont Avenue in the north and Westchester Avenue in the south. One traffic lane and one parking lane run in each direction along West Farms Road.

Boone Avenue is a one-way southbound street with one traffic lane and parking on either side. Boone Avenue runs through the middle of the Proposed Action area from East 174th Street to Jennings Street.

Westchester Avenue is an arterial that primarily runs north-south in the Bronx. It begins at Third Avenue in southwest Bronx and runs to the Bruckner Expressway in the northeast Bronx. In the southern end of study area, it runs east to west along the southern and has two lanes available to traffic each direction. Westchester Avenue provides access for traffic exiting the Sheridan Expressway in both directions and traffic entering the Sheridan Expressway Northbound.

East 174th Street provides for east-west travel through the study area between its intersection with Southern Boulevard and Boston Road and its intersection with Bronx River Avenue. One traffic lane and one parking lane primarily run in each direction along this stretch.

The Sheridan Expressway (I-895) is a short expressway that runs north-south and connects the Cross Bronx Expressway (I-95) with Bruckner Expressway (I-278). Its northern terminus is in the study area where it meets East 177th Street and its southern terminus is located where it merges with the Bruckner Expressway.

The Cross Bronx Expressway (I-95) is a major throughway runs east-west across the Bronx. It begins at the Alexander Hamilton Bridge over the Harlem River and runs to where it meets the Bruckner Expressway in Throgs Neck.

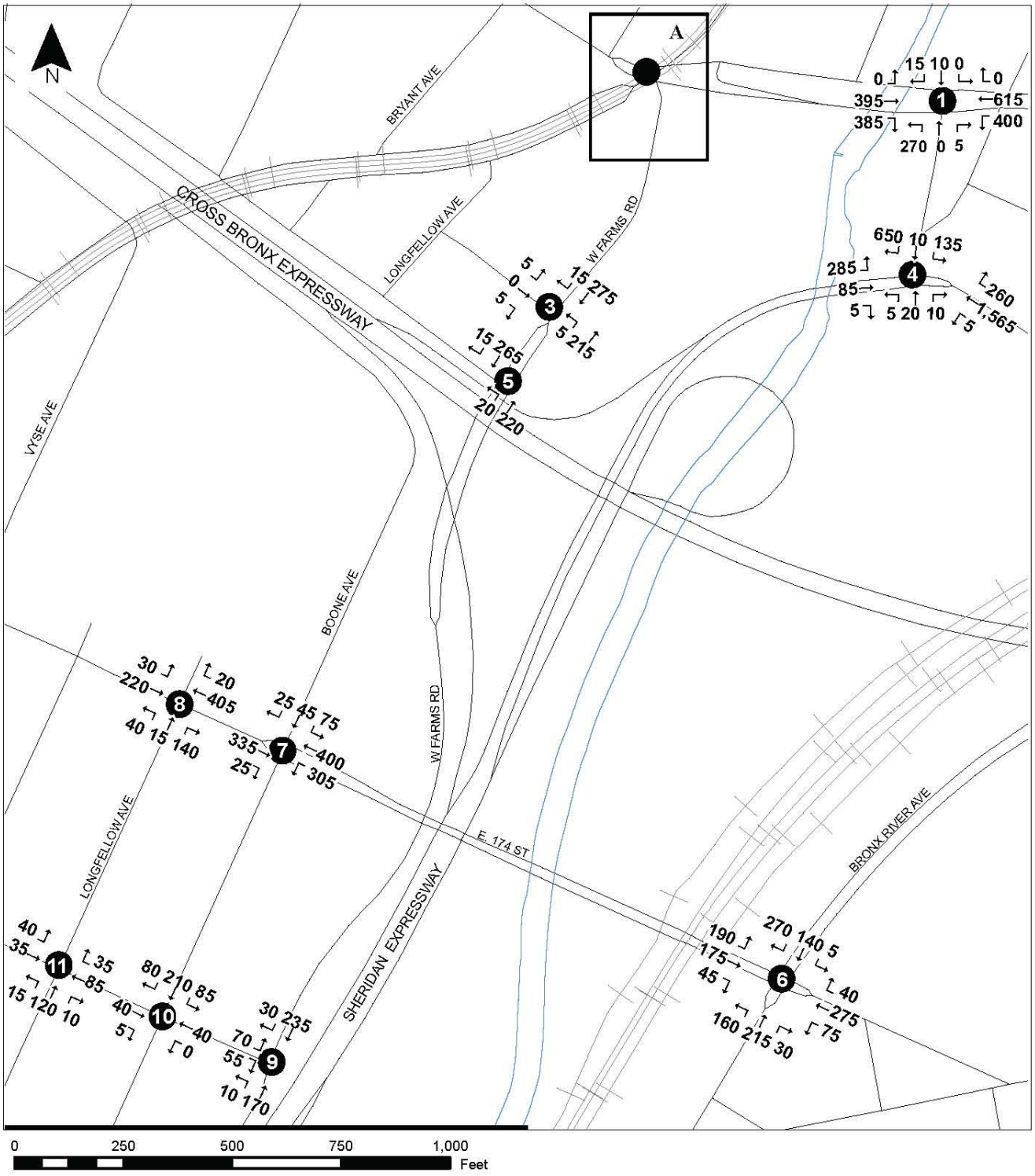
Bicycle Facilities

Bicycles lanes are located along four streets in the study area. Bicycle lanes are striped north-south along Longfellow Avenue, Bryant Avenue, and Southern Boulevard along with striped bicycle lanes running east-west on East 174th Street.

Traffic Volumes

Traffic data compiled for the Proposed Action was summarized, adjusted and balanced in a network to depict traffic volumes for a typical weekday during the AM (7:30 to 8:30 AM), midday (1:00 to 2:00 PM), and PM (4:30 to 5:30 PM) peak hours. 2009 base traffic volumes are shown in Figure M-2, Figure M-3, and Figure M-4 for weekday AM, midday, and PM peak hours. Traffic volumes are highest in the PM peak period. The AM peak period has the second highest traffic levels and the midday peak period has the lowest existing traffic. East Tremont Avenue, Westchester Avenue, East 177th Street, and East 174th Street contain the most traffic in the study area.

On typical weekdays East Tremont Avenue averages over 2000 vehicles per hour (vph) during the PM peak period, about 1700 vph during AM peak period and 1500 vph during the MD peak period. Westchester Avenue averages slightly less than 2000 vph during the PM peak period, 1750 vph during the AM peak period, and just over 1400 vph during the midday. East 177th Street between the Sheridan Expressway on and off ramps averages slightly over 1000 vph during all three peak periods. East 174th Street has significantly more traffic east of Boone Avenue then west of Boone Avenue. In the PM peak period over 1200 vph travel on East 174th Street east of Boone Avenue while west of Boone Avenue contains less than 900 vph. In the AM peak period about 1200 vph are on East 174th Street east of Boone Avenue with only 700 vph west of Boone Avenue. In the midday, 800 vph travel on East 174th Street east of Boone Avenue and 600 vph are west of Boone Avenue.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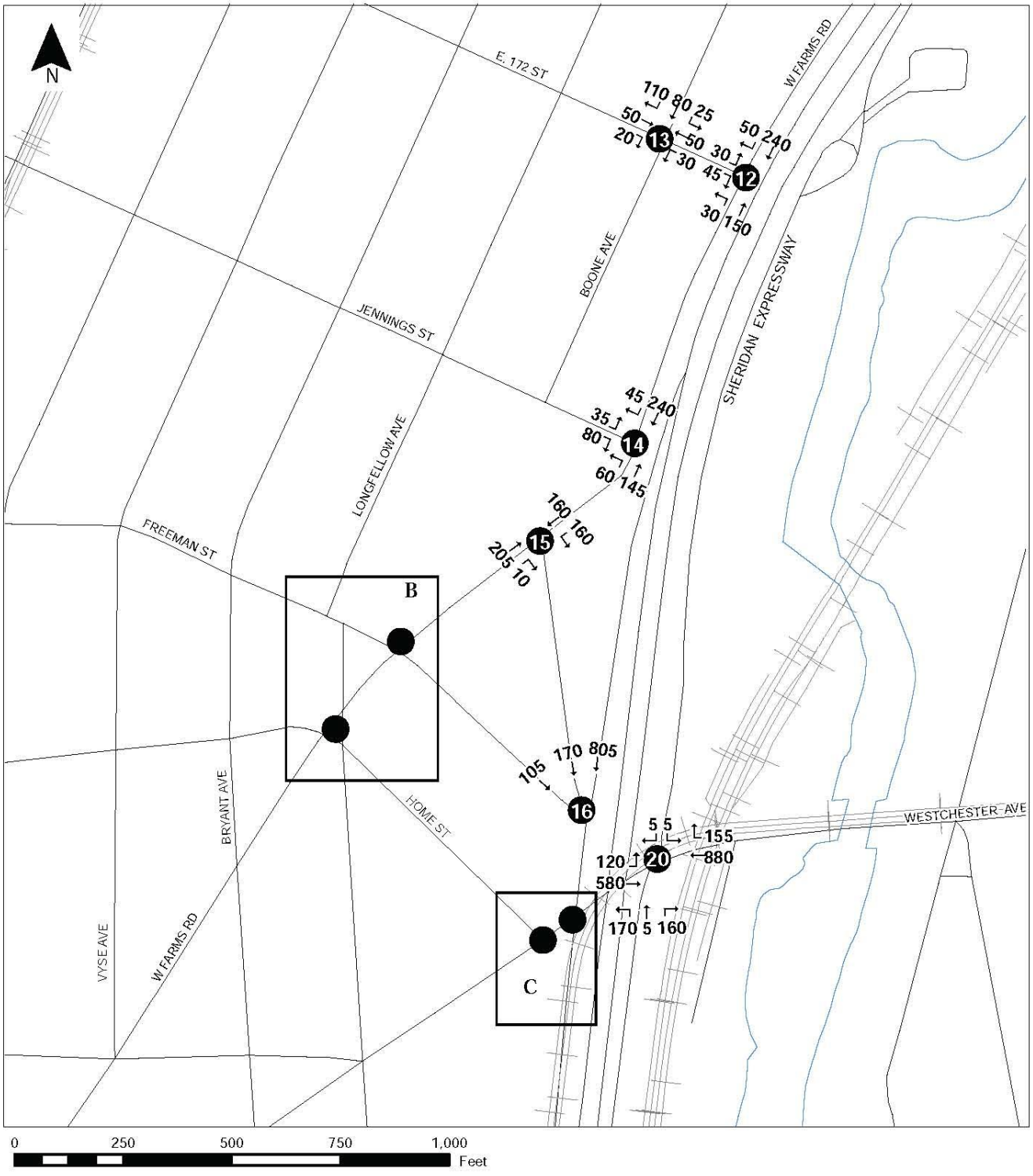
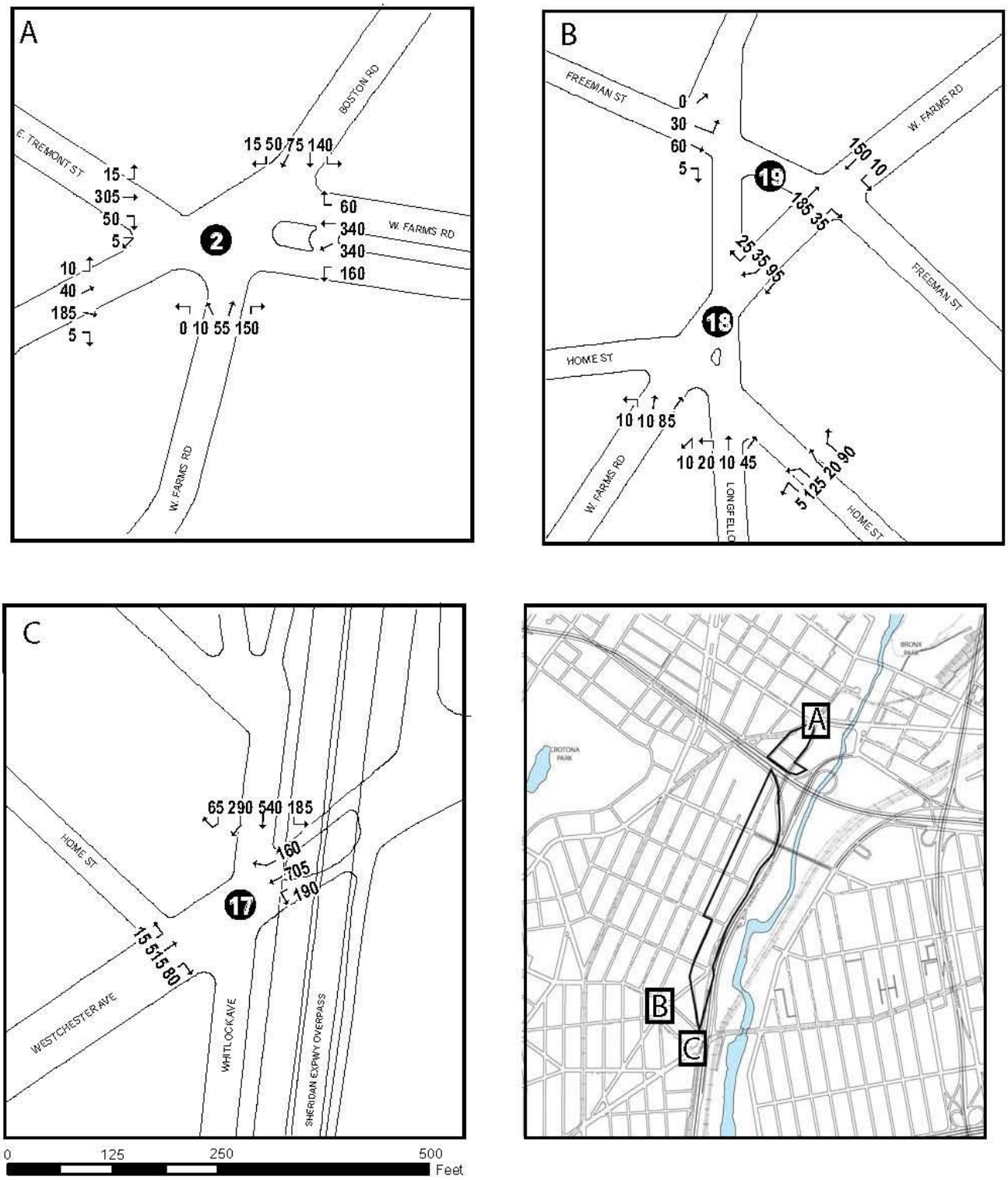


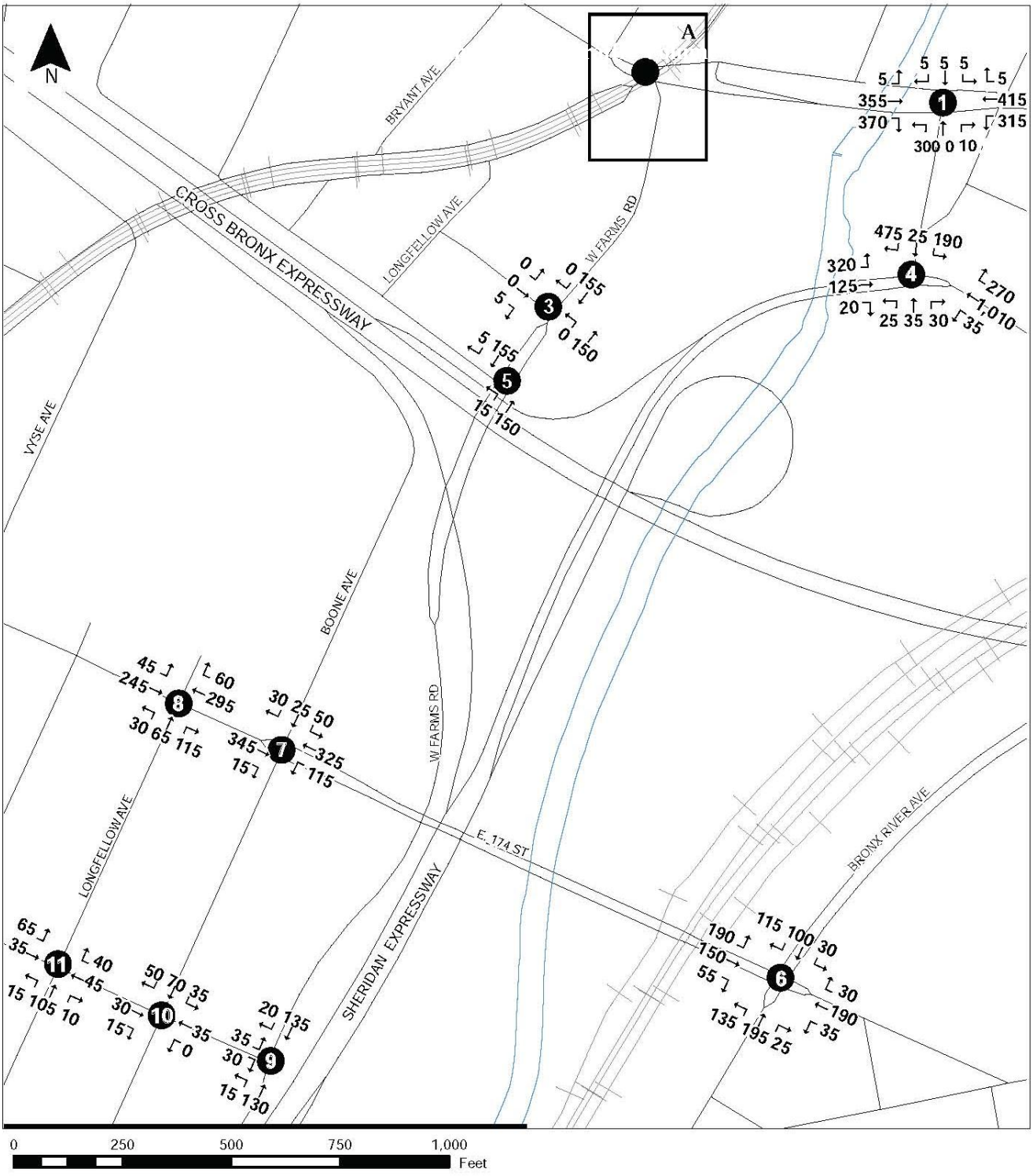
CROTONA PARK EAST / WEST FARMS ZONING MAP AMENDMENT

Bronx, New York



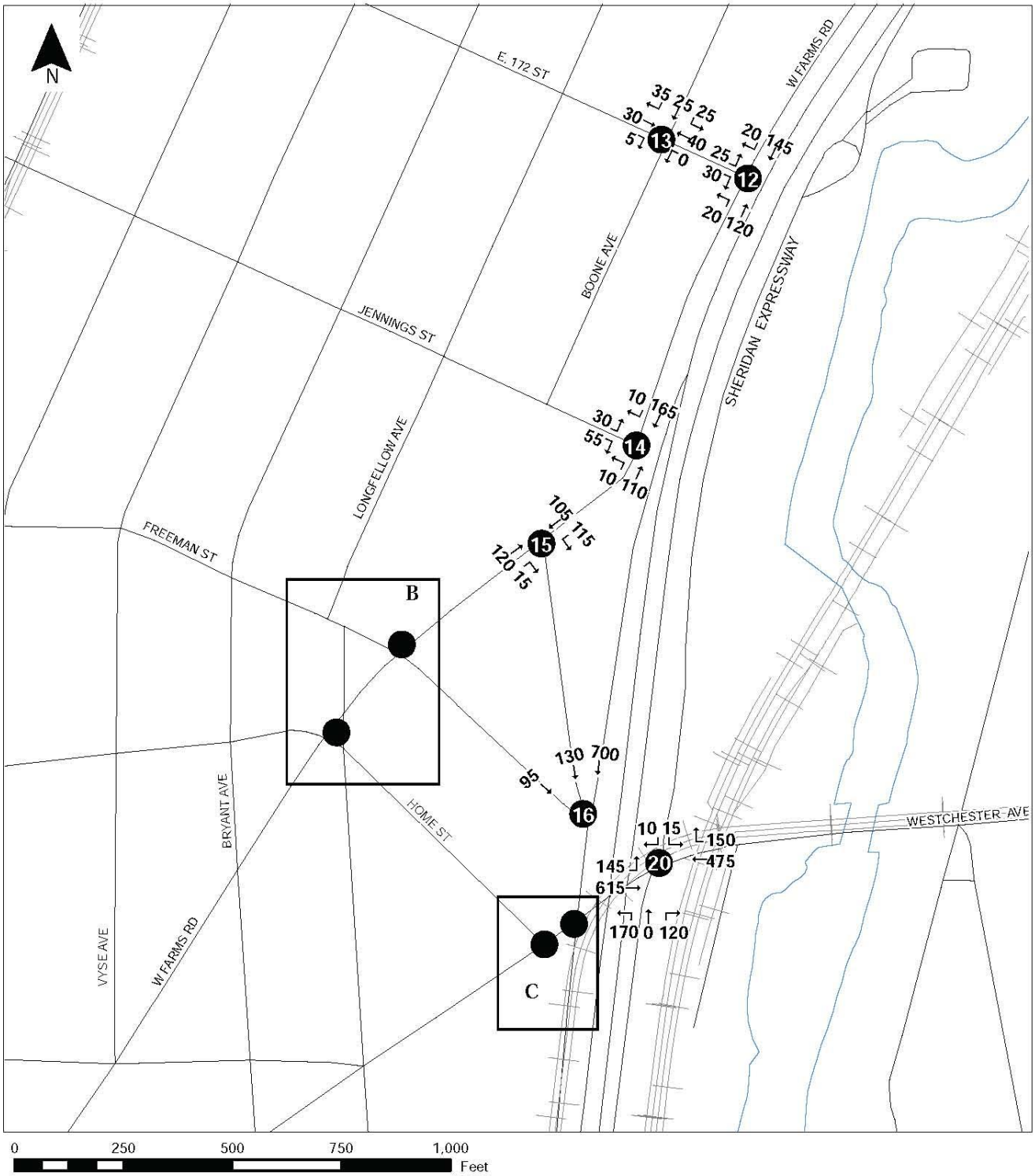
CROTONA PARK EAST / WEST FARMS ZONING MAP AMENDMENT

Bronx, New York



CROTONA PARK EAST / WEST FARMS ZONING MAP AMENDMENT

Bronx, New York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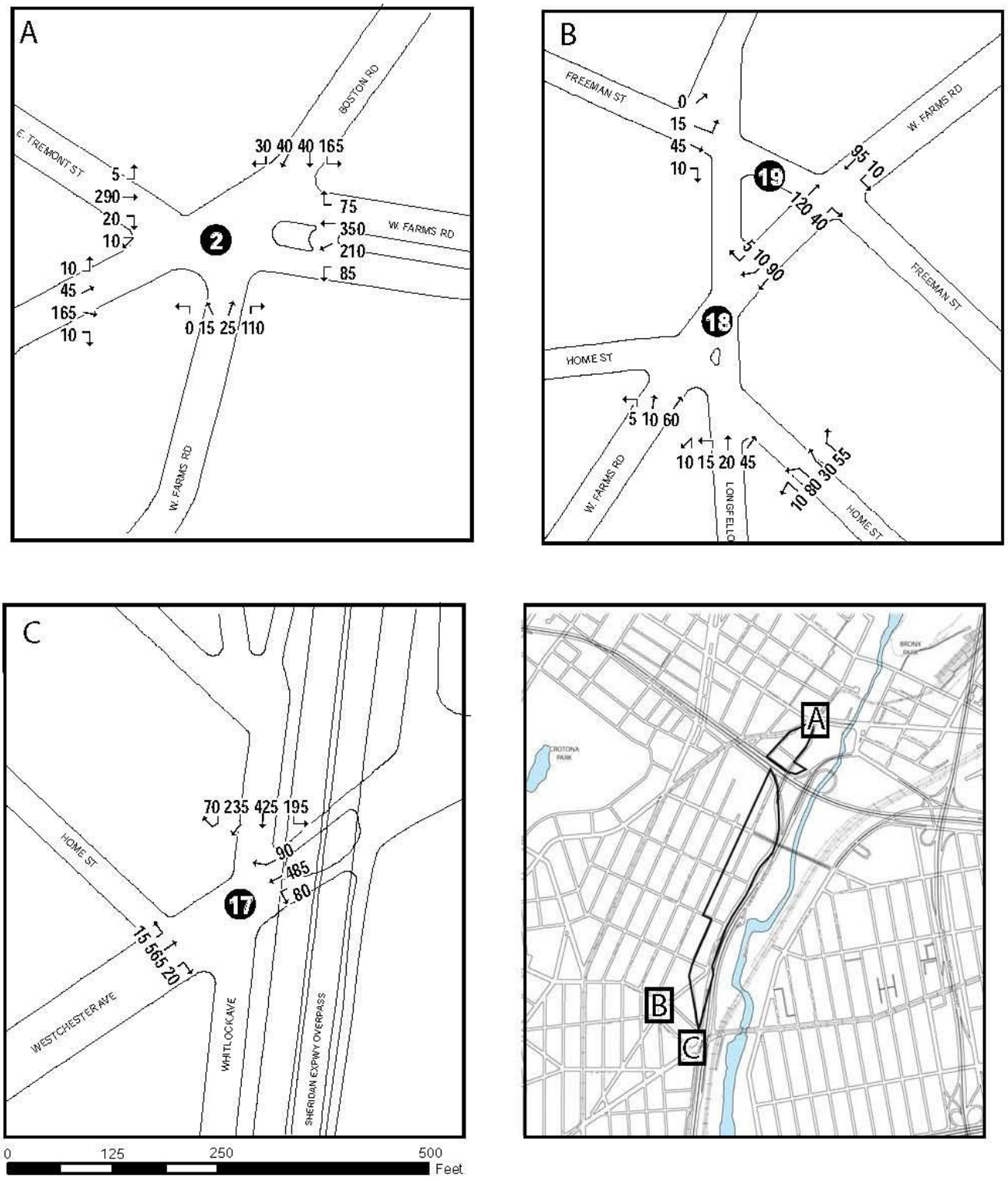
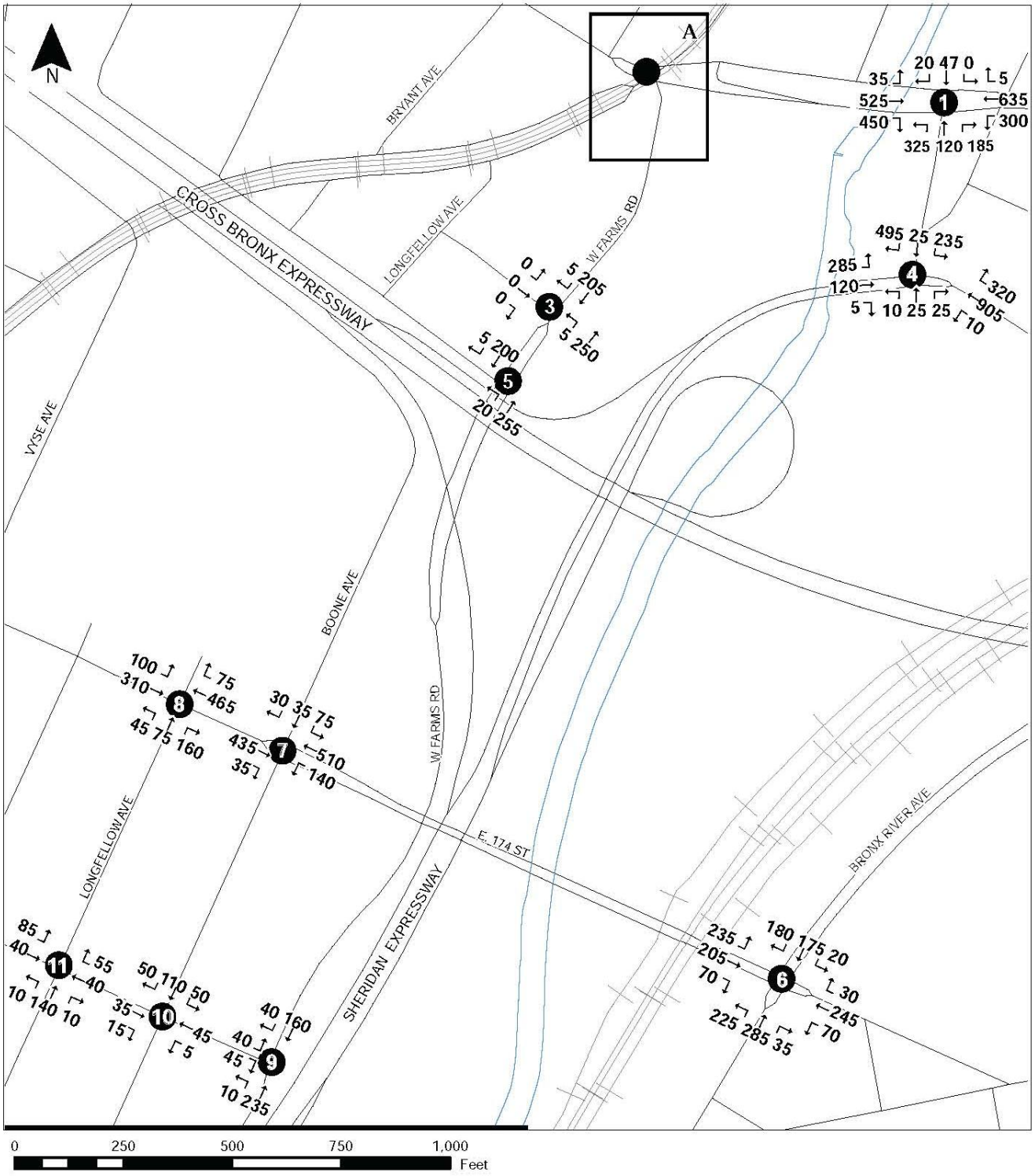


CROTONA PARK EAST / WEST FARMS ZONING MAP AMENDMENT

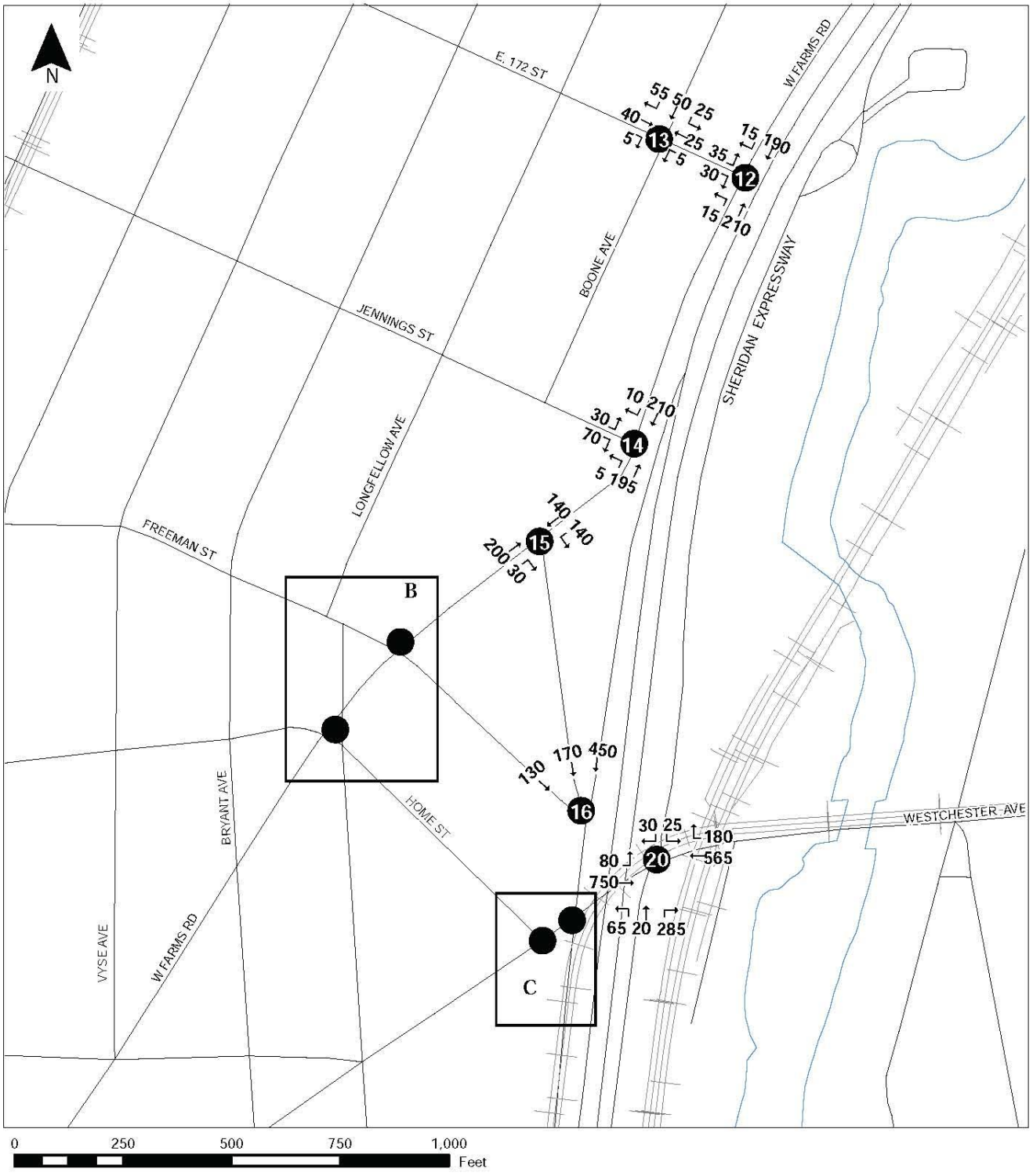
Bronx, New York

Figure M-4a: Existing PM Traffic Volume Network (North)



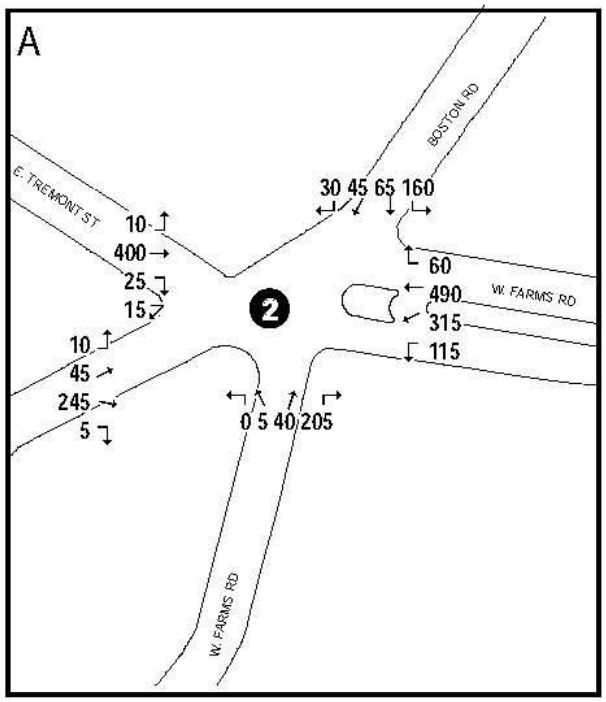
CROTONA PARK EAST / WEST FARMS ZONING MAP AMENDMENT

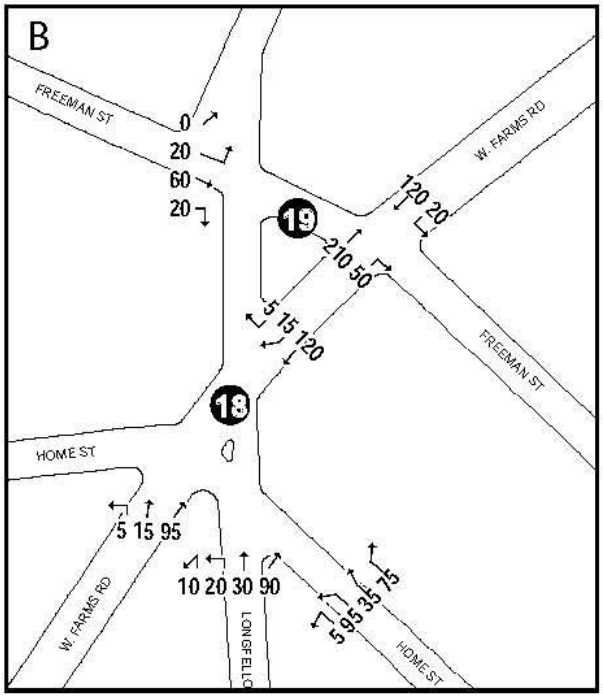
Bronx, New York

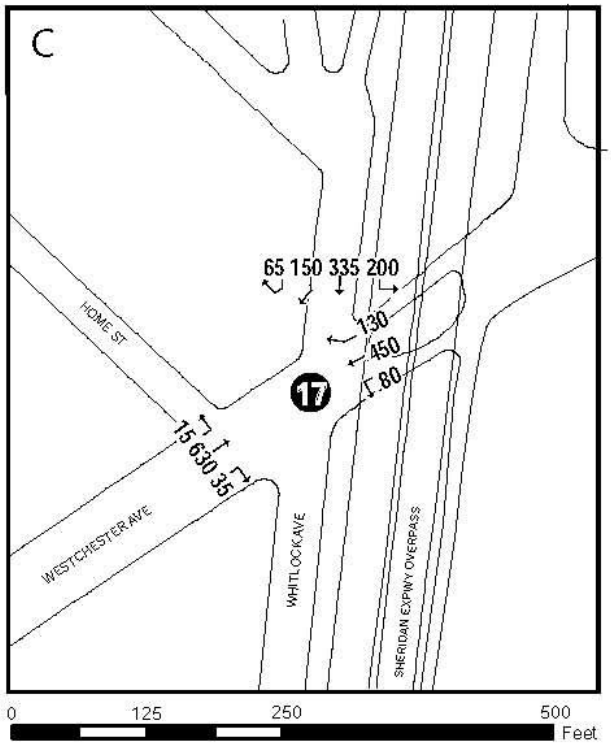


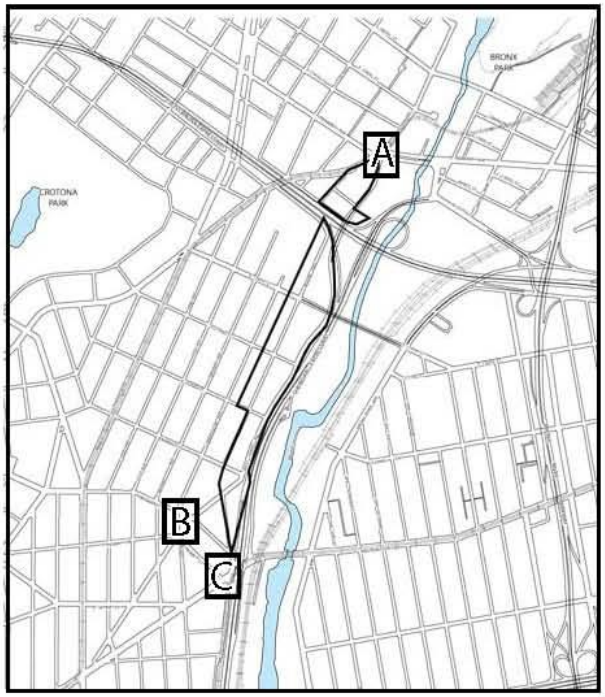
CROTONA PARK EAST / WEST FARMS ZONING MAP AMENDMENT

Bronx, New York









CROTONA PARK EAST / WEST FARMS ZONING MAP AMENDMENT

Bronx, New York

Levels of Service

An intersection capacity and level of service analysis was conducted for the 20 study area intersections. The following summarizes the analysis results by travel corridor and details the locations that operate at LOS D with a volume to capacity (v/c) ratio of greater than 0.90, LOS E or LOS F.

Although most intersections in the traffic study area operate at overall acceptable levels during the three analysis peak hours, individual approach movements at numerous intersections operate at LOS D with a v/c ratio greater than 0.90 or worse. Overall, of the 75 approach movements analyzed, 14 approach movements operate at LOS D with a volume to capacity (v/c) ratio of greater than 0.90, LOS E or LOS F in the AM peak hour, 9 approach movements operate at LOS D with a volume to capacity (v/c) ratio of greater than 0.90, LOS E or LOS F in the midday peak hour, and 10 approach movements operate at LOS D with a volume to capacity (v/c) ratio of greater than 0.90, LOS E or LOS F in the PM peak hour. These findings are presented in Table M-7 below.

Table M-7: Number of Approach Movements with Substandard Level of Service in Existing Conditions

	Analysis Hour		
Level of Service	**AM**	**MD**	**PM**
LOS D with v/c ≥ 0.90	1	1	0
LOS E	8	4	4
LOS F	5	4	6

Detailed analysis results, including the v/c ratio, delay, and LOS, for all intersections in the study area are provided in Table M-8: Existing LOS Table Signalized Intersections and Table M-9: Existing LOS Table Unsignalized Intersections for the AM, midday, and PM peak periods.

Table M-8: Existing LOS Table Signalized Intersections

Int#	Intersection Name	Direction	Lane Group	Existing AM Volume	AM v/c ratio	AM Delay (sec)	AM LOS	Existing MD Volume	MD v/c ratio	MD Delay (sec)	MD LOS	Existing PM Volume	PM v/c ratio	PM Delay (sec)	PM LOS
1	East Tremont Ave at East 177th Street	Overall		1710		27.3	C	1420		18.8	B	1850		19.5	B
		Eastbound	LT	395	0.14	9.8	A	360	0.13	9.7	A	560	0.18	10.0	A
		Westbound	DefL	400	0.98	57.0	E	315	0.64	20.4	C	300	0.77	29.2	C
			TR	615	0.39	12.2	B	420	0.25	10.8	B	660	0.38	12.2	B
		Northbound	L	270	0.50	39.9	D	300	0.43	37.8	D	320	0.49	39.4	D
			LTR	5	0.48	39.0	D	10	0.43	37.7	D	0	0.45	38.1	D
		Southbound	LTR	25	0.09	31.2	C	15	0.06	30.9	C	10	0.03	30.5	C
2	West Farms Road at Boston Rd, East Tremont Ave (1)	Overall		2010		68.1	E	1700		59.6	E	2285		65.9	E
		Eastbound	LTR	375	0.75	51.3	D	325	0.61	37.3	D	450	0.77	51.6	D
		Westbound	LTR	900	1.01	75.9	E	720	0.94	52.4	D	980	0.93	58.9	E
		Northbound	LTR	215	0.76	60.2	E	150	0.35	31.3	C	250	0.70	55.4	E
		NE-Bound	T	240	0.90	79.8	E	230	1.05	106.7	F	305	1.05	109.4	F
		Southbound	Def L	140	1.05	139.0	F	165	0.91	76.0	E	160	1.05	129.1	F
			TR	140	0.82	73.6	E	110	0.48	35.8	D	140	1.01	116.2	F
4	East 177th Street at Sheridan Expressway	Overall		2205		59.5	E	1780		47.7	D	1645		41.4	D
		Eastbound	L	285	1.05	117.9	F	320	0.93	78.2	E	285	0.71	50.7	D
			T	90	0.08	4.7	A	145	0.14	5.0	A	125	0.12	4.8	A
		Westbound	R	1570	1.05	65.7	E	1045	0.83	34.0	C	915	0.84	37.0	D
			T	260	0.38	17.9	B	270	0.47	24.3	C	320	0.60	30.3	C
		Northbound	LTR	35	0.24	44.6	D	90	1.04	144.6	F	60	0.44	52.4	D
		Southbound	LT	145	0.85	80.3	F	215	1.05	117.6	F	260	1.05	119.3	F
			TR (4)	650	0.78	40.3	D	475	0.53	26.8	C	495	0.51	23.9	C
6	Bronx River Ave at East 174th Street	Overall		1620		36.3	D	1250		36.4	D	1775		39.9	D
		Eastbound	LTR	410	1.05	84.3	F	395	1.05	88.3	F	510	1.05	83.5	F
		Westbound	LT	350	0.78	38.2	D	225	0.53	27.8	C	315	0.87	48.2	D
			R	40	0.21	22.4	C	30	0.15	21.5	C	30	0.11	20.9	C
		Northbound	L	160	0.50	17.6	B	135	0.37	14.1	B	225	0.73	25.4	C
			TR	245	0.45	14.4	B	220	0.35	12.9	B	320	0.46	14.6	B
		Southbound	LTR	415	0.39	12.9	B	245	0.26	11.5	B	375	0.30	11.9	B
7	Boone Ave at East 174th Street	Overall		1210		23.0	C	905		12.0	B	1260		14.1	B
		Eastbound	TR	360	0.48	10.2	B	360	0.47	10.0	A	470	0.55	11.1	B
		Westbound	Def L	305	0.93	43.7	D	115	0.30	9.0	A	140	0.46	12.0	B
			LT	400	0.47	10.1	B	325	0.38	8.9	A	510	0.54	10.9	B
		Southbound	LTR	145	0.64	39.5	D	105	0.37	31.5	C	140	0.50	34.5	C
8	Longfellow Ave at East 174th Street	Overall		870		24.6	C	855		24.7	C	1230		34.9	C
		Eastbound	LT	250	0.33	8.1	A	290	0.44	9.4	A	410	0.76	19.1	B
		Westbound	TR	425	0.53	10.7	B	355	0.42	9.0	A	540	0.61	12.0	B
		Northbound	LTR	195	0.91	65.9	E	210	0.92	69.6	E	280	1.04	91.2	F
17	Westchester Ave at Sheridan Expressway Service Road, Whitlock Avenue	Overall		2730		38.3	D	2165		22.7	C	1935		22.5	C
		Eastbound	TR	595	0.70	29.8	C	585	0.61	27.2	C	665	0.67	28.6	C
		Westbound	LT	1055	1.02	52.8	D	655	0.50	15.2	B	530	0.39	13.8	B
		Southbound	LTR	1080	0.75	28.2	C	925	0.60	25.0	C	740	0.48	23.1	C
18	West Farms Road at Home Street, Longfellow Ave (2)	Overall		585		19.1	B	445		24.5	C	615		40.5	D
		NW-Bound	LTR	240	1.02	93.5	F	175	0.80	59.3	E	210	0.89	70.6	E
		Northbound	LTR	85	0.45	36.2	D	90	0.60	41.3	D	150	0.95	79.7	E
		NE-Bound	LT	105	0.19	13.0	B	75	0.12	12.3	B	115	0.21	13.3	B
		SW-Bound	RT	155	0.24	13.5	B	105	0.14	12.4	B	140	0.22	13.2	B
19	West Farms Road at Freeman Street	Overall	RT	475		12.8	B	335		12.2	B	500		14.2	B
		Eastbound	0	95	0.30	25.9	C	70	0.21	24.6	C	100	0.39	27.6	C
		Northbound	LTR	220	0.30	9.6	A	160	0.22	8.9	A	260	0.41	10.9	B
		Southbound	TR	160	0.25	9.1	A	105	0.12	8.0	A	140	0.20	8.6	A
20	Westchester Ave at Sheridan Expressway Service Road and Northbound Off-Ramp	Overall		1925		44.1	D	1550		20.4	C	1820		22.9	C
		Eastbound	DefL (3)	120	0.31	28.9	C	145				80			
			LT	580	0.61	16.8	B	615	0.53	14.5	B	750	0.54	14.7	B
		Westbound	T	880	1.03	64.9	E	475	0.44	24.3	C	565	0.53	25.6	C
		Northbound	LTR	335	0.74	34.9	C	290	0.44	29.6	C	370	0.53	36.5	D
		Southbound	LR	10	0.04	20.1	C	25	0.12	21.0	C	55	0.18	22.1	C

Notes (1) Boston Road approaches the intersection in the northeast bound and southbound direction. East Tremont Avenue approaches the intersection in the eastbound and westbound direction. West Farms Road approaches the intersection in the northbound direction

(2) Home Street approaches the intersection ins the northwest bound direction. Longfellow Avenue approaches the intersection in the northbound direction. West Farms Road approaches the intersection in the northeast bound and southwest bound directions.

(3) Defacto left turn only exists in AM peak period.

(4) Left turns are shared with lane group above, volumes listed are only right turn vehicles.

Table M-9: Existing LOS Table Unsignalized Intersections

Int #	Intersection Name	Direction	Lane Group	Existing AM Volume	AM v/c ratio	AM Delay (sec)	AM LOS	Existing MD Volume	MD v/c ratio	MD Delay (sec)	MD LOS	Existing PM Volume	PM v/c ratio	PM Delay (sec)	PM LOS
3	West Farms Road at Rodman Place	Overall		520	--	--	--	310	--	--	--	465	--	--	--
		Eastbound	LR	10	0.05	14.1	B	5	0.02	10.4	B	0	--	--	--
		Northbound	LT	220	0.01	8.5	A	150	0.00	7.9	A	255	0.01	8.1	A
		Southbound [2]	TR	290	--	--	--	155				210	--	--	--
5	West Farms Road at Cross Bronx Expressway North Service Rd	Overall		520	--	--	--	325	--	--	--	480	--	--	--
		Northbound	LT	240	0.07	8.5	A	165	0.03	8.1	A	275	0.02	8.2	A
		Southbound [2]	TR	280	--	--	--	160	--	--	--	205	--	--	--
9	West Farms Road at East 173rd Street	Overall		570	--	--	--	365	--	--	--	530	--	--	--
		Eastbound	RL	125	0.46	26.1	D	65	0.21	16.3	C	85	0.6	31.4	D
		Northbound	TL	180	0.03	9.4	A	145	0.02	8.7	A	245	0.02	8.9	A
		Southbound	RT	265	--	--	--	155	--	--	--	200	--	--	--
10	Boone Ave at East 173rd Street	Overall		460	--	--	--	235	--	--	--	310	--	--	--
		Eastbound	TR	45	0.15	15.9	C	45	0.11	11.8	B	50	0.13	12.5	B
		Westbound	LT	40	0.17	18.2	C	35	0.11	13	B	50	0.17	14.7	B
		Southbound	LTR	375	0.07	7.6	A	155	0.04	7.5	A	210	0.04	7.5	A
11	Longfellow Ave at East 173rd Street	Overall		340	--	--	--	315	--	--	--	380	--	--	--
		Eastbound	TL	75	0.04	7.9	A	100	0.06	7.9	A	125	0.1	8.0	A
		Westbound [5]	RT	120	--	--	--	85	--	--	--	95	--	--	--
		Northbound	LTR	145	0.37	16.5	C	130	0.35	16,8	C	160	0.51	23.3	C
12	West Farms Road at East 172nd Street	Overall		545	--	--	--	360	--	--	--	495	--	--	--
		Eastbound	RL	75	0.3	16	C	55	0.13	12.4	B	65	0.17	14.1	B
		Northbound	TL	180	0.04	8.7	A	140	0.02	8.1	A	225	0.02	8.2	A
		Southbound [2]	RT	290	--	--	--	165	--	--	--	205	--	--	--
13	Boone Ave at East 172nd Street	Overall		365	--	--	--	160	--	--	--	205	--	--	--
		Eastbound [2]	TR	70	--	--	--	35	--	--	--	45	--	--	--
		Westbound	LT	80	0.04	7.8	A	40	0.00	7.5	A	30	0.01	7.6	A
		Southbound	LTR	215	0.52	17.4	C	85	0.19	11.4	B	130	0.25	11.9	B
14	West Farms Road at Jennings Street	Overall		605	--	--	--	380	--	--	--	470	--	--	--
		Eastbound	LR	115	0.38	17.2	C	85	0.19	12.4	B	100	0.23	13.7	B
		Northbound	LT	205	0.07	8.7	A	120	--	--	--	150	0.01	8.2	A
		Southbound [2]	TR	285	--	--	--	175	0.01	8	A	220	--	--	--
15	West Farms Road at Boone Ave [2]	Overall		535	--	--	--	355	--	--	--	510	--	--	--
		Northbound	TR	215	--	--	--	135	--	--	--	230	--	--	--
		Southbound	LT	320	0.31	12.4	B	220	0.18	11.2	B	280	0.24	11.7	B
16	Boone Ave at Freeman Street, Sheridan Expressway Ramp [1]	Overall		1185	--	--	--	1055	--	--	--	920	--	--	--
		Eastbound	T	105	0.18	11.6	B	130	0.15	11.1	B	170	0.23	12	B
		Westbound	T	275	0.54	18.9	C	225	0.43	15.7	C	300	0.5	15.7	C
		Southbound [2]	T	805	--	--	--	700	--	--	--	450	--	--	--

Notes (1) All way stop controlled intersection for Boone Avenue at Freeman Street: No v/c ratio given in HCS analysis.
(2) No conflicting movements.

A summary of intersections in the study area with approach movements operating at LOS D with a volume to capacity (v/c) ratio of greater than 0.90, LOS E or LOS F follows:

AM Peak Hour

- East Tremont Avenue at East 177th Street:
  - The de facto left turning lane in the westbound direction operates at LOS E with 57.0 seconds of delay and has a v/c ratio of 0.98.
- West Farms Road at Boston Road and East Tremont Avenue:
  - Overall the intersection operates at LOS E with a delay of 68.1 seconds.

    - The westbound approach on East Tremont Avenue operates at LOS E with 75.9 seconds of delay and has a v/c ratio of 1.01.
    - The northbound approach for West Farms Road operates at LOS E with 60.2 seconds of delay.
    - The northeast bound approach for Boston Road operates at LOS E with 79.8 seconds of delay and a v/c ratio of 0.90.
    - The southbound approach for Boston Road de facto left turn lane operates at LOS F with 139.0 seconds of delay and a v/c ratio of 1.05.
    - The southbound approach for Boston Road through and right turn lane operates at LOS E with a delay of 73.6 seconds and has a v/c ratio of 0.82.
- East 177th Street at Sheridan Expressway:
    - Overall the intersection operates at LOS E with a delay of 59.5 seconds.
    - The eastbound approach on the Sheridan Expressway off-ramp left turn lane operates at LOS F with 117.9 seconds of delay and a v/c ratio of 1.05.
    - The westbound approach on the East 177th Street through and left turn lane operates at LOS E with a delay of 65.7 seconds and a v/c ratio of 1.05.
    - The southbound approach on East 177th Street de facto left turn operates at LOS F with a delay of 80.3 seconds and a v/c ratio of 0.85.
- Bronx River Avenue at East 174th Street:
    - The eastbound approach on East 174th Street operates at LOS F with a delay of 84.3seconds and has a v/c ratio of 1.05.
- Boone Avenue at East 174th Street:
    - The westbound approach left turn pocket on East 174th has a v/c ratio of 0.93.
- Longfellow Avenue at East 174th Street:
    - The northbound approach of Longfellow Avenue operates at LOS E with a delay of 65.9 seconds and has a v/c ratio of 0.91.
- Westchester Avenue at Boone Street and Home Avenue:
    - The westbound approach on Westchester Avenue has a v/c ratio of 1.02.
- West Farms Road at Home Street and Longfellow Avenue:
    - The northwest bound approach on Home Street operates at LOS F with a delay of 93.5 seconds and a v/c ratio of 1.02.
- Westchester Avenue at Sheridan Expressway Northbound On/Off-ramp:
    - The westbound approach on Westchester Avenue operates at LOS E with a delay of 64.9 seconds and has a v/c ratio of 1.03.

<u>Midday Peak Hour</u>

- West Farms Road at Boston Road and East Tremont Avenue:
    - Overall the intersection operates at LOS E with a delay of 59.6 seconds.
    - The westbound approach on East Tremont Avenue has a v/c ratio of 0.94.
    - The northeast bound approach for Boston Road operates at LOS F with 106.7 seconds of delay and a v/c ratio of 1.05.
    - The southbound approach for Boston Road de facto left turn lane operates at LOS E with 76.0 seconds of delay and a v/c ratio of 0.91.
- East 177th Street at Sheridan Expressway:
    - The eastbound approach on the Sheridan Expressway off-ramp left turn lane operates at LOS E with 78.2 seconds of delay and a v/c ratio of 0.93.
    - The northbound approach exiting the bus depot operates at LOS F with a delay of 144.6 seconds and has a v/c ratio of 1.04.
    - The southbound approach on East 177th Street de facto left turn operates at LOS F with a delay of 117.6 seconds and has a v/c ratio of 1.05.

- Bronx River Avenue at East 174th Street:
    - The eastbound approach on East 174th Street operates at LOS F with a delay of 88.3 seconds and has a v/c ratio of 1.05.
- Longfellow Avenue at East 174th Street:
    - The northbound approach of Longfellow Avenue operates of LOS E with a delay of 69.6 seconds and has a v/c ratio of 0.92.
- West Farms Road at Home Street and Longfellow Avenue:
    - The northwest bound approach on Home Street operates at LOS E with 59.3 seconds of delay.

PM Peak Hour

- West Farms Road at Boston Road and East Tremont Avenue:
    - Overall the intersection operates at LOS E with a delay of 65.9 seconds.
    - The westbound approach on East Tremont Avenue operates at LOS E with 58.9 seconds of delay and has a v/c ratio of 0.93.
    - The northbound approach for West Farms Road operates at LOS E with 55.4 seconds of delay.
    - The northeast bound approach for Boston Road operates at LOS F with 109.4 seconds of delay and has a v/c ratio of 1.05.
    - The southbound approach for Boston Road de facto left turn lane operates at LOS F with 129.1 seconds of delay and has a v/c ratio of 1.05.
    - The southbound approach for Boston Road through and right turn lane operates at LOS F with a delay of 116.2 seconds and has a v/c ratio of 1.01.
- East 177th Street at Sheridan Expressway:
    - The southbound approach on East 177th Street de facto left turn operates at LOS F with a delay of 119.3 seconds and a v/c ratio of 1.05.
- Bronx River Avenue at East 174th Street:
    - The eastbound approach on East 174th Street operates at LOS F with a delay of 83.5 seconds and has a v/c ratio of 1.05.
- Longfellow Avenue at East 174th Street:
    - The northbound approach of Longfellow Avenue operates of LOS F with a delay of 91.2 seconds and has a v/c ratio of 1.04.
- West Farms Road at Home Street and Longfellow Avenue:
    - The northwest bound approach on Home Street operates at LOS E with 70.6 seconds of delay.
    - The northbound approach on Longfellow Avenue operates at LOS E with a delay of 79.7 seconds and has a v/c ratio of 0.95.

Transit Overview

Subway Service

The four subway stations within the study area serve area offer service to three different subway routes.

The East Tremont Avenue and West Farms Square Station, East 174th Street Station and Freeman Avenue Station all offer service to the No. 2 and the No. 5 trains. The Whitlock Avenue Station offers service to the No. 6 train. Both the No. 5 and 6 trains run on the Lexington Avenue line in Manhattan with the No. 5 providing express and the No. 6 providing local service. The No. 2 train provides express service along 7th Avenue in Manhattan.

- No. 5 Lexington Avenue Express provides service from Eastchester in the northern Bronx through Manhattan's east side out to Flatbush Avenue-Brooklyn College in Brooklyn.
- No. 6 Lexington Avenue Local provides service from Pelham Bay in the Bronx through Manhattan's east side down to Brooklyn Bridge-City Hall in lower Manhattan.
- No. 2 Seventh Avenue express provides service from Wakefield-241st Street in the Bronx through Manhattans west side to Flatbush Avenue-Brooklyn College in Brooklyn.

Bus Service

The proposed rezoning area lies near a hub of several local bus routes serving the South Bronx. A total of 9 NYCT bus routes run through the study area: the Bx 4, Bx 9, Bx 11, Bx 21, Bx 27, Bx 36, Bx 40, Bx 42, and Q 44. These routes provide service to northern Manhattan, Queens, and all areas of the Bronx. Several busses stop at West Farms Square, where West Farms Road, Boston Road and East Tremont Avenue intersect. Busses also travel along Westchester Avenue, making stops near Home Street and the Bx 11 travels along Jennings Avenue and East 172nd Street. Table M-10 depicts the bus routes running through the study area as well as their service frequency.

Table M-10: Summary of Bus Routes in Study Area

Bus Route	Terminus	Terminus	Study Area Routing	Service Frequency (minutes)		
				AM	MD	PM
Bx 4	The Hub	Westchester Square	Westchester Avenue	5	12	10
Bx 9	Riverdale	West Farms Square	West Farms Square	4	7	5
Bx 11	Longwood, Bronx	GW Bridge Bus Station	172 Street, West Farms Road	6	10	10
Bx 21	Westchester Square	Mott Haven	West Farms Square	9	10	8
Bx 27	Clasons Point	Soundview/Hunts Point	Westchester Avenue	7	10	7
Bx 36	Soundview	Washington Heights	West Farms Square	4	7	5
Bx 40	Morris Heights	Fort Schuyler	West Farms Square	12	20	15
Bx 42	Morris Heights	Throgs Neck	West Farms Square	12	20	15
Q 44	Jamaica, Queens	Bronx Park South	West Farms Square	7	7	7

Source: Service frequency based on 2009 bus schedules available from MTA

Pedestrian Overview

The pedestrian study area and identification of the sidewalks, corners, and crosswalks most affected by the new trips generated by the project was based on several factors. The Cross-Bronx Expressway limits pathways running north-south and Sheridan Expressway limits pathways running east-west. Since transit trips contain a walking component, a significant portion of walk trips generated by the project would be between the projected development and subway stations and bus stops in the area. The sidewalk and crosswalk locations selected for analysis are illustrated on Figure M-5.

Figure M-5: Pedestrian Element Analysis Locations



Data Collection

Pedestrian volumes were counted in the study area on Wednesday, October 21st 2009. These counts were performed during the three peak periods, AM, MD, and PM. Two directional counts were done at locations mentioned above for the study area.

Subway Station Analysis

Counts were collected for the stairways at the subway stations at West Farms Square and East 174th Street. Even distribution was assumed for the control elements within the stations.

The tables below show the existing operating conditions of subway control area elements during the weekday AM, MD, and PM peak hours. These elements include subway stairs and turnstiles. Six subway stairs are analyzed, two stairways at East Tremont Avenue and Boston Road and four stairways at East 174th Street and Southern Boulevard. Six turnstiles are analyzed in the station at East 174th Street and Southern Boulevard.

All subway control elements, including stairs and turnstiles operate at LOS C or better.

Table M-11: 2009 Existing Subway Stairs Operations

Location	Subway Stair	Width (feet)	Effective Width (feet)	15-Minute Volume		Friction Factor	15-Minute Volume		LOS
				Up	Down		SVCD Cap	V/SVCD	
AM									
E Tremont Ave and Boston Rd / W Farms Rd	Northwest	6.00	5.00	47	70	0.9	675	0.17	A
	Northeast	6.00	5.00	35	68	0.9	675	0.15	A
174th St and Southern Blvd / Boston Rd	Northwest	4.67	3.67	306	21	0.8	440	0.74	C
	Northeast	4.67	3.67	40	31	0.9	495	0.14	A
	Southeast	4.67	3.67	45	62	0.9	495	0.22	A
	Southwest	4.67	3.67	104	92	0.9	495	0.40	A
MD									
E Tremont Ave and Boston Rd / W Farms Rd	Northwest	6.00	5.00	19	53	0.8	600	0.12	A
	Northeast	6.00	5.00	11	36	0.8	600	0.08	A
174th St and Southern Blvd / Boston Rd	Northwest	4.67	3.67	45	60	0.9	495	0.21	A
	Northeast	4.67	3.67	49	45	0.9	495	0.19	A
	Southeast	4.67	3.67	51	33	0.9	495	0.17	A
	Southwest	4.67	3.67	37	42	0.9	495	0.16	A
PM									
E Tremont Ave and Boston Rd / W Farms Rd	Northwest	6.00	5.00	39	62	0.9	675	0.15	A
	Northeast	6.00	5.00	21	82	0.8	600	0.17	A
174th St and Southern Blvd / Boston Rd	Northwest	4.67	3.67	56	30	0.9	495	0.17	A
	Northeast	4.67	3.67	13	112	0.8	440	0.28	A
	Southeast	4.67	3.67	36	157	0.8	440	0.44	A
	Southwest	4.67	3.67	42	33	0.9	495	0.15	A

Table M-12: 2009 Existing Subway Turnstile Operations

Location	Entrance	Total turnstiles	15-Minute Volume		Friction Factor	Surging Factor	V/SVCD	LOS
			In	Out				
AM								
174th St and Southern Blvd / Boston Rd	Manhattan	3	410	113	0.8	0.75	0.50	B
	Bronx Bound	3	85	93	0.9	0.75	0.15	A
MD								
174th St and Southern Blvd / Boston Rd	Manhattan	3	82	102	1	1	0.15	A
	Bronx Bound	3	100	78	0.9	0.75	0.15	A
PM								
174th St and Southern Blvd / Boston Rd	Manhattan	3	98	63	0.9	0.75	0.13	A
	Bronx Bound	3	49	269	0.8	0.75	0.28	A

Subway Line Haul Analysis

The volume of subway riders passing a defined point on a given subway route is known as subway line haul. An analysis of line-haul capacity addresses the ability of trains to accommodate passenger loads. The analysis determines whether there is sufficient capacity per train to handle existing and projected future transit loads. In the New York City subway system, the line haul is measured at the maximum load point of the line which is the point where the trains carry the greatest number of passengers during the

peak hour. In the AM peak period, the line haul analysis is done in the southbound (Manhattan-bound) direction while the line haul analysis is done in the northbound (Bronx-bound) direction for the PM peak period.

Line haul analysis was performed on the subway routes that are assigned trips from the proposed project. As detailed above, no trips from the proposed project were assigned to the Whitlock Avenue Station, which serves the No. 6 train. Therefore a subway line haul analysis for the No. 6 train was not conducted. The subway routes that will serve the proposed project are the No. 2 and No.5 trains which stop at the 174 Street Station and West Farms Square – East Tremont Avenue Station. In the AM peak hour, the No. 2 train's maximum load point in the southbound direction occurs as it leaves the 72nd Street Station. The No. 5 train's maximum load point in the southbound direction occurs as it leaves the Grand Central – 42nd Street Station. In the PM peak hour, the No. 2 train's maximum load point in the northbound direction occurs as it leaves the Time's Square – 42nd Street Station. The No. 5 train's maximum load point in the northbound direction occurs as it leaves the 59th Street Station.

The results of the analysis for existing subway line haul analysis are shown in Table M-13. Peak hour capacities for each train were determined by multiplying the capacity per subway car by the number of subway cars per train and then multiplying this capacity per train by the number of trains per hour. A volume-to-capacity ratio was determined by dividing the number of peak hour passengers traveling through the maximum load point by the line haul capacity provided. Line haul capacities were determined by New York City Transit's (NYCT) line haul capacity guidelines found in the 2010 CEQR Manual. The number of passengers per hour on the subway routes was obtained from New York City Transit (NYCT).

Table M-13: 2009 Existing Subway Line Haul Conditions

Peak Hour	Route	Peak Direction	Maximum Load Point (Leaving Station)	Trains Per Hour (1)	Cars Per Hour (1)	Passengers Per Hour (1)	Peak Hour Capacity (2)	v/c Ratio
	2	Southbound	72 St	12	120	12,320	13,200	0.93
	5	Southbound	Grand Central - 42 St	13	130	12,690	14,300	0.89
AM	Total			25	250	25,010	27,500	0.91
	2	Northbound	Times Sq - 42 St	11	110	11,932	12,100	0.99
	5	Northbound	59 St	13	130	10,828	14,300	0.76
PM	Total			24	240	22,760	26,400	0.86

Notes: (1) Based on 2009 schedule and ridership data provided by NYC Transit.
(2) Capacity guidelines based on 110 passengers/car for 51' cars.

In the AM peak hour, southbound No. 2 and No. 5 trains are operating with v/c ratios of 0.93 and 0.89, respectively. The No. 2 has fewer passengers traveling through the maximum load point but operates one less train in the PM peak hour then it does in the AM peak hour. This contributes to a slightly worse v/c ratio of 0.99. The No. 5 train has a more significant drop in ridership at the maximum load point in the PM peak and operates the same number of trains per hour. This results in an improved v/c ratio of 0.76.

Bus Line Analysis

According to the 2010 CEQR Manual Level 2 project generated trip assignment screening assessment, a bus load analysis must be completed if any bus lines are projected to gain an additional 50 bus trips in a single direction on a single route. Bus trips calculated through trip generation and assigned to various bus stops in the study area during the AM, midday, and PM peak periods. Each peak period was checked and no individual bus lines received an additional 50 trips. Therefore, a detailed bus line analysis was not completed.

Pedestrian Elements

The existing operating conditions of the 18 sidewalks, 3 corner reservoirs, and 24 crosswalks in the pedestrian study area were analyzed for the weekday AM, weekday midday (MD), and weekday PM peak periods.

Observation of existing pedestrian activity indicated pedestrian flows along sidewalks to operate under platoon conditions. The study area consists of various subway stations, bus stops, and major intersections. Pedestrian volumes are generally low. There would be periods of no pedestrians on a sidewalk, followed by 'platoons' of pedestrians exiting buses, leaving the subway station, or crossing the street after the signal changed to walk.

Under existing conditions, all sidewalks, corner reservoirs, and crosswalks analyzed, operate at LOS C or better. The tables below summarize the existing operating conditions of the sidewalks, corner reservoirs, and crosswalks analyzed during the weekday AM, weekday midday (MD), and weekday PM. Table M-14 describes existing conditions for corner reservoirs and crosswalks. Table M-15 describes existing conditions for sidewalks that were studied.

Table M-14: 2009 Existing Corner and Crosswalk Level of Service Table

Location	Element		AM			Midday			PM		
			15-Minute Volume	SFP	LOS	15-Minute Volume	SFP	LOS	15-Minute Volume	SFP	LOS
174th St and Southern Blvd / Boston Rd	Crosswalk	North	129	119.3	A	104	144.3	A	96	159.8	A
		Northeast	129	124.4	A	104	151.1	A	96	166.7	A
		East	76	59.9	B	71	60.6	A	94	42.9	B
174th St and Hoe Ave	Crosswalk	North	174	122.3	A	101	207.6	A	149	138.1	A
		South	134	133.5	A	99	184.9	A	169	107.5	A
174th St and Vyse Ave	Crosswalk	North	195	46.5	B	102	87.6	A	163	53.5	B
		South	97	90.5	A	79	116.5	A	105	88.7	A
174th St and Bryant Ave	Crosswalk	North	50	261.0	A	38	341.0	A	76	167.3	A
		South	60	235.3	A	30	482.6	A	64	223.8	A
174th St and Longfellow Ave	Crosswalk	North	55	346.9	A	25	765.2	A	55	343.8	A
		South	51	402.4	A	31	670.3	A	47	442.7	A
174th St and Boone Ave	Crosswalk	North	28	624.0	A	22	786.8	A	31	556.7	A
		South	40	502.9	A	28	721.1	A	29	690.6	A
	Corner	Southwest	100	173.7	A	81	215.0	A	83	210.9	A
		Northwest	87	181.8	A	76	206.8	A	88	178.3	A
173rd St and Boone Ave	Crosswalk	East	8	3895.1	A	2	15580.6	A	8	3895.1	A
		West	14	2283.5	A	4	7992.1	A	4	7992.1	A
172nd St and Boone Ave	Crosswalk	East	3	9521.5	A	6	4760.7	A	8	3570.5	A
		West	12	2342.4	A	4	7027.1	A	14	2007.7	A
E Tremont Ave and Boston Rd / W Farms Rd	Crosswalk	North	67	259.9	A	38	364.9	A	48	359.9	A
		East - North	292	75.4	A	57	376.5	A	231	89.3	A
		East - South	292	74.6	A	57	366.8	A	231	87.3	A
		Southeast	153	154.4	A	36	551.8	A	167	138.3	A
		Southwest	147	84.2	A	24	435.2	A	145	82.6	A
		West	61	256.0	A	43	346.8	A	53	293.0	A
Rodman Pl and W Farms Rd	Corner	Northwest	37	191.5	A	26	272.5	A	37	191.5	A
	Crosswalk	West	9	3528.8	A	5	6351.9	A	14	2268.5	A

Table M-15: 2009 Existing Sidewalk Level of Service Table

Location	Sidewalk	Width (feet)	Effective Width (feet)	15-Minute Volume	PFM	Platoon Flow LOS
AM						
West Farms Rd between Rodman Pl and Tremonth Ave	West	12.7	11.7	14	0.1	A
	East	14.4	13.4	21	0.1	A
174th St between Boston Rd and Hoe Ave	North	14.0	13.0	213	1.1	B
	South	14.0	13.0	179	0.9	B
174th St between Hoe Ave and Vyse Ave	North	11.6	10.6	181	1.1	B
	South	11.6	10.6	116	0.7	B
174th St between Vyse Ave and Bryant Ave	North	11.3	10.3	212	1.4	B
	South	11.5	10.5	88	0.6	B
174th St between Bryant Ave and Longfellow Ave	North	9.9	8.9	50	0.4	A
	South	9.9	8.9	56	0.4	A
174th St between Longfellow Ave and Boone Ave	North	9.8	8.8	40	0.3	A
	South	6.7	5.7	40	0.5	A
Boone Ave between 174th St and 173rd St	West	13.7	12.7	16	0.1	A
	East	14.6	13.6	12	0.1	A
Boone Ave between 173rd St and 172nd St	West	6.8	5.8	8	0.1	A
	East	13.8	12.8	9	0.0	A
Boone Ave between 172nd St and 171st St	West	12.4	11.4	24	0.1	A
	East	12.1	11.1	2	0.0	A
MD						
West Farms Rd between Rodman Pl and Tremonth Ave	West	12.7	11.7	4	0.0	A
	East	14.4	13.4	8	0.0	A
174th St between Boston Rd and Hoe Ave	North	14.0	13.0	114	0.6	B
	South	14.0	13.0	132	0.7	B
174th St between Hoe Ave and Vyse Ave	North	11.6	10.6	114	0.7	B
	South	11.6	10.6	95	0.6	B
174th St between Vyse Ave and Bryant Ave	North	11.3	10.3	138	0.9	B
	South	11.5	10.5	64	0.4	A
174th St between Bryant Ave and Longfellow Ave	North	9.9	8.9	32	0.2	A
	South	9.9	8.9	36	0.3	A
174th St between Longfellow Ave and Boone Ave	North	9.8	8.8	30	0.2	A
	South	6.7	5.7	26	0.3	A
Boone Ave between 174th St and 173rd St	West	13.7	12.7	6	0.0	A
	East	14.6	13.6	7	0.0	A
Boone Ave between 173rd St and 172nd St	West	6.8	5.8	2	0.0	A
	East	13.8	12.8	2	0.0	A
Boone Ave between 172nd St and 171st St	West	12.4	11.4	5	0.0	A
	East	12.1	11.1	7	0.0	A
PM						
West Farms Rd between Rodman Pl and Tremonth Ave	West	12.7	11.7	9	0.1	A
	East	14.4	13.4	19	0.1	A
174th St between Boston Rd and Hoe Ave	North	14.0	13.0	163	0.8	B
	South	14.0	13.0	222	1.1	B
174th St between Hoe Ave and Vyse Ave	North	11.6	10.6	159	1.0	B
	South	11.6	10.6	143	0.9	B
174th St between Vyse Ave and Bryant Ave	North	11.3	10.3	182	1.2	B
	South	11.5	10.5	104	0.7	B
174th St between Bryant Ave and Longfellow Ave	North	9.9	8.9	70	0.5	B
	South	9.9	8.9	60	0.4	A
174th St between Longfellow Ave and Boone Ave	North	9.8	8.8	49	0.4	A
	South	6.7	5.7	35	0.4	A
Boone Ave between 174th St and 173rd St	West	13.7	12.7	15	0.1	A
	East	14.6	13.6	7	0.0	A
Boone Ave between 173rd St and 172nd St	West	6.8	5.8	6	0.1	A
	East	13.8	12.8	4	0.0	A
Boone Ave between 172nd St and 171st St	West	12.4	11.4	31	0.2	A
	East	12.1	11.1	10	0.1	A

Parking

A parking study was done for the study area within ¼ mile of the proposed Crotona Park rezoning area. Field inventories were conducted to evaluate existing parking conditions. On-street parking regulations were identified within the parking study area and are detailed in Figure M-6. Table M-17 describes parking regulations detailed in Figure M-6. An on-street and off-street parking utilization survey was conducted in November 2009 for the midday and overnight periods on weekdays.

In the parking study area, there are 3,886 legal on-street parking spaces overnight. Due to parking restrictions that exist during the day, there are 3,453 parking spaces available during the weekday midday time period. Utilization of the on-street parking for both midday and overnight is shown below in Table M-16.

Table M-16: Existing Parking Utilization

	Midday			Overnight		
Parking	Occupied	Capacity	Utilization	Occupied	Capacity	Utilization
On Street	2683	3453	78%	2730	3886	70%
Off Street	146	375	39%	213	375	57%
Total	2829	3828	74%	2943	4261	69%

Overnight only 69% of on-street parking spaces are occupied which leaves an available capacity of 1,318 spaces. During weekday midday, the parking utilization is 74% with an available capacity of 999 spaces.

Figure 6 Existing Parking Regulation Map



Figure 6 Existing Parking Regulation Map

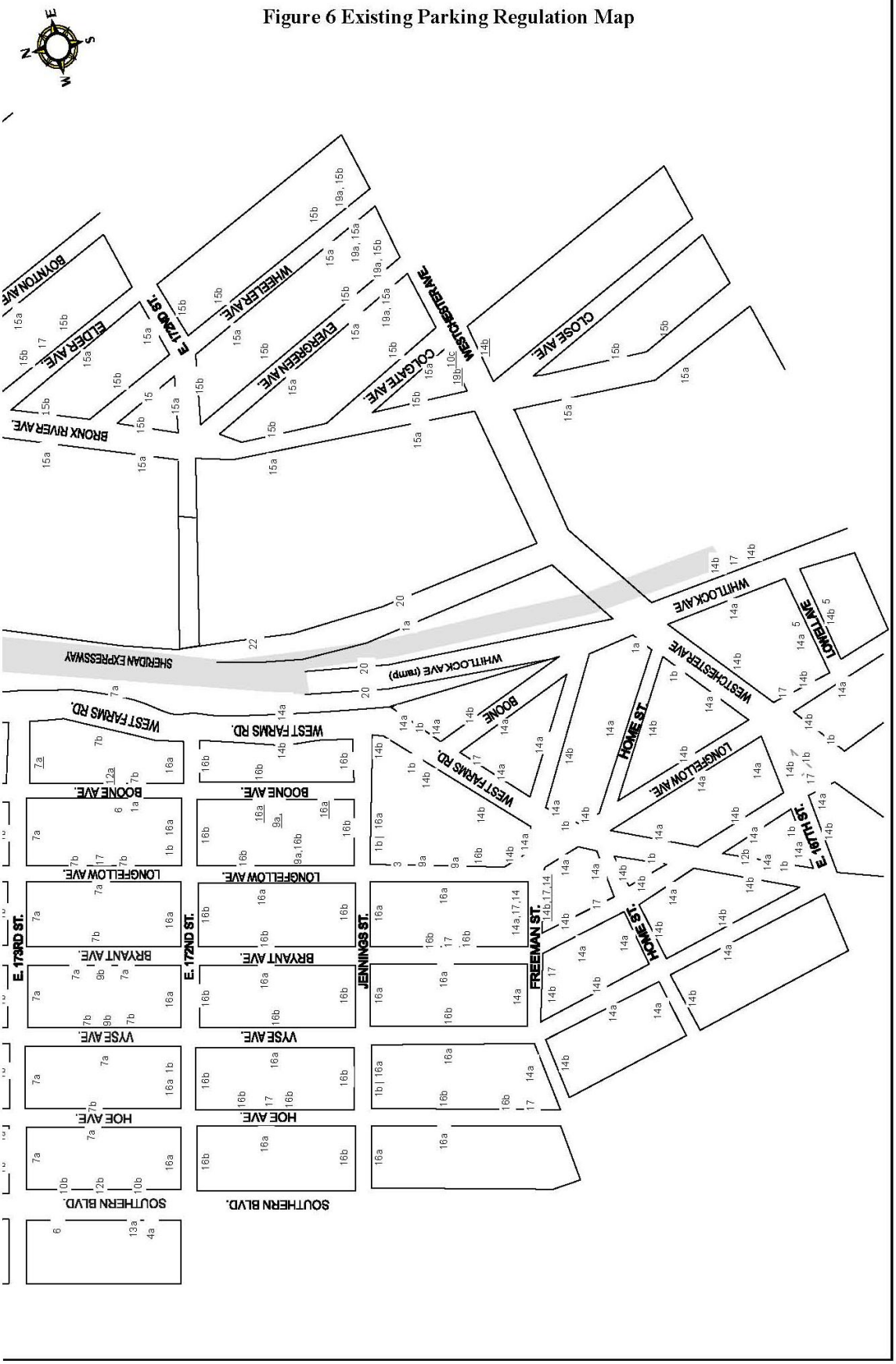


Table M-17: Parking Regulations

MAP NO.	REGULATION	TIME	DAYS OF WEEK	EXCLUSIONS	DESCRIPTION
1a	No Standing	Anytime	All days		General no standing
1b	No Standing	Anytime	All days		Bus Stop
1c	No Standing	Anytime	All days		Fire Zone
1d	No Standing	Anytime	All days	Except Department of Sanitation	
2	No Standing	7 AM - 10 PM	Monday - Friday		
3	No Standing	7 AM - 4 PM	School Days		
4a	No Standing	7 AM - 7 PM	Monday - Friday	Except Authorized Vehicles, OMRDD	
4b	No Standing	7 AM - 7 PM	Except Sunday		
5	No Standing	8 AM - 4 PM	Monday - Friday	Except Trucks loading and unloading	
6	No Standing	8 AM - 6 PM	Monday - Friday	Except Trucks loading and unloading	
7a	No Parking	1130 AM - 1 PM	Monday, Thursday		Street Cleaning
7b	No Parking	1130 AM - 1 PM	Tuesday, Friday		Street Cleaning
8	No Parking	6 AM - 4 PM	Monday - Friday		
9a	No Parking	7 AM - 4 PM	School Days		School, Department of Education
9b	No Parking	7 AM - 4 PM	Mon - Fri, School Days		School, Department of Education
9c	No Parking	7 AM - 4 PM	School Days	Except Faculty Vehicles	School, Department of Education
10a	No Parking	730 AM - 8 AM	Monday, Thursday		
10b	No Parking	730 AM - 8 AM	Tuesday, Friday		
10c	No Parking	730 AM - 8 AM	Except Sunday		
11	No Parking	8 AM - 4 PM	Monday - Friday		
12a	No Parking	8 AM - 6 PM	Monday - Friday		
12b	No Parking	8 AM - 6 PM	Except Sunday		
13a	No Parking	8 AM - 830 AM	Monday, Thursday		Street Cleaning
13b	No Parking	8 AM - 830 AM	Tuesday, Friday		Street Cleaning
14a	No Parking	8 AM - 930 AM	Monday, Thursday		Street Cleaning
14b	No Parking	8 AM - 930 AM	Tuesday, Friday		Street Cleaning
15a	No Parking	830 AM - 10 AM	Monday, Thursday		Street Cleaning
15b	No Parking	830 AM - 10 AM	Tuesday, Friday		Street Cleaning
16a	No Parking	9 AM - 1030 AM	Monday, Thursday		Street Cleaning
16b	No Parking	9 AM - 1030 AM	Tuesday, Friday		Street Cleaning
17	No Parking	Anytime	All days		Daylighting, or church
18	Angle Parking Only	Anytime	All days		Operational
19a	1 Hr Metered parking	9 AM - 7 PM	Except Sunday		Meters
19b	1 Hr Metered parking	8 AM - 7 PM	Except Sunday		Meters
20	No Posted Regulation				
21	Street Closed				
22	No Stopping	Anytime	All days		

Safety

Accident data for intersections within the study area were obtained from NYCDOT. This information provides available accident data from 2006 to 2009 and is presented in Table M-18 and Table M-19. The tables provide, by intersection, the total number of accidents, the total number of reportable accidents (involving fatality, injury, or more than $1,000 in property damage), the number of fatalities and injuries during the study period, as well as a yearly breakdown of pedestrian- and bicycle-related injuries or fatalities at each intersection.

In 2008, at the intersection of East Tremont Avenue, Boston Road, and West Farms Road there were 4 pedestrian accidents and 1 bicycle accident. According to the 2010 CEQR Manual, 5 bicycle/pedestrian related crashes at one intersection within a 12-month span indicates a high-crash location. At this intersection, observations yielded that crosswalk markings on the pavement were barely legible at some

spots and completely non-existent in other locations. Repainting the crosswalks would enhance pedestrian safety as pedestrians attempted to cross the street at this intersection. Additionally, bike lanes are planned for this intersection as a No Action improvement. This is expected to improve bicycle safety at the intersection as well.

Table M-18: Reportable Accidents in Study Area Overview

Intersection		2006 - 2009 Overall Accidents		
Main Street	Cross Street	Reportable Accidents	Fatalities	Injuries
Boone	E 172nd	1	0	1
Boone	Freeman	1	0	1
Boston	Bryant	6	0	9
Boston	Cross Bronx	2	0	2
Boston	E 179th	7	0	8
Boston	Longfellow	3	0	5
Bronx Park	E 177th	34	0	39
Close	Bronx River	14	0	23
E 173rd	Boone	9	0	12
E 173rd	Bryant	3	0	2
E 173rd	Hoe	2	0	0
E 173rd	Longfellow	7	0	6
E 173rd	Southern	11	0	12
E 173rd	Vyse	4	1	3
E 173rd	West Farms	7	0	11
E 174th	Boone	1	0	3
E 174th	Bronx River	22	0	40
E 174th	Bryant	3	0	3
E 174th	Longfellow	5	0	4
E 174th	Vyse	7	0	6
East Tremont	Boston	26	0	38
East Tremont	Bryant	3	0	5
East Tremont	E 177th	12	0	13
East Tremont	Southern	21	0	28
Sheridan	Devoe	1	0	0
Sheridan	E 177th	22	0	25
Vyse	Cross Bronx	5	0	3
West Farms	Boone	4	0	3
West Farms	E 172nd	2	0	2
West Farms	Freeman	3	0	6
West Farms	Home	2	0	4
West Farms	Jennings	2	0	1
West Farms	Longfellow	4	0	2
West Farms	Rodmand Place	1	0	1
Westchester	Bronx River	19	0	32
	Total	**276**	**1**	**353**

Table M-19: Pedestrian and Bicycle Related Accidents in Study Area

Intersection		Pedestrian and Bicycle Accidents by Year											
		Pedestrian				Bicycle				Total			
Main Street	Cross Street	2006	2007	2008	2009	2006	2007	2008	2009	2006	2007	2008	2009
Boone	E 172nd	0	0	0	0	0	0	0	0	0	0	0	0
Boone	Freeman	0	0	0	0	0	0	0	0	0	0	0	0
Boston	Bryant	0	0	1	0	0	0	0	0	0	0	1	0
Boston	Cross Bronx	0	0	0	0	0	0	0	0	0	0	0	0
Boston	E 179th	0	0	4	1	0	0	0	0	0	0	4	1
Boston	Longfellow	0	0	0	0	0	0	0	0	0	0	0	0
Bronx Park	E 177th	0	1	0	0	0	0	0	0	0	1	0	0
Close	Bronx River	2	0	0	0	2	0	0	0	4	0	0	0
E 173rd	Boone	0	0	0	0	0	0	0	0	0	0	0	0
E 173rd	Bryant	1	0	1	0	0	0	0	0	1	0	1	0
E 173rd	Hoe	0	0	0	0	0	0	0	0	0	0	0	0
E 173rd	Longfellow	1	1	0	0	0	0	0	0	1	1	0	0
E 173rd	Southern	0	1	2	0	0	0	0	0	0	1	2	0
E 173rd	Vyse	0	1	0	0	0	1	0	0	0	2	0	0
E 173rd	West Farms	0	0	0	0	0	0	0	0	0	0	0	0
E 174th	Boone	0	0	1	0	0	0	0	0	0	0	1	0
E 174th	Bronx River	1	1	0	0	0	0	0	0	1	1	0	0
E 174th	Bryant	1	1	1	0	0	0	0	0	1	1	1	0
E 174th	Longfellow	2	0	0	0	0	0	0	0	2	0	0	0
E 174th	Vyse	1	0	2	0	0	1	0	0	1	1	2	0
East Tremont	Boston	0	2	4	3	0	0	1	0	0	2	5	3
East Tremont	Bryant	0	1	0	0	0	0	0	0	0	1	0	0
East Tremont	E 177th	0	0	1	0	0	0	0	0	0	0	1	0
East Tremont	Southern	1	2	1	3	0	0	1	0	1	2	2	3
Sheridan	Devoe	1	0	0	0	0	0	0	0	1	0	0	0
Sheridan	E 177th	0	0	0	0	0	0	0	0	0	0	0	0
Vyse	Cross Bronx	0	0	0	0	0	0	0	0	0	0	0	0
West Farms	Boone	1	0	1	0	0	0	0	0	1	0	1	0
West Farms	E 172nd	0	0	0	0	1	0	0	0	1	0	0	0
West Farms	Freeman	0	1	1	0	0	0	0	0	0	1	1	0
West Farms	Home	0	0	0	0	0	0	0	0	0	0	0	0
West Farms	Jennings	0	0	0	0	0	0	0	0	0	0	0	0
West Farms	Longfellow	0	0	0	0	0	0	0	0	0	0	0	0
West Farms	Rodmand Place	0	0	0	0	0	0	0	0	0	0	0	0
Westchester	Bronx River	0	0	1	0	0	0	0	4	0	0	1	4
	Total	**12**	**12**	**21**	**7**	**3**	**2**	**2**	**4**	**15**	**14**	**23**	**11**

FUTURE CONDITIONS WITHOUT THE PROPOSED ACTION

This subsection presents the projected traffic, parking, transit and pedestrian conditions under the 2022 No Action conditions.

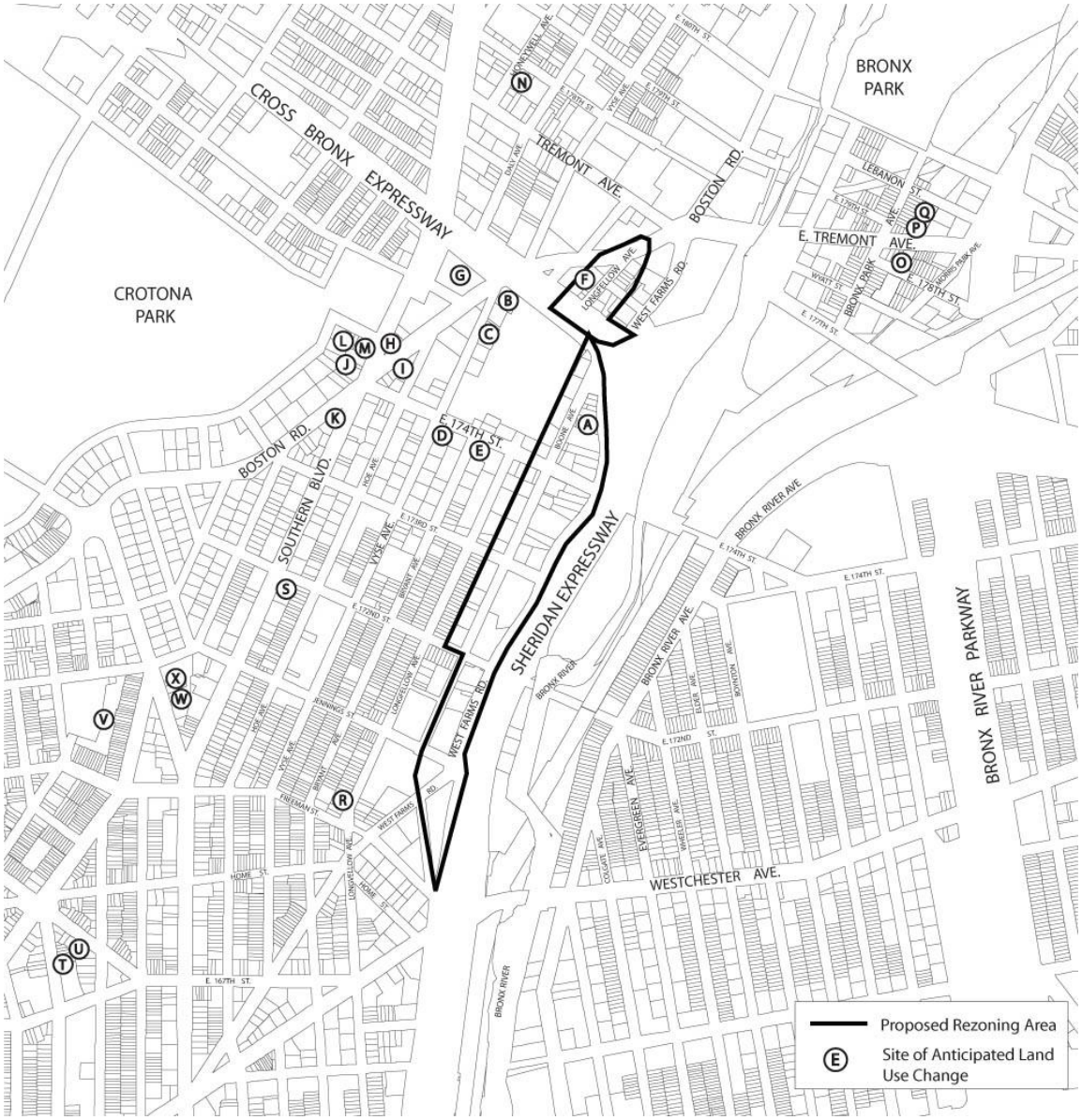
No Action Development and Background Growth

In order to determine the future 2022 No Action conditions, background growth and traffic due to major developments in the area was applied to the existing 2009 conditions. Major projects in the study area and their locations are listed in Table M-20 below. **Error! Reference source not found.** below shows the locations of the major developments. Trip generation was conducted for these projects based on their land uses in accordance with the *2010 CEQR Technical Manual*. These trips were then routed to and from the development sites and any trips that passed through the study intersections were applied to the no action traffic network.

Table M-20: Projects Expected to Be Completed in Study Area before 2022

Map Location	Address	Completion Year	Residential Units (DUs)	Local Retail Floor Area (sf)	Community Facility Floor Area (sf)	Medical Center Floor Area (sf)	Daycare Floor Area (sf)
A	1817 West Farms Rd.	2012		4,960			
B & C	Vyse Ave.	2013	150				
D	1710 Vyse Ave.	2012	65				
E	1704 Bryant Ave.	2013	40	1,547	1,555		
F	1872-1880 Boston Rd.	2011	120		168,116	70,048	
G	1825 Boston Rd.	2013	175				
H	1778 Southern Blvd.	2012	68	9,903	724		
I	1776 Boston Rd. Rezoning	2015	65				
J	1767 Southern Blvd.	2012	23	4,473			
K	1693 Southern Blvd.	2012		4,248			
L	1810 Crotona Park East	2013	55				
M	1779 Southern Blvd.	2013	18				
N	906 E 178th St.	2010	35				
O	1172 East Tremont Ave.	2012	36				
P	1175 East Tremont Ave.	2012	54	4,900			
Q	1160 Lebanon St.	2012	51				
R	1411, 1413, 1415 Longfellow Ave.	2013	9				
S	1510 Southern Blvd.	2013	60				
T	1140 Tiffany St. & 922 East 169th St	2010	84				
U	922 East 169th Street	2010	10				
V	850 Jennings St.	2011	103				6,080
W	1340 Louis Nine Blvd	2012	207				
X	870 Jennings Street	2011	84	5,118	6,711		
Total			1,512	35,149	177,106	70,048	6,080

Figure M-7: Projects to be Completed by 2022



In accordance with the *2010 CEQR Technical Manual*, background growth was applied to the 2009 existing traffic conditions. For the first five years a background growth rate of 0.25% was used. For years six through thirteen, a background growth rate of 0.125% was applied. These growth rates were applied to the 2009 existing traffic network to incorporate the background growth to the 2022 No Action Condition.

Changes in the Transportation Environment

Between the 2009 existing conditions and the future 2022 No Action year a few changes to the transportation environment are scheduled to take place. These changes are from the street reconstruction taking place due to the Bronx River Greenway Project which is expected to begin construction in the

summer of 2012. The Bronx River Greenway project involves creating a pedestrian and bicycle trail along to the Bronx River. In order to construct this pedestrian trail and bike path, reconstruction of the roadways at 3 intersections in the study area is planned. These intersections include:

- East 177th Street at the Sheridan Expressway On/Off-Ramp
- East 177th Street at East Tremont Avenue
- East Tremont Avenue at Boston and West Farms Road

These improvements are designed for pedestrian enhancements and will significantly worsen traffic situations at the three intersections. Changes to intersection geometry are described below.

East 177th Street at the Sheridan Expressway On/Off-Ramp

At this intersection, a pedestrian crossing and bike path are added to the eastbound approach on the Sheridan Expressway On/Off Ramp. Currently there is no crosswalk on this approach.

To make room for the pedestrians and bicycles north of the intersection, a sidewalk/pedestrian path to the west of East 177th Street will be constructed. This will cause East 177th street to narrow. Currently the northbound direction of East 177th Street just north of the intersection is 35 feet wide (consisting of 2 travel lanes and a parking lane). This width will reduce to approximately 30 feet, but will still contain 2 travel lanes and a parking lane.

East of this intersection, eastbound travel lanes on East 177th Street, will be striped as one 11 foot lane and one 15 foot lane. These travel lanes are 10 feet and 20 feet wide in existing conditions. The westbound approach on East 177th Street will increase lane width to three 11 foot wide lanes from the existing two 10 feet wide lanes and one 11 feet wide lane.

East Tremont Avenue at Boston and West Farms Road

No changes will made to the northbound West Farms Road approach, northeast bound Boston Road approach, southbound Boston Road approach, or the eastbound East Tremont Avenue approach. However, numerous changes occur east of the intersection, along East Tremont Avenue.

The westbound approach on East Tremont Avenue is 43.5 feet wide in existing conditions. It has no lane markings and observations have yielded that three effective 14.5 foot wide lanes are utilized. In the future No Action Condition, a 10 foot wide westbound bus lane and a 5 foot wide westbound bike lane will be created. Two travel lanes will be available to general traffic and they will each be 11 feet wide.

The eastbound travel direction on the east side of East Tremont Avenue (between West Farms Road and East 177th Street) is currently 32 feet wide. It also has no markings and operates with two 16 foot receiving lanes of traffic. In the future No Action Condition, a 10 foot wide eastbound bus lane and a 5 foot wide eastbound bike lane will be created. Two travel lanes will be available to general traffic and they will each be 11 feet wide.

East 177th Street at East Tremont Avenue

East 177th Street at East Tremont Avenue will have the most significant changes of the three intersections being redone. Currently, there are three approaches to the intersection; eastbound on East Tremont Avenue, westbound on East Tremont Avenue, and northbound on East 177th Street. In the future, reconstruction of this intersection will incorporate the intersection of Devoe Avenue at East Tremont Avenue which lies directly to the east of East 177th Street. In the future No Action Condition, there will be four approaches to the intersection; eastbound on East Tremont Avenue, westbound on East Tremont Avenue, northbound on East 177th Street, and southbound on Devoe Avenue.

In order to account for this combination of two intersections, existing movements were studied and reassigned to the network under the assumption of one intersection.

Northbound East 177th Street currently has two 12 foot lanes of travel and Devoe Avenue has one lane in the northbound direction. These two approaches will combined to make one northbound approach with three lanes, one left turn lane, one through lane, and one right turn lane. These lanes will each be 11 feet wide.

The southbound approach on Devoe Avenue will have two 11 foot right turn only lanes. This differs from the existing turn regulations where southbound trips have no movement prohibitions.

The eastbound approach on East Tremont Avenue currently is 57 feet wide with three effective 16 foot wide through lanes and one channelized right turn lane. Under the proposed intersection reconstruction, the channelized right turn lane will remain and there will be two 11 foot through lanes with left turns permitted.

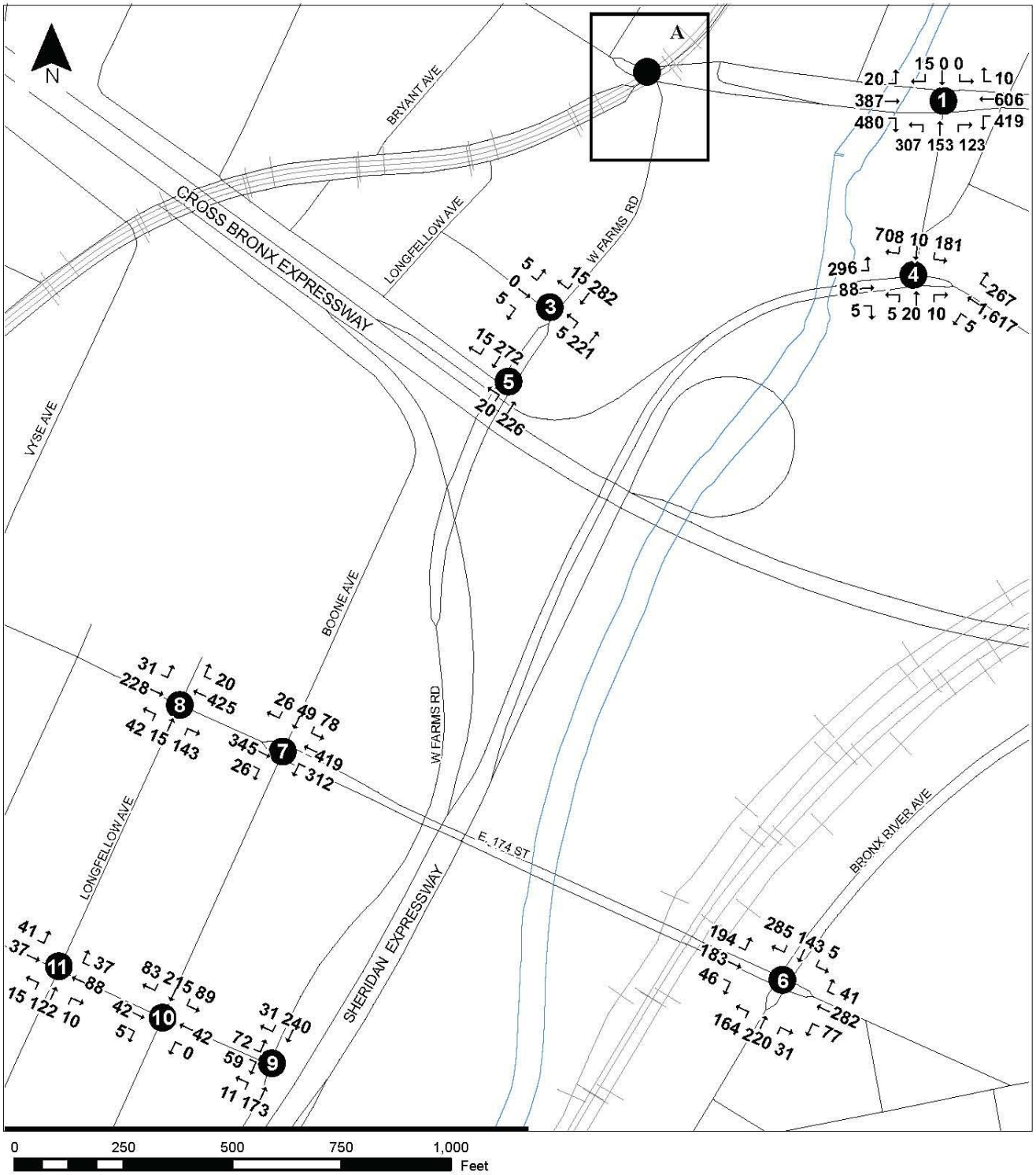
In existing conditions the westbound approach has 3 lanes that are each 11 feet wide. The intersection reconstruction proposes to drop this approach to two 11 foot wide lanes and an 8 foot wide bus stop.

Traffic

Traffic Volumes

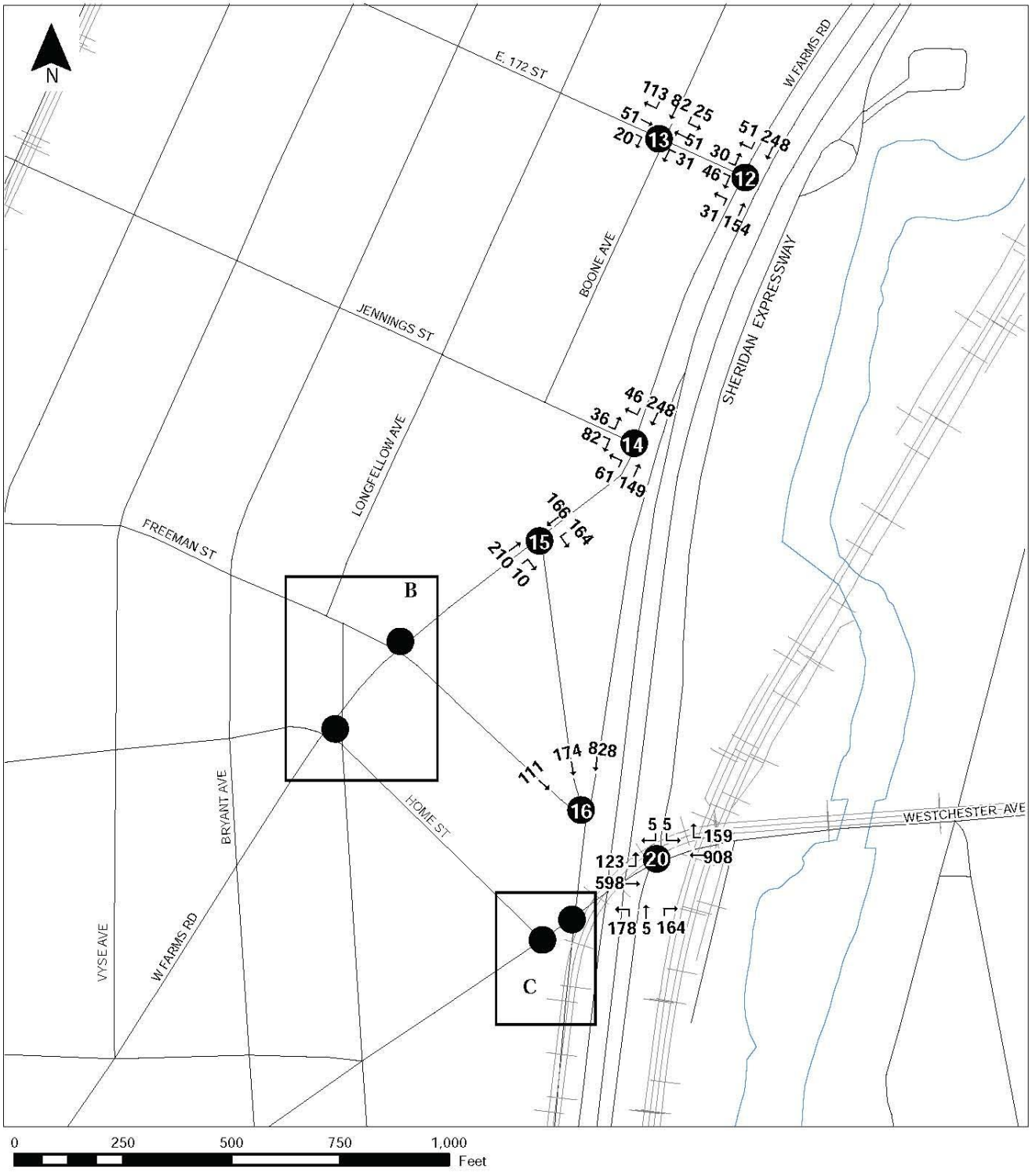
Traffic volumes on the study area roadway network in the 2022 future without the Proposed Action were derived through the addition of incremental vehicle trips generated by major developments in the area and the addition of background growth to the 2009 existing traffic network.

Figure M-8, , and Figure M-10 provide the 2022 future without the Proposed Action traffic network for the typical weekday AM, midday, and PM peak hours, respectively, in the study area.



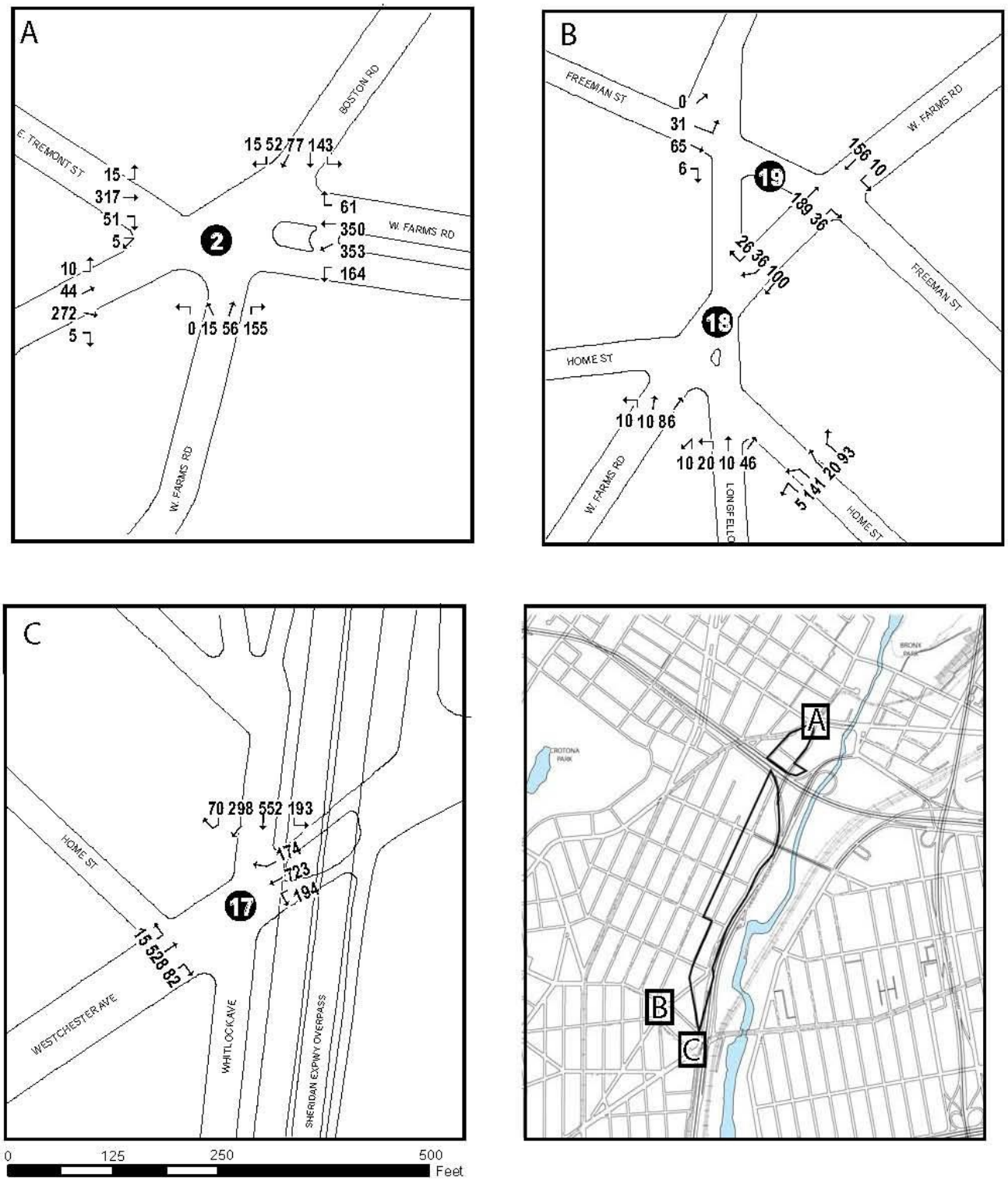
CROTONA PARK EAST / WEST FARMS ZONING MAP AMENDMENT

Bronx, New York



CROTONA PARK EAST / WEST FARMS ZONING MAP AMENDMENT

Bronx, New York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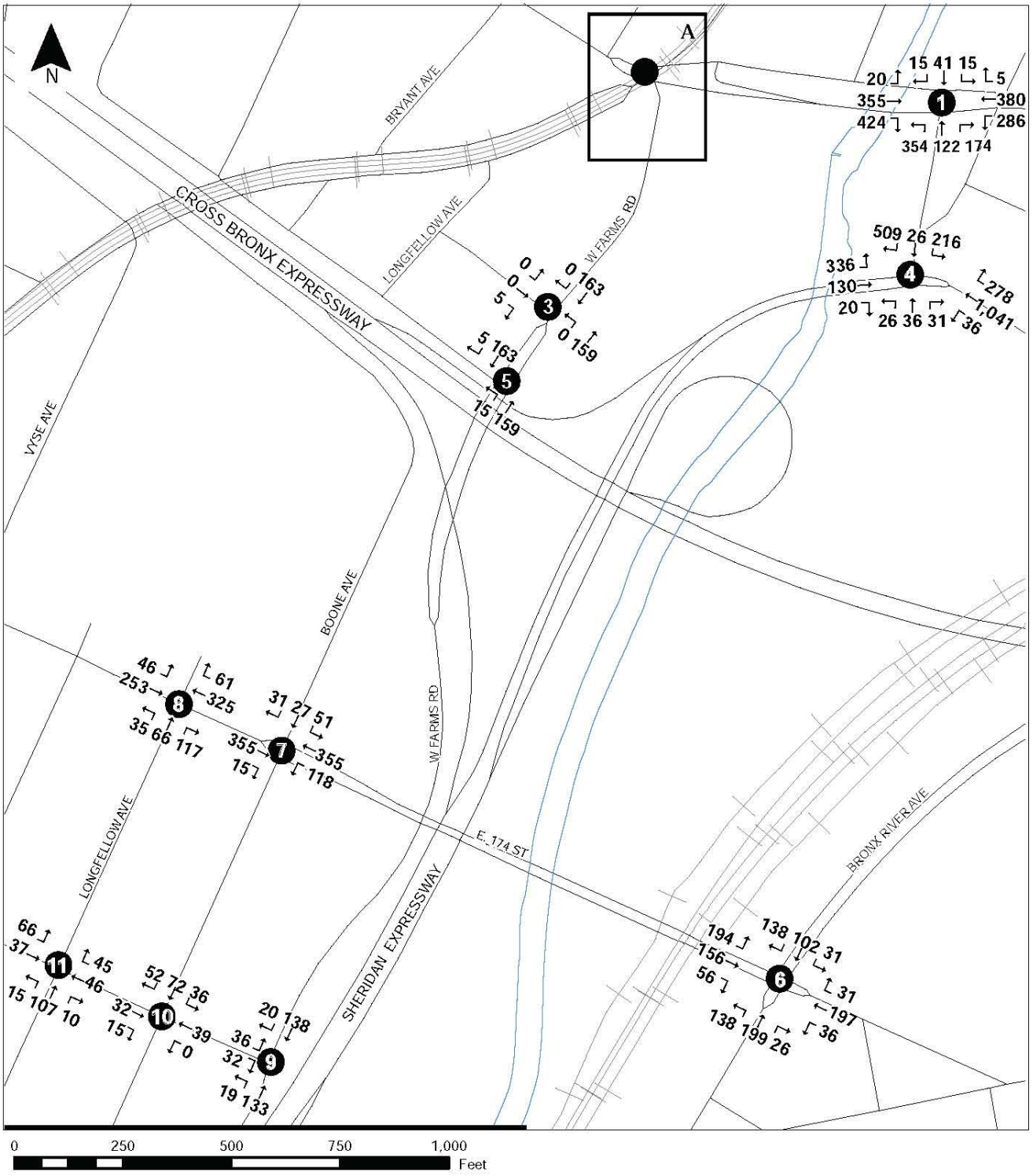
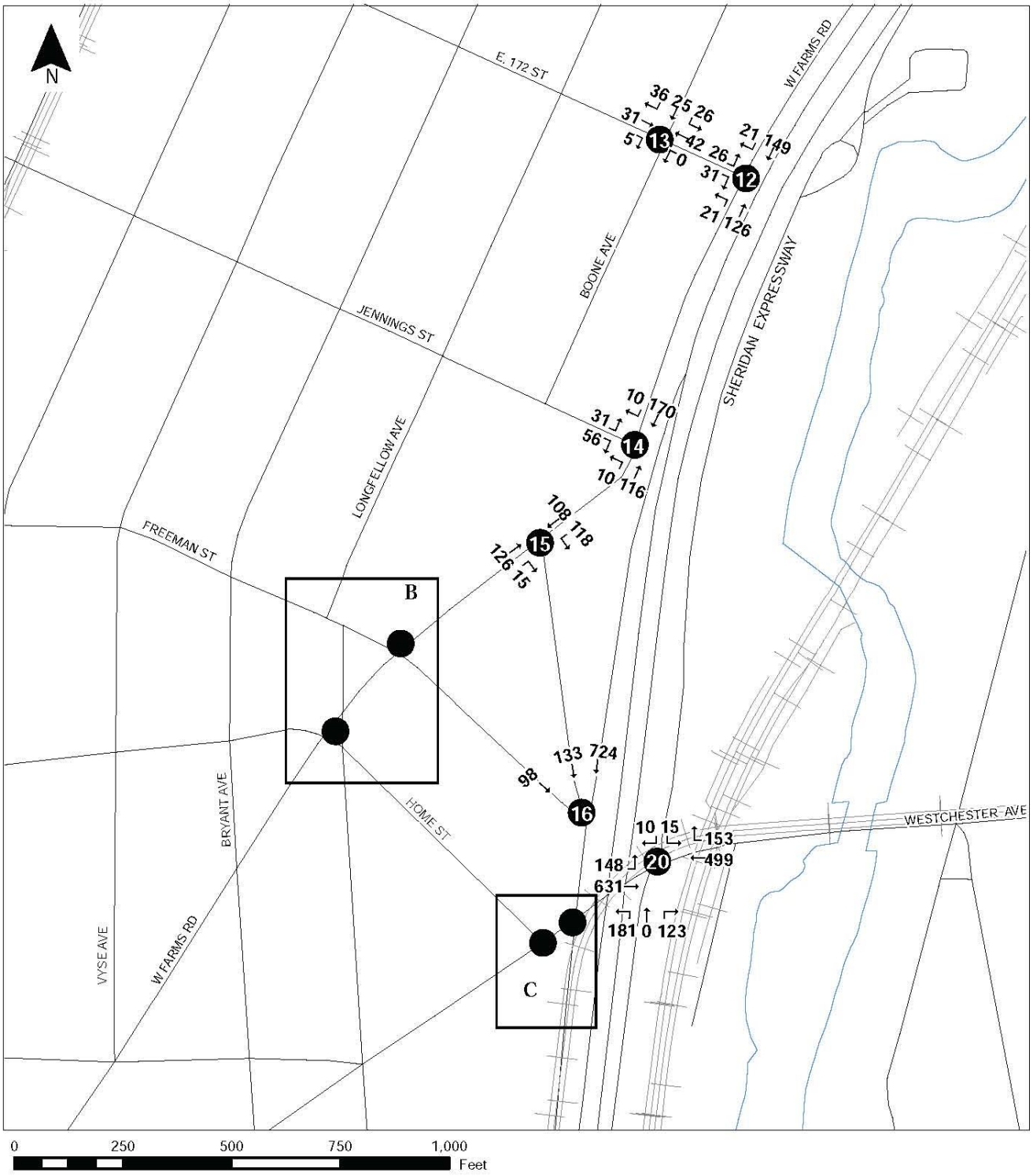
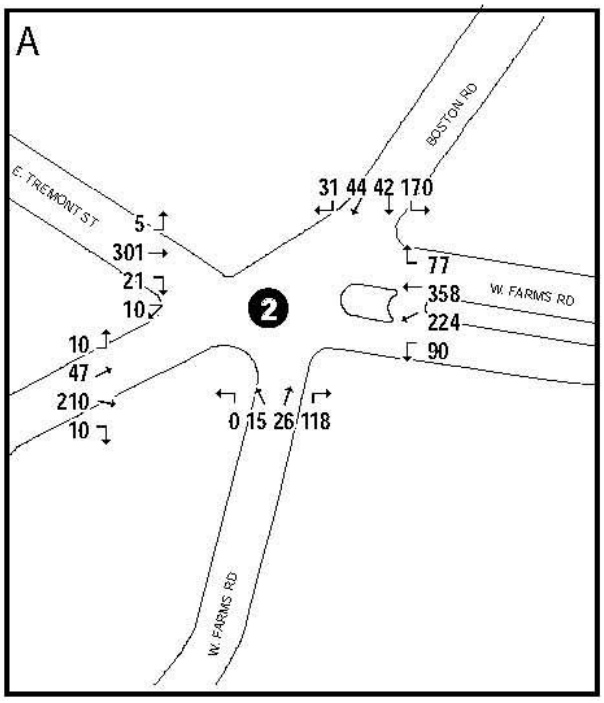
E. TREMONT ST
W. FARMS RD
15 52 77 143
15
317
51
5
61
350
353
164
10
44
272
5
0 15 56 155
2
B
FREEMAN ST
W. FARMS RD
0
31
65
6
156 10
19
189 36
26 36 100
18
HOME ST
10 10 86
10 20 10 46
5 141 20 93
C
HOME ST
70 298 552 193
174
723
194
17
15 528 82
WESTCHESTER AVE
WHITLOCK AVE
SHERIDAN EXPWY OVERPASS
0
125
250
500
Feet
A
B
C


N
A
BRYANT AVE
CROSS BRONX EXPRESSWAY
LONGFELLOW AVE
W FARMS RD
VYSE AVE
BOONE AVE
E 174 ST
SHERIDAN EXPRESSWAY
BRONX RIVER AVE
0
250
500
750
1,000
Feet



CROTONA PARK EAST / WEST FARMS ZONING MAP AMENDMENT

Bronx, New York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BOSTON RD
E. TREMONT ST
W. FARMS RD
31 44 42 170
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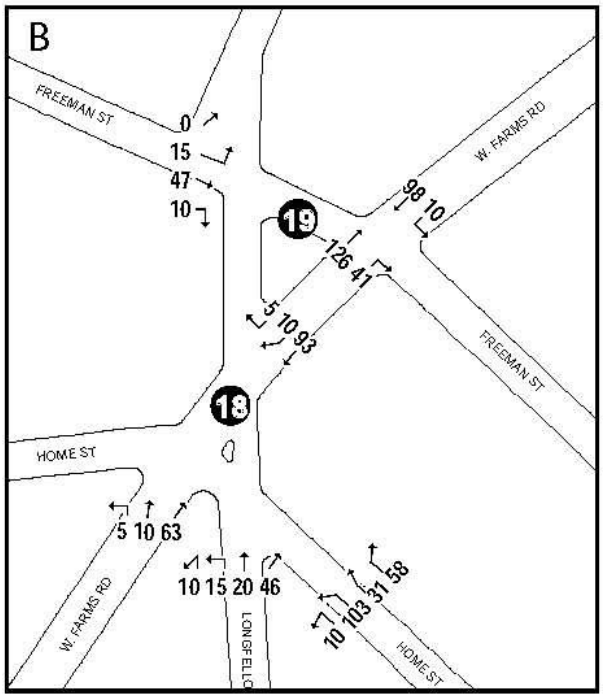
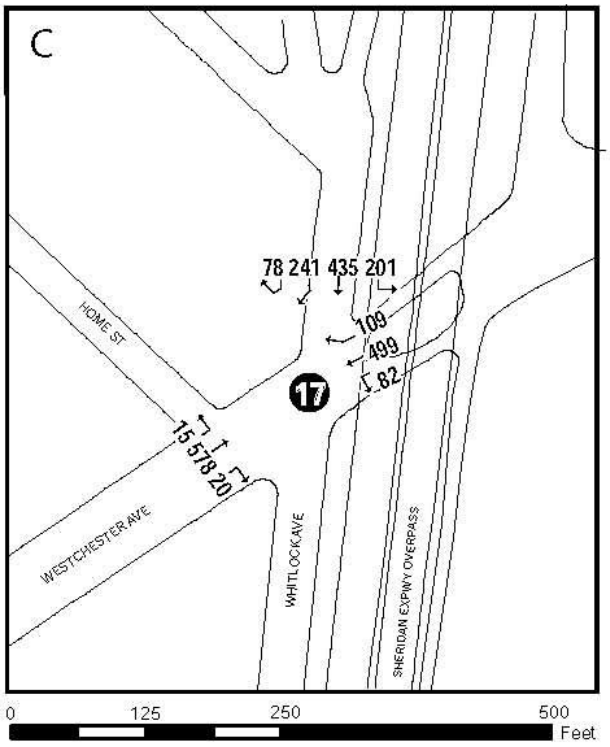
301
21
10
77
358
224
90
10
47
210
10
0 15 26 118
2
W. FARMS RD


B
FREEMAN ST
W. FARMS RD
0
15
47
10
98 10
19
126 41
5 10 93
FREEMAN ST
18
HOME ST
5 10 63
10 15 20 46
10 103 31 58
W. FARMS RD
HOME ST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HOME ST
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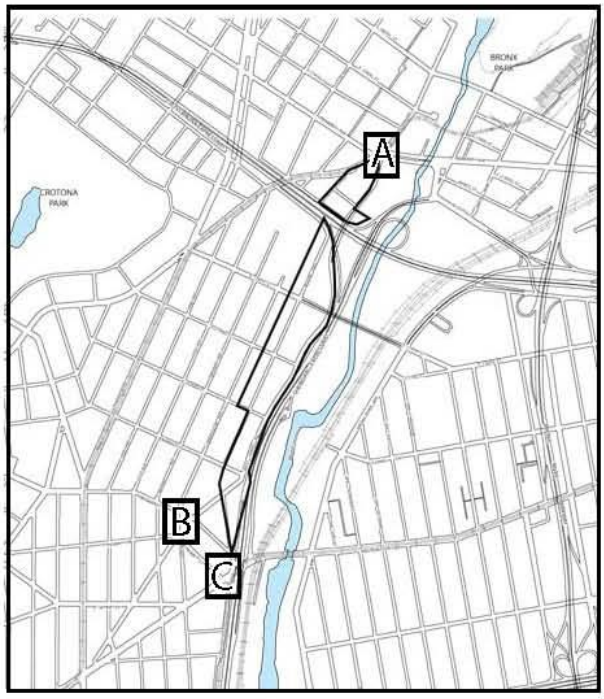
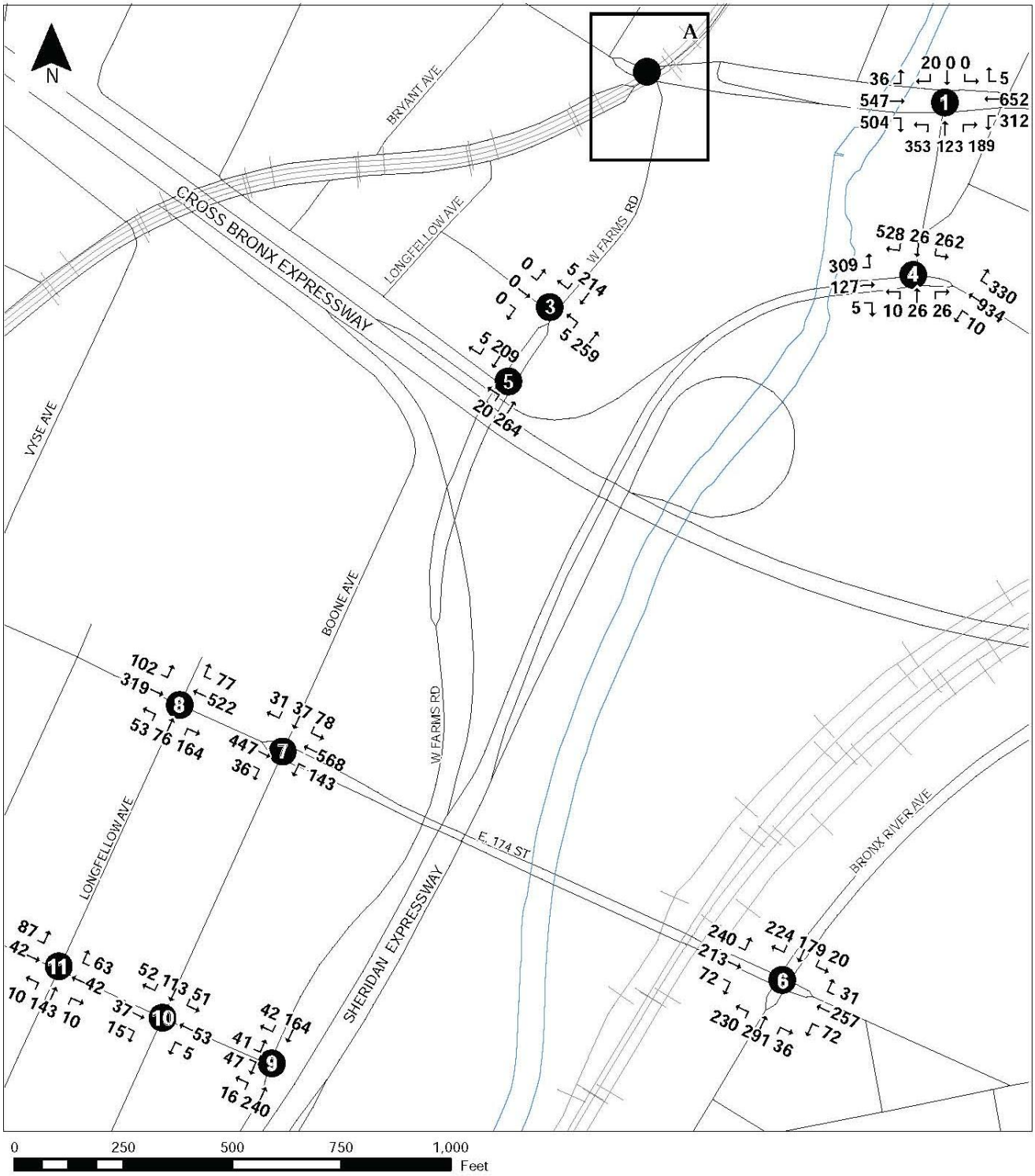
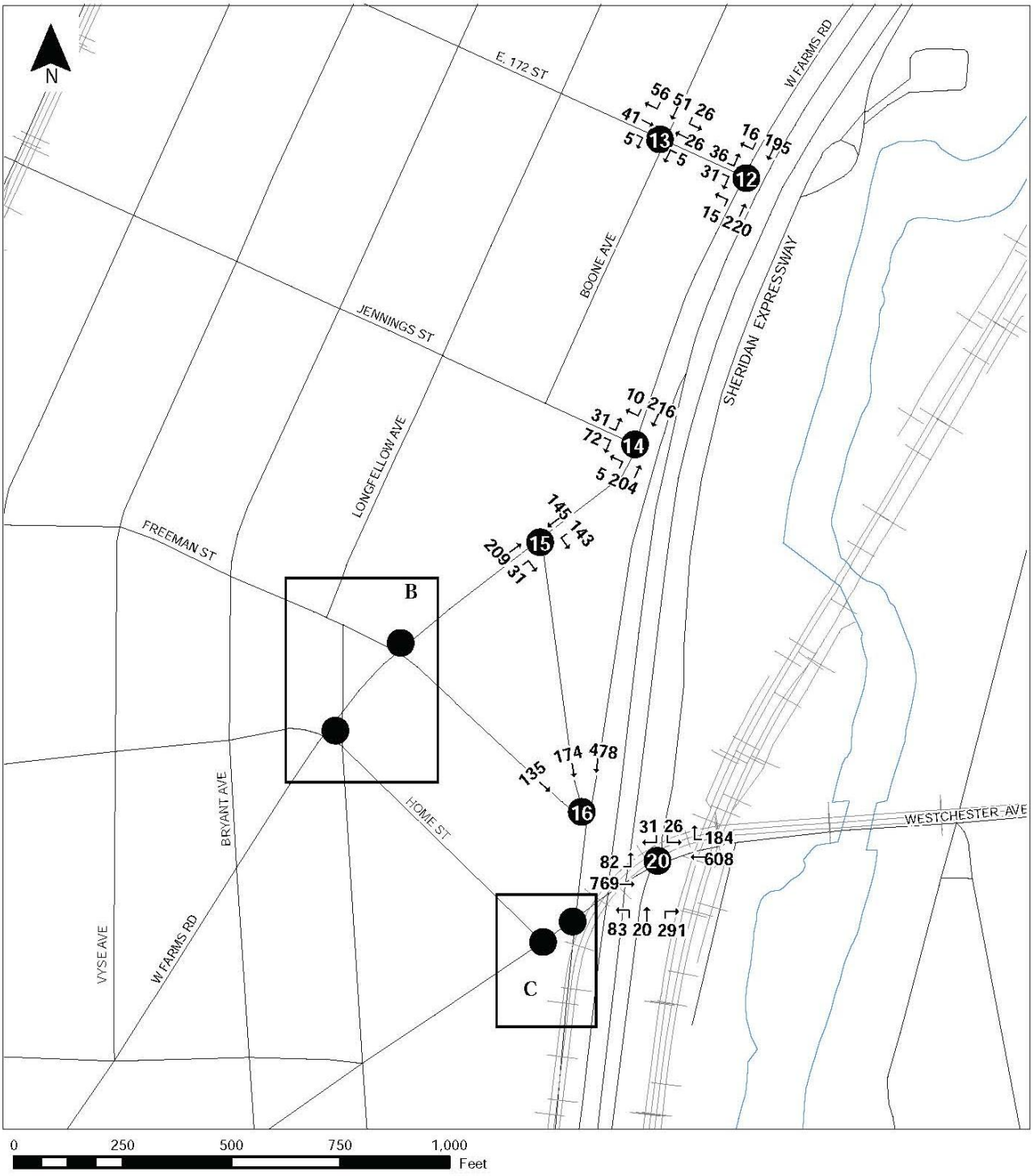
499
82
17
15 578 20
WESTCHESTER AVE
WHITLOCK AVE
SHERIDAN EXPWY OVERPASS
0
125
250
500
Feet


A
B
C



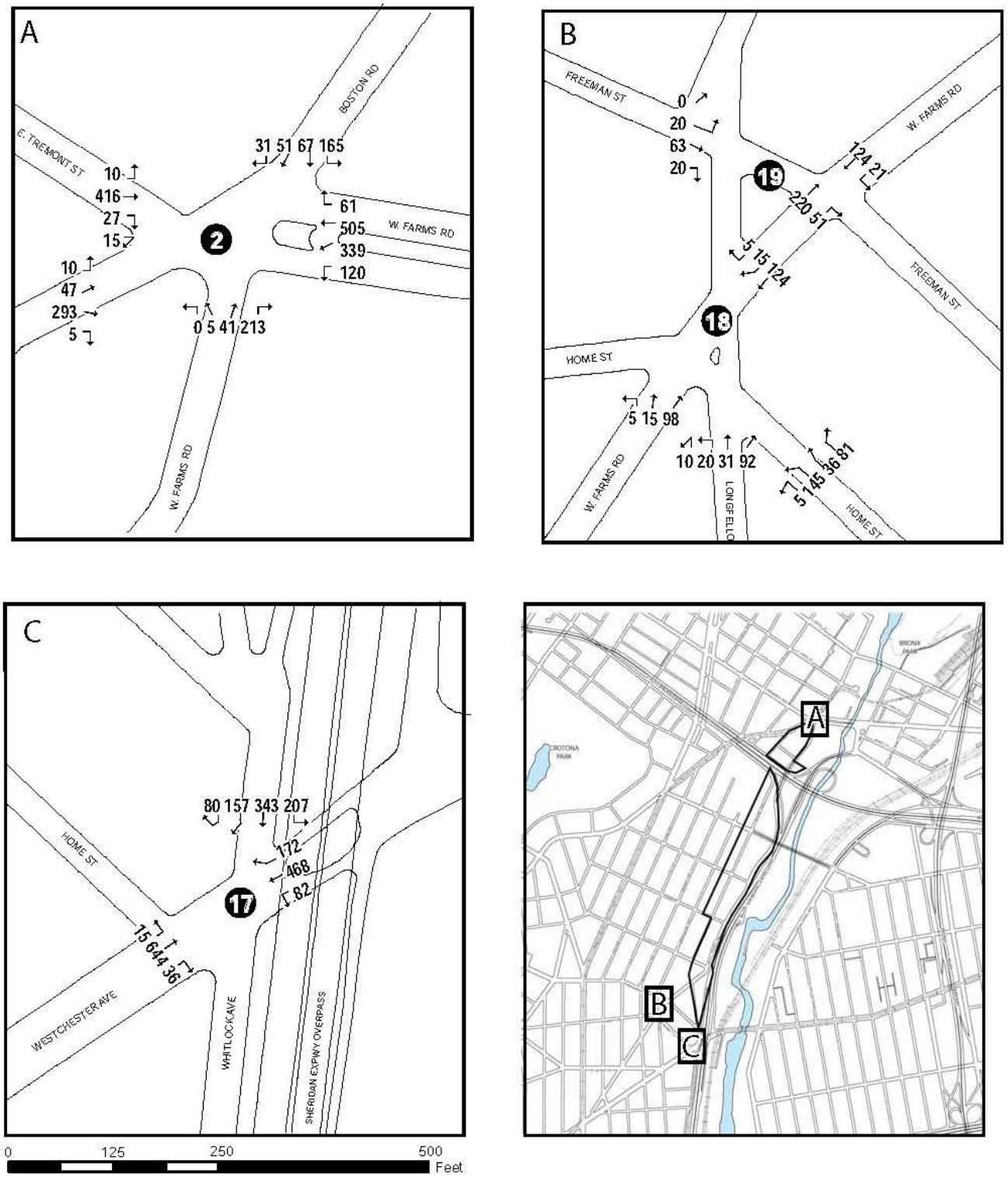
CROTONA PARK EAST / WEST FARMS ZONING MAP AMENDMENT

Bronx, New York



CROTONA PARK EAST / WEST FARMS ZONING MAP AMENDMENT

Bronx, New York


A
E. TREMONT ST
BOSTON RD
W. FARMS RD
10
416
27
15
10
47
293
5
31 51 67 165
61
505
339
120
0 5 41 213
2
B
FREEMAN ST
W. FARMS RD
HOME ST
LONGFELLOW
0
20
63
20
124 21
19
220 51
5 15 124
18
5 15 98
10 20 31 92
5 145 56 81
C
HOME ST
WESTCHESTER AVE
WHITLOCK AVE
SHERIDAN EXPWY OVERPASS
80 157 343 207
172
468
82
17
15 644 36
0
125
250
500
Feet
A
B
C

Summary of LOS Analysis

HCS analysis was done for all 20 intersections in the study area during the three peak periods. The following summarizes the analysis results by travel corridor and details the locations that operate at LOS D with a volume to capacity (v/c) ratio of greater than 0.90, LOS E or LOS F.

Although most intersections in the traffic study area operate at overall acceptable levels during the three analysis peak hours, individual approach movements at numerous intersections operate at LOS D with a volume to capacity (v/c) ratio of greater than 0.90, LOS E or LOS F. Overall, of the 75 approach movements analyzed, 14 approach movements operate at LOS D with a volume to capacity (v/c) ratio of greater than 0.90, LOS E or LOS F in the AM peak hour, 9 approach movements operate at LOS D with a volume to capacity (v/c) ratio of greater than 0.90, LOS E or LOS F in the midday peak hour, and 11 approach movements operate at LOS D with a volume to capacity (v/c) ratio of greater than 0.90, LOS E or LOS F in the PM peak hour. These findings are presented in Table M-21.

Table M-21: Number of Approach Movements with Substandard Level of Service in No Action Condition

Level of Service	Analysis Hour		
	AM	MD	PM
LOS D with v/c ≥ 0.90	1	0	1
LOS E	3	1	3
LOS F	10	8	8

Detailed analysis results, including the v/c ratio, delay, and LOS, for all intersections in the study area are provided in Table M-22 and Table M-23 for the AM, midday, and PM peak periods.

Table M-22: No Action Level of Service Analysis

Int#	Intersection Name	Direction	Lane Group	No Build											
				AM				MD				PM			
				Volume	v/c ratio	Delay (sec)	LOS	Volume	v/c ratio	Delay (sec)	LOS	Volume	v/c ratio	Delay (sec)	LOS
1	East Tremont Ave at East 177th Street	Overall		2025		33.1	C	1737		24.4	C	2217		31.2	C
		Eastbound	LT	407	0.42	29.0	C	375	0.47	25.4	C	583	0.53	27.9	C
		Westbound	DefL	419	0.85	46.6	D	327	0.58	21.9	C	312	0.68	35.5	D
			TR	616	0.79	29.3	C	385	0.46	13.7	B	657	0.75	23.8	C
		Northbound	L	307	0.56	33.3	C	354	0.71	33.8	C	353	0.77	45.7	D
			T	153	0.26	27.0	C	122	0.24	22.7	C	123	0.23	29.8	C
			R	123	0.26	27.1	C	174	0.65	32.5	C	189	0.43	33.9	C
		Southbound	LTR	15	0.02	23.6	C	15	0.02	20.2	C	20	0.02	26.9	C
2	West Farms Road at Boston Rd, East Tremont Ave (1)	Overall		2160		267.3	F	1809		168.1	F	2421		211.0	F
		Eastbound	LTR	388	0.74	50.7	D	337	0.59	35.7	D	468	0.78	51.5	D
		Westbound	LTR	928	1.71	372.1	F	749	1.47	254.8	F	1025	1.52	287.4	F
		Northbound	LTR	226	0.82	64.9	E	159	0.49	38.4	D	259	0.72	56.2	E
		NE-Bound	T	331	1.22	175.9	F	277	0.97	78.5	E	355	1.21	164.7	F
		Southbound	Def L	143	1.30	233.9	F	170	1.29	206.5	F	165	1.08	139.2	F
			TR	144	1.08	130.5	F	117	0.70	51.4	D	149	0.86	77.5	E
4	East 177th Street at Sheridan Expressway	Overall		3212		75.0	E	2685		53.4	D	2593		44.4	D
		Eastbound	L	296	0.90	76.2	E	336	0.98	87.9	F	309	0.77	54.5	D
			T	93	0.08	5.0	A	150	0.14	5.3	A	132	0.12	5.2	A
		Westbound	R	1622	1.14	99.8	F	1077	0.83	34.4	C	944	0.84	37.5	D
			T	267	0.42	21.4	C	278	0.49	25.2	C	330	0.62	31.5	C
		Northbound	LTR	35	0.26	44.6	D	93	1.15	179.2	F	62	0.45	52.0	D
		Southbound	LT	191	1.06	126.6	F	242	1.13	140.0	F	288	1.12	138.0	F
			TR (4)	708	0.72	34.1	C	509	0.53	26.1	C	528	0.50	23.2	C
6	Bronx River Ave at East 174th Street	Overall		1671		39.5	D	1304		38.5	D	1865		44.0	D
		Eastbound	LTR	423	1.08	95.3	F	406	1.08	97.0	F	525	1.08	93.6	F
		Westbound	LT	359	0.80	39.8	D	233	0.55	28.4	C	329	0.92	54.2	D
			R	41	0.21	22.4	C	31	0.15	21.5	C	31	0.11	21.0	C
		Northbound	L	164	0.52	18.5	B	138	0.39	14.5	B	230	0.79	30.4	C
			TR	251	0.46	14.6	B	225	0.36	13.1	B	327	0.47	14.8	B
		Southbound	LTR	433	0.41	13.1	B	271	0.29	11.8	B	423	0.34	12.3	B
7	Boone Ave at East 174th Street	Overall		1255		25.3	C	952		12.3	B	1340		14.7	B
		Eastbound	TR	371	0.49	10.4	B	370	0.48	10.2	B	483	0.56	11.4	B
		Westbound	Def L	312	0.96	51.5	D	118	0.31	9.2	A	143	0.48	12.5	B
			LT	419	0.50	10.4	B	355	0.42	9.3	A	568	0.60	12.0	B
		Southbound	LTR	153	0.67	41.0	D	109	0.38	31.8	C	146	0.53	35.1	D
8	Longfellow Ave at East 174th Street	Overall		904		37.9	D	903		28.5	C	1313		43.3	D
		Eastbound	LT	259	0.35	8.3	A	299	0.45	9.7	A	421	0.81	23.1	C
		Westbound	TR	445	0.56	11.1	B	386	0.46	9.5	A	599	0.67	13.4	B
		Northbound	LTR	200	1.09	116.3	F	218	0.98	84.1	F	293	1.12	117.7	F
17	Westchester Ave at Sheridan Expressway Service Road, Whitlock Avenue	Overall		2814		42.3	D	2243		22.9	C	2189		22.4	C
		Eastbound	TR	610	0.71	29.8	C	598	0.62	27.1	C	680	0.69	28.7	C
		Westbound	LT	1091	1.06	62.8	E	690	0.57	16.4	B	722	0.52	15.4	B
		Southbound	LTR	1113	0.75	28.1	C	955	0.61	24.8	C	787	0.50	23.1	C
18	West Farms Road at Home Street, Longfellow Ave (2)	Overall		613		19.3	B	479		26.4	C	682		55.8	E
		NW-Bound	LTR	259	1.04	98.6	F	202	0.97	85.3	F	267	1.18	150.1	F
		Northbound	LTR	86	0.46	36.6	D	91	0.66	45.9	D	153	1.08	116.8	F
		NE-Bound	LT	106	0.19	13.2	B	78	0.13	12.6	B	118	0.22	13.5	B
		SW-Bound	RT	162	0.26	13.9	B	108	0.14	12.7	B	144	0.23	13.5	B
19	West Farms Road at Freeman Street	Overall		493		13.2	B	347		12.3	B	519		14.4	B
		Eastbound	LTR	102	0.32	25.9	C	72	0.21	24.2	C	103	0.39	27.2	C
		Northbound	TR	225	0.31	9.9	A	167	0.24	9.2	A	271	0.43	11.4	B
		Southbound	LT	166	0.26	9.4	A	108	0.12	8.2	A	145	0.21	8.9	A
20	Westchester Ave at Sheridan Expressway Service Road and Northbound Off-Ramp	Overall		1986		52.4	D	1607		20.8	C	1910		23.7	C
		Eastbound	DefL (3)	123	0.41	20.6	C								
			LT	598	0.63	17.8	B	779	0.56	15.3	B	851	0.57	15.5	B
		Westbound	T	908	1.08	82.9	F	499	0.47	25.1	C	608	0.58	26.9	C
		Northbound	LTR	347	0.73	33.3	C	304	0.61	28.5	C	394	0.78	35.8	D
		Southbound	LR	10	0.04	19.2	B	25	0.11	20.0	C	57	0.18	21.1	C

Notes (1) Boston Road approaches the intersection in the northeast bound and southbound direction. East Tremont Avenue approaches the intersection in the eastbound and westbound direction. West Farms Road approaches the intersection in the northbound direction

(2) Home Street approaches the intersection ins the northwest bound direction. Longfellow Avenue approaches the intersection in the northbound direction. West Farms Road approaches the intersection in the northeast bound and southwest bound directions.

(3) Defacto left turn only exists in AM peak period.

(4) Left turns are shared with lane group above, volumes listed are only right turn vehicles.

Table M-23: No Action Unsignalized Level of Service Analysis Tables

Int #	Intersection Name	Direction	Lane Group	No Build											
				AM				MD				PM			
				Volume	v/c ratio	Delay (sec)	LOS	Volume	v/c ratio	Delay (sec)	LOS	Volume	v/c ratio	Delay (sec)	LOS
3	West Farms Road at Rodman Place	Overall		533	--	--	--	327	--	--	--	483	--	--	--
		Eastbound	LR	10	0.05	14.3	B	5	0.02	10.5	B	0	--	--	--
		Northbound	LT	226	0.01	8.5	A	159	0.00	8.0	A	264	0.01	8.2	A
		Southbound [2]	TR	297	--	--	--	163	--	--	--	219	--	--	--
5	West Farms Road at Cross Bronx Expressway North Service Rd	Overall		533	--	--	--	342	--	--	--	498	--	--	--
		Northbound	LT	246	0.02	8.6	A	174	0.03	8.1	A	284	0.02	8.3	A
		Southbound [2]	TR	287	--	--	--	168	--	--	--	214	--	--	--
9	West Farms Road at East 173rd Street	Overall		586	--	--	--	378	--	--	--	550	--	--	--
		Eastbound	RL	131	0.49	27.9	D	68	0.22	16.7	C	88	0.64	35.5	E
		Northbound	TL	184	0.03	9.4	A	152	0.03	8.8	A	256	0.03	9.0	A
		Southbound	RT	271	--	--	--	158	--	--	--	206	--	--	--
10	Boone Ave at East 173rd Street	Overall		476	--	--	--	246	--	--	--	326	--	--	--
		Eastbound	TR	47	0.16	16.4	C	47	0.12	11.9	B	52	0.14	12.6	B
		Westbound	LT	42	0.18	18.8	C	39	0.12	13.2	B	58	0.20	15.1	C
		Southbound	LTR	387	0.07	7.6	A	160	0.04	7.5	A	216	0.05	7.6	A
11	Longfellow Ave at East 173rd Street	Overall		350	--	--	--	326	--	--	--	397	--	--	--
		Eastbound	TL	78	0.04	7.9	A	103	0.06	7.9	A	129	0.10	8.1	A
		Westbound [5]	RT	125	--	--	--	91	--	--	--	105	--	--	--
		Northbound	LTR	147	0.38	16.9	C	132	0.36	17.3	C	163	0.54	24.9	C
12	West Farms Road at East 172nd Street	Overall		560	--	--	--	374	--	--	--	513	--	--	--
		Eastbound	RL	76	0.3	16.3	C	57	0.14	12.5	B	67	0.19	14.4	B
		Northbound	TL	185	0.04	8.7	A	147	0.02	8.1	A	235	0.02	8.2	A
		Southbound [2]	RT	299	--	--	--	170	--	--	--	211	--	--	--
13	Boone Ave at East 172nd Street	Overall		373	--	--	--	165	--	--	--	210	--	--	--
		Eastbound [2]	TR	71	--	--	--	36	--	--	--	46	--	--	--
		Westbound	LT	82	0.04	7.8	A	42	0.00	7.6	A	31	0.01	7.6	A
		Southbound	LTR	220	0.54	17.9	C	87	0.20	11.5	B	133	0.26	12.0	B
14	West Farms Road at Jennings Street	Overall		622	--	--	--	393	--	--	--	538	--	--	--
		Eastbound	LR	118	0.4	17.9	C	87	0.20	12.6	B	103	0.25	14.3	B
		Northbound	LT	210	0.07	8.8	A	126	0.01	8.0	A	209	0.01	8.2	A
		Southbound [2]	TR	294	--	--	--	180	--	--	--	226	--	--	--
15	West Farms Road at Boone Ave [2]	Overall		550	--	--	--	367	--	--	--	528	--	--	--
		Northbound	TR	220	--	--	--	141	--	--	--	240	--	--	--
		Southbound	LT	330	0.32	12.6	B	226	0.19	11.3	B	288	0.25	11.7	B
16	Boone Ave at Freeman Street, Sheridan Expressway Ramp [1]	Overall		1113	--	--	--	955	--	--	--	787	--	--	--
		Eastbound	T	111	0.19	11.7	B	98	0.16	11.2	B	135	0.24	12.2	B
		Westbound	T	174	0.57	20	C	133	0.45	16.3	C	174	0.52	16.5	C
		Southbound [2]	T	828	--	--	--	724	--	--	--	478	--	--	--

Notes (1) All way stop controlled intersection for Boone Avenue at Freeman Street: No v/c ratio given in HCS analysis.
(2) No conflicting movements.

A summary of intersections in the study area expected to operate at LOS D with a volume to capacity (v/c) ratio of greater than 0.90, LOS E or LOS F under No Action conditions follows:

<u>AM Peak Hour</u>

- West Farms Road at Boston Road and East Tremont Avenue:
  - The intersection has a delay of 267.3 seconds and operates at LOS F.
  - The westbound approach on East Tremont Avenue has operates at LOS F with 372.1 seconds of delay and has a v/c ratio of 1.71.
  - The northbound approach for West Farms Road operates at LOS E with 64.9 seconds of delay.
  - The northeast bound approach for Boston Road operates at LOS F with 175.9 seconds of delay and a v/c ratio of 1.22.

    - The southbound approach for Boston Road de facto left turn lane operates at LOS F with 233.9 seconds of delay and a v/c ratio of 1.30.
    - The southbound approach for Boston Road through and right turn lane operates at LOS F with a delay of 130.5 seconds and has a v/c ratio of 1.08.
- East 177th Street at Sheridan Expressway:
    - The intersection operates at LOS E with 75.0 seconds of delay.
    - The eastbound approach on the Sheridan Expressway off-ramp left turn lane operates at LOS E with 76.2 seconds of delay and a v/c ratio of 0.90.
    - The westbound approach on East 177th Street through and left turn lane operates at LOS F with a delay of 99.8 seconds and a v/c ratio of 1.14.
    - The southbound approach on East 177th Street de facto left turn operates at LOS F with a delay of 126.6 seconds and a v/c ratio of 1.06.
- Bronx River Avenue at East 174th Street:
    - The eastbound approach on East 174th Street operates at LOS F with a delay of 95.3 seconds and has a v/c ratio of 1.08.
- Boone Avenue at East 174th Street:
    - The de facto left turn for the westbound approach of East 174th Street operates at LOS D with 51.5 seconds of delay and a v/c ratio of 0.96.
- Longfellow Avenue at East 174th Street:
    - The northbound approach of Longfellow Avenue operates of LOS F with a delay of 116.3 seconds and has a v/c ratio of 1.09.
- Westchester Avenue at Sheridan Expressway Service Road and Whitlock Ave:
    - The westbound approach on Westchester Avenue operates at LOS E with 62.8 seconds of delay and has a v/c ratio of 1.06.
- West Farms Road at Home Street and Longfellow Avenue:
    - The northbound approach on Longfellow Avenue operates at LOS F with a delay of 98.6 seconds and has a v/c ratio of 1.04.
- Westchester Avenue at Sheridan On-ramp:
    - The westbound approach on Westchester Avenue operates at LOS F with a delay of 82.9 seconds and v/c ratio of 1.08.

<u>Midday Peak Hour</u>

- West Farms Road at Boston Road and East Tremont Avenue:
    - The intersection operates at LOS F with a delay of 168.1 seconds.
    - The westbound approach on East Tremont Avenue has operates at LOS F with 254.8 seconds of delay and has a v/c ratio of 1.47.
    - The northeast bound approach for Boston Road operates at LOS E with 78.5 seconds of delay and a v/c ratio of 0.97.
    - The southbound approach for Boston Road de facto left turn lane operates at LOS F with 206.5 seconds of delay and a v/c ratio of 1.29.
- East 177th Street at Sheridan Expressway:
    - The eastbound approach on the Sheridan Expressway off-ramp left turn lane operates at LOS F with 87.9 seconds of delay and a v/c ratio of 0.98.
    - The northbound approach out of the bus depot operates at LOS F with a delay of 179.2 seconds and a v/c ratio of 1.15
    - The southbound approach on East 177th Street de facto left turn operates at LOS F with a delay of 140 seconds and a v/c ratio of 1.13
- Bronx River Avenue at East 174th Street:

    - The eastbound approach on East 174th Street operates at LOS F with a delay of 97.0 seconds and has a v/c ratio of 1.08.
- Longfellow Avenue at East 174th Street:
    - The northbound approach of Longfellow Avenue operates of LOS F with a delay of 84.1 seconds and has a v/c ratio of 0.98.
- West Farms Road at Home Street and Longfellow Avenue:
    - The northwest bound approach on Home Street operates at LOS F with 85.3 seconds of delay.

PM Peak Hour

- West Farms Road at Boston Road and East Tremont Avenue:
    - The intersection has a delay of 211.0 seconds and operates at LOS F.
    - The westbound approach on East Tremont Avenue has operates at LOS F with 287.4 seconds of delay and has a v/c ratio of 1.52.
    - The northbound approach for West Farms Road operates at LOS E with 56.2 seconds of delay.
    - The northeast bound approach for Boston Road operates at LOS F with 164.7 seconds of delay and a v/c ratio of 1.21.
    - The southbound approach for Boston Road de facto left turn lane operates at LOS F with 139.2 seconds of delay and a v/c ratio of 1.08.
    - The southbound approach for Boston Road through and right turn lane operates at LOS E with a delay of 77.5 seconds.
- East 177th Street at Sheridan Expressway:
    - The southbound approach on East 177th Street left turn operates at LOS F with a delay of 138.0 seconds and a v/c ratio of 1.12.
- Bronx River Avenue at East 174th Street:
    - The eastbound approach on East 174th Street operates at LOS F with a delay of 93.6 seconds and has a v/c ratio of 1.08.
    - The westbound approach on East 174th Street left turn and through lane operates at LOS D and has a v/c ratio of 0.92.
- Longfellow Avenue at East 174th Street:
    - The northbound approach of Longfellow Avenue operates of LOS F with a delay of 117.7 seconds and has a v/c ratio of 1.12.
- West Farms Road at Home Street and Longfellow Avenue:
    - The intersection has a delay of 55.8 seconds and operates at LOS E.
    - The northwest bound approach on Home Street operates at LOS F with 150.1 seconds of delay and has a v/c of 1.18.
    - The northbound approach on Longfellow Avenue operates at LOS F with a delay of 116.8 seconds and has a v/c ratio of 1.08.
- West Farms Road at East 173rd Street:
    - The eastbound approach on East 173rd Street operates at LOS E.

Transit and Pedestrians

Transit and pedestrian conditions in the future without the Proposed Action were assessed to create a baseline No-Action condition. This baseline No-Action condition is necessary to evaluate impacts of the Proposed Action. In order to project the 2022 No-Action analysis year, area background growth, effects of nearby developments, and transportation improvements that would affect transit service and pedestrian movements were analyzed.

Transit and Pedestrian Projections

Future 2022 No-Action peak hour transit and pedestrian volumes have been projected using a process similar to that used in projecting traffic No-Action conditions. Background growth was generated using a growth rate of 0.25% for years 1-5 and 0.125% for years 6-13. In addition, pedestrian and transit trips for projects projected to be completed in the area before 2022 were assigned to the pedestrian network and transit stations in the area.

Subway Station Analysis

The tables below show the 2022 No-Action operating conditions of subway control area elements during the weekday AM, MD, and PM peak hours. These elements include subway stairs and turnstiles. As shown in Table M-24 and Table M-25, all subway control elements, including stairs and turnstiles operate at LOS C or better.

Table M-24: 2022 No-Action Subway Stairs Operations

Location	Subway Stair	Width (feet)	Effective Width (feet)	15-Minute Volume		Friction Factor	15-Minute Volume		LOS
				Up	Down		SVCD Cap	V/SVCD	
AM									
E Tremont Ave and Boston Rd / W Farms Rd	Northwest	6.00	5.00	68	84	0.9	675	0.22	A
	Northeast	6.00	5.00	55	82	0.9	675	0.20	A
174th St and Southern Blvd / Boston Rd	Northwest	4.67	3.67	330	25	0.8	440	0.81	C
	Northeast	4.67	3.67	58	35	0.9	495	0.19	A
	Southeast	4.67	3.67	49	64	0.9	495	0.23	A
	Southwest	4.67	3.67	109	95	0.9	495	0.41	A
MD									
E Tremont Ave and Boston Rd / W Farms Rd	Northwest	6.00	5.00	30	66	0.8	600	0.16	A
	Northeast	6.00	5.00	22	49	0.8	600	0.12	A
174th St and Southern Blvd / Boston Rd	Northwest	4.67	3.67	52	67	0.9	495	0.24	A
	Northeast	4.67	3.67	56	52	0.9	495	0.22	A
	Southeast	4.67	3.67	53	34	0.9	495	0.18	A
	Southwest	4.67	3.67	39	44	0.9	495	0.17	A
PM									
E Tremont Ave and Boston Rd / W Farms Rd	Northwest	6.00	5.00	56	81	0.9	675	0.20	A
	Northeast	6.00	5.00	38	101	0.8	600	0.23	A
174th St and Southern Blvd / Boston Rd	Northwest	4.67	3.67	64	47	0.9	495	0.22	A
	Northeast	4.67	3.67	21	129	0.8	440	0.34	A
	Southeast	4.67	3.67	39	159	0.8	440	0.45	B
	Southwest	4.67	3.67	44	37	0.9	495	0.16	A

Table M-25: 2022 No-Action Subway Turnstile Operations

Location	Entrance	Total turnstiles	15-Minute Volume In	15-Minute Volume Out	Friction Factor	Surging Factor	V/SVCD	LOS
			AM					
174th St and Southern Blvd / Boston Rd	Manhattan Bound (west side)	3	439	119	0.8	0.75	0.54	B
	Bronx Bound (east side)	3	107	99	0.9	0.75	0.17	A
			MD					
174th St and Southern Blvd / Boston Rd	Manhattan Bound (west side)	3	90	111	0.9	0.75	0.16	A
	Bronx Bound (east side)	3	109	86	0.9	0.75	0.16	A
			PM					
174th St and Southern Blvd / Boston Rd	Manhattan Bound (west side)	3	108	84	0.9	0.75	0.16	A
	Bronx Bound (east side)	3	60	288	0.8	0.75	0.31	A

Subway Line Haul Analysis

Existing subway passengers per hour at the maximum load point of the subway routes serving the Proposed Project were grown to the 2022 Build year using background growth rates. In addition to the background growth, No Action projects in the study area which would have subway trips that would utilize the No. 2 and No. 5 subway routes were added to generate the No Action passenger per hour volume for the line haul analysis. As shown in Table M-26, both the No. 2 and No. 5 subway routes would continue to operate with v/c ratio less than 1.0 during the AM peak hour in the southbound direction. However, in the PM peak hour, the northbound No. 2 train would be overcapacity with a v/c ratio of 1.03. This was an increase over a v/c ratio of 0.99 that the No. 2 subway had in existing conditions during the PM peak hour. The northbound No. 5 train in the PM peak hour will operate well under capacity with a v/c ratio of 0.79. Table M-26: 2022 No Action Subway Line Haul Conditions

Table M-26: 2022 No Action Subway Line Haul Conditions

Peak Hour	Route	Peak Direction	Maximum Load Point (Leaving Station)	Trains Per Hour	Cars Per Hour	Passengers Per Hour	Peak Hour Capacity	v/c Ratio
AM	2	Southbound	72 St	12	120	12,875	13,200	0.98
	5	Southbound	Grand Central - 42 St	13	130	13,258	14,300	0.93
	Total			25	250	26,133	27,500	0.95
PM	2	Northbound	Times Sq - 42 St	11	110	12,449	12,100	1.03
	5	Northbound	59 St	13	130	11,306	14,300	0.79
	Total			24	240	23,755	26,400	0.90

Pedestrian Analysis

In the 2022 No-Action condition, all analyzed corners and crosswalks operate at LOS C or better with the majority of analyzed corners and crosswalks operating at LOS A. The calculated peak 15 minute volumes, average square feet per pedestrian and calculated level of service can be found in Table M-27.

Table M-27: 2022 No-Action Corners and Crosswalk Level of Service Table

Location	Element		AM			Midday			PM		
			15-Minute Volume	SFP	LOS	15-Minute Volume	SFP	LOS	15-Minute Volume	SFP	LOS
174th St and Southern Blvd / Boston Rd	Crosswalk	North	164	92.9	A	140	105.6	A	141	106.5	A
		Northeast	164	97.0	A	140	110.9	A	141	111.5	A
		East	88	51.0	B	86	48.9	B	109	36.1	C
174th St and Hoe Ave	Crosswalk	North	197	107.7	A	116	180.1	A	173	118.0	A
		South	142	125.6	A	106	172.3	A	178	101.8	A
174th St and Vyse Ave	Crosswalk	North	214	42.1	B	113	78.6	A	182	47.3	B
		South	108	80.6	A	86	106.6	A	117	79.1	A
174th St and Bryant Ave	Crosswalk	North	52	250.7	A	42	307.9	A	78	162.9	A
		South	66	213.2	A	38	379.7	A	71	201.2	A
174th St and Longfellow Ave	Crosswalk	North	57	334.5	A	31	615.9	A	59	320.1	A
		South	53	387.0	A	37	560.6	A	51	407.4	A
174th St and Boone Ave	Crosswalk	North	30	582.0	A	33	522.3	A	37	465.5	A
		South	42	478.6	A	35	575.8	A	33	606.1	A
	Corner	Southwest	102	170.2	A	88	197.6	A	87	201.0	A
		Northwest	89	177.6	A	87	180.2	A	94	166.7	A
173rd St and Boone Ave	Crosswalk	East	10	3116.1	A	8	3895.1	A	12	2596.8	A
		West	16	1998.0	A	8	3996.1	A	6	5328.1	A
172nd St and Boone Ave	Crosswalk	East	3	9521.5	A	8	3570.5	A	10	2856.4	A
		West	13	2162.2	A	8	3513.5	A	16	1756.8	A
E Tremont Ave and Boston Rd / W Farms Rd	Crosswalk	North	67	259.0	A	52	265.3	A	62	276.7	A
		East - North	347	62.6	A	107	198.3	A	285	71.1	A
		East - South	347	61.8	A	107	192.7	A	285	69.3	A
		Southeast	220	105.0	A	108	180.0	A	237	96.0	A
		Southwest	226	53.2	B	111	90.7	A	227	50.1	B
		West	133	114.3	A	126	115.9	A	128	119.2	A
Rodman Pl and W Farms Rd	Corner	Northwest	66	107.3	A	66	107.3	A	67	105.7	A
	Crosswalk	West	24	1323.3	A	26	1221.5	A	30	1058.7	A

In the 2022 No-Action condition, all analyzed sidewalks operate at LOS B or better. The calculated peak 15 minute volumes, average square feet per pedestrian and calculated level of service for sidewalks can be found in Table M-28.

Table M-28: 2022 No-Action Sidewalk Level of Service Table

Location	Sidewalk	Width (feet)	Effective Width (feet)	15-Minute Volume	PFM	Platoon Flow LOS
AM						
West Farms Rd between Rodman Pl and Tremonth Ave	West	12.7	11.7	42	0.2	A
	East	14.4	13.4	22	0.1	A
174th St between Boston Rd and Hoe Ave	North	14.0	13.0	238	1.2	B
	South	14.0	13.0	187	1.0	B
174th St between Hoe Ave and Vyse Ave	North	11.6	10.6	201	1.3	B
	South	11.6	10.6	125	0.8	B
174th St between Vyse Ave and Bryant Ave	North	11.3	10.3	221	1.4	B
	South	11.5	10.5	95	0.6	B
174th St between Bryant Ave and Longfellow Ave	North	9.9	8.9	52	0.4	A
	South	9.9	8.9	58	0.4	A
174th St between Longfellow Ave and Boone Ave	North	9.8	8.8	42	0.3	A
	South	6.7	5.7	42	0.5	A
Boone Ave between 174th St and 173rd St	West	13.7	12.7	17	0.1	A
	East	14.6	13.6	14	0.1	A
Boone Ave between 173rd St and 172nd St	West	6.8	5.8	9	0.1	A
	East	13.8	12.8	10	0.1	A
Boone Ave between 172nd St and 171st St	West	12.4	11.4	25	0.1	A
	East	12.1	11.1	2	0.0	A
MD						
West Farms Rd between Rodman Pl and Tremonth Ave	West	12.7	11.7	44	0.3	A
	East	14.4	13.4	10	0.1	A
174th St between Boston Rd and Hoe Ave	North	14.0	13.0	132	0.7	B
	South	14.0	13.0	141	0.7	B
174th St between Hoe Ave and Vyse Ave	North	11.6	10.6	126	0.8	B
	South	11.6	10.6	101	0.6	B
174th St between Vyse Ave and Bryant Ave	North	11.3	10.3	144	0.9	B
	South	11.5	10.5	69	0.4	A
174th St between Bryant Ave and Longfellow Ave	North	9.9	8.9	37	0.3	A
	South	9.9	8.9	41	0.3	A
174th St between Longfellow Ave and Boone Ave	North	9.8	8.8	39	0.3	A
	South	6.7	5.7	31	0.4	A
Boone Ave between 174th St and 173rd St	West	13.7	12.7	10	0.1	A
	East	14.6	13.6	16	0.1	A
Boone Ave between 173rd St and 172nd St	West	6.8	5.8	6	0.1	A
	East	13.8	12.8	6	0.0	A
Boone Ave between 172nd St and 171st St	West	12.4	11.4	5	0.0	A
	East	12.1	11.1	7	0.0	A
PM						
West Farms Rd between Rodman Pl and Tremonth Ave	West	12.7	11.7	38	0.2	A
	East	14.4	13.4	20	0.1	A
174th St between Boston Rd and Hoe Ave	North	14.0	13.0	190	1.0	B
	South	14.0	13.0	231	1.2	B
174th St between Hoe Ave and Vyse Ave	North	11.6	10.6	180	1.1	B
	South	11.6	10.6	153	1.0	B
174th St between Vyse Ave and Bryant Ave	North	11.3	10.3	190	1.2	B
	South	11.5	10.5	112	0.7	B
174th St between Bryant Ave and Longfellow Ave	North	9.9	8.9	73	0.5	B
	South	9.9	8.9	63	0.5	A
174th St between Longfellow Ave and Boone Ave	North	9.8	8.8	54	0.4	A
	South	6.7	5.7	38	0.4	A
Boone Ave between 174th St and 173rd St	West	13.7	12.7	17	0.1	A
	East	14.6	13.6	12	0.1	A
Boone Ave between 173rd St and 172nd St	West	6.8	5.8	8	0.1	A
	East	13.8	12.8	6	0.0	A
Boone Ave between 172nd St and 171st St	West	12.4	11.4	31	0.2	A
	East	12.1	11.1	10	0.1	A

Parking

Future 2022 No Action on-street and off-street parking demand was calculated by adding existing parking demand, the increase due to background growth and the demand from No Action development projects within the study area.

Hourly parking accumulation profiles were developed based upon the Hudson Yards EIS for each No Action project within the study area. Background parking demand is projected to grow at a rate equivalent to background vehicular traffic. Each No Action development site's calculated peak parking demand accumulation was allocated to the nearest street segment based upon available parking spaces during the appropriate time period, typically midday for commercial uses and overnight for residential uses. Table M-29 breaks down the no action growth in demand from 2009 to 2022.

The overall increase in parking demand is estimated to be 230 spaces in the midday period and 350 spaces in the overnight period. No change is anticipated in the parking supply inventory. Utilization would increase from 74% to 80% in the midday and from 69% to 77% in the overnight period.

Table M-29: 2022 No-Action Parking Demand and Utilization

	Parking Location	Midday			Overnight		
		Occupied	Capacity	Utilization	Occupied	Capacity	Utilization
Existing	On Street	2683	3453	78%	2730	3886	70%
	Off Street	146	375	39%	213	375	57%
	Total	2829	3828	74%	2943	4261	69%
No Action Background Growth Increment	On Street	61	--	--	62	--	--
	Off Street	3	--	--	5	--	--
	Total	64	--	--	67	--	--
Additional No Action Demand from New Projects	On Street	166	--	--	283	--	--
	Off Street	0	--	--	0	--	--
	Total	166	--	--	283	--	--
Final No Action Parking Demand	On Street	2910	3453	84%	3075	3886	79%
	Off Street	149	375	40%	218	375	58%
	Total	3059	3828	80%	3293	4261	77%

FUTURE WITH THE PROPOSED ACTION CONDITION

With Action Increment

Trips for the project were generated and assigned as described in the methodology section. . Trip generation rates were modified to reflect an incremental increase of 2,635 housing units, 93,000 square feet of commercial space and a 12,000 square foot child care center over the future without the Proposed Action scenario and the related demolition of 396,644 square feet of light industrial, warehouse and automotive care facilities. Table M-30 shows the project size that was assigned to each garage entrance location to which the trips were routed.

Table M-30: Project Size Allocated to each Garage Entrance Location

Entrance Location	Residential (in Du's)	Local Retail (in sf)	Light Industrial (in sf)	Warehouse (in sf)	Automotive Care (in sf)	Daycare (in sf)
1	441	5,000	-3,700	-83,567	-4,612	0
2	86	0	0	-23,700	0	0
3	99	10,000	0	0	-34,700	0
4	50	13,437	-65,850	-22,371	0	11,888
5	45	0	0	-12,500	0	0
6	122	28,600	-12,160	0	0	0
7	321	0	-21,377	-33,907	-5,458	0
8	194	17,500	-16,000	0	0	0
9	238	10,040	0	-21,792	0	0
10	370	4,630	0	0	0	0
11	146	-628	0	0	0	0
12	237	6,000	-8,872	-17,527	-1,200	0
13	288	2,808	0	0	0	0
Total	2,637	97,387	-127,959	-215,364	-45,970	11,888

Person trips for each peak were then determined from using the trip generation rates and temporal distributions shown in the Methodology section. Total person trips for each garage entrance location are shown in Table M-31, Table M-32, and Table M-33 below.

Table M-31: Project Generated Person Trip by Entrance Location

Entrance	Residential			Retail			Day Care			Total Trips Added		
Point	AM	MD	PM	AM	MD	PM	AM	MD	PM	AM	MD	PM
1	356	178	392	31	195	103	0	0	0	387	373	494
2	69	35	76	0	0	0	0	0	0	69	35	76
3	80	40	88	62	390	205	0	0	0	141	429	293
4	40	20	44	83	523	275	262	82	312	385	626	632
5	36	18	40	0	0	0	0	0	0	36	18	40
6	99	49	108	176	1,114	586	0	0	0	274	1,163	695
7	259	130	285	0	0	0	0	0	0	259	130	285
8	157	78	172	108	682	359	0	0	0	264	760	531
9	192	96	211	62	391	206	0	0	0	254	487	417
10	299	149	329	28	180	95	0	0	0	327	330	424
11	118	59	130	-4	-24	-13	0	0	0	114	34	117
12	191	96	211	37	234	123	0	0	0	228	329	334
13	233	116	256	17	109	58	0	0	0	250	226	313
Total	2,129	1,065	2,342	599	3,793	1,996	262	82	312	2,991	4,940	4,650

Table M-32: Project Eliminated Person Trip by Entrance Location

Entrance	Automotive			Light Industrial			Warehouse			Total Trips Removed		
Point	AM	MD	PM	AM	MD	PM	AM	MD	PM	AM	MD	PM
1	-12	-10	-13	-6	-4	-6	-82	-82	-68	-100	-97	-87
2	0	0	0	0	0	0	-23	-23	-19	-23	-23	-19
3	-89	-74	-96	0	0	0	0	0	0	-89	-74	-96
4	0	0	0	-98	-76	-106	-22	-22	-18	-121	-98	-124
5	0	0	0	0	0	0	-12	-12	-10	-12	-12	-10
6	0	0	0	-18	-14	-20	0	0	0	-18	-14	-20
7	-14	-12	-15	-32	-25	-34	-33	-33	-28	-79	-70	-77
8	0	0	0	-24	-18	-26	0	0	0	-24	-18	-26
9	0	0	0	0	0	0	-21	-21	-18	-21	-21	-18
10	0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0
12	-3	-3	-3	-13	-10	-14	-17	-17	-14	-34	-30	-32
13	0	0	0	0	0	0	0	0	0	0	0	0
Total	-118	-98	-127	-191	-147	-206	-212	-212	-175	-521	-458	-508

Table M-33: Net Project Person Trip by Entrance Location

Entrance Point	Total Trips Added			Total Trips Removed			Total Net Trips		
	AM	MD	PM	AM	MD	PM	AM	MD	PM
1	387	373	494	-100	-97	-87	287	276	408
2	69	35	76	-23	-23	-19	46	11	57
3	141	429	293	-89	-74	-96	52	355	197
4	385	626	632	-121	-98	-124	265	528	507
5	36	18	40	-12	-12	-10	24	6	30
6	274	1,163	695	-18	-14	-20	256	1,149	675
7	259	130	285	-79	-70	-77	180	60	208
8	264	760	531	-24	-18	-26	240	742	505
9	254	487	417	-21	-21	-18	232	466	400
10	327	330	424	0	0	0	327	330	424
11	114	34	117	0	0	0	114	34	117
12	228	329	334	-34	-30	-32	195	299	302
13	250	226	313	0	0	0	250	226	313
Total	2,991	4,940	4,650	-521	-458	-508	2,469	4,482	4,143

Modal Split values from the Methodology section were applied to the person trips to determine project vehicle trips. In Table M-34, project related vehicle trips are shown by land use. Total trips increments by the project are also shown.

Table M-34: Vehicle Trip By Land Use

Land Use	Dir	AM				MD				PM			
		Auto	Trucks	Taxi	Total	Auto	Trucks	Taxi	Total	Auto	Trucks	Taxi	Total
Residential	In	66	13	15	94	110	9	8	127	339	0	17	356
	Out	374	13	15	402	110	9	8	127	145	0	17	162
	Total	440	26	30	496	220	18	16	254	484	0	34	518
Local Retail	In	6	1	10	17	36	2	63	101	19	0	33	52
	Out	6	1	10	17	36	2	63	101	19	0	33	52
	Total	12	2	20	34	72	4	126	202	38	0	66	104
Daycare	In	13	0	9	22	4	0	3	7	13	0	11	24
	Out	11	0	9	20	4	0	3	7	15	0	11	26
	Total	24	0	18	42	8	0	6	14	28	0	22	50
Total Trips Generated	In	85	14	34	133	150	11	74	235	371	0	61	432
	Out	391	14	34	439	150	11	74	235	179	0	61	240
	Total	476	28	68	572	300	22	148	470	550	0	122	672
Warehouse	In	-78	-20	-2	-100	-47	-13	-2	-62	-19	-13	-2	-34
	Out	-16	-20	-2	-38	-47	-13	-2	-62	-58	-13	-2	-73
	Total	-94	-40	-4	-138	-94	-26	-4	-124	-77	-26	-4	-107
Light Industrial	In	-53	-2	-1	-56	-23	0	-1	-24	-8	0	-1	-9
	Out	-7	-2	-1	-10	-23	0	-1	-24	-57	0	-1	-58
	Total	-60	-4	-2	-66	-46	0	-2	-48	-65	0	-2	-67
Autocare	In	-50	-4	-5	-59	-32	-3	-4	-39	-41	0	-5	-46
	Out	-27	-4	-5	-36	-32	-3	-4	-39	-41	0	-5	-46
	Total	-77	-8	-10	-95	-64	-6	-8	-78	-82	0	-10	-92
Total Trips Eliminated	In	-181	-26	-8	-215	-102	-16	-7	-125	-68	-13	-8	-89
	Out	-50	-26	-8	-84	-102	-16	-7	-125	-156	-13	-8	-177
	Total	-231	-52	-16	-299	-204	-32	-14	-250	-224	-26	-16	-266
Total Net Trips	In	-96	-12	26	-82	48	-5	67	110	303	-13	53	343
	Out	341	-12	26	355	48	-5	67	110	23	-13	53	63
	Total	245	-24	52	273	96	-10	134	220	326	-26	106	406

Traffic

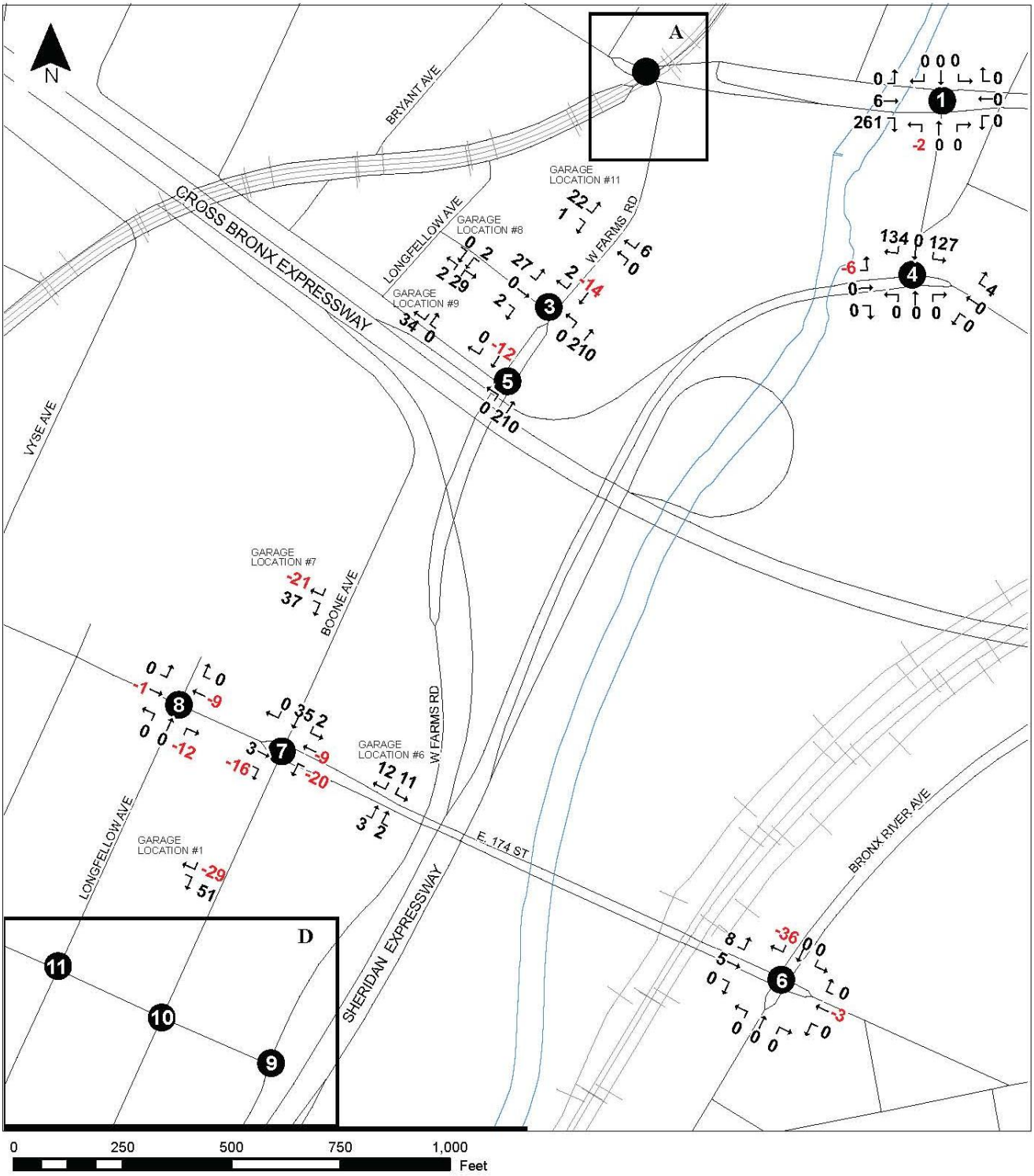
Traffic Volumes

Traffic volumes on the study area roadway network in the 2022 future with the Proposed Action were derived through the addition of incremental vehicle trips generated by the Proposed Action and the 2022 future without action traffic volumes.

Figure M-11, Figure M-12, and Figure M-13 provide the incremental traffic volumes for Proposed Action for the typical weekday during the AM, midday, and PM peak hours, respectively, in the study area.

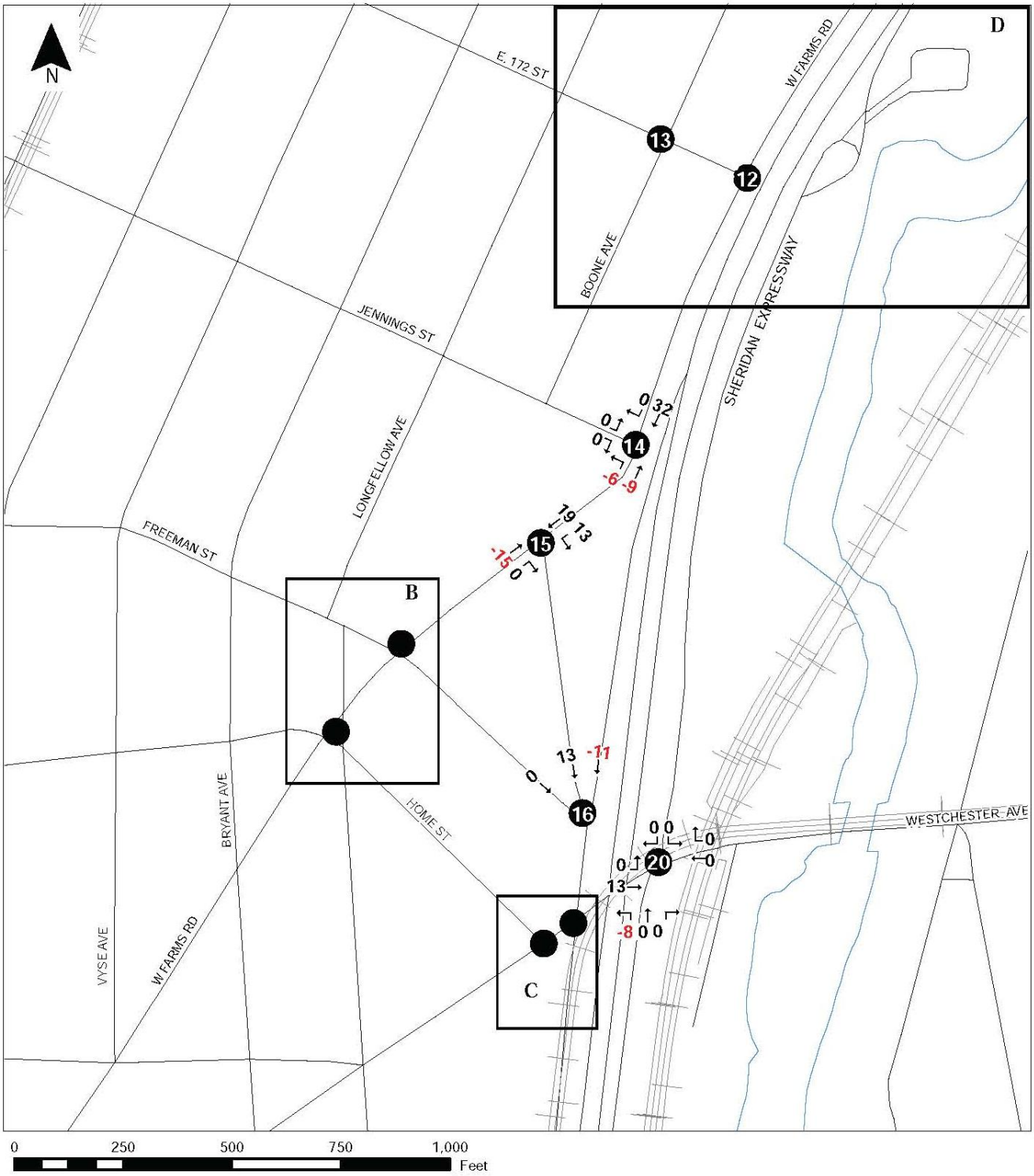
Figure M-14, Figure M-15, and Figure M-16 through provide the 2022 future with the Proposed Action traffic volumes for the typical weekday AM, midday, and PM peak hours, respectively, in the study area.

These volumes were derived by adding the project incremental traffic volumes for the Proposed Action to the 2022 No Action condition traffic volumes.



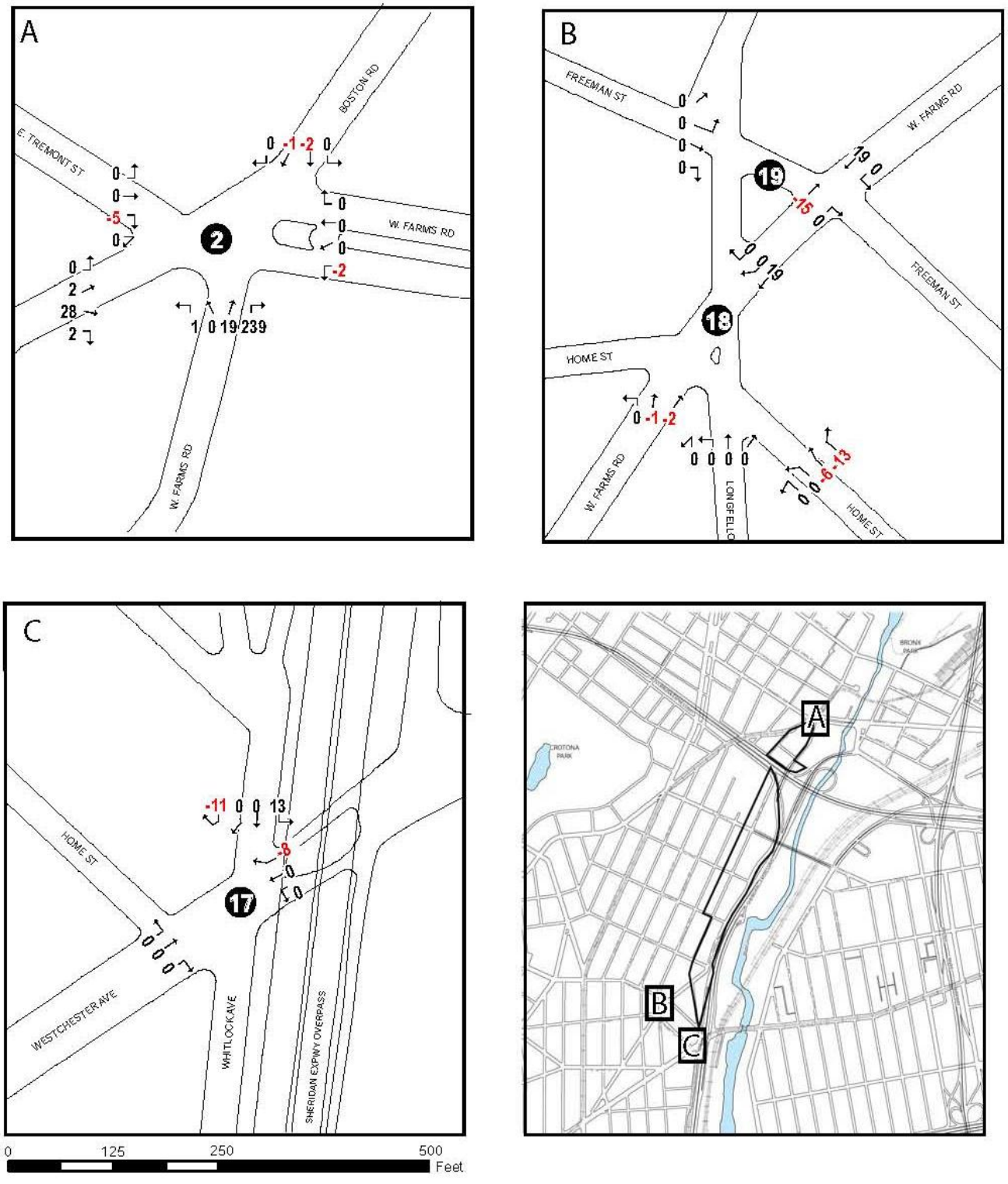
CROTONA PARK EAST / WEST FARMS ZONING MAP AMENDMENT

Bronx, New York



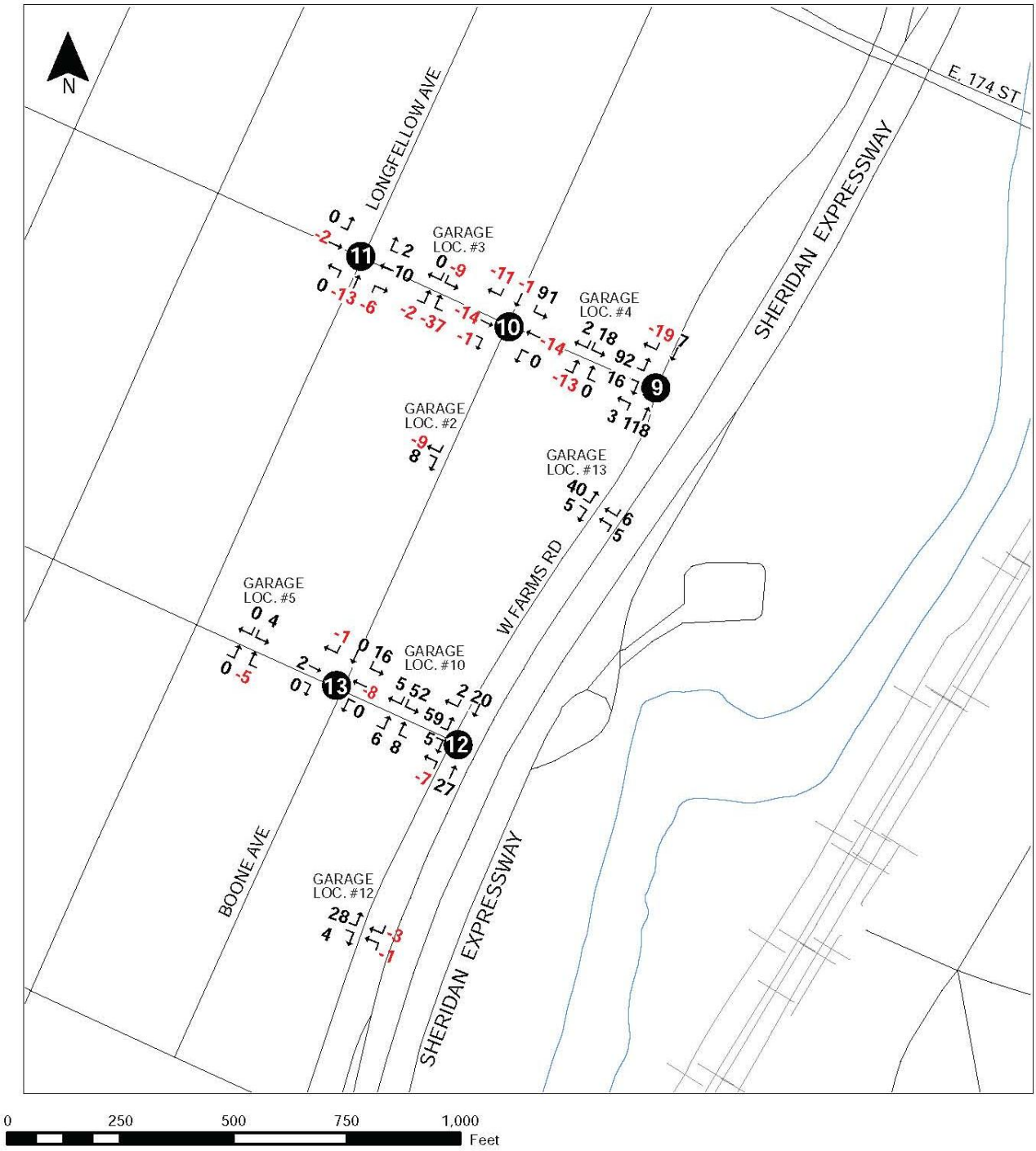
CROTONA PARK EAST / WEST FARMS ZONING MAP AMENDMENT

Bronx, New York



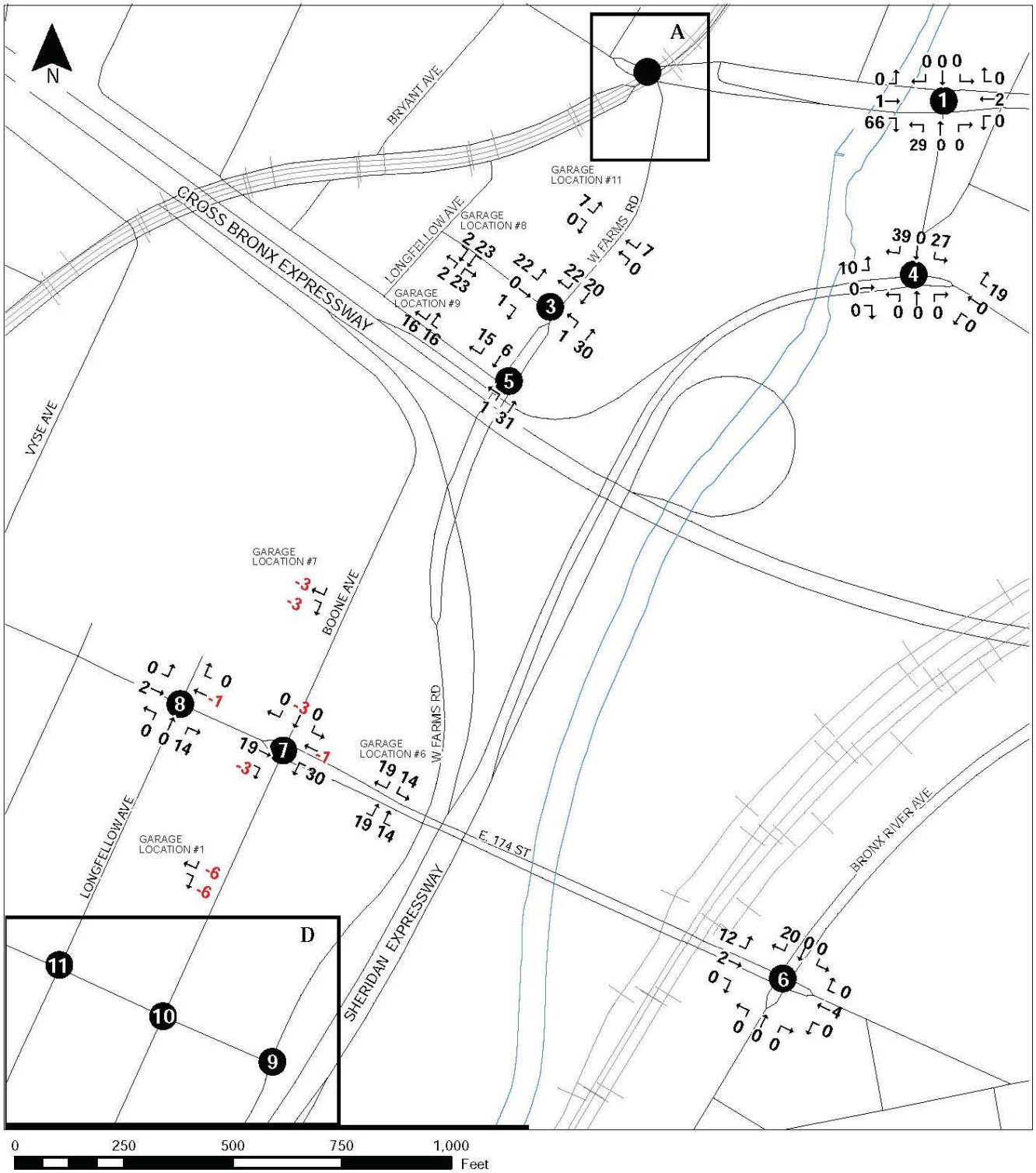
CROTONA PARK EAST / WEST FARMS ZONING MAP AMENDMENT

Bronx, New York



CROTONA PARK EAST / WEST FARMS ZONING MAP AMENDMENT

Bronx, New York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D
BRYANT AVE
CROSS BRONX EXPRESSWAY
LONGFELLOW AVE
VYSE AVE
BOONE AVE
W FARMS RD
SHERIDAN EXPRESSWAY
E. 174 ST
BRONX RIVER AVE
GARAGE LOCATION #11
GARAGE LOCATION #8
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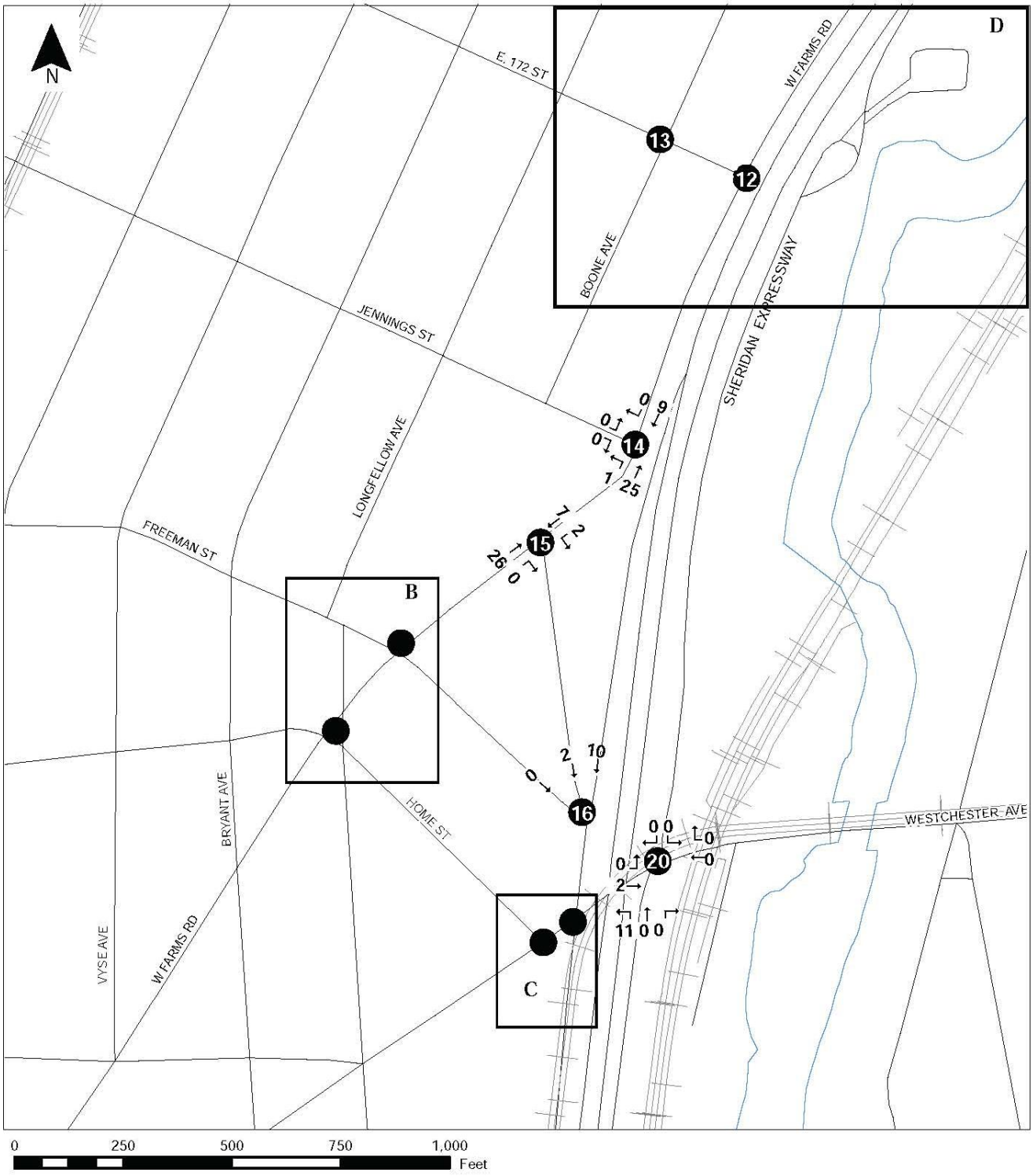
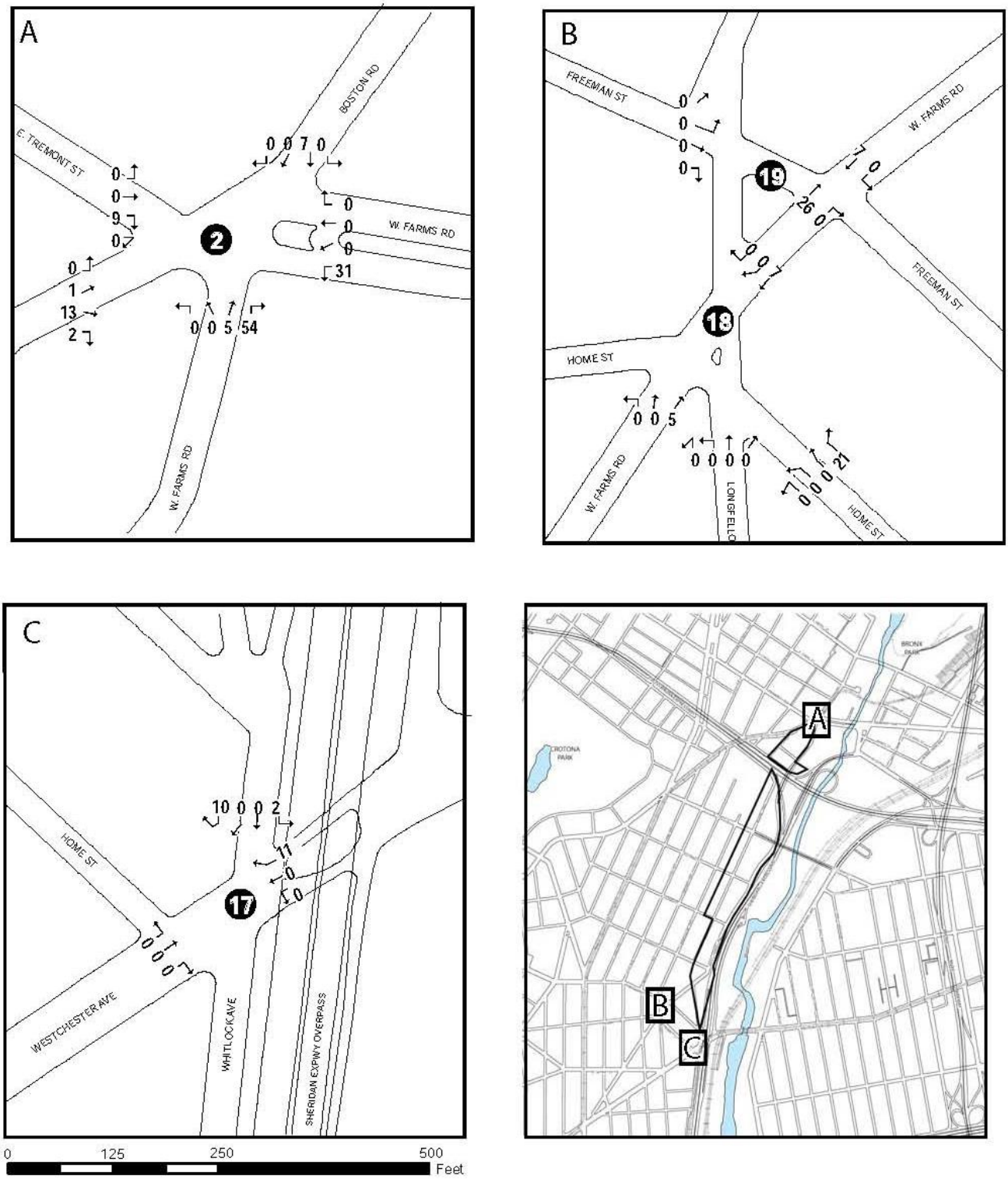


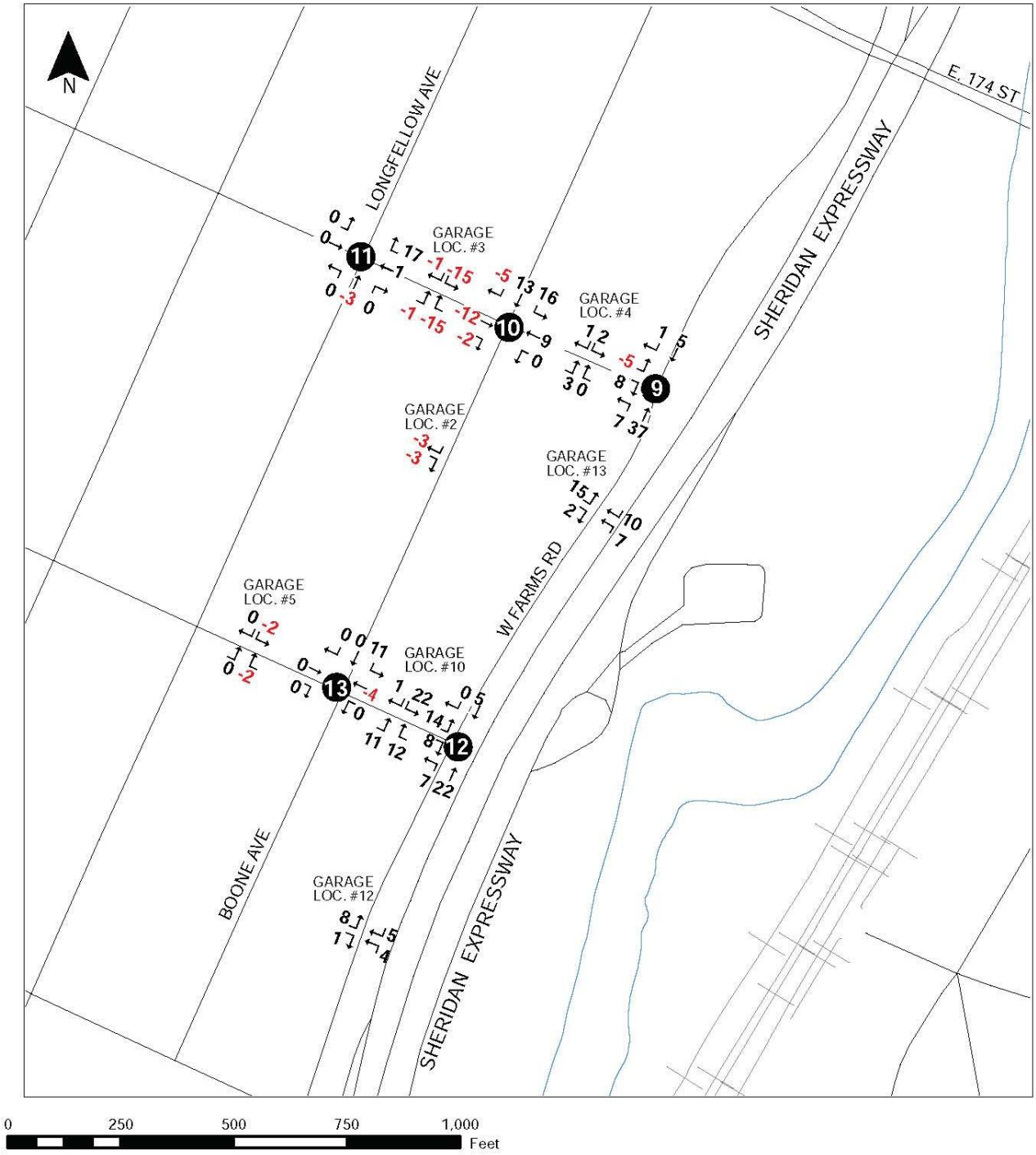
CROTONA PARK EAST / WEST FARMS ZONING MAP AMENDMENT

Bronx, New York



CROTONA PARK EAST / WEST FARMS ZONING MAP AMENDMENT

Bronx, New York


N
LONGFELLOW AVE
E. 174 ST
SHERIDAN EXPRESSWAY
W FARMS RD
BOONE AVE
SHERIDAN EXPRESSWAY
GARAGE LOC. #3
GARAGE LOC. #4
GARAGE LOC. #2
GARAGE LOC. #13
GARAGE LOC. #5
GARAGE LOC. #10
GARAGE LOC. #12
11
10
9
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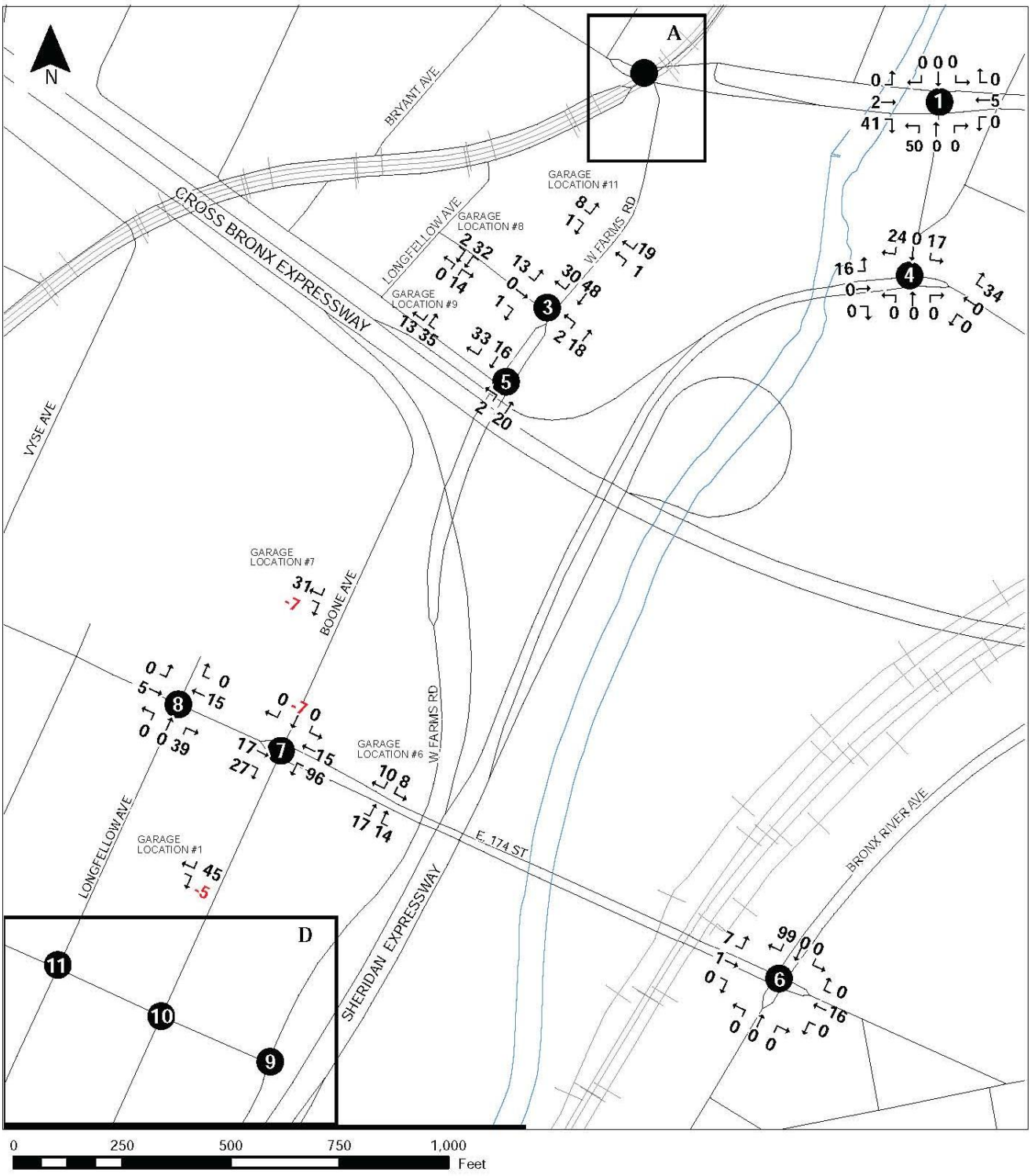
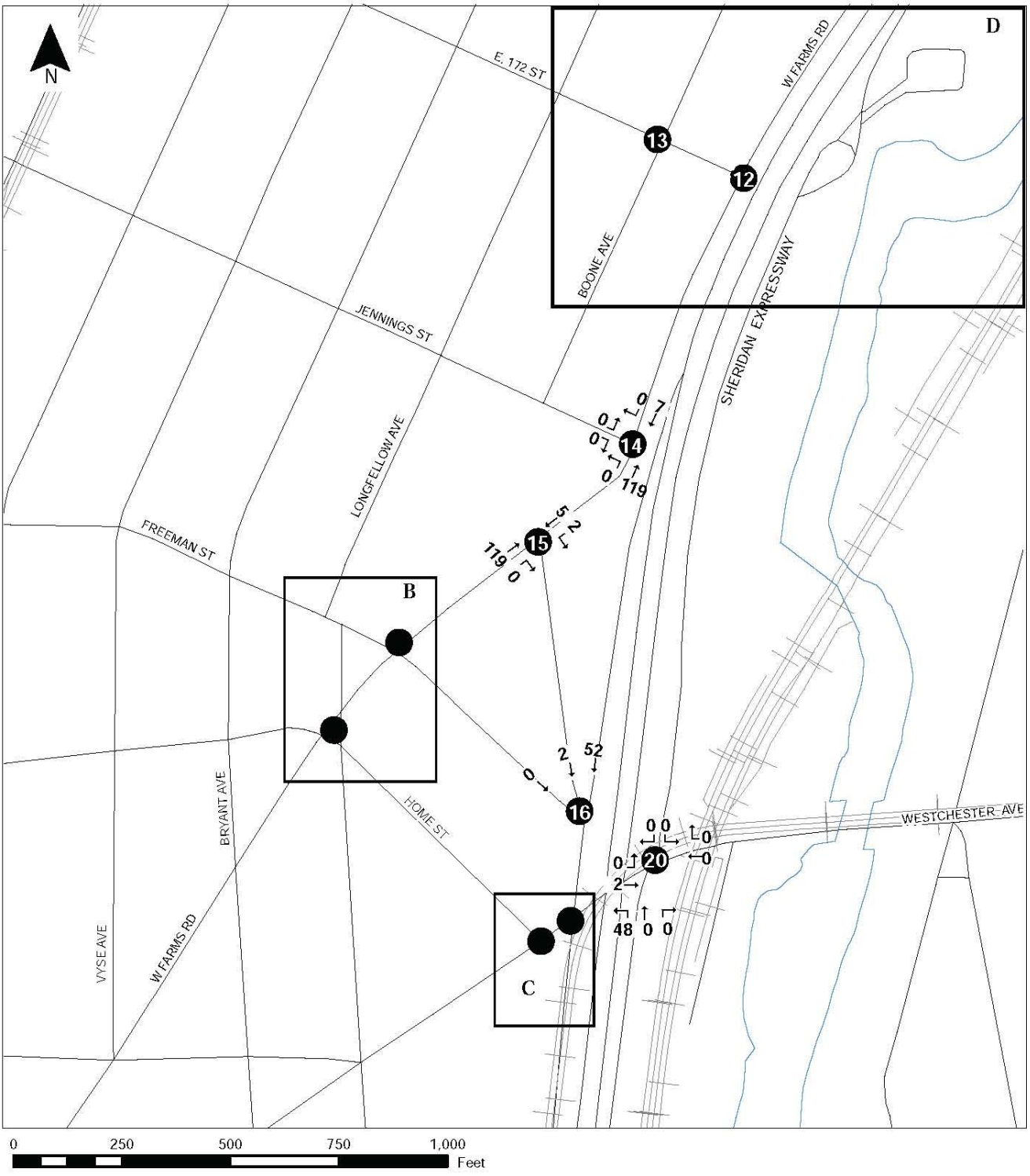
12
0
250
500
750
1,000
Feet



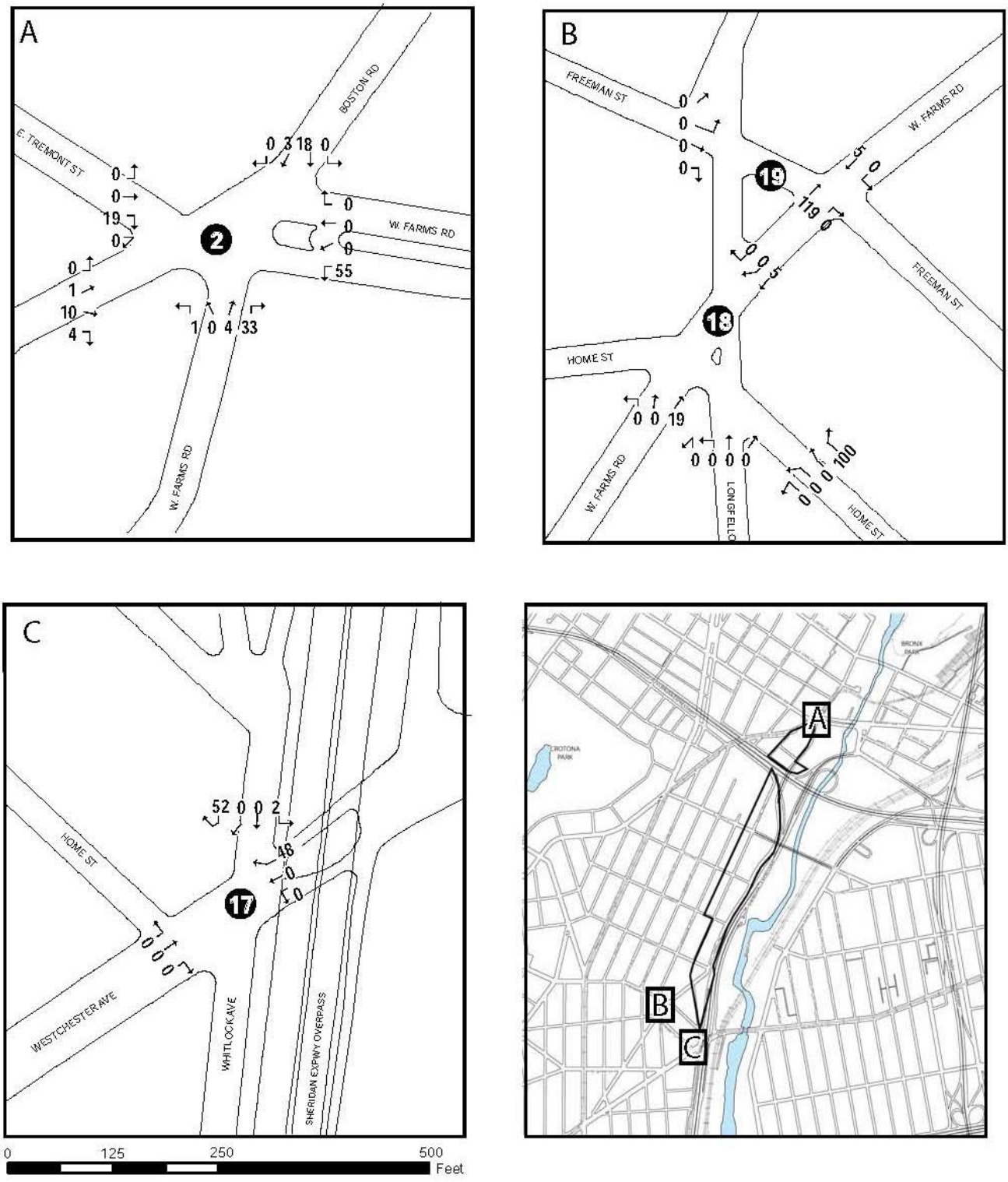
CROTONA PARK EAST / WEST FARMS ZONING MAP AMENDMENT

Bronx, New York



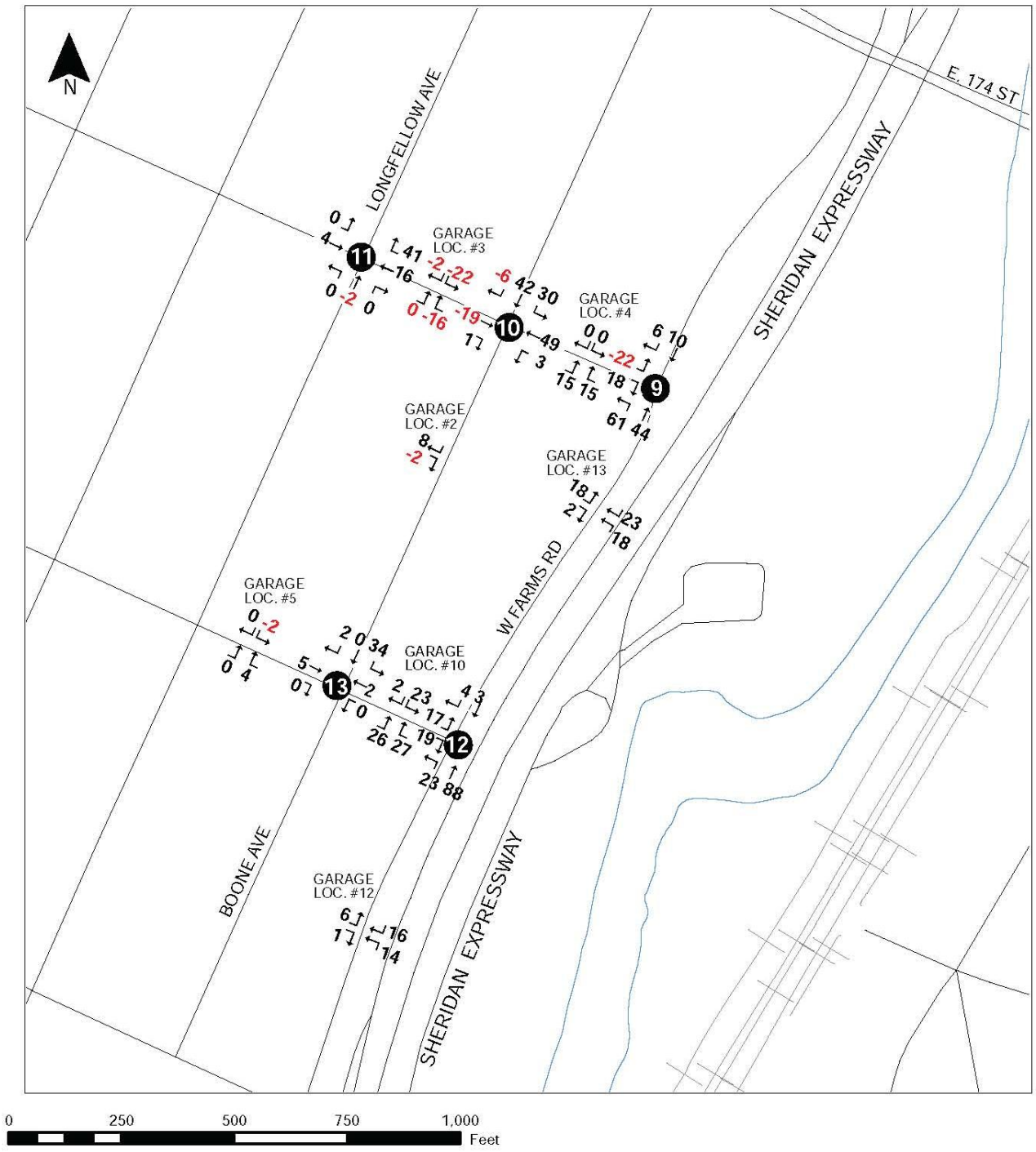
CROTONA PARK EAST / WEST FARMS ZONING MAP AMENDMENT

Bronx, New York



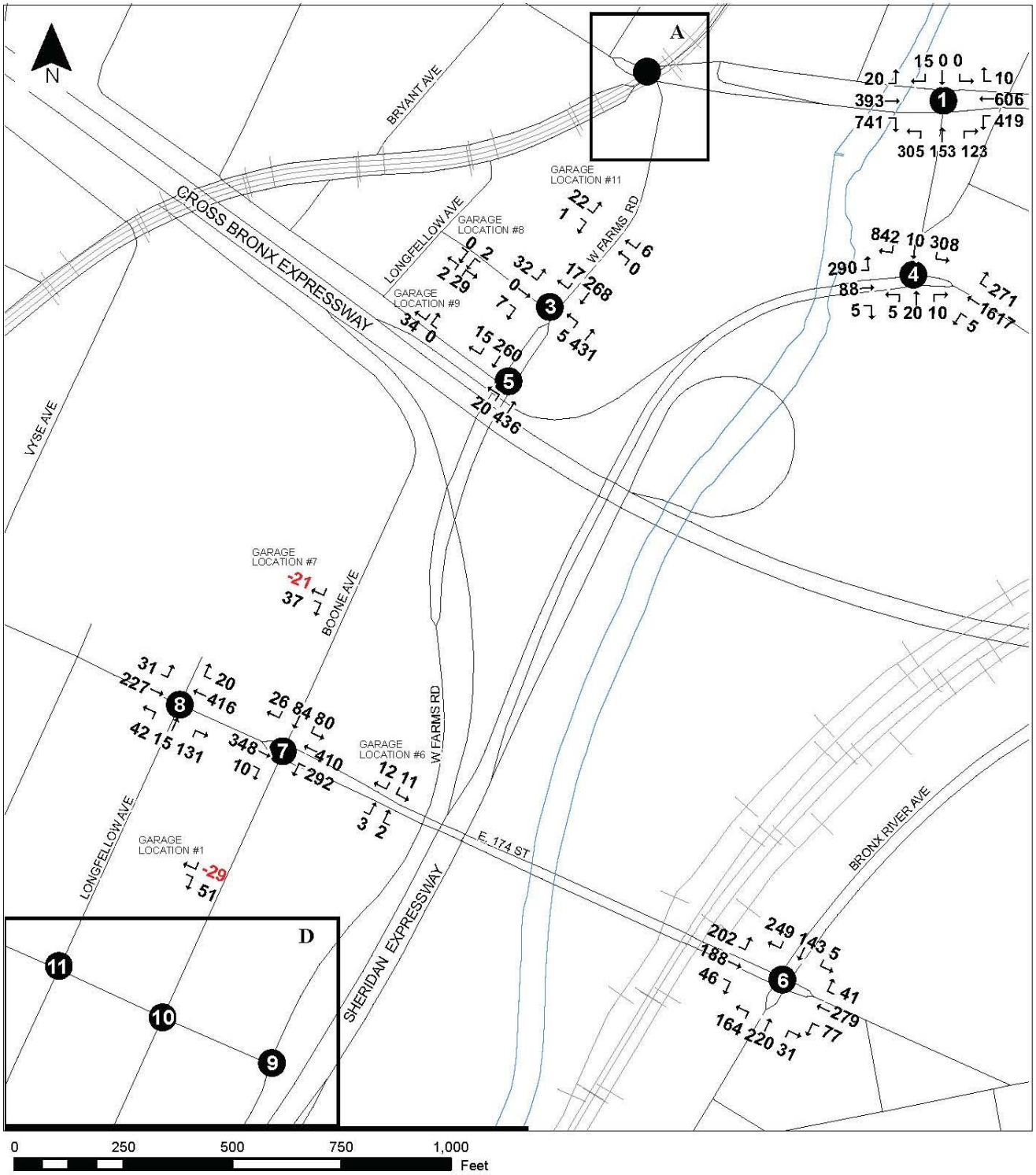
CROTONA PARK EAST / WEST FARMS ZONING MAP AMENDMENT

Bronx, New York



CROTONA PARK EAST / WEST FARMS ZONING MAP AMENDMENT

Bronx, New York


N
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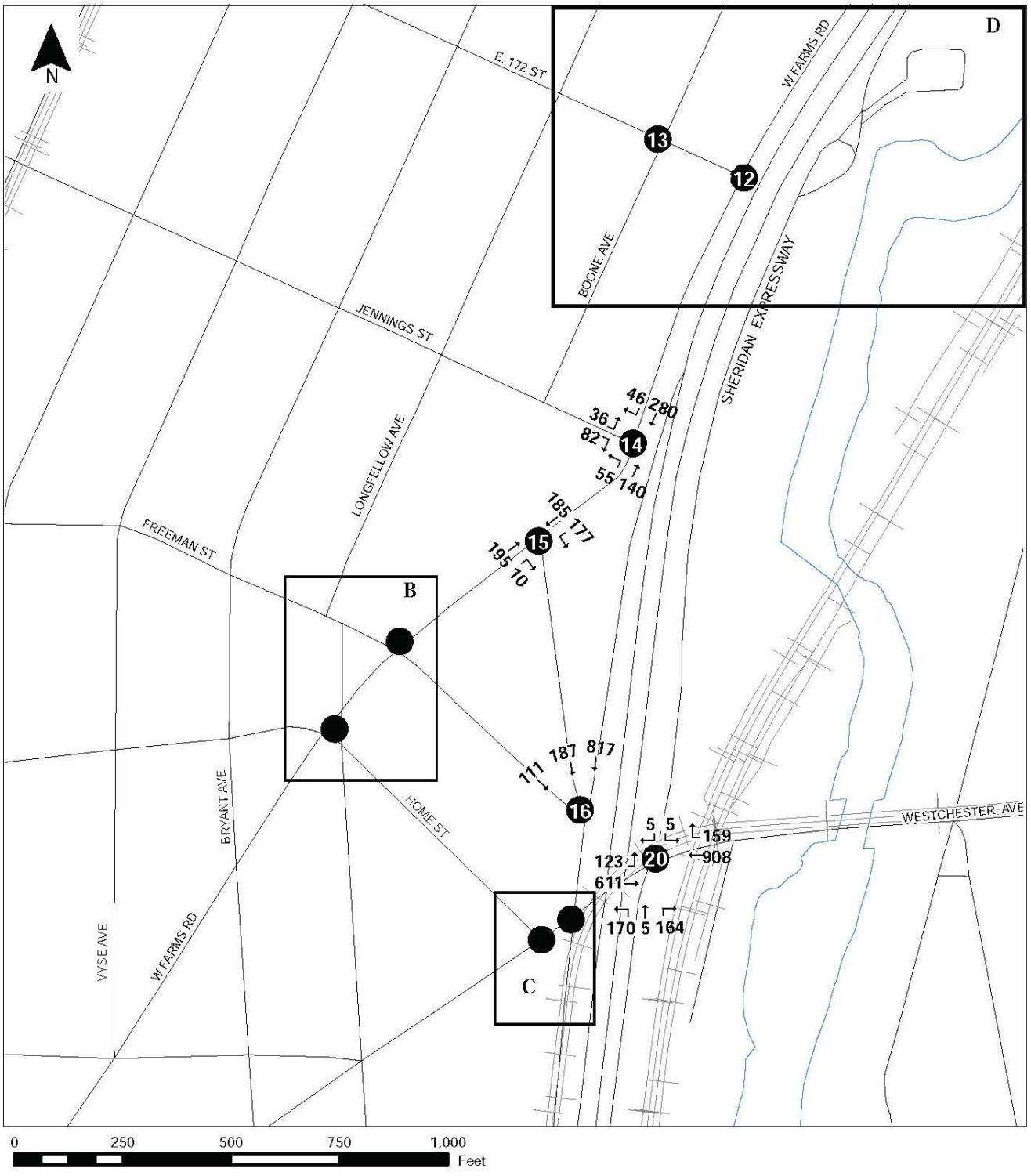
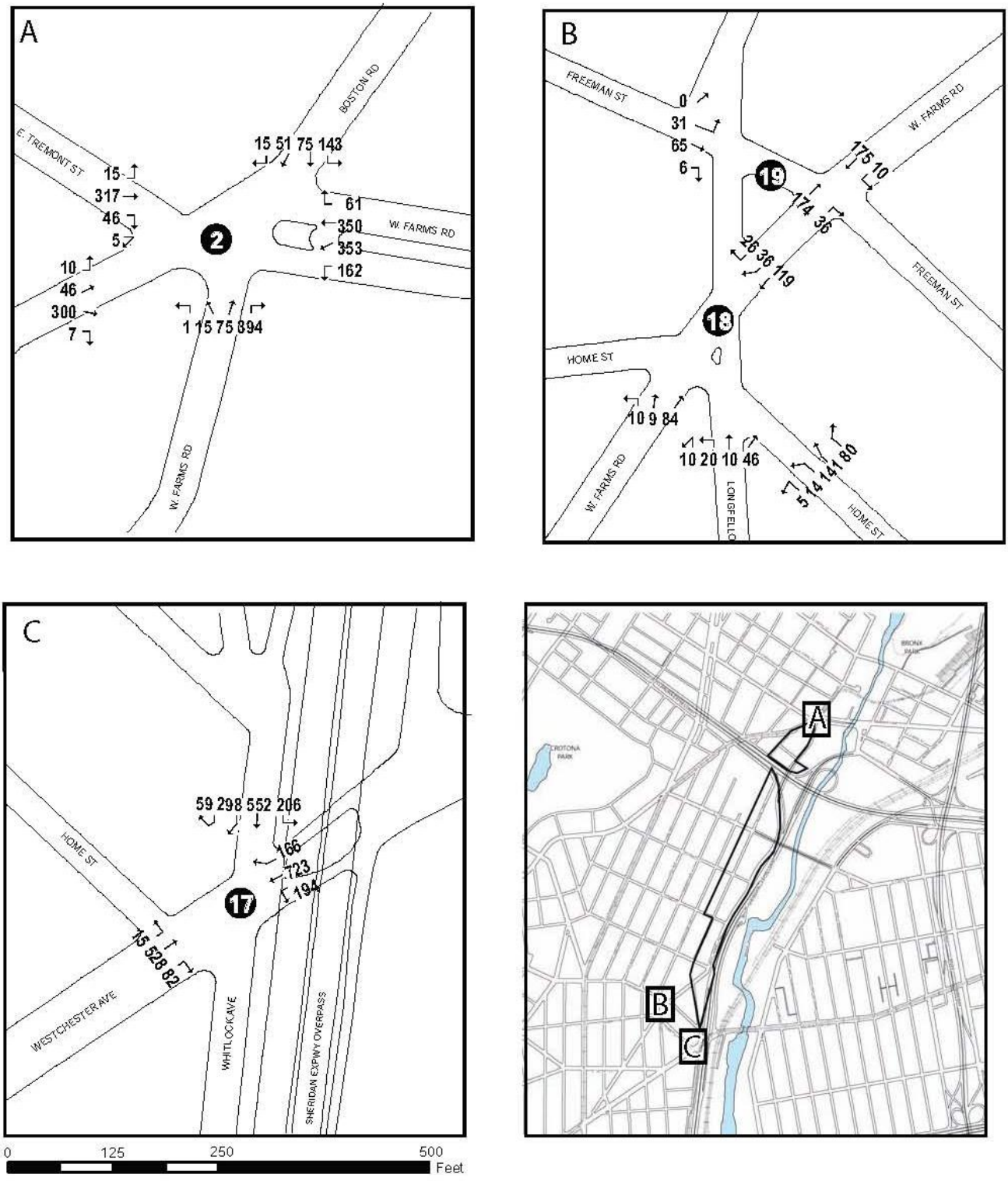
D
CROSS BRONX EXPRESSWAY
BRYANT AVE
LONGFELLOW AVE
VYSE AVE
BOONE AVE
W FARMS RD
E. 174 ST
SHERIDAN EXPRESSWAY
BRONX RIVER AVE
GARAGE LOCATION #1
GARAGE LOCATION #6
GARAGE LOCATION #7
GARAGE LOCATION #8
GARAGE LOCATION #9
GARAGE LOCATION #11
0 250 500 750 1,000
Feet

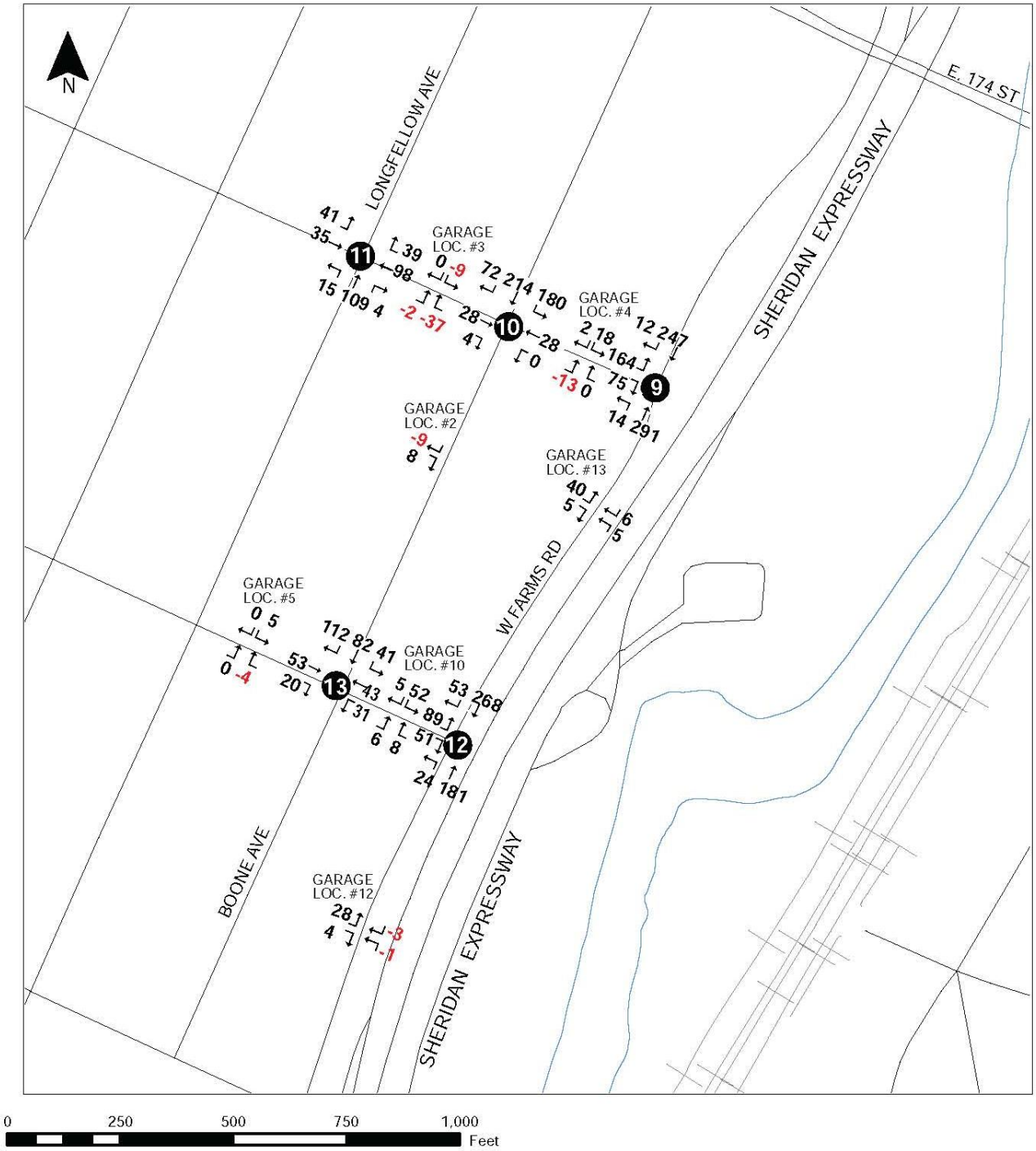
Figure M-14b: Proposed Action AM Traffic Volume Network (South)





CROTONA PARK EAST / WEST FARMS ZONING MAP AMENDMENT

Bronx, New York


N
LONGFELLOW AVE
E. 174 ST
SHERIDAN EXPRESSWAY
W FARMS RD
BOONE AVE
SHERIDAN EXPRESSWAY
GARAGE LOC. #3
GARAGE LOC. #4
GARAGE LOC. #2
GARAGE LOC. #13
GARAGE LOC. #5
GARAGE LOC. #10
GARAGE LOC. #12
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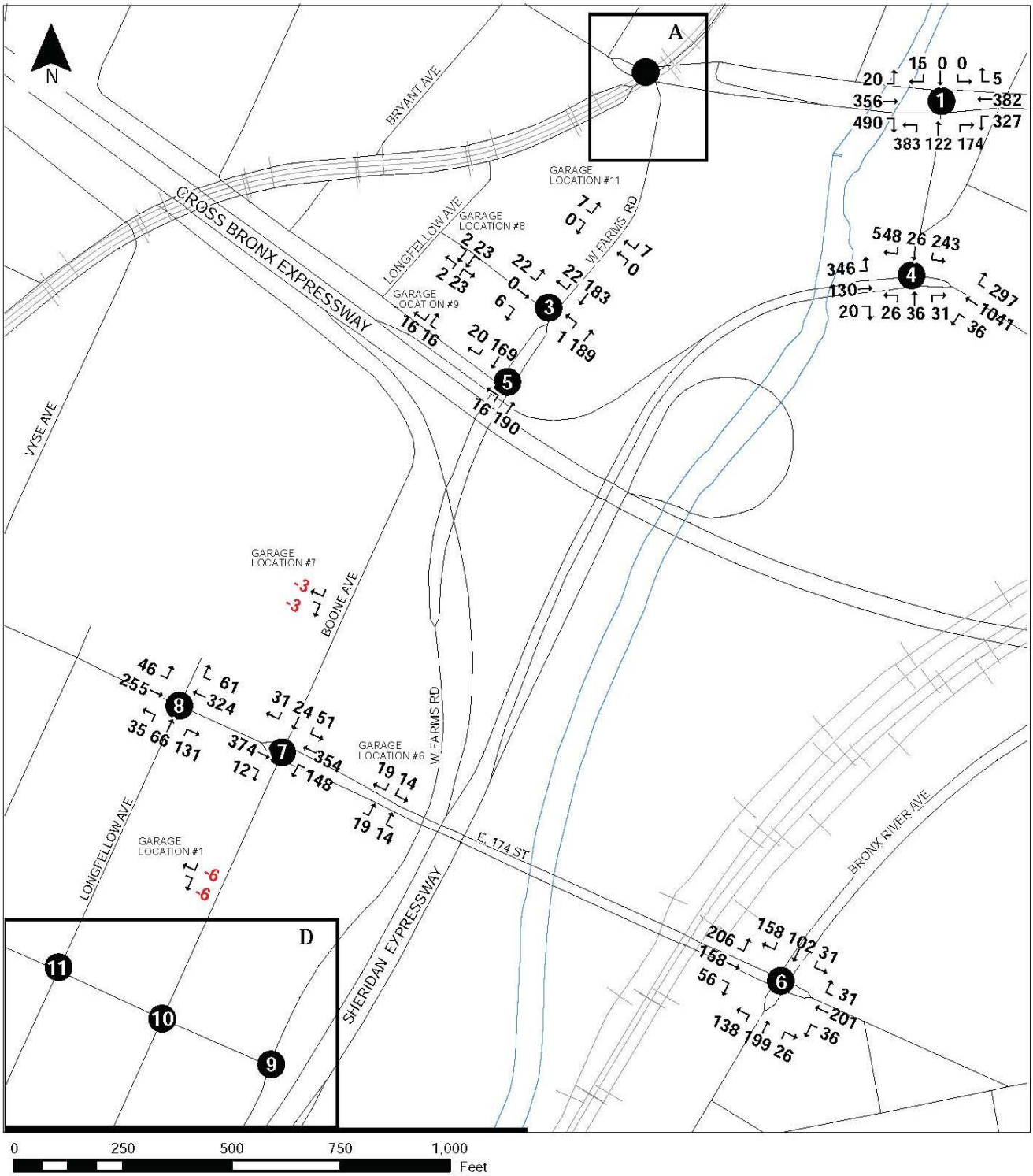
Feet


N
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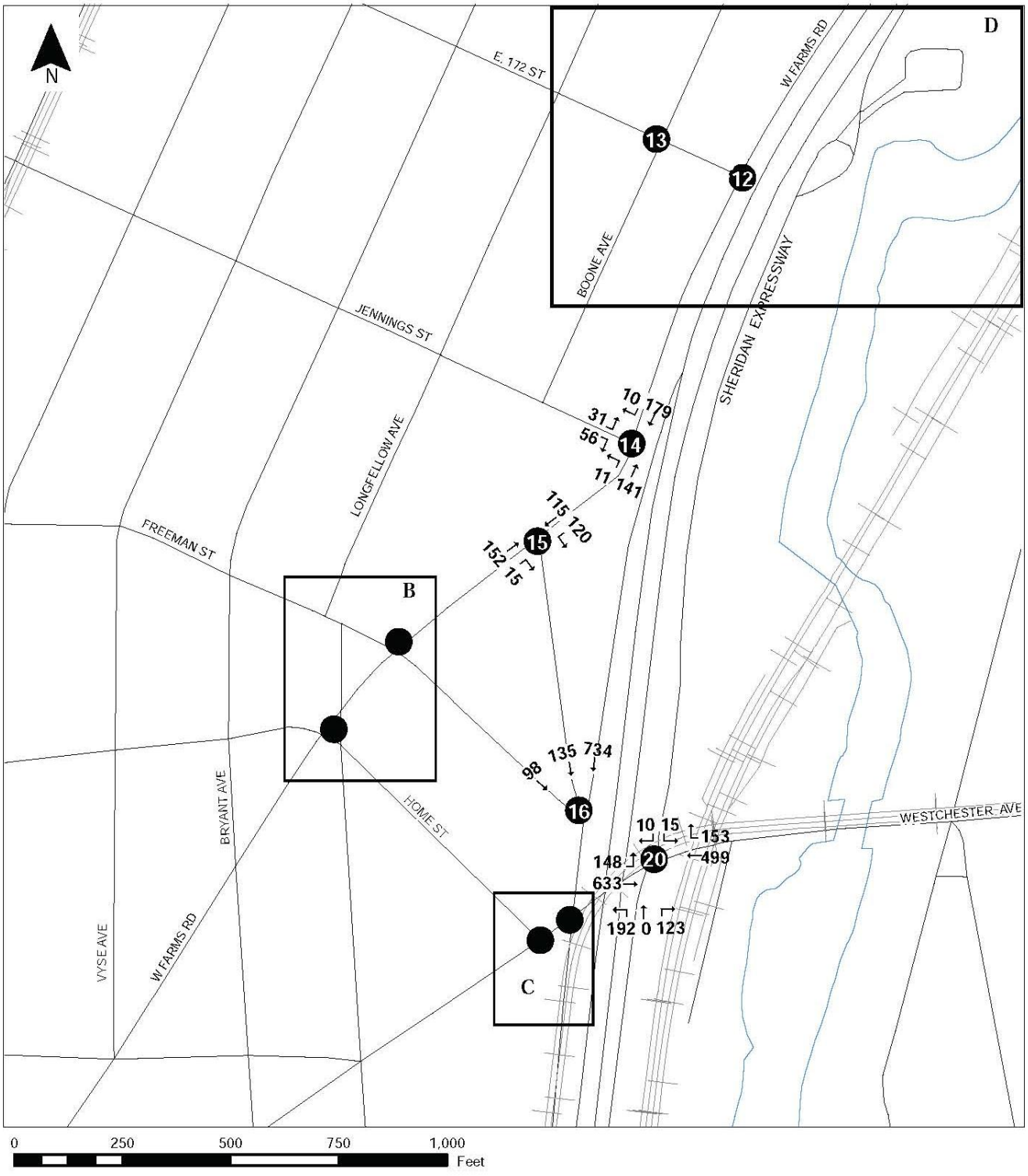
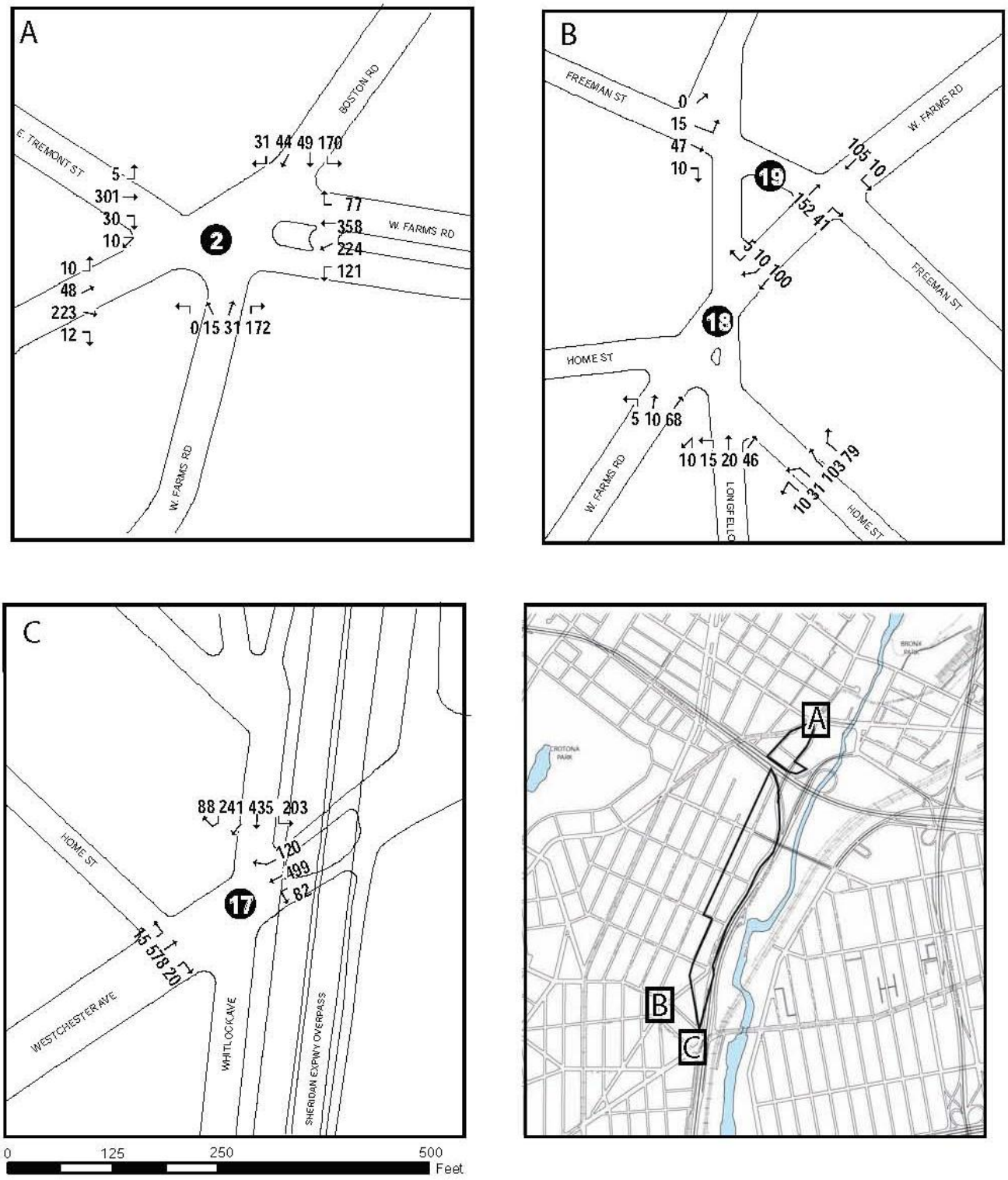
BRYANT AVE
CROSS BRONX EXPRESSWAY
LONGFELLOW AVE
VYSE AVE
BOONE AVE
W FARMS RD
E. 174 ST
BRONX RIVER AVE
SHERIDAN EXPRESSWAY
GARAGE LOCATION #1
GARAGE LOCATION #6
GARAGE LOCATION #7
GARAGE LOCATION #8
GARAGE LOCATION #9
GARAGE LOCATION #11
0 250 500 750 1,000
Feet



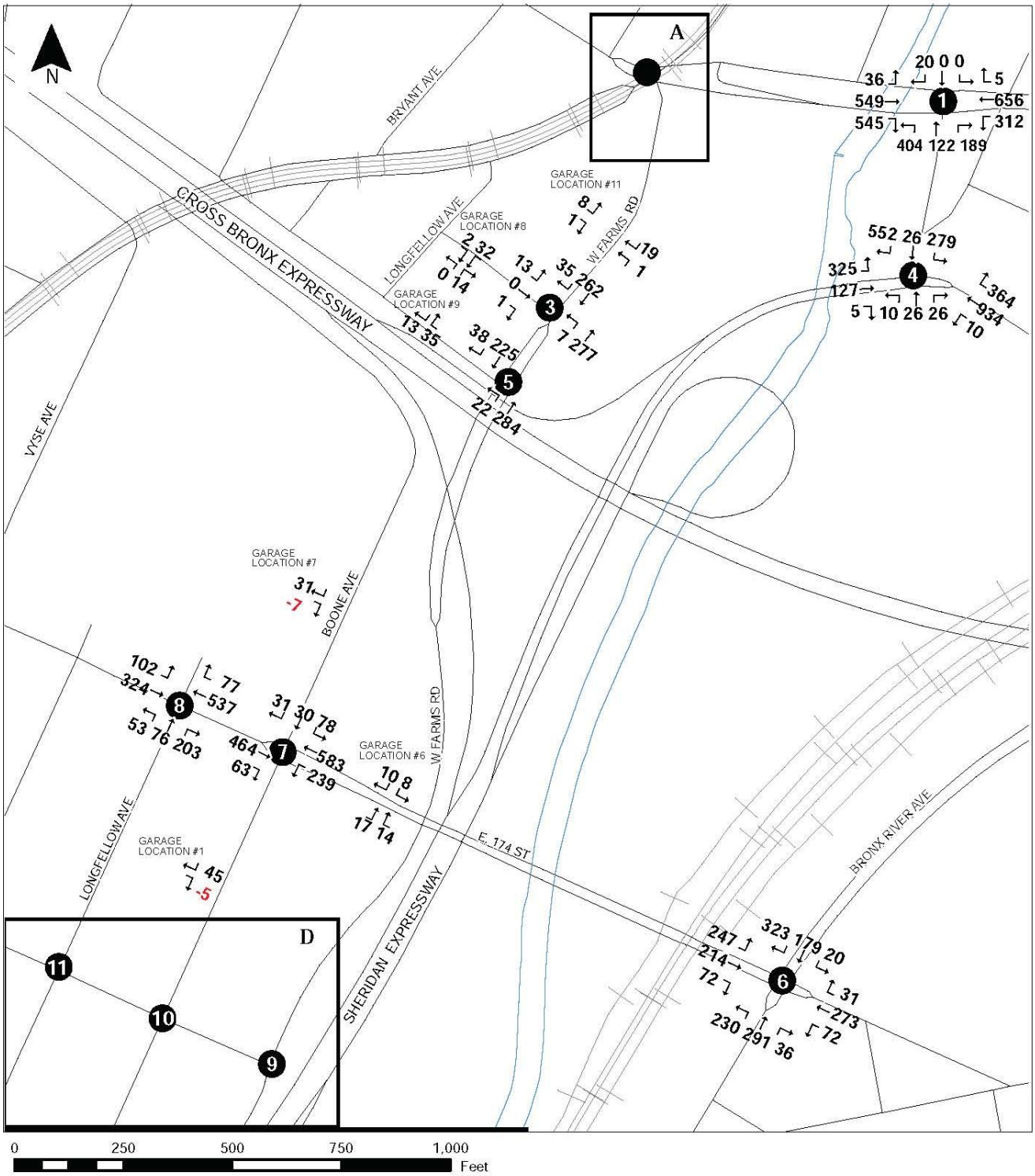
CROTONA PARK EAST / WEST FARMS ZONING MAP AMENDMENT

Bronx, New York



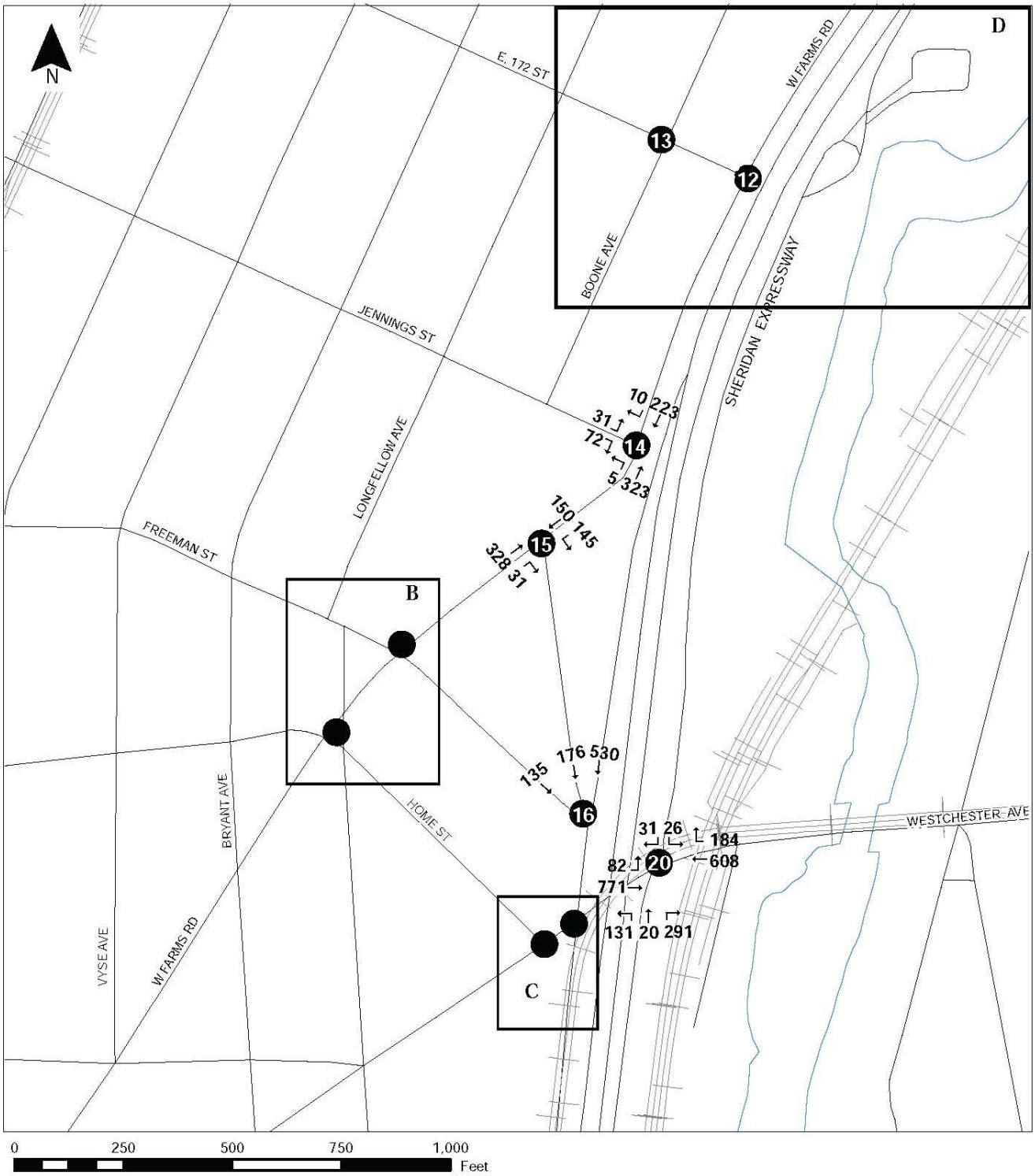
CROTONA PARK EAST / WEST FARMS ZONING MAP AMENDMENT

Bronx, New York



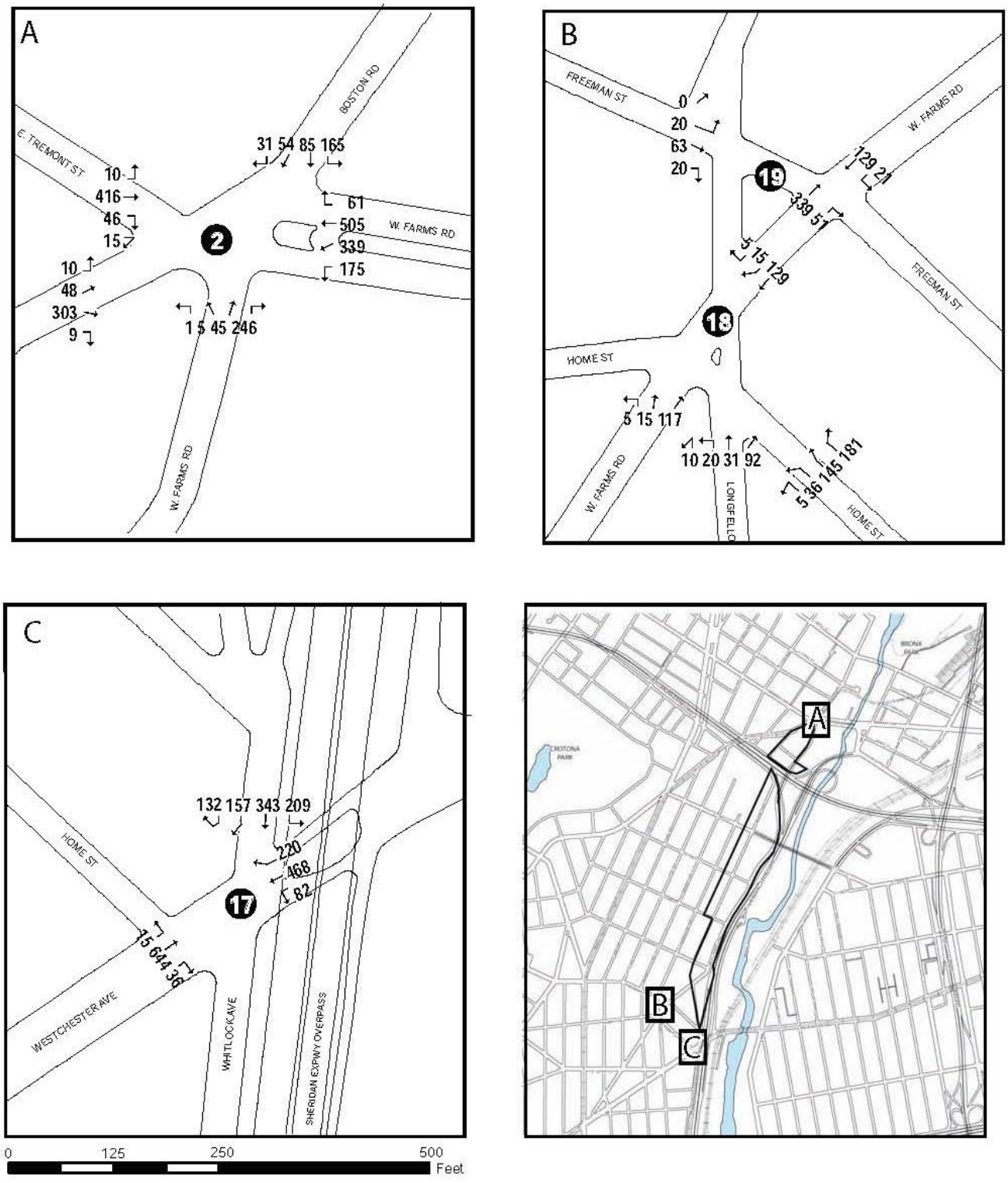
CROTONA PARK EAST / WEST FARMS ZONING MAP AMENDMENT

Bronx, New York



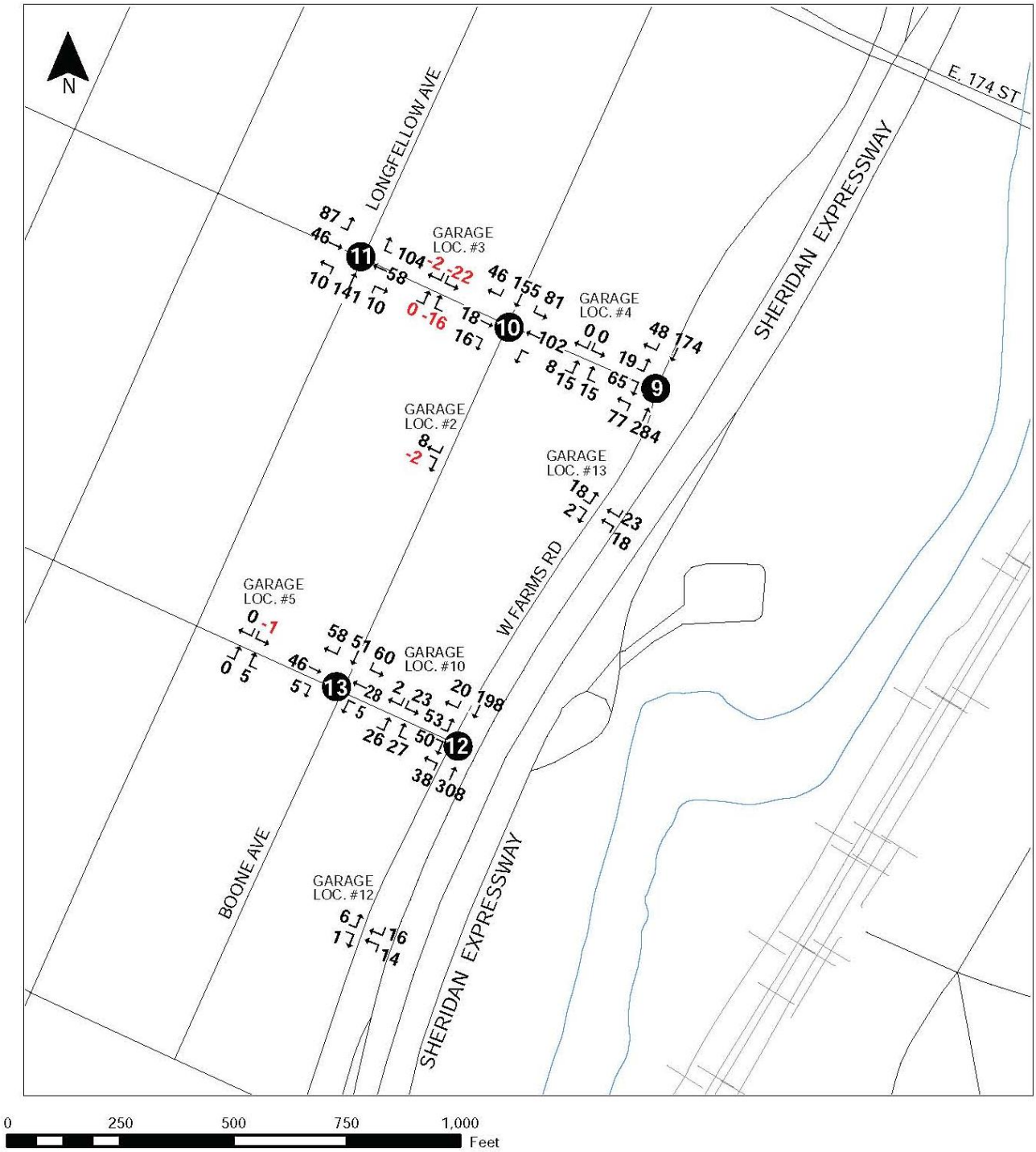
CROTONA PARK EAST / WEST FARMS ZONING MAP AMENDMENT

Bronx, New York



CROTONA PARK EAST / WEST FARMS ZONING MAP AMENDMENT

Bronx, New York



CROTONA PARK EAST / WEST FARMS ZONING MAP AMENDMENT

Bronx, New York

Summary of LOS Analysis

HCS analysis was done for all 20 intersections in the study area during the three peak periods. The following summarizes the analysis results by travel corridor and details the locations that operate at LOS D with a volume to capacity (v/c) ratio of greater than 0.90, LOS E or LOS F.

Although most intersections in the traffic study area operate at overall acceptable levels during the three analysis peak hours, individual approach movements at numerous intersections operate at LOS D with a volume to capacity (v/c) ratio of greater than 0.90, LOS E or LOS F. Overall, of the 75 approach movements analyzed, 18 approach movements operate at LOS D with a volume to capacity (v/c) ratio of greater than 0.90, LOS E or LOS F in the AM peak hour, 10 approach movements operate at LOS D with a volume to capacity (v/c) ratio of greater than 0.90, LOS E or LOS F in the midday peak hour, and 16 approach movements operate at LOS D with a volume to capacity (v/c) ratio of greater than 0.90, LOS E or LOS F in the PM peak hour. These findings are presented in Table M-35.

Table M-35: Number of Approach Movements with Substandard Level of Service in Proposed Action Condition

	Analysis Hour		
Level of Service	AM	MD	PM
LOS D with v/c ≥ 0.90	0	0	0
LOS E	4	0	5
LOS F	11	9	8

A comparison was made to the No Action condition using the significant impact criteria. Overall, of the 75 approach movements analyzed, there would be significant traffic impacts on 8 approach movements in the AM peak hour, 9 approach movements in the midday peak hour, and 9 approach movements in the PM peak hour. These findings are summarized below and presented in more detail in Table M-36.

Table M-36: Number of Impacts Created by the Proposed Action

	Analysis Hour		
Impact Type	AM	MD	PM
Intersection	5	5	6
Movement	8	9	9

HCS analysis was done for all 20 intersections in the study area during the three peak periods. Results from the HCS analysis for the 2022 With-Action Condition are shown in Table M-37: No Action and Proposed Action LOS for Signalized Intersections - AM Peak PeriodTable M-37, Table M-38, Table M-39, Table M-40, Table M-41, and Table M-42. The following summarizes the analysis results by peak period and details the approach movements that would result in significant impacts from the Proposed Action.

AM Peak Hour

In the AM peak hour, the number of approach movements operating at a substandard level of service increased from 14 movements to 15 movements between the No Action and With Action scenarios. The number of movements operating at LOS E increased from 3 to 4 and the number of movements operating at LOS F increased from 10 to 11.

The following describes approaches with significant impacts in the AM peak hour.

- West Farms Road at Boston Road and East Tremont Avenue:

    - The intersection would experience an increase in delay from 267.3 to 274.3 seconds and continue to operate at LOS F.
    - The northbound approach for West Farms Road would worsen to LOS F with 384.9 seconds of delay and a v/c ratio of 1.72 compared to LOS E with 64.9 seconds of delay and a v/c ratio of 0.82 in the No Action condition.
    - The northeast bound approach for Boston Road would continue to operate at LOS F but with 224.3 seconds of delay and a v/c ratio of 1.34 compared to 175.9 seconds of delay and a v/c ratio of 1.22 in the No Action condition.
    - The southbound approach for Boston Road de facto left turn lane would continue to operate at LOS F with 778.1 seconds of delay and a v/c ratio of 2.52 compared to 233.9 seconds of delay and a v/c ratio of 1.30 in the No Action condition.
- East 177th Street at Sheridan Expressway:
    - The intersection would worsen to LOS F with 106.0 seconds of delay compared to LOS E with 75.0 seconds of delay in the No Action condition.
    - The northbound approach left, through and right turn lane would worsen to LOS E with 55.1 seconds of delay compared to LOS D with 44.6 seconds of delay in the No Action condition.
    - The southbound approach on East 177th Street de facto left turn would continue to operate at LOS F but with 415.1 seconds of delay and a v/c ratio of 1.77 compared to 126.6 seconds of delay and a v/c ratio of 1.06 in the No Action condition.
- Bronx River Avenue at East 174th Street:
    - The eastbound approach on East 174th Street would continue to operate at LOS F but with 101.8 seconds of delay and a v/c ratio of 1.10 compared to 95.3 seconds of delay and a v/c ratio of 1.08 in the No Action condition.
- Boone Avenue at East 174th Street:
    - The southbound approach would continue to operate at LOS D but with 46.8 seconds of delay compared to 41.0 seconds of delay in the No Action condition.
- West Farms Road at East 173rd Street:
    - The eastbound approach would worsen to LOS F with 129.4 seconds of delay and a v/c ratio of 1.10 compared to LOS D with 27.9 seconds of delay and a v/c ratio of 0.49 in the No Action condition.

Midday Peak Hour

In the midday peak hour, the number of approach movements operating at a substandard level of service remained at 9 movements in both the No Action and With Action scenarios. The number of movements operating at LOS E decreased from 1 to 0 and the number of movements operating at LOS F increased from 8 to 9.

The following describes approaches with significant impacts in the midday peak hour.

- West Farms Road at Boston Road and East Tremont Avenue:
    - The intersection would continue to operate at LOS F but would experience an increase in delay from 168.1 seconds to 186.4 seconds.
    - The westbound approach on East Tremont Avenue would continue to operate at LOS F but with 282.9 seconds of delay and a v/c ratio of 1.53 compared to 254.8 seconds of delay and a v/c ratio of 1.47 in the No Action condition.
    - The northeast bound approach for Boston Road would worsen to LOS F with 93.7 seconds of delay and a v/c ratio of 1.03 compared to LOS E with 78.5 seconds of delay and a v/c ratio of 0.97 in the No Action condition.

    - The southbound approach for Boston Road de facto left turn lane would continue to operate at LOS F but with 281.2 seconds of delay and a v/c ratio of 1.46 compared to 206.5 seconds of delay and a v/c ratio of 1.29 in the No Action condition.
- East 177th Street at Sheridan Expressway:
    - The intersection would worsen to LOS E with 66.5 seconds of delay compared to LOS D with 53.4 seconds of delay in the No Action condition.
    - The eastbound approach on the Sheridan Expressway off-ramp left turn lane would continue to operate at LOS F but with 95.4 seconds of delay and a v/c ratio of 1.01 compared to 87.9 seconds of delay and a v/c ratio of 0.98 in the No Action condition.
    - The northbound approach out of the bus depot would continue to operate at LOS F but with 334.1 seconds of delay and a v/c ratio of 1.52 compared to 179.2 seconds of delay and a v/c ratio of 1.15 in the No Action condition.
    - The southbound approach on East 177th Street de facto left turn would continue to operate at LOS F but with 187.3 seconds of delay and a v/c ratio of 1.25 compared to 140.0 seconds of delay and a v/c ratio of 1.13 in the No Action condition.
- Bronx River Avenue at East 174th Street:
    - The eastbound approach on East 174th Street would continue to operate at LOS F but with 104.5 seconds of delay and a v/c ratio of 1.10 compared to 97.0 seconds of delay and a v/c ratio of 1.08 in the No Action condition.
- Longfellow Avenue at East 174th Street:
    - The northbound approach of Longfellow Avenue would continue to operate at LOS F but with 114.3 seconds of delay and a v/c ratio of 1.08 compared to 84.1 seconds of delay and a v/c ratio of 0.98 in the No Action condition.
- West Farms Road at Home Street and Longfellow Avenue:
    - The northwest bound approach on Home Street would continue to operate at LOS F but with 100.7 seconds of delay and a v/c ratio of 1.03 compared to 85.3 seconds of delay and a v/c ratio of 0.97 in the No Action condition.

PM Peak Hour

In the PM peak hour, the number of approach movements operating at a substandard level of service increased from 12 movements to 13 movements between the No Action and With Action scenarios. The number of movements operating at LOS D with a volume to capacity (v/c) ratio of greater than 0.90 decreased from 1 to 0. The number of movements operating at LOS E increased from 3 to 5 and the number of movements operating at LOS F remained at 8.

The following describes approaches with significant impacts in the PM peak hour.

- East Tremont Avenue at East 177th Street
    - The northbound left turn would worsen to LOS E with 55.7 seconds of delay compared to LOS D with 45. seconds of delay in the No Action condition.
- West Farms Road at Boston Road and East Tremont Avenue:
    - The overall intersection would continue to operate at LOS F but with 242.6 seconds of delay compared to 211.0 seconds of delay in the No Action condition.
    - The westbound approach on East Tremont Avenue would continue to operate at LOS F but with 335.0 seconds of delay and a v/c ratio of 1.63 compared to 287.4 seconds of delay and a v/c ratio of 1.52 in the No Action condition.

    - The northbound approach for West Farms Road would continue to operate at LOS E but with 64.1 seconds of delay compared to 56.2 seconds of delay in the No Action condition.
    - The northeast bound approach for Boston Road would continue to operate at LOS F but with 186.6 seconds of delay and a v/c ratio of 1.26 compared to 164.7 seconds of delay and a v/c ratio of 1.21 in the No Action condition.
    - The southbound approach for Boston Road through and right turn lane would worsen to LOS F with 101.4 seconds of delay and a v/c ratio of 0.98 compared to LOS E with 77.5 seconds of delay and a v/c ratio of 0.86 in the No Action condition.
- East 177th Street at Sheridan Expressway:
    - The southbound approach on East 177th Street left turn would continue to operate at LOS F but with 161.5 seconds of delay and a v/c ratio of 1.18 compared to 138.0 seconds of delay and a v/c ratio of 1.12 in the No Action condition.
- Longfellow Avenue at East 174th Street:
    - The northbound approach of Longfellow Avenue would continue to operate at LOS F but with 197.7 seconds of delay and a v/c ratio of 1.32 compared to 117.7 seconds of delay and a v/c ratio of 1.12 in the No Action condition.
- West Farms Road at Home Street and Longfellow Avenue:
    - The northwest bound approach on Home Street would continue to operate at LOS F but with 351.4 seconds of delay and a v/c ratio of 1.6 compared to 150.1 seconds of delay and a v/c ratio of 1.18 in the No Action condition.
- West Farms Road at East 173rd Street:
    - The eastbound approach would continue to operate at LOS E but with 40.0 seconds of delay compared to 35.5 seconds of delay in the No Action condition.

Table M-37: No Action and Proposed Action LOS for Signalized Intersections - AM Peak Period

Int#	Intersection Name	Direction	Lane Group	AM							
				No Build				Build			
				Volume	v/c ratio	Delay (sec)	LOS	Volume	v/c ratio	Delay (sec)	LOS
1	East Tremont Ave at East 177th Street	Overall		2025		33.1	C	2044		33.3	C
		Eastbound	LT	407	0.42	29.0	C	413	0.42	29.1	C
		Westbound	DefL	419	0.85	46.6	D	419	0.85	47.5	D
			TR	616	0.79	29.3	C	616	0.79	29.3	C
		Northbound	L	307	0.56	33.3	C	305	0.55	33.2	C
			T	153	0.26	27.0	C	153	0.26	27.0	C
			R	123	0.26	27.1	C	123	0.26	27.1	C
		Southbound	R	15	0.02	23.6	C	15	0.02	29.1	C
2	West Farms Road at Boston Rd, East Tremont Ave (1,5)	Overall		2160		267.3	F	2441		274.3	F
		Eastbound	LTR	388	0.74	50.7	D	383	0.73	50.0	D
		Westbound	LTR	928	1.71	372.1	F	926	1.71	370.1	F
		Northbound(6)	LTR	226	0.82	64.9	E	485	1.72	384.9	F
		NE-Bound	T	331	1.22	175.9	F	363	1.34	224.3	F
		Southbound	Def L	143	1.30	233.9	F	143	2.52	778.1	F
			TR	144	1.08	130.5	F	141	1.06	125.1	F
4	East 177th Street at Sheridan Expressway (6)	Overall		3212		75.0	E	3471		106.0	F
		Eastbound	L	296	0.90	76.2	E	290	0.89	73.6	E
			T	93	0.08	5.0	A	93	0.08	5.0	A
		Westbound	R	1622	1.14	99.8	F	1622	1.14	99.8	F
			T	267	0.42	21.4	C	271	0.43	21.5	C
		Northbound	LTR	35	0.26	44.6	D	35	0.47	55.1	E
		Southbound	LT	191	1.06	126.6	F	318	1.77	415.1	F
			TR	708	0.72	34.1	C	842	0.86	41.4	D
6	Bronx River Ave at East 174th Street	Overall		1671		39.5	D	1645		41.4	D
		Eastbound	LTR	423	1.08	95.3	F	436	1.10	101.8	F
		Westbound	LT	359	0.80	39.8	D	356	0.78	38.0	D
			R	41	0.21	22.4	C	41	0.21	22.1	C
		Northbound	L	164	0.52	18.5	B	164	0.49	16.9	B
			TR	251	0.46	14.6	B	251	0.45	14.3	B
		Southbound	LTR	433	0.41	13.1	B	397	0.37	12.5	B
7	Boone Ave at East 174th Street	Overall		1255		25.3	C	1250		22.5	C
		Eastbound	TR	371	0.49	10.4	B	358	0.46	9.7	A
		Westbound	DefL	312	0.96	51.5	D	292	0.88	35.2	D
			LT	419	0.50	10.4	B	410	0.48	10.0	A
		Southbound	LTR	153	0.67	41.0	D	190	0.77	46.8	D
8	Longfellow Ave at East 174th Street	Overall		904		37.9	D	882		34.2	C
		Eastbound	LT	259	0.35	8.3	A	258	0.34	8.0	A
		Westbound	TR	445	0.56	11.1	B	436	0.54	10.5	B
		Northbound	LTR	200	1.09	116.3	F	188	1.06	106.9	F
17	Westchester Ave at Sheridan Expressway Service Road, Whitlock Avenue	Overall		2814		42.3	D	2808		41.4	D
		Eastbound	TR	610	0.71	29.8	C	610	0.71	29.8	C
		Westbound	LT	1091	1.06	62.8	E	1083	1.05	60.8	E
		Southbound	LTR	1113	0.75	28.1	C	1115	0.75	28.1	C
18	West Farms Road at Home Street, Longfellow Ave (2)	Overall		613		19.3	B	610		18.9	B
		NW-Bound	LTR	259	1.04	98.6	F	240	0.94	72.7	E
		Northbound	LTR	86	0.46	36.6	D	86	0.45	36.0	D
		NE-Bound	LT	106	0.19	13.2	B	103	0.19	13.0	B
		SW-Bound	RT	162	0.26	13.9	B	181	0.28	13.9	B
19	West Farms Road at Freeman Street	Overall		493		13.2	B	497		13.5	B
		Eastbound	LTR	102	0.32	25.9	C	102	0.32	26.4	C
		Northbound	LT	225	0.31	9.9	A	210	0.29	10.0	A
		Southbound	TR	166	0.26	9.4	A	185	0.29	9.9	A
20	Westchester Ave at Sheridan Expressway Service Road and Northbound Off-Ramp	Overall		1986		52.4	D	1991		52.2	D
		Eastbound	DefL (3)	123	0.41	20.6	C	123	0.41	20.6	C
			LT	598	0.63	17.8	B	611	0.65	18.1	B
		Westbound	T	908	1.08	82.9	F	908	1.08	82.9	F
		Northbound	LTR	347	0.73	33.3	C	339	0.72	32.7	C
		Southbound	LR	10	0.04	19.2	B	10	0.04	19.2	B

Notes:

(1) Boston Road approaches the intersection in the northeast bound and southbound direction. East Tremont Avenue approaches the intersection in the eastbound and westbound direction. West Farms Road approaches the intersection in the northbound direction

(2) Home Street approaches the intersection ins the northwest bound direction. Longfellow Avenue approaches the intersection in the northbound direction. West Farms Road approaches the intersection in the northeast bound and southwest bound directions.

(3) Defacto left turn only exists in AM peak period.

(4) Left turns are shared with lane group above, volumes listed are only right turn vehicles.

(5) To mitigate a left turn lane was added westbound on East Tremont Ave and a right turn lane was added northbound on West Farms Rd, creating new lane groups

(6) To mitigate, a left turn lane was added southbound on East 177th St and right turn lane was striped northbound exiting the Bus Depot, creating new lane groups

Shaded Lane Groups Represent Impacts

Table M-38: No Action and Proposed Action LOS for Signalized Intersections - Midday Peak Period

Int#	Intersection Name	Direction	Lane Group	MD							
				No Build				Build			
				Volume	v/c ratio	Delay (sec)	LOS	Volume	v/c ratio	Delay (sec)	LOS
1	East Tremont Ave at East 177th Street	Overall		1737		24.4	C	1784		25.5	C
		Eastbound	LT	375	0.47	25.4	C	376	0.47	25.4	C
		Westbound	DefL	327	0.58	21.9	C	327	0.58	22.0	C
			TR	385	0.46	13.7	B	387	0.47	13.7	B
		Northbound	L	354	0.71	33.8	C	383	0.76	36.7	D
			T	122	0.24	22.7	C	122	0.24	22.7	C
			R	174	0.65	32.5	C	174	0.65	32.5	C
		Southbound	R	15	0.02	20.2	C	15	0.02	20.2	C
2	West Farms Road at Boston Rd, East Tremont Ave (1,5)	Overall		1809		168.1	F	1931		186.4	F
		Eastbound	LTR	337	0.59	35.7	D	346	0.61	36.3	D
		Westbound	LTR	749	1.47	254.8	F	780	1.53	282.9	F
		Northbound(6)	LTR	159	0.49	38.4	D	218	0.67	43.9	D
		NE-Bound	T	277	0.97	78.5	E	293	1.03	93.7	F
		Southbound	Def L	170	1.29	206.5	F	170	1.46	281.2	F
			TR	117	0.70	51.4	D	124	0.73	54.0	D
4	East 177th Street at Sheridan Expressway (6)	Overall		2685		53.4	D	2780		66.5	E
		Eastbound	L	336	0.98	87.9	F	346	1.01	95.4	F
			T	150	0.14	5.3	A	150	0.14	5.3	A
		Westbound	R	1077	0.83	34.4	C	1077	0.83	34.4	C
			T	278	0.49	25.2	C	297	0.52	26.0	C
		Northbound	LTR	93	1.15	179.2	F	93	1.52	334.1	F
		Southbound	LT	242	1.13	140.0	F	269	1.25	187.3	F
			TR	509	0.53	26.1	C	548	0.57	27.0	C
6	Bronx River Ave at East 174th Street	Overall		1304		38.5	D	1342		40.5	D
		Eastbound	LTR	406	1.08	97.0	F	420	1.10	104.5	F
		Westbound	LT	233	0.55	28.4	C	237	0.55	28.0	C
			R	31	0.15	21.5	C	31	0.15	21.2	C
		Northbound	L	138	0.39	14.5	B	138	0.39	14.4	B
			TR	225	0.36	13.1	B	225	0.35	12.8	B
		Southbound	LTR	271	0.29	11.8	B	291	0.30	11.8	B
7	Boone Ave at East 174th Street	Overall		952		12.3	B	994		12.1	B
		Eastbound	TR	370	0.48	10.2	B	386	0.50	10.2	B
		Westbound	DefL	118	0.31	9.2	A	148	0.40	10.5	B
			LT	355	0.42	9.3	A	354	0.42	9.1	A
		Southbound	LTR	109	0.38	31.8	C	106	0.37	31.1	C
8	Longfellow Ave at East 174th Street	Overall		903		28.5	C	918		37.1	D
		Eastbound	LT	299	0.45	9.7	A	301	0.45	9.4	A
		Westbound	TR	386	0.46	9.5	A	385	0.45	9.2	A
		Northbound	LTR	218	0.98	84.1	F	232	1.08	114.3	F
17	Westchester Ave at Sheridan Expressway Service Road, Whitlock Avenue	Overall		2243		22.9	C	2266		23.0	C
		Eastbound	TR	598	0.62	27.1	C	598	0.62	27.1	C
		Westbound	LT	690	0.57	16.4	B	701	0.58	16.6	B
		Southbound	LTR	955	0.61	24.8	C	967	0.62	24.9	C
18	West Farms Road at Home Street, Longfellow Ave (2)	Overall		479		26.4	C	512		25.3	C
		NW-Bound	LTR	202	0.97	85.3	F	223	1.03	100.7	F
		Northbound	LTR	91	0.66	45.9	D	91	0.65	44.6	D
		NE-Bound	LT	78	0.13	12.6	B	83	0.13	12.4	B
		SW-Bound	RT	108	0.14	12.7	B	115	0.15	12.5	B
19	West Farms Road at Freeman Street	Overall		347		12.3	B	380		12.5	B
		Eastbound	LTR	72	0.21	24.2	C	72	0.21	24.6	C
		Northbound	LT	167	0.24	9.2	A	193	0.28	9.8	A
		Southbound	TR	108	0.12	8.2	A	115	0.13	8.5	A
20	Westchester Ave at Sheridan Expressway Service Road and Northbound Off-Ramp	Overall		1607		20.8	C	1620		21.0	C
		Eastbound	DefL (3)								
			LT	779	0.56	15.3	B	781	0.56	15.3	B
		Westbound	T	499	0.47	25.1	C	499	0.47	25.1	C
		Northbound	LTR	304	0.61	28.5	C	315	0.64	29.2	C
		Southbound	LR	25	0.11	20.0	C	25	0.11	20.0	C

Notes:

(1) Boston Road approaches the intersection in the northeast bound and southbound direction. East Tremont Avenue approaches the intersection in the eastbound and westbound direction. West Farms Road approaches the intersection in the northbound direction

(2) Home Street approaches the intersection ins the northwest bound direction. Longfellow Avenue approaches the intersection in the northbound direction. West Farms Road approaches the intersection in the northeast bound and southwest bound directions.

(3) Defacto left turn only exists in AM peak period.

(4) Left turns are shared with lane group above, volumes listed are only right turn vehicles.

(5) To mitigate a left turn lane was added westbound on East Tremont Ave and a right turn lane was added northbound on West Farms Rd, creating new lane groups

(6) To mitigate, a left turn lane was added southbound on East 177th St and right turn lane was striped northbound exiting the Bus Depot, creating new lane groups

Shaded Lane Groups Represent Impacts

Table M-39: No Action and Proposed Action LOS for Signalized Intersections - PM Peak Period

Int#	Intersection Name	Direction	Lane Group	PM							
				No Build				Build			
				Volume	v/c ratio	Delay (sec)	LOS	Volume	v/c ratio	Delay (sec)	LOS
1	East Tremont Ave at East 177th Street	Overall		2217		31.2	C	2293		33.8	C
		Eastbound	LT	583	0.53	27.9	C	585	0.53	28.0	C
		Westbound	DefL	312	0.68	35.5	D	312	0.68	35.6	D
			TR	657	0.75	23.8	C	661	0.75	24.0	C
		Northbound	L	353	0.77	45.7	D	404	0.88	55.7	E
			T	123	0.23	29.8	C	122	0.23	29.8	C
			R	189	0.43	33.9	C	189	0.43	33.9	C
		Southbound	R	20	0.02	26.9	C	20	0.02	26.9	C
2	West Farms Road at Boston Rd, East Tremont Ave (1,5)	Overall		2421		211.0	F	2569		242.6	F
		Eastbound	LTR	468	0.78	51.5	D	487	0.82	53.8	D
		Westbound	LTR	1025	1.52	287.4	F	1080	1.63	335.0	F
		Northbound(6)	LTR	259	0.72	56.2	E	297	0.83	64.1	E
		NE-Bound	T	355	1.21	164.7	F	370	1.26	186.6	F
		Southbound	Def L	165	1.08	139.2	F	165	1.08	137.2	F
			TR	149	0.86	77.5	E	170	0.98	101.4	F
4	East 177th Street at Sheridan Expressway (6)	Overall		2593		44.4	D	2684		47.9	D
		Eastbound	L	309	0.77	54.5	D	325	0.81	57.7	E
			T	132	0.12	5.2	A	132	0.12	5.2	A
		Westbound	R	944	0.84	37.5	D	944	0.84	37.5	D
			T	330	0.62	31.5	C	364	0.68	33.9	C
		Northbound	LTR	62	0.45	52.0	D	62	0.49	54.6	D
		Southbound	LT	288	1.12	138.0	F	305	1.18	161.5	F
			TR	528	0.50	23.2	C	552	0.53	23.6	C
6	Bronx River Ave at East 174th Street	Overall		1865		44.0	D	1988		45.2	D
		Eastbound	LTR	525	1.08	93.6	F	533	1.08	93.4	F
		Westbound	LT	329	0.92	54.2	D	345	0.93	56.5	E
			R	31	0.11	21.0	C	31	0.11	20.7	C
		Northbound	L	230	0.79	30.4	C	230	0.89	43.0	D
			TR	327	0.47	14.8	B	327	0.47	14.5	B
		Southbound	LTR	423	0.34	12.3	B	522	0.41	12.9	B
7	Boone Ave at East 174th Street	Overall		1340		14.7	B	1488		18.2	B
		Eastbound	TR	483	0.56	11.4	B	527	0.62	12.3	B
		Westbound	DefL	143	0.48	12.5	B	239	0.85	33.1	C
			LT	568	0.60	12.0	B	583	0.61	12.0	B
		Southbound	LTR	146	0.53	35.1	D	139	0.49	33.8	C
8	Longfellow Ave at East 174th Street	Overall		1313		43.3	D	1372		67.6	E
		Eastbound	LT	421	0.81	23.1	C	426	0.82	23.2	C
		Westbound	TR	599	0.67	13.4	B	614	0.68	13.4	B
		Northbound	LTR	293	1.12	117.7	F	332	1.32	197.7	F
17	Westchester Ave at Sheridan Expressway Service Road, Whitlock Avenue	Overall		2189		22.4	C	2291		22.7	C
		Eastbound	TR	680	0.69	28.7	C	680	0.69	28.7	C
		Westbound	LT	722	0.52	15.4	B	770	0.55	15.9	B
		Southbound	LTR	787	0.50	23.1	C	841	0.54	23.6	C
18	West Farms Road at Home Street, Longfellow Ave (2)	Overall		682		55.8	E	806		50.7	D
		NW-Bound	LTR	267	1.18	150.1	F	367	1.66	351.4	F
		Northbound	LTR	153	1.08	116.8	F	153	1.06	109.1	F
		NE-Bound	LT	118	0.22	13.5	B	137	0.25	13.6	B
		SW-Bound	RT	144	0.23	13.5	B	149	0.24	13.4	B
19	West Farms Road at Freeman Street	Overall		519		14.4	B	643		16.3	B
		Eastbound	LTR	103	0.39	27.2	C	103	0.40	27.7	C
		Northbound	LT	271	0.43	11.4	B	390	0.62	15.3	B
		Southbound	TR	145	0.21	8.9	A	150	0.22	9.3	A
20	Westchester Ave at Sheridan Expressway Service Road and Northbound Off-Ramp	Overall		1910		23.7	C	1960		25.6	C
		Eastbound	DefL (3)								
			LT	851	0.57	15.5	B	853	0.57	15.5	B
		Westbound	T	608	0.58	26.9	C	608	0.58	26.9	C
		Northbound	LTR	394	0.78	35.8	D	442	0.87	42.7	D
		Southbound	LR	57	0.18	21.1	C	57	0.18	21.0	C

Notes:

(1) Boston Road approaches the intersection in the northeast bound and southbound direction. East Tremont Avenue approaches the intersection in the eastbound and westbound direction. West Farms Road approaches the intersection in the northbound direction

(2) Home Street approaches the intersection ins the northwest bound direction. Longfellow Avenue approaches the intersection in the northbound direction. West Farms Road approaches the intersection in the northeast bound and southwest bound directions.

(3) Defacto left turn only exists in AM peak period.

(4) Left turns are shared with lane group above, volumes listed are only right turn vehicles.

(5) To mitigate a left turn lane was added westbound on East Tremont Ave and a right turn lane was added northbound on West Farms Rd, creating new lane groups

(6) To mitigate, a left turn lane was added southbound on East 177th St and right turn lane was striped northbound exiting the Bus Depot, creating new lane groups

Shaded Lane Groups Represent Impacts

Table M-40: No Action and Proposed Action LOS for Unsignalized Intersections - AM Peak Period

Int #	Intersection Name	Direction	Lane Group	AM Peak Period							
				No Build				Build			
				Volume	v/c ratio	Delay (sec)	LOS	Volume	v/c ratio	Delay (sec)	LOS
3	West Farms Road at Rodman Place	Overall		533	--	--	--	760	--	--	--
		Eastbound	LR	10	0.05	14.3	B	39	0.33	24.9	C
		Northbound	LT	226	0.01	8.5	A	436	0.01	8.4	A
		Southbound (3)	TR	297	--	--	--	285	--	--	--
5	West Farms Road at Cross Bronx Expressway North Service Rd	Overall		533	--	--	--	731	--	--	--
		Northbound	LT	246	0.02	8.6	A	456	0.02	8.5	A
		Southbound (3)	TR	287	--	--	--	275	--	--	--
9	West Farms Road at East 173rd Street	Overall		586	--	--	--	803	--	--	--
		Eastbound (1)	RL	131	0.49	27.9	D	239	1.10	129.4	F
		Northbound	TL	184	0.03	9.4	A	305	0.04	9.4	A
		Southbound (3)	RT	271	--	--	--	259	--	--	--
10	Boone Ave at East 173rd Street	Overall		476	--	--	--	526	--	--	--
		Eastbound	TR	47	0.16	16.4	C	32	0.15	20.8	C
		Westbound (1)	LT	42	0.18	18.8	C	28	0.18	25.4	D
		Southbound	LTR	387	0.07	7.6	A	466	0.15	7.9	A
11	Longfellow Ave at East 173rd Street	Overall		350	--	--	--	341	--	--	--
		Eastbound	TL	78	0.04	7.9	A	76	0.05	8.0	A
		Westbound (3)	RT	125	--	--	--	137	--	--	--
		Northbound	LTR	147	0.38	16.9	C	128	0.34	16.6	C
12	West Farms Road at East 172nd Street	Overall		560	--	--	--	666	--	--	--
		Eastbound	RL	76	0.30	16.3	C	140	0.64	28.8	D
		Northbound	TL	185	0.04	8.7	A	205	0.03	8.8	A
		Southbound (3)	RT	299	--	--	--	321	--	--	--
13	Boone Ave at East 172nd Street	Overall		373	--	--	--	382	--	--	--
		Eastbound (3)	TR	71	--	--	--	73	--	--	--
		Westbound	LT	82	0.04	7.8	A	74	0.04	7.8	A
		Southbound	LTR	220	0.54	17.9	C	235	0.57	18.8	C
14	West Farms Road at Jennings Street	Overall		622	--	--	--	639	--	--	--
		Eastbound	LR	118	0.40	17.9	C	118	0.41	18.7	C
		Northbound	LT	210	0.07	8.8	A	195	0.07	8.9	A
		Southbound (3)	TR	294	--	--	--	326	--	--	--
15	West Farms Road at Boone Ave	Overall		550	--	--	--	567	--	--	--
		Northbound(3)	TR	220	--	--	--	205	--	--	--
		Southbound	LT	330	0.32	12.6	B	362	0.36	13.0	B
16	Boone Ave at Freeman Street, Sheridan Expressway Ramp	Overall		1113	--	--	--	1114	--	--	--
		Eastbound	T	111	0.19	11.7	B	111	0.20	11.9	B
		Westbound	T	174	0.57	20.0	C	187	0.59	20.6	C
		Southbound (3)	T	828	--	--	--	816	--	--	--

Notes:

(1) Significant Impact in AM Peak Period and PM Peak Period.

(2) Significant Impact in only the AM Peak Period.

(3) No conflicting movents.

SHADED CELLS REPRESENT IMPACT DURING PEAK PERIOD

ORANGE HIGHLIGHTED CELLS REPRESENT IMPACT IN OTHER PEAK PERIOD

Table M-41: No Action and Proposed Action LOS for Unsignalized Intersections - Midday Peak Period

Int #	Intersection Name	Direction	Lane Group	MD Peak Period							
				No Build				Build			
				Volume	v/c ratio	Delay (sec)	LOS	Volume	v/c ratio	Delay (sec)	LOS
3	West Farms Road at Rodman Place	Overall		327	--	--	--	423	--	--	--
		Eastbound	LR	5	0.02	10.5	B	28	0.12	13.5	B
		Northbound	LT	159	0.00	8.0	A	190	0.00	8.1	A
		Southbound (3)	TR	163	--	--	--	205	--	--	--
5	West Farms Road at Cross Bronx Expressway North Service Rd	Overall		342	--	--	--	395	--	--	--
		Northbound	LT	174	0.03	8.1	A	206	0.03	8.2	A
		Southbound (3)	TR	168	--	--	--	189	--	--	--
9	West Farms Road at East 173rd Street	Overall		378	--	--	--	431	--	--	--
		Eastbound (1)	RL	68	0.22	16.7	C	71	0.24	17.3	C
		Northbound	TL	152	0.03	8.8	A	196	0.04	8.8	A
		Southbound (3)	RT	158	--	--	--	164	--	--	--
10	Boone Ave at East 173rd Street	Overall		246	--	--	--	265	--	--	--
		Eastbound	TR	47	0.12	11.9	B	33	0.09	12.0	B
		Westbound (1)	LT	39	0.12	13.2	B	48	0.17	14.5	B
		Southbound	LTR	160	0.04	7.5	A	184	0.05	7.6	A
11	Longfellow Ave at East 173rd Street	Overall		326	--	--	--	341	--	--	--
		Eastbound	TL	103	0.06	7.9	A	103	0.06	8.0	A
		Westbound (3)	RT	91	--	--	--	109	--	--	--
		Northbound	LTR	132	0.36	17.3	C	129	0.37	17.8	C
12	West Farms Road at East 172nd Street	Overall		374	--	--	--	430	--	--	--
		Eastbound	RL	57	0.14	12.5	B	79	0.20	13.8	B
		Northbound	TL	147	0.02	8.1	A	176	0.03	8.2	A
		Southbound (3)	RT	170	--	--	--	175	--	--	--
13	Boone Ave at East 172nd Street	Overall		165	--	--	--	172	--	--	--
		Eastbound (3)	TR	36	--	--	--	36	--	--	--
		Westbound	LT	42	0.00	7.6	A	38	0.00	7.6	A
		Southbound	LTR	87	0.20	11.5	B	98	0.22	11.6	B
14	West Farms Road at Jennings Street	Overall		393	--	--	--	428	--	--	--
		Eastbound	LR	87	0.20	12.6	B	87	0.20	13.0	B
		Northbound	LT	126	0.01	8.0	A	152	0.01	8.0	A
		Southbound (3)	TR	180	--	--	--	189	--	--	--
15	West Farms Road at Boone Ave	Overall		367	--	--	--	402	--	--	--
		Northbound(3)	TR	141	--	--	--	167	--	--	--
		Southbound	LT	226	0.19	11.3	B	235	0.20	11.4	B
16	Boone Ave at Freeman Street, Sheridan Expressway Ramp	Overall		955	--	--	--	967	--	--	--
		Eastbound	T	98	0.16	11.2	B	98	0.16	11.2	B
		Westbound	T	133	0.45	16.3	C	135	0.46	16.5	C
		Southbound (3)	T	724	--	--	--	734	--	--	--

Notes:

(1) Significant Impact in AM Peak Period and PM Peak Period.

(2) Significant Impact in only the AM Peak Period.

(3) No conflicting movents.

SHADED CELLS REPRESENT IMPACT DURING PEAK PERIOD

ORANGE HIGHLIGHTED CELLS REPRESENT IMPACT IN OTHER PEAK PERIOD

Table M-42: No Action and Proposed Action LOS for Unsignalized Intersections - PM Peak Period

Int #	Intersection Name	Direction	Lane Group	PM Peak Period							
				No Build				Build			
				Volume	v/c ratio	Delay (sec)	LOS	Volume	v/c ratio	Delay (sec)	LOS
3	West Farms Road at Rodman Place	Overall		483	--	--	--	595	--	--	--
		Eastbound	LR	0	--	--	--	14	0.09	17.4	C
		Northbound	LT	264	0.01	8.2	A	284	0.01	8.5	A
		Southbound (3)	TR	219	--	--	--	297	--	--	--
5	West Farms Road at Cross Bronx Expressway North Service Rd	Overall		498	--	--	--	569	--	--	--
		Northbound	LT	284	0.02	8.3	A	306	0.03	8.5	A
		Southbound (3)	TR	214	--	--	--	263	--	--	--
9	West Farms Road at East 173rd Street	Overall		550	--	--	--	667	--	--	--
		Eastbound (1)	RL	88	0.64	35.5	E	84	0.67	40.0	E
		Northbound	TL	256	0.03	9.0	A	361	0.15	9.7	A
		Southbound (3)	RT	206	--	--	--	222	--	--	--
10	Boone Ave at East 173rd Street	Overall		326	--	--	--	426	--	--	--
		Eastbound	TR	52	0.14	12.6	B	34	0.11	12.7	B
		Westbound (1)	LT	58	0.20	15.1	C	110	0.45	22.6	C
		Southbound	LTR	216	0.05	7.6	A	282	0.07	7.6	A
11	Longfellow Ave at East 173rd Street	Overall		397	--	--	--	456	--	--	--
		Eastbound	TL	129	0.10	8.1	A	133	0.11	8.3	A
		Westbound (3)	RT	105	--	--	--	162	--	--	--
		Northbound	LTR	163	0.54	24.9	C	161	0.59	29.6	D
12	West Farms Road at East 172nd Street	Overall		513	--	--	--	667	--	--	--
		Eastbound	RL	67	0.19	14.4	B	103	0.33	18.2	C
		Northbound	TL	235	0.02	8.2	A	346	0.04	8.3	A
		Southbound (3)	RT	211	--	--	--	218	--	--	--
13	Boone Ave at East 172nd Street	Overall		210	--	--	--	253	--	--	--
		Eastbound (3)	TR	46	--	--	--	51	0.00	0.0	0
		Westbound	LT	31	0.01	7.6	A	33	0.01	7.6	A
		Southbound	LTR	133	0.26	12.0	B	169	0.35	13.0	B
14	West Farms Road at Jennings Street	Overall		538	--	--	--	664	--	--	--
		Eastbound	LR	103	0.25	14.3	B	103	0.28	15.7	C
		Northbound	LT	209	0.01	8.2	A	328	0.01	8.2	A
		Southbound (3)	TR	226	--	--	--	233	--	--	--
15	West Farms Road at Boone Ave	Overall		528	--	--	--	654	--	--	--
		Northbound(3)	TR	240	--	--	--	359	--	--	--
		Southbound	LT	288	0.25	11.7	B	295	0.25	11.8	B
16	Boone Ave at Freeman Street, Sheridan Expressway Ramp	Overall		787	--	--	--	841	--	--	--
		Eastbound	T	135	0.24	12.2	B	135	0.25	12.2	B
		Westbound	T	174	0.52	16.5	C	176	0.55	17.7	C
		Southbound (3)	T	478	--	--	--	530	--	--	--

Notes:
(1) Significant Impact in AM Peak Period and PM Peak Period.
(2) Significant Impact in only the AM Peak Period.
(3) No conflicting movents.
SHADED CELLS REPRESENT IMPACT DURING PEAK PERIOD
ORANGE HIGHLIGHTED CELLS REPRESENT IMPACT IN OTHER PEAK PERIOD

Conclusion:

As highlighted in Table M-37 through Table M-42 above, there are four signalized intersections and one unsignalized intersection in the AM peak period, 5 signalized intersections in the midday

peak period, and five signalized intersections and one unsignalized intersection in the PM peak period which would be subject to significant traffic impacts, as summarized in Table M-36. Please refer to the mitigation chapter for further discussion of the mitigation measures which could be employed to eliminate these impacts.

Transit and Pedestrians

Trip Generation

Development sites within the zoning area would be developed as described in Chapter 1, Project Description. These sites consist of residential, local retail, and daycare facility land uses. Current development existing on the proposed rezoning site includes light industrial, warehouse, and auto care center land uses. The trip generation characteristics are provided in the section describing traffic trip generation. Walk, bus and subway person trips provided below in Table M-43.

Table M-43: Projected Transit and Pedestrian Trips By Parcel for the Proposed Action

	Bus Trips						Subway Trips						Walk Trips					
	AM		MD		PM		AM		MD		PM		AM		MD		PM	
Parcel	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
1	3	31	18	18	32	14	4	56	19	19	53	19	14	24	95	95	57	51
2A	10	65	20	20	64	26	27	125	33	33	121	54	73	86	76	76	116	109
2B	9	41	26	26	43	23	14	75	29	29	71	33	20	31	120	120	72	66
3A	2	10	3	3	9	4	3	20	6	6	18	7	-2	2	-1	-1	1	-1
3B	0	5	1	1	4	1	-1	9	2	2	8	2	0	2	0	0	1	0
3D	-1	7	1	1	6	2	-1	13	2	2	12	3	0	2	0	0	2	0
3E	0	6	1	1	5	1	-1	12	2	2	11	3	0	2	0	0	2	0
4A	1	10	20	20	16	11	-1	14	11	11	16	7	24	27	156	156	84	82
4B	0	13	3	3	11	3	0	25	5	5	22	7	0	4	1	1	4	1
4C	0	20	4	4	18	5	1	38	9	9	34	11	0	6	1	1	5	1
5A	1	2	10	10	5	5	1	1	5	5	3	3	12	12	78	78	41	41
5B	0	5	1	1	4	1	-1	9	2	2	8	2	0	2	0	0	1	0
5C	-1	9	2	2	8	2	-1	17	3	3	15	4	0	3	0	0	2	0
5D	-1	7	1	1	7	2	-1	14	3	3	13	3	0	2	0	0	2	0
5E	4	7	20	20	14	12	3	9	12	12	12	8	23	25	155	155	81	81
6A	5	12	22	22	18	14	5	19	15	15	21	12	25	27	157	157	85	83
6B	1	8	2	2	7	3	2	15	4	4	14	6	0	3	1	1	2	1
6C	1	7	2	2	6	3	2	13	4	4	12	5	0	2	0	0	1	0
6E	1	8	2	2	7	3	3	16	5	5	14	6	0	2	1	1	2	1
6G	5	14	38	38	27	20	2	19	21	21	24	12	45	48	290	290	155	152
7A	0	5	1	1	5	1	1	10	2	2	9	3	0	2	0	0	1	0
7B	-3	25	4	4	22	3	-4	48	9	9	43	9	-2	8	1	1	7	0
8	5	31	27	27	36	20	6	56	24	24	54	23	25	34	159	159	90	85
9C	4	21	5	5	18	8	7	40	11	11	36	15	0	5	-8	-8	1	-3
9D	7	33	41	41	43	25	8	56	31	31	57	25	43	52	274	274	151	145
9E	1	5	2	2	5	2	2	11	3	3	10	4	0	2	1	1	2	1
Total	**54**	**405**	**277**	**277**	**441**	**212**	**80**	**740**	**272**	**272**	**710**	**285**	**296**	**412**	**1556**	**1556**	**969**	**897**

Trip Distribution and Assignment

Transit and pedestrian volumes used for With-Action condition analysis were derived as peak 15 minute volumes based upon the trip generation estimates described in the traffic trip generation discussion. Pedestrian routings to transit stations and bus stops from the project sites were compiled. In addition, pedestrian walking trips were routed from the project site to outside of the study area. The project generated subway, bus, and walking trips discussed above, were assigned to the routings created to analyze the impacts of the project.

- Subway trips were assigned to the station on East 174th Street and Southern Boulevard and the station at East Tremont Avenue and Boston Road based on proximity of the development site. Both stations have stops for the Lexington Avenue No. 5 line and the 7th Avenue No. 2 line.
- Bus trips were assigned to the nearest bus stop to the development site. Due to similarity of bus lines and availability of bus to bus transfers, it was not deemed appropriate to provide individual routings based on bus line.

- Walking trips were conservatively assigned as external trips into and out of the study area to/from each development site.

Transit and Pedestrian With-Action Conditions Analysis

The following presents the findings of the conditions analysis for the subway station, bus transit and pedestrian operations in the future with the Proposed Action.

Subway Station Operations

The tables below show the 2022 With-Action operating conditions of subway control area elements during the weekday AM, MD, and PM peak hours. These elements include subway stairs and turnstiles. All subway control elements, including stairs and turnstiles operate at LOS C or better. Due to additional trips created by the Proposed Action, all subway station control elements will continue to act at satisfactory levels of service as shown in Table M-44 and Table M-45.

Table M-44: 2022 With-Action Subway Stairs Operations

Location	Subway Stair	Width (feet)	Effective Width (feet)	15-Minute Volume		Friction Factor	15-Minute Volume		LOS
				Up	Down		SVCD Cap	V/SVCD	
AM									
E Tremont Ave and Boston Rd / W Farms Rd	Northwest	6.00	5.00	90	87	0.9	675	0.26	A
	Northeast	6.00	5.00	77	85	0.9	675	0.24	A
174th St and Southern Blvd / Boston Rd	Northwest	4.67	3.67	363	27	0.8	440	0.89	C
	Northeast	4.67	3.67	91	38	0.8	440	0.29	A
	Southeast	4.67	3.67	73	66	0.9	495	0.28	A
	Southwest	4.67	3.67	133	97	0.9	495	0.47	B
MD									
E Tremont Ave and Boston Rd / W Farms Rd	Northwest	6.00	5.00	40	75	0.9	675	0.17	A
	Northeast	6.00	5.00	32	58	0.9	675	0.13	A
174th St and Southern Blvd / Boston Rd	Northwest	4.67	3.67	64	80	0.9	495	0.29	A
	Northeast	4.67	3.67	68	64	0.9	495	0.27	A
	Southeast	4.67	3.67	61	44	0.9	495	0.21	A
	Southwest	4.67	3.67	46	53	0.9	495	0.20	A
PM									
E Tremont Ave and Boston Rd / W Farms Rd	Northwest	6.00	5.00	65	102	0.9	675	0.25	A
	Northeast	6.00	5.00	47	122	0.8	600	0.28	A
174th St and Southern Blvd / Boston Rd	Northwest	4.67	3.67	76	79	0.9	495	0.31	A
	Northeast	4.67	3.67	33	160	0.8	440	0.44	A
	Southeast	4.67	3.67	48	187	0.8	440	0.53	B
	Southwest	4.67	3.67	53	64	0.9	495	0.24	A

Table M-45: 2022 With-Action Subway Turnstile Operations

Location	Entrance	Total turnstiles	15-Minute Volume In	15-Minute Volume Out	Friction Factor	Surging Factor	V/SVCD	LOS
AM								
174th St and Southern Blvd / Boston Rd	Manhattan Bound (west side)	3	496	125	0.8	0.75	0.60	B
	Bronx Bound (east side)	3	164	104	0.9	0.75	0.22	A
MD								
174th St and Southern Blvd / Boston Rd	Manhattan Bound (west side)	3	110	133	0.9	0.75	0.20	A
	Bronx Bound (east side)	3	129	108	0.9	0.75	0.20	A
PM								
174th St and Southern Blvd / Boston Rd	Manhattan Bound (west side)	3	129	143	0.9	0.75	0.22	A
	Bronx Bound (east side)	3	81	347	0.8	0.75	0.38	A

Subway Line Haul Analysis

As shown in Table M-43, there are 740 out subway trips in the AM peak period and 710 in subway trips in the PM peak period. By analyzing existing ridership data at the two subway stations in the study area (East 174th Street Station and East Tremont Ave – West Farms Square Station), it was determined that 83% of the out subway trips in the AM peak period will travel southbound towards Manhattan and 81% of the in subway trips in the PM peak will arrive at the stations traveling northbound from Manhattan. Since the No. 2 subway route serves the westside of Manhattan and the No. 5 subway route serves the east side of Manhattan, it is assumed that equal numbers of the transit riders will take each line. In other words, 50% of the subway trips are assigned to the No. 2 subway and 50% are assigned to the No. 5 subway. These project layer subway trips were added to the 2022 No Action volumes to create the 2022 With-Action passengers per hour at the maximum load point.

In the AM peak period, the No. 2 southbound trains will be at capacity with a 1.00 v/c ratio, increasing from a v/c ratio of 0.98 in the No Action condition. The No. 5 southbound trains will remain below capacity in the AM peak period by increasing from a v/c ratio of 0.93 to a 0.95 v/c ratio.

In the PM peak period, the No. 2 northbound trains will remain overcapacity with a 1.05 v/c ratio, increasing from a v/c ratio of 1.02 in the No Action condition. The No. 5 northbound trains will easily remain below capacity in the PM peak period by increasing from a v/c ratio of 0.79 to a 0.81 v/c ratio.

Although the Proposed Action pushes the subways to capacity, it will only add between 2.2 and 2.6 passengers per car as shown in Table M-46. According to the 2010 CEQR Manual, the threshold to trigger a significant impact is an additional 5 passengers per car. The Proposed Action will not cause any significant impacts in the line haul analysis.

Table M-46: 2022 With-Action Subway Line Haul Conditions

Peak Hour	Route	Peak Direction	Maximum Load Point (Leaving Station)	Trains Per Hour	Cars Per Hour	Peak Hour Cap.	No Build		Build		Avg Added Pass. Per Car
							Pass. Per Hour	v/c Ratio	Pass. Per Hour	v/c Ratio	
AM	2	Southbound	72 St	12	120	13,200	12,875	0.98	13,182	1.00	2.6
	5	Southbound	Grand Central - 42 St	13	130	14,300	13,258	0.93	13,565	0.95	2.4
PM	2	Northbound	Times Sq - 42 St	11	110	12,100	12,449	1.03	12,737	1.05	2.6
	5	Northbound	59 St	13	130	14,300	11,306	0.79	11,594	0.81	2.2

Street Level Pedestrian Operations

In the 2022 with Action condition, all analyzed corners and crosswalks operate at LOS C or better with the majority of analyzed corners and crosswalks operating at LOS A. The calculated peak 15 minute volumes, average square feet per pedestrian and calculated LOS can be found in Table M-47 below. Due to additional trips created by the Proposed Action, all corners and crosswalks within the study area will continue to act at satisfactory levels of service.

Table M-47: 2022 With-Action Corner and Crosswalk Level of Service Tables

Location	Element		AM			Midday			PM		
			15-Minute Volume	SFP	LOS	15-Minute Volume	SFP	LOS	15-Minute Volume	SFP	LOS
174th St and Southern Blvd / Boston Rd	Crosswalk	North	205	74.1	A	175	83.2	A	194	75.0	A
		Northeast	205	77.5	A	175	87.6	A	194	79.0	A
		East	97	45.2	B	93	44.6	B	121	32.2	C
174th St and Hoe Ave	Crosswalk	North	260	81.4	A	169	121.7	A	255	77.5	A
		South	222	76.6	A	160	112.2	A	277	64.2	A
174th St and Vyse Ave	Crosswalk	North	265	33.9	C	158	54.7	B	248	32.9	C
		South	203	39.0	C	161	54.4	B	239	37.1	C
174th St and Bryant Ave	Crosswalk	North	102	127.4	A	85	148.9	A	143	84.9	A
		South	168	77.5	A	138	100.0	A	208	66.1	A
174th St and Longfellow Ave	Crosswalk	North	117	162.1	A	127	145.8	A	153	118.8	A
		South	163	118.8	A	163	122.4	A	206	97.7	A
174th St and Boone Ave	Crosswalk	North	92	187.7	A	168	97.9	A	146	112.7	A
		South	114	170.2	A	180	107.1	A	158	123.0	A
	Corner	Southwest	251	68.8	A	314	53.7	B	315	53.7	B
		Northwest	170	92.3	A	230	66.0	A	225	67.5	A
173rd St and Boone Ave	Crosswalk	East	92	338.7	A	150	207.7	A	145	214.9	A
		West	79	404.7	A	134	238.6	A	117	273.2	A
172nd St and Boone Ave	Crosswalk	East	60	476.1	A	112	255.0	A	105	272.0	A
		West	49	573.6	A	96	292.8	A	85	330.7	A
E Tremont Ave and Boston Rd / W Farms Rd	Crosswalk	North	67	259.0	A	52	265.3	A	62	276.7	A
		East - North	389	54.6	B	183	113.7	A	354	56.3	B
		East - South	389	53.7	B	183	110.0	A	354	54.8	B
		Southeast	259	88.8	A	183	104.1	A	302	73.7	A
		Southwest	280	41.1	B	220	43.7	B	319	34.5	C
		West	169	89.5	A	194	74.1	A	188	79.3	A
Rodman Pl and W Farms Rd	Corner	Northwest	117	60.6	A	170	41.7	B	155	45.7	B
	Crosswalk	West	58	547.6	A	96	330.8	A	89	356.8	A

In the 2022 with Action condition, all analyzed sidewalks operate at LOS B or better. The calculated peak 15 minute volumes, average square feet per pedestrian and calculated LOS can be found in Table M-48. Due to additional trips created by the Proposed Action, all sidewalks located within the study area will continue to act at satisfactory levels of service.

Table M-48: 2022 With-Action Sidewalk Level of Service Tables

Location	Sidewalk	Width (feet)	Effective Width (feet)	15-Minute Volume	PFM	Platoon Flow LOS
AM						
West Farms Rd between Rodman Pl and Tremonth Ave	West	12.7	11.7	117	0.7	B
	East	14.4	13.4	31	0.2	A
174th St between Boston Rd and Hoe Ave	North	14.0	13.0	308	1.6	B
	South	14.0	13.0	261	1.3	B
174th St between Hoe Ave and Vyse Ave	North	11.6	10.6	259	1.6	B
	South	11.6	10.6	212	1.3	B
174th St between Vyse Ave and Bryant Ave	North	11.3	10.3	271	1.8	B
	South	11.5	10.5	194	1.2	B
174th St between Bryant Ave and Longfellow Ave	North	9.9	8.9	103	0.8	B
	South	9.9	8.9	160	1.2	B
174th St between Longfellow Ave and Boone Ave	North	9.8	8.8	127	1.0	B
	South	6.7	5.7	180	2.1	B
Boone Ave between 174th St and 173rd St	West	13.7	12.7	129	0.7	B
	East	14.6	13.6	117	0.6	B
Boone Ave between 173rd St and 172nd St	West	6.8	5.8	59	0.7	B
	East	13.8	12.8	193	1.0	B
Boone Ave between 172nd St and 171st St	West	12.4	11.4	55	0.3	A
	East	12.1	11.1	64	0.4	A
MD						
West Farms Rd between Rodman Pl and Tremonth Ave	West	12.7	11.7	182	1.0	B
	East	14.4	13.4	30	0.1	A
174th St between Boston Rd and Hoe Ave	North	14.0	13.0	189	1.0	B
	South	14.0	13.0	192	1.0	B
174th St between Hoe Ave and Vyse Ave	North	11.6	10.6	175	1.1	B
	South	11.6	10.6	160	1.0	B
174th St between Vyse Ave and Bryant Ave	North	11.3	10.3	189	1.2	B
	South	11.5	10.5	157	1.0	B
174th St between Bryant Ave and Longfellow Ave	North	9.9	8.9	92	0.7	B
	South	9.9	8.9	142	1.1	B
174th St between Longfellow Ave and Boone Ave	North	9.8	8.8	178	1.4	B
	South	6.7	5.7	215	2.5	B
Boone Ave between 174th St and 173rd St	West	13.7	12.7	244	1.3	B
	East	14.6	13.6	238	1.2	B
Boone Ave between 173rd St and 172nd St	West	6.8	5.8	104	1.2	B
	East	13.8	12.8	246	1.3	B
Boone Ave between 172nd St and 171st St	West	12.4	11.4	75	0.4	A
	East	12.1	11.1	134	0.8	B
PM						
West Farms Rd between Rodman Pl and Tremonth Ave	West	12.7	11.7	160	0.9	B
	East	14.4	13.4	36	0.2	A
174th St between Boston Rd and Hoe Ave	North	14.0	13.0	279	1.4	B
	South	14.0	13.0	323	1.7	B
174th St between Hoe Ave and Vyse Ave	North	11.6	10.6	253	1.6	B
	South	11.6	10.6	261	1.6	B
174th St between Vyse Ave and Bryant Ave	North	11.3	10.3	255	1.6	B
	South	11.5	10.5	241	1.5	B
174th St between Bryant Ave and Longfellow Ave	North	9.9	8.9	143	1.1	B
	South	9.9	8.9	202	1.5	B
174th St between Longfellow Ave and Boone Ave	North	9.8	8.8	189	1.4	B
	South	6.7	5.7	244	2.9	B
Boone Ave between 174th St and 173rd St	West	13.7	12.7	216	1.1	B
	East	14.6	13.6	198	1.0	B
Boone Ave between 173rd St and 172nd St	West	6.8	5.8	95	1.1	B
	East	13.8	12.8	276	1.4	B
Boone Ave between 172nd St and 171st St	West	12.4	11.4	87	0.5	B
	East	12.1	11.1	118	0.7	B

Conclusion

In conclusion, the existing pedestrian and transit networks have low levels of pedestrian activity today. While the Proposed Action does increase pedestrian and transit volumes, the existing facilities prove adequate to handle the projected growth without creating impacts. No improvements will be needed and no significant impacts to these facilities would be expected.

Parking

In order to determine future parking demand with the Proposed Action, parking accumulation was conducted for each land use. This analysis included the removal of existing uses and the parking demand associated with these sites. As part of the Proposed Action, an additional 590 off-street parking spaces will be available in the study area. Table M-49 and Table M-50 summarize the typical weekday parking accumulation by land use and the projected parking location.

Table M-49: Proposed Action Parking Accumulation by Land Use

Hour			Residential			Local Retail			Daycare			Light Industrial			Warehouse			Autocare			Total		
			In	Out	Accum.	In	Out	Accum.	In	Out	Accum.	In	Out	Accum.	In	Out	Accum.	In	Out	Accum.	In	Out	Accum.
12:00 AM	–	1:00 AM	32	32	729	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	32	32	729
1:00 AM	–	2:00 AM	13	13	729	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	13	729
2:00 AM	–	3:00 AM	7	7	729	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7	729
3:00 AM	–	4:00 AM	4	4	729	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	729
4:00 AM	–	5:00 AM	4	4	729	0	0	0	0	0	0	0	0	0	0	0	0	-3	-2	-1	1	2	728
5:00 AM	–	6:00 AM	6	6	729	0	0	0	0	0	0	0	0	0	0	0	0	-2	-1	-2	4	5	727
6:00 AM	–	7:00 AM	4	23	710	0	0	0	2	2	0	0	0	0	0	0	0	-1	-1	-2	5	24	708
7:00 AM	–	8:00 AM	26	148	588	0	0	0	13	11	2	-8	-1	-7	-9	-2	-7	-19	-13	-8	3	143	568
8:00 AM	–	9:00 AM	57	323	322	6	6	0	13	11	4	-54	-7	-54	-78	-16	-69	-123	-67	-64	-179	250	139
9:00 AM	–	10:00 AM	57	194	185	6	6	0	6	6	4	-48	-9	-93	-25	-8	-86	-66	-44	-86	-70	145	-76
10:00 AM	–	11:00 AM	75	111	149	7	7	0	1	1	4	-21	-5	-109	-13	-9	-90	-44	-36	-94	5	69	-140
11:00 AM	–	12:00 PM	82	81	150	13	13	0	3	3	4	-17	-14	-112	-17	-17	-90	-57	-57	-94	7	9	-142
12:00 PM	–	1:00 PM	95	95	150	36	36	0	4	4	4	-24	-24	-112	-39	-39	-90	-79	-79	-94	-7	-7	-142
1:00 PM	–	2:00 PM	88	87	151	35	35	0	2	2	4	-24	-24	-112	-28	-28	-90	-59	-59	-94	14	13	-141
2:00 PM	–	3:00 PM	84	83	152	20	20	0	3	3	4	-15	-23	-104	-20	-24	-86	-47	-49	-92	25	10	-126
3:00 PM	–	4:00 PM	124	81	195	13	13	0	4	5	3	-9	-20	-93	-12	-21	-77	-42	-43	-91	78	15	-63
4:00 PM	–	5:00 PM	169	71	293	13	13	0	8	9	2	-6	-34	-65	-13	-31	-59	-59	-59	-91	112	-31	80
5:00 PM	–	6:00 PM	293	125	461	19	19	0	13	15	0	-8	-58	-15	-18	-54	-23	-100	-100	-91	199	-53	332
6:00 PM	–	7:00 PM	236	99	598	13	13	0	1	1	0	-2	-14	-3	-4	-23	-4	-15	-84	-22	229	-8	569
7:00 PM	–	8:00 PM	184	97	685	6	6	0	0	0	0	-1	-3	-1	0	-3	-1	-4	-25	-1	185	72	682
8:00 PM	–	9:00 PM	93	49	729	2	2	0	0	0	0	0	-1	0	0	-1	0	-2	-3	0	93	46	729
9:00 PM	–	10:00 PM	61	61	729	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	61	61	729
10:00 PM	–	11:00 PM	61	61	729	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	61	61	729
11:00 PM	–	12:00 AM	45	45	729	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	45	45	729

Table M-50: Proposed Action Parking Accumulation

Hour			Project Garages		
			In	Out	Accum.
12:00 AM	-	1:00 AM	26	26	590
1:00 AM	-	2:00 AM	10	10	590
2:00 AM	-	3:00 AM	6	6	590
3:00 AM	-	4:00 AM	3	3	590
4:00 AM	-	5:00 AM	3	3	590
5:00 AM	-	6:00 AM	5	5	590
6:00 AM	-	7:00 AM	5	20	590
7:00 AM	-	8:00 AM	34	129	575
8:00 AM	-	9:00 AM	65	275	479
9:00 AM	-	10:00 AM	58	167	268
10:00 AM	-	11:00 AM	68	97	159
11:00 AM	-	12:00 PM	82	81	130
12:00 PM	-	1:00 PM	116	116	131
1:00 PM	-	2:00 PM	107	107	131
2:00 PM	-	3:00 PM	90	89	132
3:00 PM	-	4:00 PM	116	83	132
4:00 PM	-	5:00 PM	156	79	166
5:00 PM	-	6:00 PM	266	134	243
6:00 PM	-	7:00 PM	203	93	376
7:00 PM	-	8:00 PM	153	84	485
8:00 PM	-	9:00 PM	76	41	555
9:00 PM	-	10:00 PM	49	49	590
10:00 PM	-	11:00 PM	49	49	590
11:00 PM	-	12:00 AM	36	36	590

Future parking conditions with the Action are expected to change in terms of both supply and demand. As shown in Table M-51, parking demand will increase due to additional residential developments and decrease due to active land uses that would be eliminated. Overall the parking supply would increase from 3,828 spaces to 4,418 spaces in the midday and from 4,261 spaces to 4,851 spaces in the overnight period. In the midday, the demand will decrease by 115 spaces. Overnight the demand will increase by 729 spaces. Utilization would decrease in the midday from 80% to 67% and increase in the overnight from 77% to 83%.

Table M-51: Proposed Action Parking Utilization

	Parking Location	Midday			Overnight		
		Occupied	Capacity	Utilization	Occupied	Capacity	Utilization
No Build Parking	On Street	2910	3453	84%	3075	3886	79%
	Off Street	149	375	40%	218	375	58%
	Total	3059	3828	80%	3293	4261	77%
Eliminated Demand due to Action	On Street	-289	--	--	0	--	--
	Off Street	0	--	--	0	--	--
	Total	-289	--	--	0	--	--
Generated Demand due to Action	On Street	0	--	--	139	--	--
	Off Street	174	--	--	590	--	--
	Total	174	--	--	729	--	--
Increased Capacity due to Action	On Street	--	0	--	--	0	--
	Off Street	--	590	--	--	590	--
	Total	--	590	--	--	590	--
Final With Action Parking Demand	On Street	2621	3453	76%	3214	3886	83%
	Off Street	323	965	34%	808	965	84%
	Total	2944	4418	67%	4022	4851	83%

SUMMARY OF CONCLUSIONS

Traffic

The traffic analyses indicate that traffic movements within four signalized intersections and one unsignalized intersection in AM peak period, five signalized intersections in the Mid-day peak period, and five signalized intersections and one unsignalized intersection in the PM peak period would be subject to significant traffic impacts. Please refer to the Chapter 3, Mitigation for further discussion of the mitigation measures which could be employed to eliminate these impacts.

Transit and Pedestrian

The existing pedestrian and transit networks have low levels of pedestrian activity today. While the Proposed Action does increase pedestrian and transit volumes, the existing facilities prove adequate to handle the projected growth without creating impacts. No significant transit or pedestrian impacts are expected.

Parking

Future parking conditions with the Proposed Action are expected to change in terms of both supply and demand. Overall the parking supply would increase from 3,828 spaces to 4,418 spaces in the midday and from 4,261 spaces to 4,851 spaces in the overnight period. In the midday, the demand will decrease by 115 spaces. Overnight the demand will increase by 729 spaces. Final demand with the Proposed Action will be 2,944 parking spaces and 4,022 parking spaces in the midday and overnight, respectively. Utilization would decrease in the midday from

80% to 67% and increase in the overnight from 77% to 83%. There are no parking significant impacts associated with the Proposed Action.