Chapter 13: Transportation

A. INTRODUCTION

As described in detail in Chapter 1, "Project Description," the Office of the Deputy Mayor for Economic Development (ODMED), in coordination with the New York City Economic Development Corporation (NYCEDC) and the City Of New York Department of Housing Preservation & Development (HPD), is sponsoring initiatives to allow mixed-use development on 10 City-owned sites in Manhattan Community District 3 on the Lower East Side. The project site also includes demapped sections of Broome and Suffolk Streets that would be mapped as City streets and sections of Clinton and Delancey Streets that would be demapped.

The proposed actions would allow for a range of new developments including residential, office, community facility, hotel, local retail, and destination retail uses. While the actual development will depend on developer proposals and future market conditions, the City has developed a maximum development envelope, or reasonable worst-case development scenario (RWCDS). The transportation analyses are based on the RWCDS which describes various development components that represent a "worst-case" for the Draft Generic Environmental Impact Statement (DGEIS) technical analyses.

This chapter examines the potential effects of the proposed development on the study area transportation systems.

PRINCIPAL CONCLUSIONS

TRAFFIC

In accordance with *City Environmental Quality Review (CEQR) Technical Manual* (January 2012 edition) guidelines, a RWCDS was developed (discussed in detail later in this chapter) to estimate the peak hour vehicular and pedestrian volumes expected as a result of the proposed actions. In the weekday AM peak hour, the RWCDS would generate 209 vehicle trips arriving at the project sites and 162 vehicle trips leaving the project sites, for a total of 371 vehicle trips. In the weekday midday peak hour, it would generate 267 inbound vehicle trips plus 260 outbound vehicle trips for a total of 527 vehicle trips. In the weekday PM peak hour, it would generate 244 inbound vehicle trips plus 296 outbound vehicle trips for a total of 540 vehicle trips. In the Saturday peak hour, it would generate 250 vehicle trips arriving and 246 vehicle trips leaving, for a total of 496 vehicle trips. Although these volumes are significantly lower than those for several other major EISs in New York City, the number of development parcels, the displacement of existing parking facilities, and the critical nature of potential issues along key corridors like Delancey Street, Grand Street, Essex Street, and others has made the number of intersections analyzed in this DGEIS comparable to other large-scale EISs in New York City.

Of the 30 study area intersections analyzed (25 signalized and five unsignalized intersections), the proposed actions would cause significant traffic impacts at nine intersections in the weekday AM peak hour, seven in the weekday midday peak hour, 18 in the weekday PM peak hour, and

10 in the Saturday peak hour. Traffic capacity improvements that would be needed to mitigate these significant impacts are addressed in Chapter 21, "Mitigation Measures."

The New York City Department of Transportation (NYCDOT) is currently developing a Delancey Street corridor plan to improve traffic and pedestrian safety. Incorporation of the plan may result in some changes to significant traffic impact locations or time periods when impacts occur. Details related to this plan would be included in the FGEIS and the effects of the plan on traffic and pedestrian conditions will be addressed between completion of the DGEIS and FGEIS should the plans be adopted prior to release of the FGEIS.

TRANSIT

The preliminary screening assessment summarized below concluded that a detailed examination of subway line-haul analysis is not warranted. However, bus line-haul analyses and a detailed analysis of station elements at the Delancey Street/Essex Street subway station (F, J, M, and Z lines) were prepared. Based on the result of the transit analysis, the proposed actions would not result in significant adverse impacts at the Essex Street/Delancey Street station during any analysis peak periods.

The proposed actions would result in significant adverse impacts on bus line-haul levels on the southbound M9 and westbound M14A during the AM peak period, and the northbound and southbound M9 during the PM peak period. Potential measures to mitigate the projected significant adverse bus line-haul impacts are described in Chapter 21, "Mitigation Measures."

Based on the transit analysis of the Essex Street/Delancey Street station, no potentially significant adverse subway station impacts at the Essex Street/Delancey Street station have so far been determined during the peak analysis periods. At the direction of the Metropolitan Transportation Authority-New York City Transit (MTA NYCT), analyses of the following interior transfer and platform stairways will be undertaken for the Final Generic Environmental Impact Statement (FGEIS):

- PL4 (A61) - platform stair at uptown J/M/Z platform;
- P9 (N525) - leading to uptown F train platform;
- PL2 & PL9 (leading to PL11B on uptown F train platform) – Brooklyn bound J/M/Z platform; and
- PL18 (connecting to downtown F train platform) - Brooklyn bound J/M/Z platform.

As part of incorporating these stairway elements in the subway analyses, the distribution of project generated subway trips will be refined to reflect the connectivity of the interior and platform stairways with the street-level stairways analyzed in this DGEIS.

The above amendments to the analysis may result in significant adverse subway station impacts that are being conservatively disclosed in this DGEIS. Should the results of the analyses identify significant adverse impacts, measures to increase capacity would be recommended to mitigate such impacts. The practicability and feasibility of such mitigation measures will be further assessed in the FGEIS.

PEDESTRIANS

Weekday and Saturday peak period pedestrian conditions were evaluated at key sidewalk, corner reservoir, and crosswalk elements at 22 area intersections. Under the RWCDS, significant adverse pedestrian impacts are anticipated for four pedestrian analysis locations at Delancey

Street and Essex Street including the west crosswalk during the midday peak period, the east crosswalk during the Saturday peak period, the west sidewalk of Essex Street between Delancey Street and Broome Street during the AM and midday peak periods, and the east sidewalk of Essex Street between Delancey Street and Rivington Street during the Saturday peak period. Measures that can be implemented to mitigate these significant adverse pedestrian impacts are discussed in Chapter 21, "Mitigation Measures."

VEHICULAR AND PEDESTRIAN SAFETY

Accident data for the study area intersections were obtained from NYSDOT for the time period between February 29, 2008 and February 28, 2011. The data obtained quantify the total number of reportable accidents (involving fatality, injury, or more than $1,000 in property damage), fatalities, and injuries during the study period, as well as a yearly breakdown of pedestrian- and bicycle-related accidents at each location. During this three-year period, a total of 587 reportable and non-reportable accidents, 3 fatalities, 475 injuries, and 175 pedestrian/bicyclist-related accidents occurred at the study area intersections; ten study area intersections have been defined as high pedestrian accident locations in the 2008 to 2011 period. These intersections are Allen Street at Delancey Street, Clinton Street at Delancey Street, Essex Street at Delancey Street, Norfolk Street at Delancey Street, Suffolk Street at Delancey Street, Avenue A at Houston Street, Bowery at Houston Street, Allen Street at Grand Street, Clinton Street at Grand Street, and Essex Street at Grand Street. NYCDOT is currently developing a Delancey Street corridor plan to improve traffic and pedestrian safety. Once this plan is finalized and implemented, it is expected that the pedestrian safety conditions at the high accident locations along the Delancey Street corridor would improve. Details related to this plan would be included in the FGEIS (should the plan be adopted prior to the release of the FGEIS) and the effects of the plan on traffic and pedestrian conditions will be addressed between completion of the DGEIS and FGEIS. For the remaining high pedestrian accident locations, measures that can be implemented to improve vehicular and pedestrian safety include installation of crosswalk countdown timers, restriping faded crosswalks, and installation of warning signs to alert drivers about the high pedestrian activities at the intersections.

PARKING

The proposed actions are expected to include a total of up to 500 off-street parking spaces within Sites 2, 3, 4, and 5 to meet the project's demand and to replace the number of parking spaces that could be lost as a result of the proposed actions. Parking demands generated by the proposed actions during peak traffic hours would be fully accommodated by the parking garages. The maximum project-generated demand of 257 spaces would be reached during 9-10 AM and 2-3 PM on a typical weekday. The maximum accumulation of 254 spaces for a Saturday would occur between 4-5 PM. In the existing conditions, there are approximately 507 parking spaces (approximately 400 public spaces, and approximately 100 spaces being used by commercial vehicles such as vans and trucks) within surface lots that currently occupy Sites 3, 4, 5, and 6. Approximately 400 public spaces on these four sites would be displaced as part of the proposed actions. In the garages developed under the proposed actions, there would be a surplus capacity of about 240 to 250 spaces which would serve to accommodate a portion of the displaced parkers. Approximately 150 vehicles would need to find parking elsewhere in the area. These vehicles would be accommodated within the 375 to 625 off-street spaces that would be available within off-street lots/garages in the study area.

Among the proposed actions of the ULURP application are four special permits for public parking facilities on Sites 2, 3, 4 and 5. Consistent with the overall limit in the number of spaces

that would be permitted under the LSGD, the DGEIS analyzed up to 500 off-street parking spaces in accordance with the *CEQR Technical Manual*. Given that the special permits would allow for flexibility with respect to the distribution of these spaces among Sites 2, 3, 4 and 5, an assessment was conducted to project conditions that could arise if the parking spaces were distributed only on two or three of the sites. That assessment found that the resulting conditions would be generally similar to those in the DGEIS and affected locations could require standard traffic improvements. Based on this analysis, it was determined that the streets providing access to the public parking garages would be adequate to handle traffic generated thereby.

B. PRELIMINARY ANALYSIS METHODOLOGY

The *CEQR Technical Manual* describes a two-tier screening procedure for the preparation of a "preliminary analysis" to determine if quantified analyses of transportation conditions are warranted. As discussed below, the preliminary analysis begins with a trip generation analysis (Level 1) to estimate the volume of person and vehicle trips attributable to the proposed actions. According to the *CEQR Technical Manual*, if the proposed actions are expected to result in fewer than 50 peak hour vehicle trips and fewer than 200 peak hour transit or pedestrian trips, further quantified analyses are not warranted. When these thresholds are exceeded, detailed trip assignments (Level 2) are performed to estimate the incremental trips that could be incurred at specific transportation elements and to identify potential locations for further analyses. If the trip assignments show that the proposed actions would generate 50 or more peak hour vehicle trips at an intersection, 200 or more peak hour subway trips at a station, 50 or more peak hour bus trips in one direction along a bus route, or 200 or more peak hour pedestrian trips traversing a pedestrian element, then further quantified analyses may be warranted to assess the potential for significant adverse impacts on traffic, transit, pedestrians, parking, and vehicular and pedestrian safety.

C. LEVEL 1 SCREENING ASSESSMENT

A Level 1 trip generation screening assessment was conducted to estimate the volume of person and vehicle trips by mode expected to be generated by the proposed actions during the weekday AM, midday, PM, and Saturday peak hours for the RWCDS. These estimates were then compared to the CEQR analysis thresholds to determine if a Level 2 screening and/or quantified analyses would be warranted.

BACKGROUND

The proposed development would include residential, retail and office space, community facility use, as well as provisions for parking and publicly accessible open space. This development area is the largest underdeveloped City-owned site south of 96th Street. It consists of 10 sites located in Community Board 3 generally along Delancey and Essex Streets on the Lower East Side. Five of the sites (Sites 2, 3, 4, 5, and 6) are located within the former Seward Park Extension Urban Renewal Area (SPEURA). Four sites (Sites 7, 8, 9, and 10) are located within the 2008 East Village/Lower East Side Rezoning area. The tenth site (Site 1) is in neither.

The program for the proposed development on Sites 1–6 and 8–10 is expected to include a variety of residential and commercial uses, such as mixed-income residential, retail, other commercial uses such as office space, parking, and publicly accessible open space. Site 7 would retain its current function as a municipal parking garage that will support the new development across all development sites.

TRANSPORTATION PLANNING ASSUMPTIONS

As described in Chapter 1, "Project Description," the RWCDS includes various development components that represent a "worst-case" for the DGEIS technical analyses. The proposed actions would allow for a range of new developments. While the actual development will depend on developer proposals and future market conditions, the City has developed a maximum development envelope, or RWCDS, for the purpose of the DGEIS technical analysis.

Under a RWCDS, it is assumed that the proposed actions would result in approximately 951,000 square feet of residential development (comprising 900 dwelling units, of which half would be affordable units); up to approximately 632,300 square feet of commercial space; up to approximately 114,000 gsf of community facility or cultural uses; approximately 500 parking spaces; and an approximately 10,000 square-foot publicly accessible open space. The commercial space would include up to approximately 235,000 square feet of ground-floor retail, an approximately 29,150 square-foot public market, an approximately 65,000 square-foot supermarket, an approximately 97,500 square-foot hotel, and approximately 283,400 square feet of non-specific commercial uses.

For trip generation purposes in the DGEIS analysis, the commercial space was divided into approximately 36,300 gsf of commercial office use, 146,900 gsf of local retail space (including 29,150 gsf of public market space and 65,000 gsf of supermarket space), 351,600 gsf of destination retail space, 114,000 gsf of community facility uses (including medical office, community office, and general community facility space), and a 97,500 square-foot hotel (comprising approximately 200 hotel rooms). The RWCDS program is for illustrative purposes only; it does not represent an actual development program. The distribution of development space among the development sites is summarized in **Table 13-1**.

Table 13-1
Reasonable Worst-Case Development Scenario (RWCDS) Program

Use		Site 1	Site 2	Site 3	Site 4	Site 5	Site 6	Site 7	Site 8	Site 9	Site 10	Total
	SF	74,951		168,239	256,663	229,603	88,101	--	37,862	75,361	20,402	951,182
Residential	Units	71		159	243	217	83	--	36	71	20	900
	SF		97,500					--				97,450
Hotel	Rooms		200					--				200
Office	SF		36,304					--				36,304
Local Retail	SF						18,925	--	8,790	18,807	6,240	52,762
Destination Retail	SF	60,731	102,294	71,019	69,688	47,855		--				351,587
Public Market	SF		29,152					--				29,152
Supermarket	SF		65,000					--				65,000
Medical Office	SF		25,000	15,000	20,000	34,000		--				94,000
Community Office	SF						10,000	--				10,000
Community Facility	SF	5,000					5,000	--				10,000
Total	SF	140,682	355,200	254,258	346,351	311,458	122,026	--	46,652	94,168	26,642	1,697,437

Note: The RWCDS program is for illustrative purposes only; it does not represent an actual development program.

Travel demand projections were prepared for each of the proposed development components for the weekday AM, midday, PM, and Saturday peak hours. The trips generated by the proposed development were compared to the above screening thresholds to determine if additional quantified analyses are warranted. **Table 13-2** shows the transportation planning assumptions used in calculating the trip estimates. Consistent with CEQR requirements, these assumptions are based on travel demand factors from established and published sources including the *CEQR Technical Manual*, *ITE Trip Generation 8th Edition*, 2000 U.S. Census data, and various approved studies.

Table 13-2
Travel Demand Assumptions

Use	Residential				Hotel				Office				Local Retail				Destination Retail				Public Market/ Supermarket				Medical Office (Staff)				Medical Office (Visitors)				Community Office				Community Facility			
Daily Person Trip	(1)				(1)				(1)				(1)				(1)				(1)(2)				(10)				(10)				(1)				(10)			
Generation Rate	8.075			9.6	9.4			9.4	18.0			3.9	205			240	78.2			92.5	175			231	10.0			4.3	33.6			14.5	18.0			3.9	48			19
	Trips / Unit				Trips / Room				Trips / KSF				Trips / KSF				Trips / KSF				Trips / KSF				Trips / KSF				Trips / KSF				Trips / KSF				Trips / KSF			
Trip Linkage	0%				0%				0%				25%				25%				25%				0%				0%				0%				0%			
	AM	**MD**	**PM**	**SAT**	**AM**	**MD**	**PM**	**SAT**	**AM**	**MD**	**PM**	**SAT**	**AM**	**MD**	**PM**	**SAT**	**AM**	**MD**	**PM**	**SAT**	**AM**	**MD**	**PM**	**SAT**	**AM**	**MD**	**PM**	**SAT**	**AM**	**MD**	**PM**	**SAT**	**AM**	**MD**	**PM**	**SAT**	**AM**	**MD**	**PM**	**SAT**
Temporal	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(1)	(1)	(1)	(1)	(10)	(10)	(10)	(10)
	10%	5%	11%	8%	8%	14%	13%	9%	12%	15%	14%	17%	3%	19%	10%	10%	3%	9%	9%	11%	5%	6%	10%	9%	24%	17%	24%	17%	6.0%	9.0%	5.0%	9%	12%	15%	14%	17%	7%	10%	7%	14%
Direction	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(6)	(4)	(4)	(4)	(7)	(7)	(7)	(8)	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(4)	(4)	(4)	(4)	(10)	(10)	(10)	(10)
In	15%	50%	70%	50%	39%	54%	65%	56%	96%	48%	5%	57%	50%	50%	50%	50%	61%	55%	47%	52%	59%	46%	47%	51%	94%	50%	12%	50%	94%	50%	12%	50%	96%	48%	5%	57%	61%	55%	29%	49%
Out	85%	50%	30%	50%	61%	46%	35%	44%	4%	52%	95%	43%	50%	50%	50%	50%	39%	45%	53%	48%	41%	54%	53%	49%	6%	50%	88%	50%	6%	50%	88%	50%	4%	52%	95%	43%	39%	45%	71%	51%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Modal Split	(3)	(3)	(3)	(3)	(4)	(4)	(4)	(4)	(5)	(4)	(5)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(9)	(9)	(9)	(9)	(5)(11)	(5)(11)	(5)(11)	(5)(11)	(10)	(10)	(10)	(10)	(5)	(4)	(5)	(4)	(10)	(10)	(10)	(10)
Auto	11%	11%	11%	11%	9%	8%	9%	9%	27%	2%	27%	2%	2%	2%	2%	2%	9%	9%	9%	9%	2%	2%	2%	2%	28%	28%	28%	28%	25%	25%	25%	25%	27%	2%	27%	2%	5%	5%	5%	5%
Taxi	2%	2%	2%	2%	18%	15%	18%	18%	1%	3%	1%	3%	3%	3%	3%	3%	4%	4%	4%	4%	3%	3%	3%	3%	1%	1%	1%	1%	25%	25%	25%	25%	1%	3%	1%	3%	1%	1%	1%	1%
Subway	49%	49%	49%	49%	24%	13%	24%	24%	37%	6%	37%	6%	6%	6%	6%	6%	29%	20%	29%	20%	6%	6%	6%	6%	39%	39%	39%	39%	29%	29%	29%	29%	37%	6%	37%	6%	3%	3%	3%	3%
Bus	9%	9%	9%	9%	3%	3%	3%	3%	8%	6%	8%	6%	6%	6%	6%	6%	8%	8%	8%	8%	6%	6%	6%	6%	8%	8%	8%	8%	11%	11%	11%	11%	8%	6%	8%	6%	6%	6%	6%	6%
Walk	29%	29%	29%	29%	46%	61%	46%	46%	23%	83%	23%	83%	83%	83%	83%	83%	51%	59%	51%	59%	83%	83%	83%	83%	24%	24%	24%	24%	10%	10%	10%	10%	23%	83%	23%	83%	85%	85%	85%	85%
Work at Home	0%	0%	0%	0%	0%	0%	0%	0%	4%	0%	4%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	4%	0%	4%	0%	0%	0%	0%	0%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Vehicle Occupancy	(3)(4)	(3)(4)	(3)(4)	(3)(4)	(4)	(4)	(4)	(4)	(4)(5)	(4)(5)	(4)(5)	(4)(5)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(9)	(9)	(9)	(9)	(4)(5)	(4)(5)	(4)(5)	(4)(5)	(10)	(10)	(10)	(10)	(4)(5)	(4)(5)	(4)(5)	(4)(5)	(10)	(10)	(10)	(10)
Auto	1.18	1.18	1.18	1.18	1.40	1.40	1.40	1.40	1.25	1.25	1.25	1.25	1.65	1.65	1.65	1.65	2.00	2.00	2.00	2.00	1.65	1.65	1.65	1.65	1.25	1.25	1.25	1.25	1.65	1.65	1.65	1.65	1.25	1.25	1.25	1.25	1.65	1.65	1.65	1.65
Taxi	1.40	1.40	1.40	1.40	1.80	1.80	1.80	1.80	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	2.00	2.00	2.00	2.00	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.20	1.20	1.20	1.20	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40
Daily Delivery Trip	(1)				(4)				(1)				(1)				(1)				(9)				(10)				(10)				(1)				(10)			
Generation Rate	0.06			0.02	0.06			0.01	0.32			0.01	0.35			0.04	0.35			0.04	0.35			0.04	0.29			0.0	0.29			0.0	0.32			0.01	0.29			0.04
	Delivery Trips / Unit				Delivery Trips / Room				Delivery Trips / KSF				Delivery Trips / KSF				Delivery Trips / KSF				Delivery Trips / KSF				Delivery Trips / KSF				Delivery Trips / KSF				Delivery Trips / KSF				Delivery Trips / KSF			
	AM	**MD**	**PM**	**SAT**	**AM**	**MD**	**PM**	**SAT**	**AM**	**MD**	**PM**	**SAT**	**AM**	**MD**	**PM**	**SAT**	**AM**	**MD**	**PM**	**SAT**	**AM**	**MD**	**PM**	**SAT**	**AM**	**MD**	**PM**	**SAT**	**AM**	**MD**	**PM**	**SAT**	**AM**	**MD**	**PM**	**SAT**	**AM**	**MD**	**PM**	**SAT**
Delivery Temporal	(1)	(1)	(1)	(1)	(4)	(4)	(4)	(4)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(9)	(9)	(9)	(9)	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(1)	(1)	(1)	(1)	(10)	(10)	(10)	(10)
	12%	9%	2%	9%	12%	9%	1%	9%	10%	11%	2%	11%	8%	11%	2%	11%	8%	11%	2%	11%	8%	11%	2%	11%	9.6%	11.0%	1.0%	0%	9.6%	11%	1.0%	0%	10%	11%	2%	11%	10%	11%	1%	0%
Delivery Direction	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
In	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%
Out	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Sources:
(1) 2010 CEQR Technical Manual
(2) Assumed supermarket use.
(3) ACS 2005-2009 5-year estimates.
(4) Western Rail Yard EIS
(5) 2000 Census Reverse Journey-to-Work Data.
(6) ITE Trip Generation 8th Edition, Land Use Code: 820, P1501.
(7) 250 East 57th Street Redevelopment EAF.
(8) ITE Trip Generation 8th Edition, Land Use Code: 850, P1580.
(9) Same as local retail use.
(10) Jamaica Plan FEIS
(11) Work at home mode excluded from modal split estimations

TRIP GENERATION

RESIDENTIAL

For the residential component, trip generation rates of 8.075 daily person trips per dwelling unit for weekday and 9.6 daily person trips per dwelling unit for Saturday, and a temporal distribution of 10 percent for the weekday AM peak hour, 5 percent for the midday peak hour, 11 percent for the PM peak hour, and 8 percent for the Saturday peak hour were obtained from the *CEQR Technical Manual*. A directional distribution of 15 percent "in" during the weekday AM peak hour, 50 percent "in" during the midday peak hour, 70 percent "in" during the PM peak hour, and 50 percent "in" during the Saturday peak hour were also obtained from the *Western Rail Yard FEIS.* Modal split information (11 percent by auto, 2 percent by taxi, 49 percent by subway 9 percent by bus, 29 percent by walk) and auto occupancy (1.18 persons per auto) for the weekday and Saturday peak hours were obtained from the *American Community Survey (ACS) 2005-2009*. A taxi occupancy rate of 1.40 passengers per taxi was obtained from the *Western Rail Yard FEIS*.

Daily truck trip generation rates of 0.06 trips per dwelling unit for weekday and 0.02 trips per dwelling unit for Saturday were obtained from the *CEQR Technical Manual.* Temporal distribution (12 percent during the weekday AM peak hour, 9 percent during the midday peak hour, 2 percent during the PM peak hour, and 9 percent during the Saturday peak hour) and directional distribution assumptions (50 percent "in" during all peak hours) were also obtained from the *CEQR Technical Manual.*

HOTEL

A daily person trip generation rate of 9.4 persons per room for weekday and Saturday, and a temporal distribution of 8 percent for the weekday AM peak hour, 14 percent for the midday peak hour, 13 percent for the PM peak hour, and 9 percent for the Saturday peak hour were obtained from the *CEQR Technical Manual*. Peak hour directional distribution (39 percent, 54 percent, 65 percent, and 56 percent "in" during the weekday AM, midday, PM and Saturday peak hours, respectively), modal splits (9 percent by auto, 18 percent by taxi, 24 percent by subway, 3 percent by bus, and 46 percent walk during weekday AM and PM peak hours and during the Saturday peak hour; 8 percent by auto, 15 percent by taxi, 13 percent by subway, 3 percent by bus, and 61 percent walk during the weekday midday peak hour), and vehicle occupancy rates (1.4 persons per auto and 1.8 passengers by taxi) were all obtained from the *Western Rail Yard FEIS.*

Daily truck trip generation rates of 0.06 trips per room for weekday and 0.01 trips per room for Saturday, and a temporal distribution of 12 percent during the weekday AM peak hour, 9 percent during the midday peak hour, 1 percent during the PM peak hour, and 9 percent during the Saturday peak hour) and were obtained from the *Western Rail Yard FEIS*. Directional distribution assumptions (50 percent "in" during all peak hours) were based on the *CEQR Technical Manual.*

OFFICE/COMMUNITY OFFICE

For office and community office space, daily trip generation rates of 18 person trips per 1,000 square feet for weekday and 3.9 daily person trips per 1,000 square feet for Saturday, and a temporal distribution of 12 percent for the weekday AM peak hour, 15 percent for the midday peak hour, 14 percent for the PM peak hour, and 17 percent for the Saturday peak hour were obtained from the *CEQR Technical Manual.* Directional distributions of 96 percent "in" during the weekday AM peak hour, 48 percent "in" during the midday peak hours, 5 percent "in during the PM peak hour, and 57 percent "in" during the Saturday peak hour were obtained from the *Western Rail Yard FEIS*. Weekday AM and PM peak hour modal splits of 27 percent by auto, 1 percent by taxi, 37 percent subway, 8

percent by bus, 23 percent by walk, and 4 percent working at home (not an external trip) were obtained from 2000 Census reverse journey-to-work data. Weekday midday and Saturday peak hour modal splits of 2 percent by auto, 3 percent by taxi, 6 percent by subway, 6 percent by bus, and 83 percent by walk were obtained from the *Western Rail Yard FEIS*, and reflect a substantially higher walk share and slightly higher taxi share typical for the middle of the work day and Saturdays. Auto occupancies (1.25 persons per auto) were obtained from the 2000 Census' reverse-journey-to work data, and taxi occupancies (1.40 passengers per taxi) were obtained from the *Western Rail Yard FEIS.*

Daily truck trip generation rates of 0.32 trips per 1,000 square feet for weekday and 0.01 trips per 1,000 square feet for Saturday were obtained from the *CEQR Technical Manual*. Temporal distribution (10 percent during the weekday AM peak hour, 11 percent during the midday peak hour, 2 percent during the PM peak hour, and 11 percent during the Saturday peak hour) and directional distribution assumptions (50 percent "in" during all peak hours) were also obtained from the *CEQR Technical Manual.*

LOCAL RETAIL

For local retail, daily person trip generation rates of 205 person trips per 1,000 square feet for weekday and 240 trips per 1,000 square feet for Saturday, and a temporal distribution of 3 percent for the weekday AM peak hour, 19 percent for the midday peak hour, 10 percent for the PM peak hour, and 10 percent for the Saturday peak hour were obtained from the *CEQR Technical Manual*. A directional distribution of 50 percent "in" during all peak hours, a modal split of 2 percent by auto, 3 percent by taxi, 6 percent by subway, 6 percent by bus, and 83 percent by walk, and vehicle occupancy rates of 1.65 persons per auto and 1.4 passengers by taxi during all peak hours were all obtained from the *Western Rail Yard FEIS*. A 25 percent linked trip credit was assumed for all local retail trips.

For truck deliveries, a daily trip generation rate of 0.35 trips per 1,000 square feet for weekday and 0.04 trips per 1,000 square feet for Saturday were obtained from the *CEQR Technical Manual*. Temporal distribution (8 percent during the weekday AM peak hour, 11 percent during the midday peak hour, 2 percent during the PM peak hour, and 11 percent during the Saturday peak hour) and directional distribution assumptions (50 percent "in" during all peak hours) were also obtained from the *CEQR Technical Manual.*

DESTINATION RETAIL

For the destination retail component, trip generation rates of 78.2 person trips per 1,000 square feet for weekday and 92.5 trips per 1,000 square feet for Saturday, and a temporal distribution of 3 percent for the weekday AM peak hour, 9 percent for the midday peak hour, 9 percent for the PM peak hour, and 11 percent for the Saturday peak hour were obtained from the *CEQR Technical Manual*. A directional distribution for the weekday AM peak hour (61 percent "in") was obtained from *ITE Trip Generation* while weekday midday and PM, and Saturday directional distributions (55, 47, and 52 percents "in", respectively) were obtained from the *Western Rail Yard FEIS*. A modal split of 9 percent by auto, 4 percent by taxi, 29 percent by subway, 8 percent by bus, and 51 percent by walk during the weekday AM, weekday PM, and Saturday peak hours was also obtained from the *Western Rail Yard FEIS*. The weekday midday peak hour would have a similar modal split but with a slightly higher walk share (59 percent) and a slightly lower subway share (20 percent). Vehicle occupancy rates (2.0 persons per auto and taxi) were obtained from the *Western Rail Yard FEIS* as well. A 25 percent linked trip credit was assumed for all destination retail trips.

Daily truck trip generation rates were similar to local retail.

PUBLIC MARKET

For the public market space, a daily trip generation of 175 person trips per 1,000 square feet for weekday and 231 person trips per 1,000 square feet for Saturday, and temporal distributions of 5 percent during the weekday AM peak hour, 6 percent during the midday peak hour, 10 percent during the PM peak hour, and 9 percent during the Saturday peak hour were based on the *CEQR Technical Manual* rates for supermarket use. Weekday directional distributions of 59 percent "in" during the AM peak hour, 46 percent "in" during the midday peak hour, and 47 percent "in" during the PM peak hour were obtained from the *250 East 57th Street Redevelopment EAF*, while a Saturday peak hour distribution of 51 percent "in" was obtained from *ITE Trip Generation*. Weekday and Saturday peak hour modal splits (2 percent by auto, 3 percent by taxi, 6 percent by subway, 6 percent by bus, and 83 percent by walk) and vehicle occupancies (1.65 persons per auto and 1.4 passengers per taxi) were assumed similar to local retail use.

Truck delivery trip generation rates for the public market component were also assumed to be similar to local retail.

MEDICAL OFFICE (STAFF)

For medical office staff, daily trip generation rates (10 person trips per 1,000 square feet for weekday and 4.3 person trips per 1,000 square feet for Saturday), temporal distribution (24, 17, and 24 percent during weekday AM, midday, and PM peak hours, respectively; 17 percent during the Saturday peak hour) and directional distribution percentages (94 percent "in" during the weekday AM peak hour, 50 percent "in" during the midday peak hour, 12 percent "in" during the PM peak hour, and 50 percent "in" during the Saturday peak hour) were all obtained from the *Jamaica Plan FEIS*. A modal split of 28 percent by auto, 1 percent by taxi, 39 percent by subway, 8 percent by bus, and 24 percent by walk was based on US Census 2000 journey-to-work data but was slightly modified to exclude 'work from home'. An auto occupancy rate of 1.25 persons per auto was based on US Census 2000 data, and a taxi occupancy rate of 1.4 passengers per taxi was obtained from the *Western Rail Yard FEIS*.

For truck delivery trips, a weekday daily trip generation rate of 0.29 trips per 1,000 square feet and a temporal distribution of 9.6 percent during the weekday AM peak hour, 11 percent during the midday peak hour, and 1 percent during the PM peak hour were obtained from the *Jamaica Plan FEIS*. No truck delivery trips would be generated on Saturday.

MEDICAL OFFICE (VISITORS)

All trip generation rates and percentages for medical office visitors were obtained from the *Jamaica Plan FEIS*. This includes a daily trip generation rate of 33.6 person trips per 1,000 square feet for weekday and 14.5 person trips per 1,000 square feet for Saturday, and a temporal distribution of 6 percent during the weekday AM peak hour, 9 percent during the midday peak hour, 5 percent during the PM peak hour, and 9 percent during the Saturday peak hour. A directional distribution of 94 percent "in" during the weekday AM peak hour, 50 percent "in" during the midday peak hour, 12 percent "in" during the PM peak hour, and 50 percent "in" during the Saturday peak hour was used, and a modal split of 25 percent by auto, 25 percent by taxi, 29 percent by subway, 11 percent by bus, and 10 percent by walk was applied. Vehicle occupancies used for medical office visitors were 1.65 persons per auto and 1.4 passengers per taxi.

Truck delivery trip generation rates for medical office visitors were the same as medical office staff, and were also obtained from the *Jamaica Plan FEIS*.

COMMUNITY FACILITY

To calculate trips generated by community facility space, rates from the *Jamaica Plan FEIS* were used. This included a weekday trip generation rate of 48 daily person trips per 1,000 square feet and a Saturday rate of 19 person trips per 1,000 square feet. A temporal distribution of 7 percent during the weekday AM peak hour, 10 percent during the midday peak hour, 7 percent during the PM peak hour, and 14 percent during the Saturday peak hour, and directional splits of 61 percent "in" during the weekday AM peak hour, 55 percent "in" during the midday peak hour, 29 percent "in" during the PM peak hour, and 49 percent "in" during the Saturday peak hour were used. A modal split of 5 percent by auto, 1 percent by taxi, 3 percent by subway, 6 percent by bus, and 85 percent by walk was applied, and vehicle occupancies of 1.65 persons per auto and 1.4 passengers per taxi were used.

For delivery trips, a weekday trip generation rate of 0.29 daily trips per 1,000 square feet for weekday and 0.04 daily trips per 1,000 square feet on a Saturday, and a temporal distribution of 10 percent, 11 percent, 1 percent, and 0 percent during the weekday AM, midday and PM, and Saturday peak hours, respectively, were all obtained from the *Jamaica Plan FEIS*.

Table 13-3 summarizes the person trips generated by the proposed actions. As presented in **Table 13-3**, the proposed actions would generate approximately 2,904, 5,379, 5,477, and 6,204 person trips, which is the summation of all trips by all modes, during the weekday AM, midday, PM, and Saturday peak hours, respectively. The proposed actions would also generate approximately 371, 527, 540, and 496 vehicle trips, including both auto trips and taxi trips, during the weekday AM, midday, PM, and Saturday peak hours, respectively (see **Table 13-4)**. These trips would be distributed among the project sites comprising the proposed overall development. Since the projected trips would exceed the CEQR analysis thresholds for vehicular traffic, transit, and pedestrians, a Level 2 screening assessment, as detailed below, was undertaken to identify specific locations where additional detailed analyses would be warranted.

D. LEVEL 2 SCREENING ASSESSMENT

A Level 2 screening assessment involves the distribution and assignment of projected trips to the transportation network and the determination of whether specific locations are expected to incur incremental trips exceeding CEQR thresholds. If the results of this analysis show that the proposed actions would generate 50 or more peak hour vehicle trips through an intersection, 50 or more peak hour bus riders on a bus route in a single direction, 200 or more peak hour subway passengers per station element, or 200 or more peak hour pedestrian trips per pedestrian element, further quantified analyses may be warranted to evaluate the potential for significant adverse traffic, transit, pedestrian, and parking impacts. For the proposed actions, trips projected for the 2022 full build-out, representing the maximum amount of project-generated trips under the RWCDS, were allocated to the area's roadways, transit facilities, and pedestrian elements to identify the various study areas for which detailed analyses of potential impacts would be prepared.

Table 13-3
Trip Generation Summary - Person Trips

Use		Peak Hour		Person Trips					
				Auto	Taxi	Subway	Bus	Walk	Total
Residential	900 Dwelling Units	AM	In	12	2	53	10	32	109
			Out	68	12	303	56	179	618
			Total	**80**	**14**	**356**	**66**	**211**	**727**
		MD	In	20	4	89	16	53	182
			Out	20	4	89	16	53	182
			Total	**40**	**8**	**178**	**32**	**106**	**364**
		PM	In	62	11	274	50	162	559
			Out	26	5	118	22	70	241
			Total	**88**	**16**	**392**	**72**	**232**	**800**
		SAT	In	38	7	169	31	100	345
			Out	38	7	169	31	100	345
			Total	**76**	**14**	**338**	**62**	**200**	**690**
Hotel	200 Rooms	AM	In	5	11	14	2	27	59
			Out	8	17	22	3	42	92
			Total	**13**	**28**	**36**	**5**	**69**	**151**
		MD	In	11	21	18	4	87	141
			Out	10	18	16	4	74	122
			Total	**21**	**39**	**34**	**8**	**161**	**263**
		PM	In	14	29	38	5	73	159
			Out	8	15	21	3	39	86
			Total	**22**	**44**	**59**	**8**	**112**	**245**
		SAT	In	9	17	23	3	44	96
			Out	7	13	18	2	34	74
			Total	**16**	**30**	**41**	**5**	**78**	**170**
Office	36.304 KSF	AM	In	20	1	28	6	17	72
			Out	1	0	1	0	1	3
			Total	**21**	**1**	**29**	**6**	**18**	**75**
		MD	In	1	1	3	3	39	47
			Out	1	2	3	3	42	51
			Total	**2**	**3**	**6**	**6**	**81**	**98**
		PM	In	1	0	2	0	1	4
			Out	23	1	32	7	20	83
			Total	**24**	**1**	**34**	**7**	**21**	**87**
		SAT	In	0	0	1	1	11	13
			Out	0	0	1	1	9	11
			Total	**0**	**0**	**2**	**2**	**20**	**24**
Local Retail	52.762 KSF	AM	In	2	4	7	7	101	121
			Out	2	4	7	7	101	121
			Total	**4**	**8**	**14**	**14**	**202**	**242**
		MD	In	15	23	46	46	640	770
			Out	15	23	46	46	640	770
			Total	**30**	**46**	**92**	**92**	**1,280**	**1,540**
		PM	In	8	12	24	24	337	405
			Out	8	12	24	24	337	405
			Total	**16**	**24**	**48**	**48**	**674**	**810**
		SAT	In	9	14	28	28	394	473
			Out	9	14	28	28	394	473
			Total	**18**	**28**	**56**	**56**	**788**	**946**

Table 13-3 (cont'd)
Trip Generation Summary - Person Trips

Use		Peak Hour		Person Trips					
				Auto	Taxi	Subway	Bus	Walk	Total
Destination Retail	351.587 KSF	AM	In	34	15	108	30	191	378
			Out	22	10	69	19	122	242
			Total	**56**	**25**	**177**	**49**	**313**	**620**
		MD	In	92	41	204	82	602	1,021
			Out	75	33	167	67	493	835
			Total	**167**	**74**	**371**	**149**	**1,095**	**1,856**
		PM	In	79	35	249	70	440	873
			Out	89	39	280	79	497	984
			Total	**168**	**74**	**529**	**149**	**937**	**1,857**
		SAT	In	126	56	279	112	823	1,396
			Out	116	52	258	103	760	1,289
			Total	**242**	**108**	**537**	**215**	**1,583**	**2,685**
Public Market	94.152 KSF	AM	In	7	11	22	22	303	365
			Out	5	8	15	15	210	253
			Total	**12**	**19**	**37**	**37**	**513**	**618**
		MD	In	7	10	20	20	283	340
			Out	8	12	24	24	332	400
			Total	**15**	**22**	**44**	**44**	**615**	**740**
		PM	In	12	17	35	35	482	581
			Out	13	20	39	39	544	655
			Total	**25**	**37**	**74**	**74**	**1,026**	**1,236**
		SAT	In	15	22	45	45	621	748
			Out	14	22	43	43	597	719
			Total	**29**	**44**	**88**	**88**	**1,218**	**1,467**
Medical Office (Staff)	94 KSF	AM	In	59	2	83	17	51	212
			Out	4	0	5	1	3	13
			Total	**63**	**2**	**88**	**18**	**54**	**225**
		MD	In	22	1	31	6	19	79
			Out	22	1	31	6	19	79
			Total	**44**	**2**	**62**	**12**	**38**	**158**
		PM	In	8	0	11	2	6	27
			Out	56	2	77	16	48	199
			Total	**64**	**2**	**88**	**18**	**54**	**226**
		SAT	In	10	0	13	3	8	34
			Out	10	0	13	3	8	34
			Total	**20**	**0**	**26**	**6**	**16**	**68**
Medical Office (Visitors)	94 KSF	AM	In	45	45	52	20	18	180
			Out	3	3	3	1	1	11
			Total	**48**	**48**	**55**	**21**	**19**	**191**
		MD	In	36	36	41	16	14	143
			Out	36	36	41	16	14	143
			Total	**72**	**72**	**82**	**32**	**28**	**286**
		PM	In	5	5	5	2	2	19
			Out	35	35	40	15	14	139
			Total	**40**	**40**	**45**	**17**	**16**	**158**
		SAT	In	15	15	18	7	6	61
			Out	15	15	18	7	6	61
			Total	**30**	**30**	**36**	**14**	**12**	**122**

Table 13-3 (cont'd)
Trip Generation Summary - Person Trips

Use		Peak Hour		Person Trips					
				Auto	Taxi	Subway	Bus	Walk	Total
Community Office	10 KSF	AM	In	6	0	8	2	5	21
			Out	0	0	0	0	0	0
			Total	**6**	**0**	**8**	**2**	**5**	**21**
		MD	In	0	0	1	1	11	13
			Out	0	0	1	1	12	14
			Total	**0**	**0**	**2**	**2**	**23**	**27**
		PM	In	0	0	0	0	0	0
			Out	6	0	9	2	6	23
			Total	**6**	**0**	**9**	**2**	**6**	**23**
		SAT	In	0	0	0	0	3	3
			Out	0	0	0	0	2	2
			Total	**0**	**0**	**0**	**0**	**5**	**5**
Community Facility	10 KSF	AM	In	1	0	1	1	18	21
			Out	1	0	0	1	11	13
			Total	**2**	**0**	**1**	**2**	**29**	**34**
		MD	In	1	0	1	2	22	26
			Out	1	0	1	1	18	21
			Total	**2**	**0**	**2**	**3**	**40**	**47**
		PM	In	1	0	0	1	9	11
			Out	1	0	1	1	21	24
			Total	**2**	**0**	**1**	**2**	**30**	**35**
		SAT	In	1	0	0	1	11	13
			Out	1	0	0	1	12	14
			Total	**2**	**0**	**0**	**2**	**23**	**27**
Total		AM	In	191	91	376	117	763	1,538
			Out	114	54	425	103	670	1,366
			Total	**305**	**145**	**801**	**220**	**1,433**	**2,904**
		MD	In	205	137	454	196	1,770	2,762
			Out	188	129	419	184	1,697	2,617
			Total	**393**	**266**	**873**	**380**	**3,467**	**5,379**
		PM	In	190	109	638	189	1,512	2,638
			Out	265	129	641	208	1,596	2,839
			Total	**455**	**238**	**1,279**	**397**	**3,108**	**5,477**
		SAT	In	223	131	576	231	2,021	3,182
			Out	210	123	548	219	1,922	3,022
			Total	**433**	**254**	**1,124**	**450**	**3,943**	**6,204**

Table 13-4
Trip Generation Summary - Vehicle Trips

Use	Weekday Peak Hours									Saturday Peak Hour		
	AM			Midday			PM					
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
Autos												
Residential	10	59	69	17	17	34	52	22	74	34	34	68
Hotel	4	6	10	8	7	15	10	5	15	6	5	11
Office	16	1	17	1	1	2	1	19	20	0	0	0
Local Retail	1	1	2	9	9	18	6	6	12	6	6	12
Destination Retail	16	10	26	45	38	83	39	45	84	63	60	123
Medical Office (Staff)	48	3	51	18	18	36	6	44	50	8	8	16
Medical Office (Visitors)	27	1	28	22	22	44	3	21	24	8	8	16
Community Office	4	0	4	0	0	0	0	5	5	0	0	0
Community Facility	1	0	1	0	0	0	0	1	1	0	0	0
Public Market	4	3	7	4	5	9	7	8	15	9	9	18
Deliveries (all uses)	11	11	22	14	14	28	0	0	0	0	0	0
Taxis (all uses)	67	67	134	129	129	258	120	120	240	116	116	232
Total	**209**	**162**	**371**	**267**	**260**	**527**	**244**	**296**	**540**	**250**	**246**	**496**

TRAFFIC

As shown above, incremental vehicle trips resulting from the proposed actions would exceed the CEQR Level 1 screening threshold during the weekday AM, midday, PM, and Saturday peak hours. These vehicle trips were assigned to area intersections based on the most likely travel routes to and from the project sites, the configuration of the roadway network, and the anticipated locations of site access and egress. Although some vehicles might seek parking off-site at available nearby parking facilities, for a conservative analysis, all auto trips were assigned to the on-site parking garages on Sites 2, 3, 4, and 5. Taxi trips were assigned to the block faces bordering each project site. Traffic assignments for autos, taxis, and deliveries are discussed in detail later in this chapter under Section F, "Traffic."

In coordination with NYCDOT, 30 area intersections were identified for study (25 signalized and five unsignalized). Of these, 25 intersections are situated in the immediate area near the project sites (Primary Study Area) bounded by Stanton Street to the north, Grand Street to the south, Allen Street to the west, and Clinton Street to the east. Five additional intersections along Houston Street and Grand Street/East Broadway are located within a Secondary Study Area. These study area intersections include (see **Figure 13-1**):

1. Delancey Street and Clinton Street
2. Delancey Street and Suffolk Street
3. Delancey Street and Norfolk Street
4. Delancey Street and Essex Street
5. Delancey Street and Ludlow Street
6. Delancey Street and Orchard Street
7. Delancey Street and Allen Street
8. Broome Street and Clinton Street (unsignalized)
9. Broome Street and Suffolk Street (unsignalized)
10. Broome Street and Norfolk Street
11. Broome Street and Essex Street
12. Broome Street and Ludlow Street (unsignalized)
13. Grand Street and Clinton Street
14. Grand Street and Suffolk Street
15. Grand Street and Norfolk Street
16. Grand Street and Essex Street
17. Grand Street and Ludlow Street
18. Grand Street and Orchard Street
19. Grand Street and Allen Street
20. Grand Street and East Broadway
21. Rivington Street and Norfolk Street
22. Rivington Street and Essex Street
23. Rivington Street and Ludlow Street (unsignalized)
24. Stanton Street and Norfolk Street
25. Stanton Street and Essex Street
26. Stanton Street and Ludlow (unsignalized)
27. Houston Street and Essex Street/Avenue A
28. Houston Street and Allen Street/First Avenue
29. Houston Street and Chrystie Street/Second Avenue
30. Houston Street and the Bowery

***** *Site 7 Would Not Be Redeveloped Under the Proposed Actions*

Traffic Study Area
Figure 13-1

TRANSIT

SUBWAY

The development sites are located near the Delancey Street/ Essex Street subway station (F, J, M, and Z lines) operated by New York City Transit (NYCT). Subway lines at this station provide convenient access to all of the project sites. Therefore, all projected subway trips are expected to be served by this station. As summarized in **Table 13-3**, the proposed actions are expected to generate 801, 873, 1,279, and 1,124 incremental peak hour subway trips during the weekday AM, midday, PM, and Saturday peak hours, respectively. Based on the distribution of these trips to the Delancey Street/Essex Street subway station, the following elements were identified for a detailed analysis for the weekday AM and PM peak hours.

- Station stairway at Essex Street between Delancey Street and Broome Street on the east sidewalk (S-4) and the adjoining control area elements; and
- Station stairways at the Delancey Street and Norfolk Street entrance(S-6 and S-7) on the north sidewalk and adjoining control area (A-61) element.

Based on the transit analysis of the Essex Street/Delancey Street station, no potentially significant adverse subway station impacts at the Essex Street/Delancey Street station have so far been determined during the peak analysis periods. At the direction of MTA NYCT, analyses of the following interior transfer and platform stairways will be undertaken for the Final Generic Environmental Impact Statement (FGEIS):

- PL4 (A61) - platform stair at uptown J/M/Z platform;
- P9 (N525) - leading to uptown F train platform;
- PL2 & PL9 (leading to PL11B on uptown F train platform) – Brooklyn bound J/M/Z platform; and
- PL18 (connecting to downtown F train platform) - Brooklyn bound J/M/Z platform.

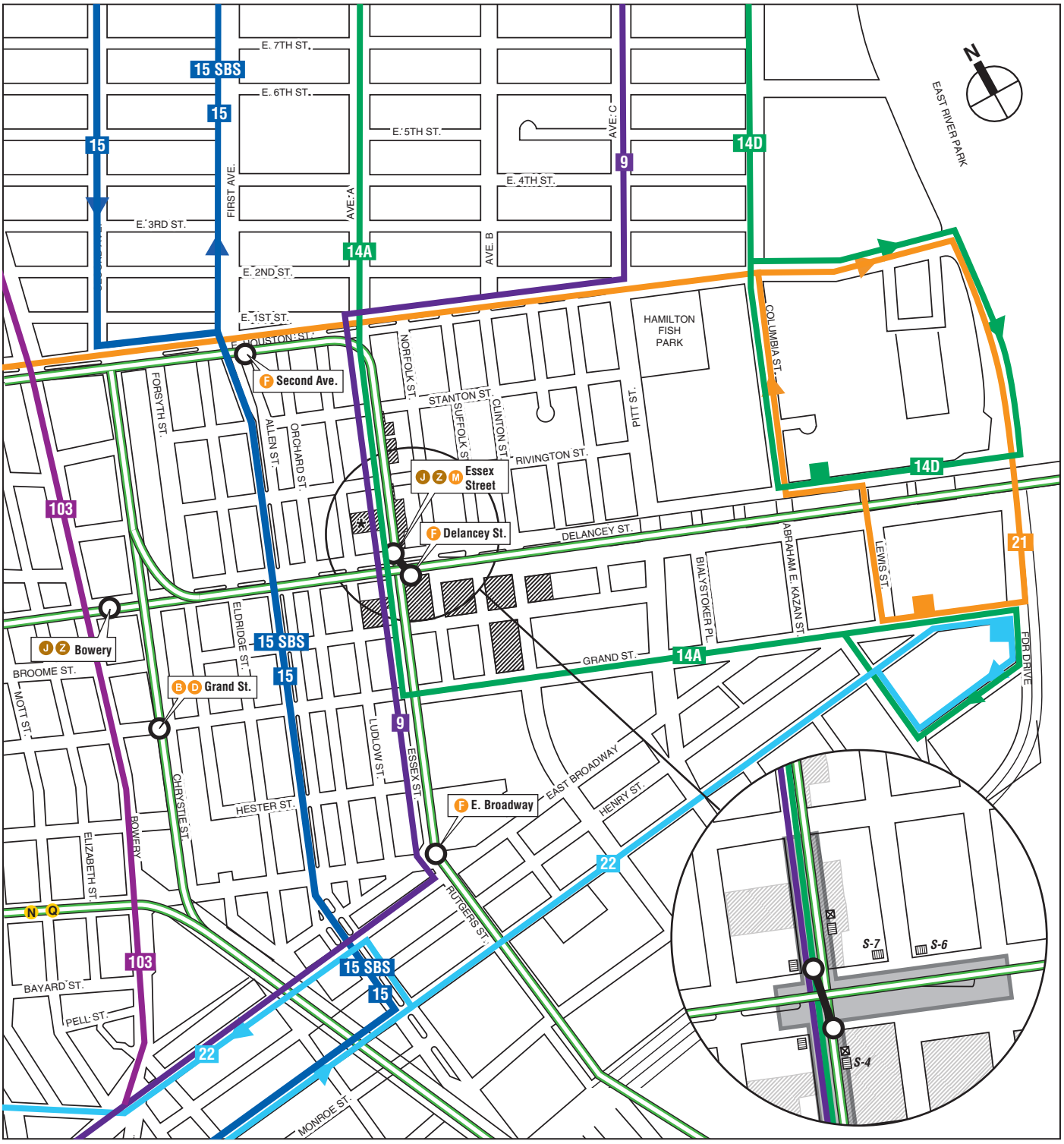
As part of incorporating these stairway elements in the subway analyses, the distribution of project generated subway trips will be refined to reflect the connectivity of the interior and platform stairways with the street-level stairways analyzed in this DGEIS.

To determine whether a subway line-haul analysis is warranted, the estimated incremental ridership for each subway line by direction was compared to each line's peak period service frequency to determine the incremental increase in subway riders per subway car. According to the *CEQR Technical Manual*, an incremental ridership of fewer than 5 riders per subway car is unlikely to result in the potential for a significant subway line-haul impact. The detailed subway trip assignments showed that all subway lines would incur fewer than 5 additional riders per car along all subway lines under the RWCDS. Since the projected peak ridership increment would be below this threshold, a detailed subway line-haul analysis is not warranted.

NYCT BUS

NYCT bus trips were distributed to bus routes serving the Lower East Side area (see **Figure 13-2**). There are six bus routes (M9, M14A, M15, M15 SBS, M21, and M22) with stops adjacent to or near the project sites. As summarized in **Table 13-3**, the proposed actions are expected to generate 220, 380, 397, and 450 incremental peak hour bus trips during the weekday AM, midday, PM, and Saturday midday peak hours, respectively. Based on the distribution of these trips, the following bus routes would incur 50 or more peak hour riders in a single direction, and

3.9.12



Proposed Development Sites

* *Site 7 Would Not Be Redeveloped Under the Proposed Actions*

Subway Line

Subway Stop

Subway Stairs

S-7 *Subway Stair Number*

Subway Escalators

Underground Walkway

Bus Line

0 400 1000 FEET

SCALE

SEWARD PARK MIXED-USE DEVELOPMENT PROJECT

Public Transit Options

Figure 13-2

require a detailed line-haul analysis for the weekday AM and PM peak hours to address potential transit impacts on the bus system associated with the proposed actions.

- M14A northbound/westbound;
- M14A southbound/eastbound;
- M15/M15 SBS northbound;
- M15/M15 SBS southbound;
- M9 northbound; and
- M9 southbound.

Even though the M15 and M15 SBS bus routes would not incur 50 or more peak hour riders in a single direction on either route, these were included in the detailed line-haul analysis since their combined increase would exceed 50 or more peak hour riders in both directions.

PEDESTRIANS

Pedestrian trip assignments were developed by distributing person trips generated by the individual project sites under the proposed actions to surrounding pedestrian facilities, including sidewalks, corner reservoirs, and crosswalks, adjacent to and near the project sites. It was assumed that all of the sites would be accessible from all block faces that the sites extend to, with the exception of Sites 8, 9, and 10 which would be accessed only from Essex Street. It was also assumed that the entrances on Broome Street, Essex Street, Delancey Street, and Grand Street would be used for the retail use, with the entrances on Ludlow Street, Norfolk Street, Suffolk Street, and Clinton Street being used for the residential, hotel, and commercial office uses.

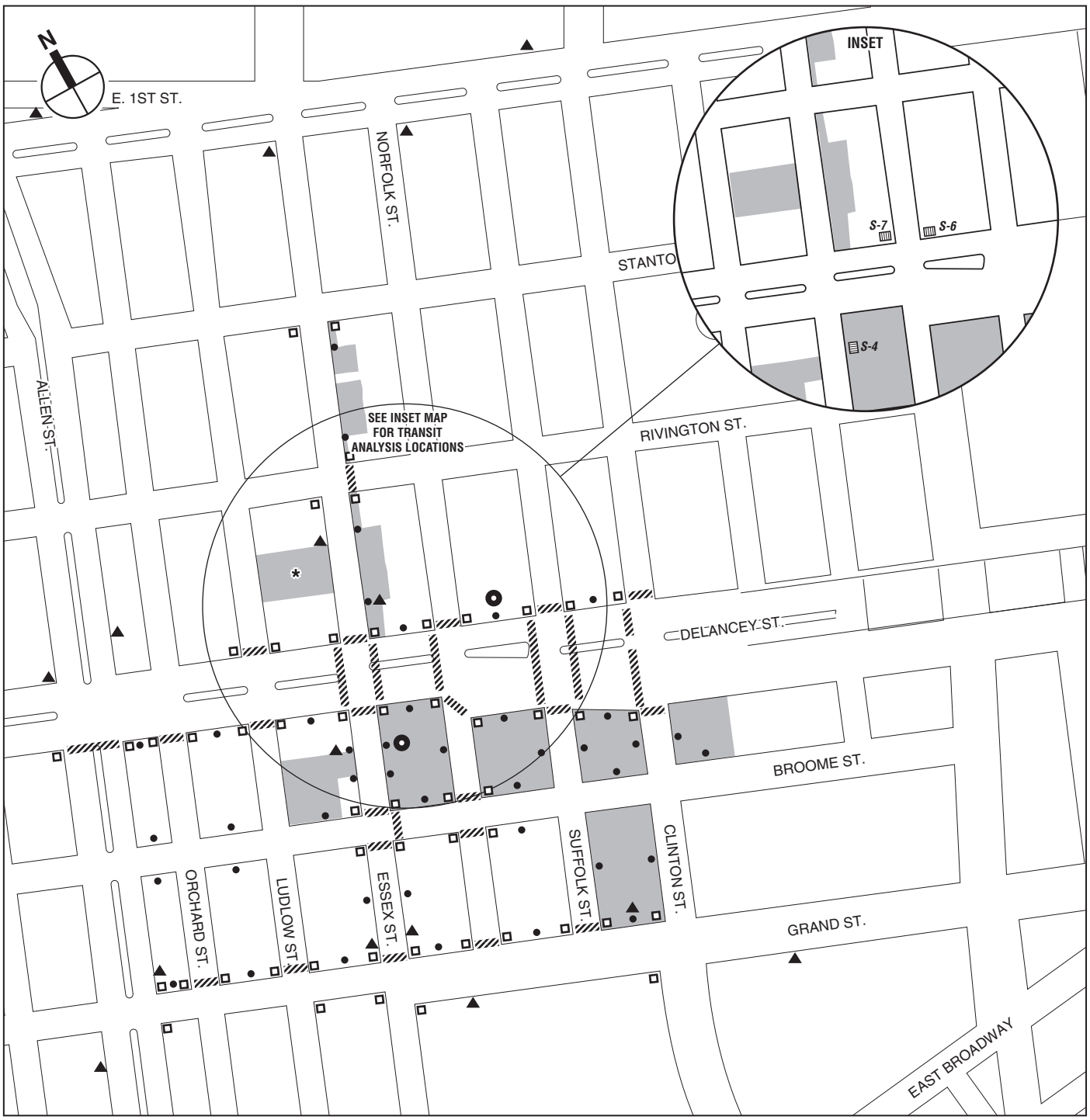
Pedestrian assignments for sidewalks, corners and crosswalks are discussed in detail later in this chapter under Section H, "Pedestrians."

Based on the *CEQR Technical Manual*, quantified pedestrian analyses would be required for pedestrian elements incurring 200 or more incremental peak hour trips. Based on this Level 2 pedestrian assignment, various sidewalks, crosswalks, and corner reservoirs in the vicinity of the proposed development site would exceed 200 peak hour trips. The pedestrian analysis locations for the weekday AM, midday, PM, and Saturday peak hours were selected in coordination with NYCDOT and are summarized in **Table 13-5** and depicted in **Figure 13-3.**

The Level 2 pedestrian trip assignments were developed for each of the sites for the different uses on each site to account for the highest project-generated pedestrian volumes. For each use, pedestrian trips would follow similar assignment procedures, as described below:

- Auto Trips – Motorists would park either at the on-site parking facilities or at the nearest available public parking facilities and walk to and from the project sites.
- Taxi Trips – Taxi riders would get dropped off and picked up near the entrance of each site.
- NYCT Bus Trips – Bus riders would use one of the six bus lines serving the Lower East Side area (M9, M14A, M15, M15 SBS, M21, and M22) and would get on and off at the bus stops nearest to the project site and walk to and from the site.

3.22.12



0 200 500 FEET
SCALE

Proposed Development Sites

* *Site 7 Would Not Be Redeveloped Under the Proposed Actions*

• *Sidewalk*

□ *Corner*

⊙ *Subway Station Access*

Crosswalk

▥ *Subway Stairs*

S-7 *Subway Stair Number*

▲ *Bus Stop*

Transit and Pedestrian Analysis Locations
Figure 13-3

Table 13-5
Pedestrian Analysis Locations

Intersection No.	Location	Elements
1	Essex Street and Stanton Street	Southeast Corner/ Southwest Corner
		East sidewalk between Stanton Street and Rivington Street (on Essex Street)
2	Essex Street and Rivington Street	East Crosswalk
		Northeast Corner/ Southeast Corner/ Southwest Corner
		East sidewalk between Rivington Street and Stanton Street (on Essex Street)
		East sidewalk between Rivington Street and Delancey Street (on Essex Street)
3	Allen Street and Delancey Street	South Crosswalk
		Southeast Corner / Southwest Corner
		South sidewalk between Allen Street and Orchard Street (on Delancey Street)
4	Orchard Street and Delancey Street	South Crosswalk
		Southeast Corner / Southwest Corner
		South sidewalk between Orchard Street and Ludlow Street (on Delancey Street)
5	Ludlow Street and Delancey Street	North Crosswalk/ South Crosswalk
		Northeast Corner/ Southeast Corner/ Southwest Corner / Northwest Corner
		South sidewalk between Ludlow Street and Essex Street (on Delancey Street)
6	Essex Street and Delancey Street	North Crosswalk/ East Crosswalk/ South Crosswalk/ West Crosswalk
		Northeast Corner/ Southeast Corner/ Southwest Corner / Northwest Corner
		East sidewalk between Delancey Street and Rivington Street (on Essex Street)
		North sidewalk between Essex Street and Norfolk Street (on Delancey Street)
		South sidewalk between Essex Street and Norfolk Street (on Delancey Street)
		East sidewalk between Delancey Street and Broome Street (on Essex Street)
		West sidewalk between Delancey Street and Broome Street (on Essex Street)
7	Norfolk Street and Delancey Street	North Crosswalk/ South Crosswalk/ West Crosswalk
		Northeast Corner/ Southeast Corner/ Southwest Corner / Northwest Corner
		North sidewalk between Norfolk Street and Suffolk Street (on Delancey Street)
		South sidewalk between Norfolk Street and Suffolk Street (on Delancey Street)
		West sidewalk between Delancey Street and Broome Street (on Norfolk Street)
		South sidewalk between Norfolk Street and Essex Street (on Delancey Street)
		North sidewalk between Norfolk Street and Essex Street (on Delancey Street)
8	Suffolk Street and Delancey Street	North Crosswalk/ East Crosswalk/ South Crosswalk/ West Crosswalk
		Northeast Corner/ Southeast Corner/ Southwest Corner / Northwest Corner
		North sidewalk between Suffolk Street and Clinton Street (on Delancey Street)
		South sidewalk between Suffolk Street and Clinton Street (on Delancey Street)
		East sidewalk between Delancey Street and Broome Street (on Suffolk Street)
		South sidewalk between Suffolk Street and Norfolk Street (on Delancey Street)
9	Clinton Street and Delancey Street	North Crosswalk/ West Crosswalk (North of Williamsburg Bridge)/ South Crosswalk/ West Crosswalk (South of Williamsburg Bridge)
		Southeast Corner / Southwest Corner / Northwest Corner
		East sidewalk between Delancey Street and Broome Street (on Clinton Street)
		South sidewalk between Clinton Street and Suffolk Street (on Delancey Street)
10	Allen Street and Broome Street	North sidewalk between Allen Street and Orchard Street (on Broome Street)
		South sidewalk between Allen Street and Orchard Street (on Broome Street)
11	Ludlow Street and Broome Street	North sidewalk between Ludlow Street and Essex Street (on Broome Street)
		South sidewalk between Ludlow Street and Orchard Street (on Broome Street)
		North sidewalk between Ludlow Street and Orchard Street (on Broome Street)

Table 13-5 (cont'd)
Pedestrian Analysis Locations

Intersection No.	Location	Elements
12	Essex Street and Broome Street	North Crosswalk/ East Crosswalk /South Crosswalk
		Northeast Corner/ Southeast Corner/ Southwest Corner / Northwest Corner
		West sidewalk between Broome Street and Delancey Street (on Essex Street)
		East sidewalk between Broome Street and Delancey Street (on Essex Street)
		North sidewalk between Essex Street and Norfolk Street (on Broome Street)
		East sidewalk between Broome Street and Grand Street (on Essex Street)
		West sidewalk between Broome Street and Grand Street (on Essex Street)
		North sidewalk between Essex Street and Ludlow Street (on Broome Street)
13	Norfolk Street and Broome Street	North Crosswalk/ South Crosswalk
		Northeast Corner/ Southeast Corner/ Southwest Corner / Northwest Corner
		West sidewalk between Broome Street and Delancey Street (on Norfolk Street)
		North sidewalk between Norfolk Street and Suffolk Street (on Broome Street)
		South sidewalk between Norfolk Street and Suffolk Street (on Broome Street)
		North sidewalk between Norfolk Street and Essex Street (on Broome Street)
14	Suffolk Street and Broome Street	West sidewalk between Broome Street and Delancey Street (on Suffolk Street)
		North sidewalk between Suffolk Street and Clinton Street (on Broome Street)
		East sidewalk between Broome Street and Grand Street (on Suffolk Street)
		North sidewalk between Suffolk Street and Norfolk Street (on Broome Street)
15	Clinton Street and Broome Street	North sidewalk between Clinton Street and Ridge Street (on Broome Street)
		North sidewalk between Clinton Street and Suffolk Street (on Broome Street)
16	Allen Street and Grand Street	Northeast Corner / Southeast Corner
		North sidewalk between Allen Street and Orchard Street (on Grand Street)
17	Orchard Street and Grand Street	North Crosswalk
		Northeast Corner / Northwest Corner
18	Ludlow Street and Grand Street	North Crosswalk
		Northeast Corner/ Southeast Corner/ Southwest Corner / Northwest Corner
		North sidewalk between Ludlow Street and Essex Street (on Grand Street)
		South sidewalk between Ludlow Street and Orchard Street (on Grand Street)
		North sidewalk between Ludlow Street and Orchard Street (on Grand Street)
19	Essex Street and Grand Street	North Crosswalk/ West Crosswalk
		Northeast Corner/ Southeast Corner/ Southwest Corner / Northwest Corner
		West sidewalk between Grand Street and Broome Street (on Essex Street)
		East sidewalk between Grand Street and Broome Street (on Essex Street)
		North sidewalk between Essex Street and Norfolk Street (on Grand Street)
20	Norfolk Street and Grand Street	North Crosswalk
		Northeast Corner / Northwest Corner
		North sidewalk between Norfolk Street and Suffolk Street (on Grand Street)
21	Suffolk Street and Grand Street	North Crosswalk
		Northeast Corner / Northwest Corner
		North sidewalk between Suffolk Street and Clinton Street (on Grand Street)
22	Clinton Street and Grand Street	Southwest Corner/ Northwest Corner
		West sidewalk between Grand Street and Broome Street (on Clinton Street)

- Subway Trips – Subway riders were assigned to the Delancey Street and Essex Street station and were assumed to enter into/exit from the nearest entrance and would walk to and from

the project site. The distribution of the subway riders to the station entrances was based on the proximity of the entrance and availability of the escalator at each of the entrances.

- Walk-Only Trips – Pedestrians who walk to and from the project site were distributed based on the neighborhood land-use characteristics and available pedestrian facilities (i.e., crosswalks, sidewalks, and corners).

E. TRANSPORTATION ANALYSIS METHODOLOGIES

TRAFFIC OPERATIONS

The operation of all of the signalized and unsignalized intersection analysis locations were assessed using methodologies presented in the *2000 Highway Capacity Manual (HCM)* using the *Highway Capacity Software (HCS+ 5.5)*, which is the analysis methodology approved for use by NYCDOT The *HCM* procedure evaluates the levels of service (LOS) for signalized and unsignalized intersections using average stop control delay, in seconds per vehicle, as described below.

SIGNALIZED INTERSECTIONS

The average control delay per vehicle is the basis for determining levels of service for individual lane groups (grouping of movements in one or more travel lanes), the overall approaches to each intersection, and the overall intersection itself. Levels of service are defined in **Table 13-6**.

Table 13-6
LOS Criteria for Signalized Intersections

LOS	Average Control Delay
A	≤ 10.0 seconds
B	>10.0 and ≤ 20.0 seconds
C	>20.0 and ≤ 35.0 seconds
D	>35.0 and ≤ 55.0 seconds
E	>55.0 and ≤ 80.0 seconds
F	>80.0 seconds

Source: Transportation Research Board. *Highway Capacity Manual*, 2000.

LOS A describes operations with low delays, i.e., 10.0 seconds or less per vehicle. This occurs when signal progression is extremely favorable and most vehicles arrive during the green phase. Most vehicles do not stop at all.

LOS B describes operations with delays in excess of 10.0 seconds up to 20.0 seconds per vehicle. This generally occurs with good progression and/or short cycle lengths. Again, most vehicles do not stop at the intersection.

LOS C describes operations with delays in excess of 20.0 seconds up to 35.0 seconds per vehicle. These higher delays may result from fair progression and/or longer cycle lengths. The number of vehicles stopping is noticeable at this level, although many still pass through the intersection without stopping.

LOS D describes operations with delays in excess of 35.0 seconds up to 55.0 seconds per vehicle. At LOS D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high volume-to-capacity (v/c) ratios. Many vehicles stop, and the proportion of vehicles not stopping declines.

LOS E describes operations with delays in excess of 55.0 seconds up to 80.0 seconds per vehicle. These high delay values generally indicate poor progression, long cycle lengths, and high v/c ratios.

LOS F describes operations with delays in excess of 80.0 seconds per vehicle. This is considered to be unacceptable to most drivers. This condition often occurs with oversaturation, i.e., when arrival flow rates exceed the capacity of the intersection. It may also occur at high v/c ratios with cycle failures. Poor progression and long cycle lengths may also contribute to such delays. Often, vehicles do not pass through the intersection in one signal cycle.

Based on *CEQR Technical Manual* guidelines, LOS A, B, and C are considered acceptable, LOS D is considered marginally acceptable up to mid-LOS D (45 seconds of delay for signalized intersections) and unacceptable above mid-LOS D, and LOS E and F indicate congestion. These guidelines are applicable to individual traffic movements and overall intersection levels of service.

UNSIGNALIZED INTERSECTIONS

For unsignalized intersections, the average control delay is defined as the total elapsed time from which a vehicle stops at the end of the queue until the vehicle departs from the stop line. Level of service criteria for unsignalized intersections are summarized in **Table 13-7**.

Table 13-7
LOS Criteria for Unsignalized Intersections

LOS	Average Control Delay
A	≤ 10.0 seconds
B	> 10.0 and ≤ 15.0 seconds
C	> 15.0 and ≤ 25.0 seconds
D	> 25.0 and ≤ 35.0 seconds
E	> 35.0 and ≤ 50.0 seconds
F	> 50.0 seconds

Source: Transportation Research Board. *Highway Capacity Manual*, 2000.

For unsignalized intersections, LOS E is considered the limit of acceptable delay, while LOS F is considered unacceptable to most drivers. LOS F conditions exist when there are insufficient gaps of suitable size in a major vehicular traffic stream to allow side street traffic to cross safely.

Significant Impact Criteria

The assessment of potential significant traffic impacts of a proposed action is based on significant impact criteria defined in the *CEQR Technical Manual*. No Action LOS A, B, or C conditions that deteriorate to unacceptable LOS D, E, or F in the future With Action condition are considered a significant traffic impact.

For future With Action LOS A, B, or C conditions that deteriorate to unacceptable LOS D, mitigation to mid-LOS D (45.0 seconds of delay for signalized intersections and 30.0 seconds of delay for unsignalized intersections) needs to be considered to fully mitigate the impact.

For a No Action LOS D, an increase of delay by five or more seconds in the With Action condition is considered a significant impact if the With Action delay meets or exceeds 45.0 seconds. For a No Action LOS E, the threshold is a four second increase in With Action delay; for a No Action LOS F, a three second increase in delay in the With Action condition is significant. For unsignalized intersections, for the minor street to generate a significant impact,

90 passenger car equivalents (PCEs) must be identified in the With Action condition in any peak hour.

TRANSIT OPERATIONS

SUBWAY STATION ELEMENTS

The methodology for assessing station circulation (stairs, escalators, and passageways) and fare control (regular turnstiles, high entry/exit turnstiles, and high exit turnstiles) elements compares the user volume with the analyzed element's design capacity, resulting in a volume-to-capacity (v/c) ratio.

For stairs, the design capacity considers the effective width of a tread, which accounts for railings or other obstructions, the friction or counter-flow between upward and downward pedestrians (up to 10 percent capacity reduction is applied to account for counter-flow friction), surging of exiting pedestrians (up to 25 percent capacity reduction is applied to account for detraining surges near platforms), and the average area required for circulation. For passageways, similar considerations are made. For escalators and turnstiles, capacities are measured by the number and width of an element and the NYCT optimum capacity per element, also account for the potential for surging of exiting pedestrians. In the analysis for each of these elements, volumes and capacities are presented for 15-minute intervals.

The estimated v/c ratio is compared with NYCT criteria to determine a level of service (LOS) for the operation of an element, as summarized in **Table 13-8**.

Table 13-8
LOS Criteria for Subway Station Elements

LOS	V/C Ratio
A	0.00 to 0.45
B	0.45 to 0.70
C	0.70 to 1.00
D	1.00 to 1.33
E	1.33 to 1.67
F	Above 1.67

Source: New York City Mayor's Office of Environmental Coordination, *CEQR Technical Manual* (January 2012 edition).

At LOS A ("free flow") and B ("fluid flow"), 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 ("fluid, somewhat restricted"), 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 ("crowded, walking speed restricted"), 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 ("congested, some shuffling and queuing") and F ("severely congested, queued"), walking speed is restricted. There is also insufficient area to bypass others, and opposing movement is difficult. Often, forward progress is achievable only through shuffling, with queues forming.

Significant Impact Criteria

The determination of significant impacts for station elements varies based on their type and use. For stairs and passageways, significant impacts are defined in term of width increment threshold

(WIT) based on the minimum amount of additional capacity that would be required either to mitigate the location to its service conditions (LOS) under the No Action levels, or to bring it to a v/c ratio of 1.00 (LOS C/D), whichever is greater. Significant impacts are typically considered to occur once the WITs in **Table 13-9** are reached or exceeded.

Table 13-9
Significant Impact Guidance for Stairs and Passageways

No Action V/C Ratio	WIT for Significant Impact (inches)	
	Stairway	Passageway
1.00 to 1.09	8.0	13.0
1.10 to 1.19	7.0	11.5
1.20 to 1.29	6.0	10.0
1.30 to 1.39	5.0	8.5
1.40 to 1.49	4.0	6.0
1.50 to 1.59	3.0	4.5
1.60 and up	2.0	3.0

Notes: WIT = Width Increment Threshold
Sources: New York City Mayor's Office of Environmental Coordination, *CEQR Technical Manual* (January 2012 edition).

For escalators and control area elements, impacts are significant if the proposed action causes a v/c ratio to increase from below 1.00 to 1.00 or greater. Where a facility is already at or above its capacity (a v/c of 1.00 or greater) in the No Action condition, a 0.01 increase in v/c ratio is also significant.

SUBWAY AND BUS LINE-HAUL CAPACITIES

As per the *CEQR Technical Manual*, line-haul capacities are evaluated when a proposed action is anticipated to generate a perceptible number of passengers on particular subway and bus routes. For subways, if, on average, a subway car for a particular route is expected to incur five or more riders from a proposed action, a review of ridership level at its maximum load point and/or other project-specific load points would be required to determine if the route's guideline (or practical) capacity would be exceeded. NYCT operates six different types of subway cars with different seating and guideline capacities. The peak period guideline capacity of a subway car, which ranges from 110 to 175 passengers, is compared with ridership levels to determine the acceptability of conditions.

Bus line-haul capacities are evaluated when a proposed action is anticipated to generate 50 or more bus passengers to a single bus line in one direction. The assessment of bus line-haul conditions involves analyzing bus routes at their peak load points and, if necessary, also their bus stops closest to the project site to identify the potential for the analyzed routes to exceed their guideline (or practical) capacities. NYCT and the MTA Bus Company operate three types of buses: standard and articulated buses, and over-the-road coaches. During peak hours, standard buses operate with up to 54 passengers per bus, articulated buses operate with up to 85 passengers per bus, and over-the-road coaches operate with up to 55 passengers per bus.

Significant Impact Criteria

For subways, projected increases from the No Action condition within guideline capacity to a With Action condition that exceeds guideline capacity may be a significant impact. Since there are constraints on what service improvements are available to NYCT, significant line-haul capacity impacts on subway routes are generally disclosed but would usually remain unmitigated.

For buses, an increase in bus load levels greater than the maximum capacity at any load point is defined as a significant adverse impact. While subject to operational and fiscal constraints, bus impacts can typically be mitigated by increasing service frequency. Therefore, mitigation of bus line-haul capacity impacts, where appropriate, would be recommended for NYCT's approval.

PEDESTRIAN OPERATIONS

The adequacy of the study area's sidewalks, crosswalks, and corner reservoir capacities in relation to the demand imposed on them is evaluated based on the methodologies presented in the 2000 *Highway Capacity Manual* (HCM), pursuant to procedures detailed in the *CEQR Technical Manual*.

Sidewalks are analyzed in terms of pedestrian flow. The calculation of the average pedestrians per minute per foot (PMF) of effective walkway width is the basis for a sidewalk level of service (LOS) analysis. The determination of walkway LOS is also dependent on whether the pedestrian flow being analyzed is best described as "non-platoon" or "platoon." Non-platoon flow occurs when pedestrian volume within the peak 15-minute period is relatively uniform, whereas, platoon flow occurs when pedestrian volumes vary significantly with the peak 15-minute period. Such variation typically occurs near bus stops, subway stations, and/or where adjacent crosswalks account for much of the walkway's pedestrian volume.

Crosswalks and street corners are not easily measured in terms of free pedestrian flow, as they are influenced by the effects of 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 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 total "time-space" available for these activities, expressed in square feet-second, is calculated by multiplying the net area of the corner (in square feet) by the signal's cycle length. The analysis then determines the total circulation time for all pedestrian movements at the corner per signal cycle (expressed as pedestrians per second). The ratio of net time-space divided by the total pedestrian circulation volume per signal cycle provides the LOS measurement of square feet per pedestrian (SFP).

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 width of the street) and the permitted crossing time. This measure is expressed in square feet-second. The average time required for a pedestrian to cross the street is calculated based on the width of the street and an assumed walking speed. The ratio of time-space available in the crosswalk to the total crosswalk pedestrian occupancy time is the LOS measurement of available square feet per pedestrian. The LOS analysis also accounts for vehicular turning movements that traverse the crosswalk. The LOS standards for sidewalks, corner reservoirs, and crosswalks are summarized in **Table 13-10**. The *CEQR Technical Manual* specifies acceptable LOS in Central Business District (CBD) areas is mid-LOS D or better.

Table 13-10
Level of Service Criteria for Pedestrian Elements

LOS	Sidewalks		Corner Reservoirs and Crosswalks
	Non-Platoon Flow	Platoon Flow	
A	≤ 5 PMF	≤ 0.5 PMF	> 60 SFP
B	> 5 and ≤ 7 PMF	> 0.5 and ≤ 3 PMF	> 40 and ≤ 60 SFP
C	> 7 and ≤ 10 PMF	> 3 and ≤ 6 PMF	> 24 and ≤ 40 SFP
D	> 10 and ≤ 15 PMF	> 6 and ≤ 11 PMF	> 15 and ≤ 24 SFP
E	> 15 and ≤ 23 PMF	> 11 and ≤ 18 PMF	> 8 and ≤ 15 SFP
F	> 23 PMF	> 18 PMF	≤ 8 SFP

Notes: PMF = pedestrians per minute per foot; SFP = square feet per pedestrian.
Source: New York City Mayor's Office of Environmental Coordination, *CEQR Technical Manual* (January 2012 edition).

SIGNIFICANT IMPACT CRITERIA

The determination of significant pedestrian impacts considers the level of predicted deterioration in pedestrian flow or decrease in pedestrian space between the No Action and Action conditions. For different pedestrian elements, flow conditions, and area types, the CEQR procedure for impact determination corresponds with various sliding-scale formulas, as further detailed below.

Sidewalks

There are two sliding-scale formulas for determining significant sidewalk impacts. For non-platoon flow, the increase in average pedestrian flow rate (Y) in PMF needs to be greater or equal to 3.5 minus X divided by 8.0 (where X is the No Action pedestrian flow rate in PMF [$Y \geq 3.5 - X/8.0$]) for it to be a significant impact. For platoon flow, the sliding-scale formula is $Y \geq 3.03 - X/8.0$. Since deterioration in pedestrian flow within acceptable levels would not constitute a significant impact, these formulas would apply only if the With Action pedestrian flow exceeds LOS C in non-CBD areas or mid-LOS D in CBD areas. **Table 13-11** summarizes the sliding scale guidance provided by the *CEQR Technical Manual* for determining potential significant sidewalk impacts.

Corner Reservoirs and Crosswalks

The determination of significant corner and crosswalk impacts is also based on a sliding scale using the following formula: $Y \geq X/9.0 - 0.31$, where Y is the decrease in pedestrian space in SFP and X is the No Action pedestrian space in SFP. Since a decrease in pedestrian space within acceptable levels would not constitute a significant impact, this formula would apply only if the Action pedestrian space falls short of LOS C in non-CBD areas or mid-LOS D in CBD areas. **Table 13-12** summarizes the sliding scale guidance provided by the *CEQR Technical Manual* for determining potential significant corner reservoir and crosswalk impacts.

Table 13-11
Significant Impact Guidance for Sidewalks

Non-Platoon Flow				Platoon Flow			
Sliding Scale Formula: *Y ≥ 3.5 – X/8.0*				Sliding Scale Formula: *Y ≥ 3.03 – X/8.0*			
Non-CBD Areas		CBD Areas		Non-CBD Areas		CBD Areas	
No Action Ped. Flow (X, PMF)	Action Ped. Flow Incr. (Y, PMF)	No Action Ped. Flow (X, PMF)	Action Ped. Flow Incr. (Y, PMF)	No Action Ped. Flow (X, PMF)	Action Ped. Flow Incr. (Y, PMF)	No Action Ped. Flow (X, PMF)	Action Ped. Flow Incr. (Y, PMF)
7.5 to 7.8	≥ 2.6	–	–	3.5 to 3.8	≥ 2.6	–	–
7.9 to 8.6	≥ 2.5	–	–	3.9 to 4.6	≥ 2.5	–	–
8.7 to 9.4	≥ 2.4	–	–	4.7 to 5.4	≥ 2.4	–	–
9.5 to 10.2	≥ 2.3	–	–	5.5 to 6.2	≥ 2.3	–	–
10.3 to 11.0	≥ 2.2	10.4 to 11.0	≥ 2.2	6.3 to 7.0	≥ 2.2	6.4 to 7.0	≥ 2.2
11.1 to 11.8	≥ 2.1	11.1 to 11.8	≥ 2.1	7.1 to 7.8	≥ 2.1	7.1 to 7.8	≥ 2.1
11.9 to 12.6	≥ 2.0	11.9 to 12.6	≥ 2.0	7.9 to 8.6	≥ 2.0	7.9 to 8.6	≥ 2.0
12.7 to 13.4	≥ 1.9	12.7 to 13.4	≥ 1.9	8.7 to 9.4	≥ 1.9	8.7 to 9.4	≥ 1.9
13.5 to 14.2	≥ 1.8	13.5 to 14.2	≥ 1.8	9.5 to 10.2	≥ 1.8	9.5 to 10.2	≥ 1.8
14.3 to 15.0	≥ 1.7	14.3 to 15.0	≥ 1.7	10. to 11.0	≥ 1.7	10. to 11.0	≥ 1.7
15.1 to 15.8	≥ 1.6	15.1 to 15.8	≥ 1.6	11.1 to 11.8	≥ 1.6	11.1 to 11.8	≥ 1.6
15.9 to 16.6	≥ 1.5	15.9 to 16.6	≥ 1.5	11.9 to 12.6	≥ 1.5	11.9 to 12.6	≥ 1.5
16.7 to 17.4	≥ 1.4	16.7 to 17.4	≥ 1.4	12.7 to 13.4	≥ 1.4	12.7 to 13.4	≥ 1.4
17.5 to 18.2	≥ 1.3	17.5 to 18.2	≥ 1.3	13.5 to 14.2	≥ 1.3	13.5 to 14.2	≥ 1.3
18.3 to 19.0	≥ 1.2	18.3 to 19.0	≥ 1.2	14.3 to 15.0	≥ 1.2	14.3 to 15.0	≥ 1.2
19.1 to 19.8	≥ 1.1	19.1 to 19.8	≥ 1.1	15.1 to 15.8	≥ 1.1	15.1 to 15.8	≥ 1.1
19.9 to 20.6	≥ 1.0	19.9 to 20.6	≥ 1.0	15.9 to 16.6	≥ 1.0	15.9 to 16.6	≥ 1.0
20.7 to 21.4	≥ 0.9	20.7 to 21.4	≥ 0.9	16.7 to 17.4	≥ 0.9	16.7 to 17.4	≥ 0.9
21.5 to 22.2	≥ 0.8	21.5 to 22.2	≥ 0.8	17.5 to 18.2	≥ 0.8	17.5 to 18.2	≥ 0.8
22.3 to 23.0	≥ 0.7	22.3 to 23.0	≥ 0.7	18.3 to 19.0	≥ 0.7	18.3 to 19.0	≥ 0.7
> 23.0	≥ 0.6	> 23.0	≥ 0.6	> 19.0	≥ 0.6	> 19.0	≥ 0.6

Notes: PMF = pedestrians per minute per foot; Y = increase in average pedestrian flow rate in PMF; X = No Action pedestrian flow rate in PMF.
Sources: New York City Mayor's Office of Environmental Coordination, *CEQR Technical Manual* (January 2012 edition).

Table 13-12
Significant Impact Guidance for Corners and Crosswalks

Sliding Scale Formula: *Y ≥ X/9.0 – 0.31*			
Non-CBD Areas		CBD Areas	
No Action Pedestrian Space (X, SFP)	Action Pedestrian Space Reduction (Y, SFP)	No Action Pedestrian Space (X, SFP)	Action Pedestrian Space Reduction (Y, SFP)
25.8 to 26.6	≥ 2.6	–	–
24.9 to 25.7	≥ 2.5	–	–
24.0 to 24.8	≥ 2.4	–	–
23.1 to 23.9	≥ 2.3	–	–
22.2 to 23.0	≥ 2.2	–	–
21.3 to 22.1	≥ 2.1	21.3 to 21.5	≥ 2.1
20.4 to 21.2	≥ 2.0	20.4 to 21.2	≥ 2.0
19.5 to 20.3	≥ 1.9	19.5 to 20.3	≥ 1.9
18.6 to 19.4	≥ 1.8	18.6 to 19.4	≥ 1.8
17.7 to 18.5	≥ 1.7	17.7 to 18.5	≥ 1.7
16.8 to 17.6	≥ 1.6	16.8 to 17.6	≥ 1.6
15.9 to 16.7	≥ 1.5	15.9 to 16.7	≥ 1.5
15.0 to 15.8	≥ 1.4	15.0 to 15.8	≥ 1.4
14.1 to 14.9	≥ 1.3	14.1 to 14.9	≥ 1.3
13.2 to 14.0	≥ 1.2	13.2 to 14.0	≥ 1.2
12.3 to 13.1	≥ 1.1	12.3 to 13.1	≥ 1.1
11.4 to 12.2	≥ 1.0	11.4 to 12.2	≥ 1.0
10.5 to 11.3	≥ 0.9	10.5 to 11.3	≥ 0.9
9.6 to 10.4	≥ 0.8	9.6 to 10.4	≥ 0.8
8.7 to 9.5	≥ 0.7	8.7 to 9.5	≥ 0.7
7.8 to 8.6	≥ 0.6	7.8 to 8.6	≥ 0.6
6.9 to 7.7	≥ 0.5	6.9 to 7.7	≥ 0.5
6.0 to 6.8	≥ 0.4	6.0 to 6.8	≥ 0.4
5.1 to 5.9	≥ 0.3	5.1 to 5.9	≥ 0.3
< 5.1	≥ 0.2	< 5.1	≥ 0.2

Notes: SFP = square feet per pedestrian; Y = decrease in pedestrian space in SFP; X = No Action pedestrian space in SFP.
Sources: New York City Mayor's Office of Environmental Coordination, *CEQR Technical Manual* (January 2012 edition).

VEHICULAR AND PEDESTRIAN SAFETY EVALUATION

An evaluation of vehicular and pedestrian safety is necessary for locations within the traffic and pedestrian study areas that have been identified as high accident locations, where 48 or more total reportable and non-reportable crashes or five or more pedestrian/bicyclist injury crashes occurred in any consecutive 12 months of the most recent three-year period for which data are available. For these locations, accident trends are identified to determine whether projected vehicular and pedestrian traffic would further impact safety at these locations. The determination of potential significant safety impacts depends on the type of area where the project site is located, traffic volumes, accident types and severity, and other contributing factors. Where appropriate, measures to improve traffic and pedestrian safety are identified and coordinated with NYCDOT.

PARKING CONDITIONS ASSESSMENT

The parking analysis identifies the extent to which off-street parking is available and utilized under existing and future conditions. It takes into consideration anticipated changes in area parking supply and provides a comparison of parking needs versus availability to determine if a parking shortfall is likely to result from parking displacement attributable to or additional demand generated by a proposed action. Typically, this analysis encompasses a study area within a quarter-mile of the project site. If the analysis concludes a shortfall in parking within the quarter-mile study area, the study area could sometimes be extended to a half-mile to identify additional parking supply.

For proposed projects located in Manhattan or other CBD areas, the inability of the proposed project or the surrounding area to accommodate the project's future parking demand is considered a parking shortfall, but is generally not considered significant due to the magnitude of available alternative modes of transportation. For other areas in New York City, a parking shortfall that exceeds more than half the available on-street and off-street parking spaces within a quarter-mile of the project site may be considered significant. Additional factors, such as the availability and extent of transit in the area, proximity of the project to such transit, and patterns of automobile usage by area residents, could be considered to determine the significance of the identified parking shortfall. In some cases, if there is adequate parking supply within a half-mile of the project site, the projected parking shortfall may also not necessarily be considered significant.

F. TRAFFIC

2011 EXISTING CONDITIONS

ROADWAY NETWORK

The roadway network within the study area is generally a grid of local streets through residential and mixed-use neighborhoods on Manhattan's Lower East Side. Delancey Street is the key east-west roadway that passes through the study area providing direct access to the Williamsburg Bridge, and connectivity to Brooklyn. Other important east-west corridors include Houston Street, Grand Street, and Broome Street. Key north-south corridors include Essex Street/Avenue A, Allen Street/First Avenue, and Chrystie Street/Second Avenue, while other important, but more local, streets include Norfolk, Suffolk, and Clinton Streets.

Delancey Street extends in the east-west direction and is an important commuter route for traffic entering and exiting Manhattan via the Williamsburg Bridge. Delancey Street generally consists

of four travel lanes in each direction with curbside parking allowed on both sides during the off-peak periods. Pedestrian refuge islands within the roadway's median separate the two-directional traffic and provide storage for pedestrians. Left turn prohibitions from Delancey Street are in effect at all times between the Williamsburg Bridge and Allen Street due to heavy through volumes; left turns for westbound Delancey Street are allowed onto southbound Allen Street. East of Clinton Street, the Delancey Street "mainline" leads onto the Williamsburg Bridge and its service roads extend to/from the FDR Drive. Delancey Street is generally characterized by mixed-use developments.

Houston Street extends in the east-west direction and forms the northern boundary of the study area. It connects with the FDR Drive to the east and extends to Route 9A to the west. Within the study area, Houston Street has three moving lanes in each direction with parking on both sides. Similarly to Delancey Street, it borders blocks with mixed-use developments.

Broome Street is oriented in the east-west direction and is one-way eastbound within the study area except for two blocks between Norfolk Street and Clinton Street where it is one-way westbound. West of Chrystie Street, Broome Street is one-way westbound and provides access to the Holland Tunnel. Within the study area, it is generally characterized by one travel lane per direction with parking on both sides.

Grand Street extends in the east-west direction and forms the southern edge of the study area. It generally consists of one travel lane in each direction with exclusive left turn lanes provided at certain intersections. Parking is allowed on both sides of the street. Grand Street also has Class II bike lanes (in both directions) that provide a travel lane designated for the exclusive use of bicycles. Within the study area, Grand Street is mostly characterized by residential and retail uses.

Allen Street is an important corridor that extends in the north-south direction. It provides the first opportunity for traffic traveling from the Williamsburg Bridge to turn left from Delancey Street onto the local roadway network. Allen Street generally carries two lanes in each direction separated by a wide pedestrian refuge island, and has dedicated bike lanes. Curbside parking is provided at some locations along both sides of the street. Allen Street is generally characterized by commercial and retail uses. North of Houston Street, Allen Street is called First Avenue and it operates as one-way northbound with three travel lanes, an exclusive bus lane and a dedicated bike lane. Curbside parking is allowed on both sides of the street.

Essex Street travels in the north-south direction and passes through the heart of the study area. It consists of two lanes in each direction with parking on both sides of the street. Left turns from northbound and southbound Essex Street onto Delancey Street are prohibited weekdays from 4 PM to 7 PM, although illegal left turns do occur. It is characterized by commercial/retail uses. Essex Street has local bus routes operating along its length within the study area. North of Houston Street, Essex Street is called Avenue A and it operates as a two-way roadway with one lane in each direction with bike lanes and parking on both sides.

Norfolk Street is a one-way northbound roadway that extends from Grand Street to Houston Street. It consists of one lane with parking on both sides of the street, except for the block between Delancey Street and Broome Street where parking is prohibited. This section of Norfolk Street serves as an important connection for traffic turning right towards the Williamsburg Bridge.

Suffolk Street is a one-way southbound roadway that extends from Houston Street to Grand Street. It consists of one lane with parking along the west curb south of Rivington Street and

parking along the east curb north of Rivington Street. North of Delancey Street, Suffolk Street is a bike route with Class II bike lanes and Class III bike route markings.

Clinton Street travels in the north-south direction and is two-directional south of Delancey Street. South of Grand Street, it widens to accommodate Class II bike lanes and parking in both directions. North of Delancey Street, Clinton Street operates one-way northbound with a parking lane along the west curb and a Class II bike lane along the east curb. Clinton Street is generally characterized by residential land uses.

New York City designated truck routes in the study area vicinity include Delancey Street, Allen Street, and Houston Street west of Allen Street.

TRAFFIC CONDITIONS

Traffic counts were conducted for this DGEIS in June 2011 for weekday AM, midday, PM, and Saturday peak periods using manual intersection counts and 24-hour Automatic Traffic Recorder (ATR) machine counts. These volumes were used along with observations of traffic conditions to determine levels of service for the weekday peak hours of 8:00 to 9:00 AM, 1:00 to 2:00 PM, 5:15 to 6:15 PM, and the Saturday 3:45 to 4:45 PM peak hour. Volume information along key corridors within the study area is provided below.

Delancey Street between Allen Street and Norfolk Street is traveled by approximately 1,200 to 1,700 vph in the weekday AM peak hour, 1,400 to 1,950 vph in the weekday midday peak hour, 2,000 to 2,700 vph in the weekday PM peak hour, and 1,700 to 2,350 vph in the Saturday peak hour in the eastbound direction. Approximately 2,000 to 2,600 vph travel westbound in this section during all four peak analysis hours. Between Norfolk Street and Clinton Street, in the section closer to the Williamsburg Bridge, eastbound volumes increase to approximately 2,150, 2,350, 3,350, and 3,050 vph in the weekday AM, midday and PM, and Saturday peak hours, respectively, and westbound volumes increase to between 2,350 and 2,750 vph during all peak hours.

Along the Williamsburg Bridge traffic volumes in the eastbound direction (Brooklyn-bound) are approximately 2,150 vph in the weekday AM peak hour, 2,350 vph in the weekday midday peak hour, 3,350 vph during the weekday PM peak hour, and 3,050 vph in the Saturday peak hour. In the westbound direction (Manhattan-bound), traffic volumes are more consistent throughout the peak hours: 3,200 vph in the weekday AM peak hour; 2,750 vph in the weekday midday peak hour; 3,300 in the weekday PM peak hour; and 2,900 in the Saturday peak hour.

Along Houston Street between the Bowery and Essex Street/Avenue A, eastbound traffic volumes are approximately 550 to 900 vph in the weekday AM peak hour, 650 to 1,150 vph in the weekday midday peak hour, 600 to 950 vph in the weekday PM peak hour, and 650 to 1,200 vph in the Saturday peak hour, with the highest eastbound volumes at the intersection of Allen Street/First Avenue for all peak hours. Westbound traffic volumes are approximately 800 to 1,300 vph in the weekday AM peak hour, 650 to 1,150 vph in the weekday midday peak hour, 700 to 1,300 vph in the weekday PM peak hour, and 900 to 1,300 vph in the Saturday peak hour, with the highest westbound volumes at the intersection of Houston Street and the Bowery for all peak hours.

Grand Street, between Allen Street and East Broadway, is traveled by approximately 150 to 350 vph for all peak hours in the eastbound direction, while westbound volumes range from approximately 200 to 400 vph between Allen Street and Norfolk Street, and from 500 to 750 vph between Norfolk Street and East Broadway, during the four peak hours.

Within the study area, Broome Street primarily provides access to Norfolk Street for vehicles headed towards the Williamsburg Bridge. Between Ludlow Street and Norfolk Street, traffic operates in the eastbound direction with volumes of 50 to 90 vph during peak hours except in the weekday PM peak hour when volumes reach 225 vph. Between Norfolk Street and Clinton Street, traffic operates in the westbound direction with volumes of 200 to 375 vph during all peak hours.

Allen Street, between Houston Street and Grand Street, has northbound volumes that range from approximately 450 to 850 vph during all four peak hours. Southbound volumes are approximately 200 to 750 vph during all four peak hours.

Volumes along Essex Street between Houston Street and Grand Street range from approximately 200 to 600 vph for all peak hours in each direction. Volumes along the corridor are typically highest at Delancey Street where motorists make turns to travel to the Williamsburg Bridge.

Norfolk Street services northbound traffic in the study area between Grand Street and Houston Street, with approximately 250 to 650 vph in the weekday AM peak hour, 200 to 550 vph in the weekday midday peak hour, 200 to 800 vph in the weekday PM peak hour, and 150 to 800 vph in the Saturday peak hour, with the heaviest volumes at the intersection of Delancey Street where vehicles make right turns towards the Williamsburg Bridge.

The section of Suffolk Street north of Delancey Street carries approximately 20 to 65 vph in the southbound direction during all four peak hours. South of Delancey Street, Suffolk Street traffic volumes are generally less than 40 vph during the peak hours.

Clinton Street, between Broome Street and Grand Street, is characterized by 250 to 400 vph in the northbound direction and about 50 vph in the southbound direction during all peak hours. For the section between Delancey Street and Broome Street, Clinton Street is traveled by approximately 50 vph during the peak hours.

To supplement the field data, inventories of roadway geometry, traffic controls, bus stops, and parking regulations/activities were also recorded to provide appropriate inputs for the operational analyses. In addition, official signal timings obtained from NYCDOT were used in the analyses for all the signalized intersections. Existing traffic volumes for the weekday AM, midday, and PM, and Saturday peak hours, respectively are provided at the end of the chapter.

LEVELS OF SERVICE

Tables 13-13a and 13-13b provide an overview of the levels of service that characterize existing "overall" intersection conditions and individual traffic movements, respectively, during the weekday AM, midday and PM, and Saturday peak hours. Detailed descriptions of the existing conditions traffic levels of service are provided in **Table 13-14**.

Table 13-13a
Existing Traffic Level of Service Summary – Overall Intersections

	Weekday			
	AM Peak Hour	Midday Peak Hour	PM Peak Hour	Saturday Peak Hour
Intersections at Overall LOS A/B/C	27	28	24	26
Intersections at Overall LOS D	3	2	6	4
Intersections at Overall LOS E	0	0	0	0
Intersections Overall LOS F	0	0	0	0

Note: Includes the 30 analyzed intersections (25 signalized and 5 unsignalized). All 5 unsignalized intersections operate at overall LOS A or B during all four traffic analysis hours.

Table 13-13b
Existing Traffic Level of Service Summary – Traffic Movements

	Weekday			
	AM Peak Hour	Midday Peak Hour	PM Peak Hour	Saturday Peak Hour
Traffic movements at LOS A/B/C and acceptable LOS D	103	103	100	103
Traffic movements at unacceptable LOS D	7	10	6	6
Traffic movements at LOS E	8	3	8	6
Traffic movements LOS F	1	2	3	3
Number of individual traffic movements*	119	118	117	118
Note: * Number of movements may vary between peak hours due to turn prohibitions, parking regulations, and the presence of de facto left turn movements.				

Table 13-14
Seward Park Development EIS
2011 Existing Traffic Levels of Service

Intersection & Approach		Weekday AM (8:00 - 9:00 AM)				Weekday Midday (1:00 - 2:00 PM)				Weekday PM (5:15 - 6:15 PM)				Saturday (3:45 - 4:45 PM)			
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS
SIGNALIZED INTERSECTIONS																	
EAST HOUSTON STREET																	
1. EAST HOUSTON STREET AND BOWERY																	
East Houston Street	EB	L	0.28	29.7	C	L	0.42	31.5	C	L	0.40	32.5	C	L	0.68	38.8	D
		TR	0.63	28.2	C	TR	0.72	29.7	C	TR	0.69	28.9	C	TR	0.82	31.5	C
	WB	L	0.63	27.3	C	L	0.72	36.1	D	L	0.64	34.9	C	L	0.81	44.8	D
		TR	0.96	36.3	D	TR	0.80	31.0	C	TR	0.95	42.8	D	TR	0.93	37.2	D
Bowery	NB	L	0.80	39.4	D	L	0.47	28.1	C	L	0.76	46.4	D	L	0.69	36.1	D
		TR	0.89	38.5	D	TR	0.72	34.3	C	TR	0.66	32.4	C	TR	0.95	42.0	D
	SB	L	0.31	25.5	C	L	0.39	24.8	C	L	0.47	26.2	C	L	0.56	32.1	C
		TR	0.90	40.8	D	TR	0.80	37.2	D	TR	0.98	49.1	D	TR	0.99	49.0	D
Overall Intersection		-	**0.93**	**35.2**	**D**	-	**0.84**	**32.0**	**C**	-	**0.92**	**38.6**	**D**	-	**0.95**	**38.9**	**D**
2. EAST HOUSTON STREET AND CHRYSTIE STREET / SECOND AVENUE																	
East Houston Street	EB	TR	0.96	53.6	D	TR	1.05	73.7	E	TR	0.80	34.4	C	TR	0.88	35.9	D
	WB	L	0.88	73.7	E	L	0.73	65.7	E	L	0.86	80.8	F	L	0.68	51.9	D
		T	0.92	42.2	D	T	0.80	35.9	D	T	0.55	28.4	C	T	0.80	32.7	C
Chrystie Street / Second Avenue	NB	L	0.92	46.9	D	L	0.60	38.3	D	L	0.71	40.5	D	L	0.55	36.6	D
		LR	0.93	51.0	D	LR	0.65	42.2	D	LR	0.75	44.3	D	LR	0.64	41.3	D
	SB	L	0.90	43.9	D	L	1.00	48.8	D	L	0.81	36.8	D	L	1.05	67.5	E
		LT	0.96	49.8	D	LT	1.01	51.7	D	LT	0.99	47.3	D	LT	1.04	59.0	E
		R	0.90	43.1	D	R	1.01	51.1	D	R	0.95	46.7	D	R	0.87	35.8	D
Overall Intersection		-	**0.92**	**47.9**	**D**	-	**0.93**	**52.2**	**D**	-	**0.87**	**39.6**	**D**	-	**0.87**	**43.0**	**D**
3. EAST HOUSTON STREET AND ALLEN STREET / FIRST AVENUE																	
East Houston Street	EB	L	0.99	56.1	E	L	0.69	26.5	C	L	0.74	33.0	C	L	0.78	36.0	D
		TR	0.77	29.0	C	TR	0.98	36.4	D	TR	0.80	31.1	C	TR	0.98	40.6	D
	WB	L	0.39	25.2	C	L	0.25	24.7	C	L	0.32	23.9	C	L	0.41	30.3	C
		TR	0.74	30.6	C	TR	0.60	27.8	C	TR	0.58	27.0	C	TR	0.81	32.1	C
Allen Street	NB	L	0.59	31.8	C	L	0.42	28.7	C	L	0.35	27.5	C	L	0.35	27.3	C
		T	0.94	45.7	D	T	0.75	34.3	C	T	0.97	51.5	D	T	0.81	35.3	D
		R	0.30	27.7	C	R	0.24	27.0	C	R	0.14	25.4	C	R	0.20	26.1	C
Overall Intersection		-	**0.98**	**36.1**	**D**	-	**0.81**	**32.1**	**C**	-	**0.90**	**35.0**	**C**	-	**0.91**	**35.5**	**D**
4. EAST HOUSTON STREET AND ESSEX STREET / AVENUE A																	
East Houston Street	EB	L	0.45	16.3	B	L	0.35	13.0	B	L	0.26	13.3	B	L	0.27	13.3	B
		TR	0.41	22.4	C	TR	0.48	22.8	C	TR	0.47	22.9	C	TR	0.49	22.9	C
	WB	L	0.51	17.3	B	L	0.58	20.3	C	L	0.79	39.3	D	L	0.70	22.8	C
		TR	0.55	24.5	C	TR	0.45	23.1	C	TR	0.52	24.0	C	TR	0.62	25.3	C
Essex Street / Avenue A	NB	LTR	0.72	33.0	C	LTR	0.72	33.1	C	LTR	0.69	31.8	C	LTR	0.66	31.4	C
	SB	LTR	0.91	41.4	D	LTR	0.99	46.1	D	LTR	0.91	40.9	D	LTR	1.03	53.5	D
Overall Intersection		-	**0.75**	**26.8**	**C**	-	**0.73**	**27.2**	**C**	-	**0.76**	**28.3**	**C**	-	**0.78**	**28.8**	**C**

Table 13-14 (cont'd)
Seward Park Development EIS
2011 Existing Traffic Levels of Service

Intersection & Approach		Weekday AM (8:00 - 9:00 AM)				Weekday Midday (1:00 - 2:00 PM)				Weekday PM (5:15 - 6:15 PM)				Saturday (3:45 - 4:45 PM)			
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS
SIGNALIZED INTERSECTIONS																	
STANTON STREET																	
5. STANTON STREET AND ESSEX STREET																	
Stanton Street	EB	LTR	0.20	22.0	C	LTR	0.42	26.3	C	LTR	0.24	22.6	C	LTR	0.21	21.9	C
Essex Street	NB	TR	0.32	11.9	B	TR	0.24	11.1	B	TR	0.32	11.8	B	TR	0.30	11.6	B
	SB	LT	0.37	12.3	B	LT	0.34	11.9	B	LT	0.38	12.2	B	LT	0.52	13.8	B
Overall Intersection		-	**0.31**	**12.9**	**B**	-	**0.37**	**14.0**	**B**	-	**0.32**	**12.9**	**B**	-	**0.40**	**13.6**	**B**
6. STANTON STREET AND NORFOLK STREET																	
Stanton Street	EB	LT	0.22	16.3	B	LT	0.19	15.8	B	LT	0.16	15.4	B	LT	0.21	16.0	B
Norfolk Street	NB	TR	0.44	19.4	B	TR	0.49	20.3	C	TR	0.40	18.7	B	TR	0.38	18.4	B
Overall Intersection		-	**0.33**	**18.4**	**B**	-	**0.34**	**19.0**	**B**	-	**0.28**	**17.7**	**B**	-	**0.30**	**17.5**	**B**
RIVINGTON STREET																	
7. RIVINGTON STREET AND ESSEX STREET																	
Rivington Street	WB	LTR	0.84	43.5	D	LTR	0.59	30.2	C	LTR	0.72	35.7	D	LTR	0.67	33.3	C
Essex Street	NB	LT	0.34	11.8	B	LT	0.27	11.2	B	LT	0.31	11.4	B	LT	0.32	11.6	B
	SB	TR	0.31	11.8	B	TR	0.39	12.7	B	TR	0.42	13.1	B	TR	0.82	32.4	C
Overall Intersection		-	**0.53**	**21.0**	**C**	-	**0.47**	**15.9**	**B**	-	**0.54**	**17.8**	**B**	-	**0.75**	**25.9**	**C**
8. RIVINGTON STREET AND NORFOLK STREET																	
Rivington Street	WB	TR	0.52	21.2	C	TR	0.18	16.0	B	TR	0.42	19.3	B	TR	0.45	19.7	B
Norfolk Street	NB	LT	0.45	18.0	B	LT	0.60	20.4	C	LT	0.54	19.0	B	LT	0.40	17.5	B
Overall Intersection		-	**0.48**	**19.5**	**B**	-	**0.39**	**19.5**	**B**	-	**0.48**	**19.2**	**B**	-	**0.43**	**18.7**	**B**
DELANCEY STREET																	
9. DELANCEY STREET AND ALLEN STREET																	
Delancey Street	EB	TR	0.91	34.8	C	TR	0.69	21.8	C	TR	0.91	31.0	C	TR	0.74	22.6	C
	WB	L	0.85	51.3	D	L	0.94	70.1	E	L	0.93	73.7	E	L	0.97	71.1	E
		TR	0.98	32.9	C	TR	0.75	14.1	B	TR	0.97	30.3	C	TR	0.79	14.7	B
Allen Street	NB	T	0.67	34.3	C	T	0.64	33.8	C	T	0.62	32.9	C	T	0.71	35.7	D
		R	0.57	36.6	D	R	0.74	45.3	D	R	0.95	71.7	E	R	0.82	55.1	E
	SB	TR	0.54	31.7	C	TR	0.69	33.4	C	TR	0.54	31.4	C	TR	0.75	35.1	D
Overall Intersection		-	**0.89**	**34.9**	**C**	-	**0.76**	**24.3**	**C**	-	**0.97**	**34.8**	**C**	-	**0.81**	**25.6**	**C**
10. DELANCEY STREET AND ORCHARD STREET																	
Delancey Street	EB	T	0.40	9.6	A	T	0.55	11.2	B	T	0.65	12.1	B	T	0.57	11.3	B
	WB	TR	0.75	14.1	B	TR	0.67	12.9	B	TR	0.78	14.7	B	TR	0.73	13.9	B
Orchard Street	NB	LTR	0.24	25.8	C	LTR	0.30	27.1	C	LTR	0.29	26.7	C	LTR	0.26	26.3	C
Overall Intersection		-	**0.58**	**12.9**	**B**	-	**0.55**	**12.6**	**B**	-	**0.62**	**13.8**	**B**	-	**0.58**	**13.1**	**B**
11. DELANCEY STREET AND LUDLOW STREET																	
Delancey Street	EB	TR	0.42	10.0	B	TR	0.57	11.6	B	TR	0.69	13.1	B	TR	0.57	11.5	B
	WB	T	0.72	13.0	B	T	0.70	12.8	B	T	0.76	13.6	B	T	0.66	12.0	B
Ludlow Street	SB	LTR	0.59	34.9	C	LTR	0.81	48.9	D	LTR	1.04	96.5	F	LTR	1.03	89.8	F
Overall Intersection		-	**0.68**	**13.1**	**B**	-	**0.73**	**14.5**	**B**	-	**0.85**	**18.3**	**B**	-	**0.78**	**17.7**	**B**
12. DELANCEY STREET AND ESSEX STREET																	
Delancey Street	EB	TR	0.49	13.8	B	TR	0.65	16.0	B	TR	0.97	32.2	C	TR	0.85	24.2	C
	WB	TR	0.98	33.9	C	TR	0.93	21.1	C	TR	1.01	41.7	D	TR	0.99	31.2	C
Essex Street	NB	LTR	0.79	44.8	D	LTR	0.74	40.1	D	LTR	0.98	64.6	E	LTR	0.71	37.1	D
	SB	DefL	1.02	90.5	F	DefL	1.03	96.3	F	LTR	0.97	61.4	E	DefL	1.04	83.9	F
		TR	0.74	42.8	D	TR	0.73	42.2	D	-	-	-	-	TR	0.63	35.9	D
Overall Intersection		-	**0.99**	**31.9**	**C**	-	**0.96**	**25.1**	**C**	-	**1.00**	**41.6**	**D**	-	**1.01**	**32.3**	**C**
13. DELANCEY STREET AND NORFOLK STREET																	
Delancey Street	EB	T	0.59	12.3	B	T	0.69	13.7	B	T	1.02	41.6	D	T	0.75	14.4	B
	WB	TR	0.90	17.7	B	TR	0.94	22.1	C	TR	0.96	22.7	C	TR	0.90	19.2	B
Norfolk Street	NB	TR	0.93	57.2	E	TR	0.75	39.1	D	TR	0.99	65.8	E	TR	0.93	59.0	E
		R	0.91	55.1	E	R	0.80	43.0	D	R	1.00	68.8	E	R	0.91	56.1	E
Overall Intersection		-	**0.91**	**21.1**	**C**	-	**0.89**	**21.0**	**C**	-	**1.01**	**36.6**	**D**	-	**0.91**	**22.4**	**C**
14. DELANCEY STREET AND SUFFOLK STREET																	
Delancey Street	EB	T	0.77	16.7	B	T	0.78	15.4	B	T	1.04	39.5	D	T	0.96	22.8	C
	WB	T	0.91	18.9	B	T	0.75	14.2	B	T	0.82	15.3	B	T	0.72	13.8	B
Delancey Street Service Road	EB	TR	0.19	10.2	B	TR	0.14	8.5	A	TR	0.13	8.3	A	TR	0.10	8.2	A
Suffolk Street	SB	R	0.11	21.4	C	R	0.06	22.8	C	R	0.20	24.9	C	R	0.24	25.4	C
Overall Intersection		-	**0.61**	**17.7**	**B**	-	**0.54**	**14.7**	**B**	-	**0.75**	**28.1**	**C**	-	**0.72**	**18.8**	**B**
15. DELANCEY STREET AND CLINTON STREET																	
Williamsburg Bridge	WB	T	1.03	43.1	D	T	0.86	16.5	B	T	1.03	42.4	D	T	0.81	14.5	B
		R	1.04	72.3	E	R	0.87	37.8	D	R	1.04	71.7	E	R	0.95	49.2	D
Delancey Street Service Road	EB	TR	0.13	6.5	A	TR	0.12	6.4	A	TR	0.09	6.2	A	TR	0.08	6.2	A
	WB	TR	0.86	58.4	E	TR	0.49	45.7	D	TR	0.70	53.6	D	TR	0.59	48.6	D
Clinton Street	NB	R	0.17	28.0	C	R	0.09	26.8	C	R	0.16	27.6	C	R	0.09	26.7	C
Overall Intersection		-	**0.80**	**33.0**	**C**	-	**0.65**	**16.3**	**B**	-	**0.79**	**42.4**	**D**	-	**0.68**	**17.9**	**B**

Table 13-14 (cont'd)
Seward Park Development EIS
2011 Existing Traffic Levels of Service

Intersection & Approach		Weekday AM (8:00 - 9:00 AM)				Weekday Midday (1:00 - 2:00 PM)				Weekday PM (5:15 - 6:15 PM)				Saturday (3:45 - 4:45 PM)			
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS
SIGNALIZED INTERSECTIONS																	
BROOME STREET																	
16. BROOME STREET AND ESSEX STREET																	
Broome Street	EB	LTR	0.16	21.2	C	LTR	0.13	20.8	C	LTR	0.13	20.9	C	LTR	0.18	21.3	C
Essex Street	NB	TR	0.29	11.5	B	TR	0.27	11.4	B	TR	0.42	12.7	B	TR	0.24	11.1	B
	SB	L	0.10	10.3	B	L	0.09	10.1	B	L	0.78	20.3	C	L	0.14	10.6	B
		T	0.25	11.3	B	T	0.24	11.2	B	T	0.28	11.2	B	T	0.21	10.9	B
Overall Intersection		-	**0.24**	**12.5**	**B**	-	**0.21**	**12.1**	**B**	-	**0.53**	**14.2**	**B**	-	**0.22**	**12.4**	**B**
17. BROOME STREET AND NORFOLK STREET																	
Broome Street	EB	L	0.12	10.3	B	L	0.09	10.0	A	L	0.64	36.2	D	L	0.12	10.3	B
	WB	R	0.40	13.6	B	R	0.31	12.4	B	R	0.92	65.3	E	R	0.57	16.9	B
Norfolk Street	NB	T	0.75	29.8	C	T	0.69	28.4	C	T	0.62	26.3	C	T	0.69	27.3	C
Overall Intersection		-	**0.53**	**21.6**	**C**	-	**0.46**	**20.9**	**C**	-	**0.75**	**42.2**	**D**	-	**0.62**	**20.8**	**C**
GRAND STREET																	
18. GRAND STREET AND ALLEN STREET																	
Grand Street	EB	LTR	0.97	46.3	D	LTR	1.01	50.1	D	LTR	0.87	41.7	D	LTR	0.88	42.3	D
	WB	LTR	0.76	42.9	D	LTR	0.87	52.9	D	LTR	0.63	34.8	C	LTR	0.66	36.0	D
Allen Street	NB	L	0.67	60.5	E	L	0.41	45.5	D	L	0.28	40.4	D	L	0.58	52.2	D
		TR	0.53	21.5	C	TR	0.45	19.9	B	TR	0.59	22.0	C	TR	0.47	20.1	C
	SB	L	0.84	70.9	E	L	1.05	105.4	F	L	0.93	82.3	F	L	1.03	104.0	F
		TR	0.56	21.4	C	TR	0.71	23.9	C	TR	0.61	22.1	C	TR	0.57	21.4	C
Overall Intersection		-	**0.73**	**33.4**	**C**	-	**0.78**	**39.2**	**D**	-	**0.74**	**31.7**	**C**	-	**0.69**	**35.5**	**D**
19. GRAND STREET AND ORCHARD STREET																	
Grand Street	EB	LT	0.59	20.5	C	LT	0.66	20.6	C	LT	0.64	21.4	C	LT	0.66	21.3	C
	WB	TR	0.48	20.5	C	TR	0.52	21.1	C	TR	0.43	19.6	B	TR	0.48	20.5	C
Orchard Street	NB	LTR	0.15	15.4	B	LTR	0.15	15.4	B	LTR	0.17	15.6	B	LTR	0.14	15.3	B
Overall Intersection		-	**0.37**	**19.9**	**B**	-	**0.40**	**20.2**	**C**	-	**0.40**	**19.9**	**B**	-	**0.40**	**20.4**	**C**
20. GRAND STREET AND LUDLOW STREET																	
Grand Street	EB	TR	0.58	22.2	C	TR	0.64	23.9	C	TR	0.59	22.0	C	TR	0.56	21.2	C
	WB	LT	0.33	17.2	B	LT	0.35	17.6	B	LT	0.33	16.9	B	LT	0.34	17.6	B
Ludlow Street	SB	LTR	0.27	17.2	B	LTR	0.25	17.0	B	LTR	0.17	15.8	B	LTR	0.23	16.5	B
Overall Intersection		-	**0.43**	**19.5**	**B**	-	**0.45**	**20.5**	**C**	-	**0.38**	**19.4**	**B**	-	**0.40**	**19.2**	**B**
21. GRAND STREET AND ESSEX STREET																	
Grand Street	EB	LTR	0.73	28.7	C	LTR	0.64	24.4	C	LTR	0.63	24.0	C	LTR	0.69	26.2	C
	WB	LTR	0.69	21.2	C	LTR	0.61	20.1	C	LTR	0.98	33.1	C	LTR	0.52	18.5	B
Essex Street	NB	LTR	0.36	17.7	B	LTR	0.29	16.7	B	LTR	0.36	17.5	B	LTR	0.23	16.0	B
	SB	DefL	0.38	20.7	C	LTR	0.31	17.3	B	LTR	0.33	17.5	B	LTR	0.25	16.3	B
		TR	0.28	17.3	B	-	-	-	-	-	-	-	-	-	-	-	-
Overall Intersection		-	**0.55**	**21.9**	**C**	-	**0.47**	**19.8**	**B**	-	**0.67**	**24.2**	**C**	-	**0.47**	**20.1**	**C**
22. GRAND STREET AND NORFOLK STREET																	
Grand Street	EB	L	0.30	14.7	B	L	0.22	13.2	B	L	0.24	13.8	B	L	0.14	11.9	B
		T	0.52	16.8	B	T	0.42	15.0	B	T	0.44	15.1	B	T	0.41	14.6	B
	WB	TR	0.99	42.6	D	TR	0.94	34.0	C	TR	1.02	42.8	D	TR	0.91	29.0	C
Overall Intersection		-	**1.00**	**32.7**	**C**	-	**0.94**	**27.4**	**C**	-	**1.01**	**33.6**	**C**	-	**0.90**	**24.1**	**C**
23. GRAND STREET AND SUFFOLK STREET																	
Grand Street	EB	T	0.47	15.7	B	T	0.37	14.2	B	T	0.38	14.1	B	T	0.40	14.6	B
	WB	T	0.86	28.5	C	T	0.83	25.8	C	T	0.96	38.6	D	T	0.85	27.1	C
Suffolk Street	SB	LR	0.10	19.2	B	LR	0.06	18.7	B	LR	0.08	19.0	B	LR	0.07	18.7	B
Overall Intersection		-	**0.55**	**23.9**	**C**	-	**0.51**	**22.3**	**C**	-	**0.60**	**31.3**	**C**	-	**0.53**	**23.0**	**C**
24. GRAND STREET AND CLINTON STREET																	
Grand Street	EB	LTR	0.70	25.3	C	LTR	0.53	19.2	B	LTR	0.85	40.3	D	LTR	0.75	28.7	C
	WB	L	0.05	11.8	B	L	0.06	11.8	B	L	0.04	11.6	B	L	0.04	11.7	B
		T	0.68	20.5	C	T	0.70	21.2	C	T	0.76	22.3	C	T	0.69	20.5	C
		R	0.64	23.5	C	R	0.44	17.1	B	R	0.69	25.1	C	R	0.67	23.3	C
Clinton Street	NB	LTR	0.64	27.9	C	LTR	0.42	23.2	C	LTR	0.64	28.5	C	LTR	0.49	24.0	C
	SB	LTR	0.02	17.0	B	LTR	0.03	17.1	B	LTR	0.01	16.9	B	LTR	0.01	16.9	B
Overall Intersection		-	**0.67**	**23.4**	**C**	-	**0.58**	**20.2**	**C**	-	**0.76**	**27.5**	**C**	-	**0.64**	**23.4**	**C**
25. GRAND STREET AND EAST BROADWAY																	
Grand Street	EB	T	0.16	7.1	A	T	0.13	6.9	A	T	0.11	6.8	A	T	0.12	6.8	A
	WB	LT	0.74	14.9	B	LT	0.80	16.3	B	LT	0.86	17.8	B	LT	0.79	15.9	B
East Broadway	NB	R	0.00	6.1	A	R	0.00	6.1	A	R	0.00	6.1	A	R	0.00	6.1	A
Overall Intersection		-	**0.74**	**13.4**	**B**	-	**0.81**	**14.9**	**B**	-	**0.85**	**16.4**	**B**	-	**0.79**	**14.6**	**B**

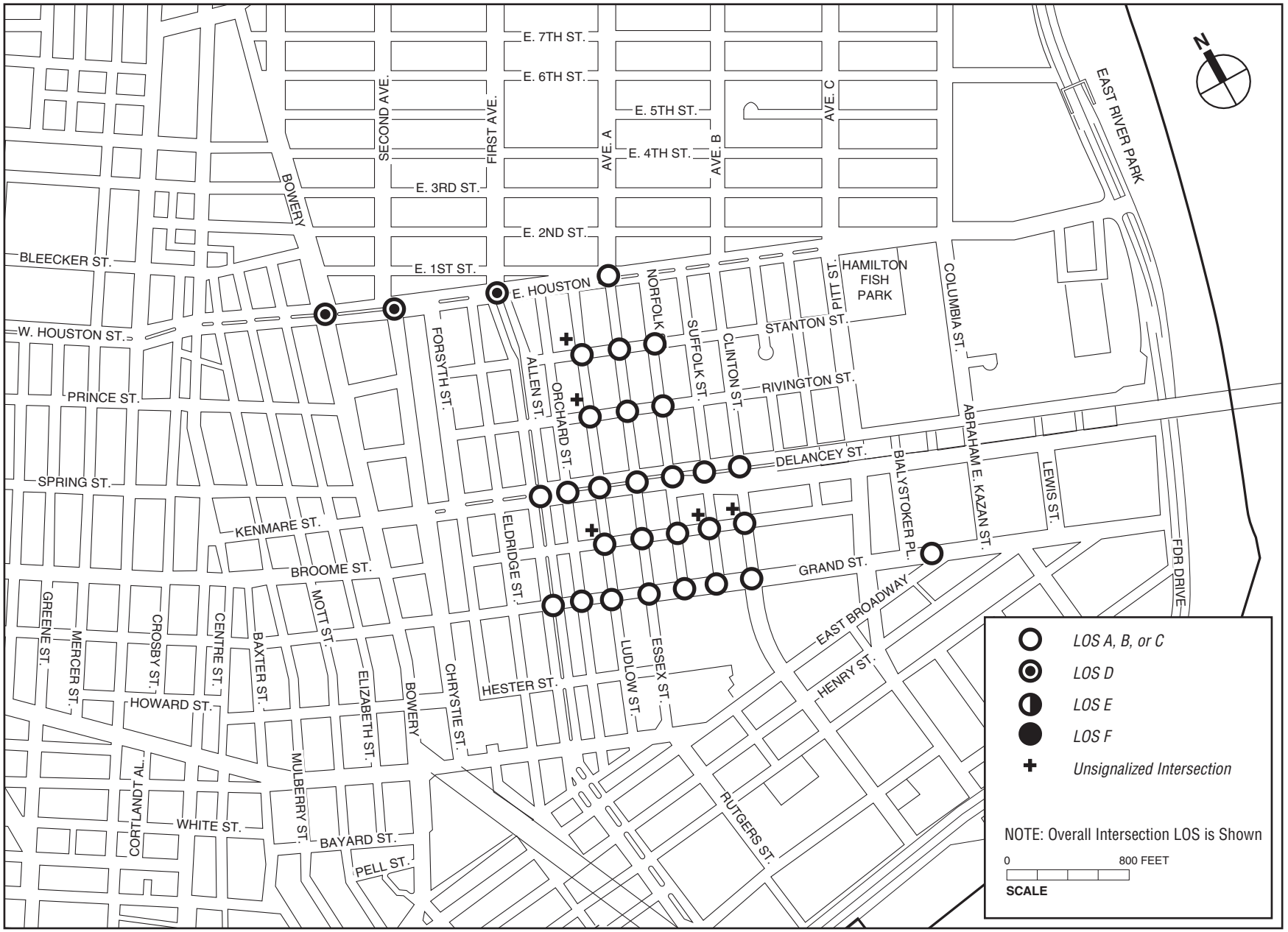
Table 13-14 (cont'd)
Seward Park Development EIS
2011 Existing Traffic Levels of Service

Intersection & Approach		Weekday AM (8:00 - 9:00 AM)				Weekday Midday (1:00 - 2:00 PM)				Weekday PM (5:15 - 6:15 PM)				Saturday (3:45 - 4:45 PM)			
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS
UNSIGNALIZED INTERSECTIONS																	
26. STANTON STREET AND LUDLOW STREET																	
Stanton Street	EB	TR	-	7.8	A	TR	-	8.6	A	TR	-	7.7	A	TR	-	8.2	A
Ludlow Street	SB	LT	-	8.6	A	LT	-	9.7	A	LT	-	9.0	A	LT	-	9.8	A
Overall Intersection		-	**-**	**8.4**	**A**	-	**-**	**9.4**	**A**	-	**-**	**8.7**	**A**	-	**-**	**9.3**	**A**
27. RIVINGTON STREET AND LUDLOW STREET																	
Rivington Street	WB	LT	-	9.8	A	LT	-	9.2	A	LT	-	10.1	B	LT	-	11.1	B
Ludlow Street	SB	TR	-	8.9	A	TR	-	9.4	A	TR	-	9.9	A	TR	-	11.1	B
Overall Intersection		-	**-**	**9.5**	**A**	-	**-**	**9.3**	**A**	-	**-**	**10.0**	**B**	-	**-**	**11.1**	**B**
28. BROOME STREET AND LUDLOW STREET																	
Broome Street	EB	TR	-	10.5	B	TR	-	13.8	B	TR	-	10.8	B	TR	-	12.1	B
Ludlow Street	SB	LT	-	7.5	A	LT	-	7.4	A	LT	-	7.3	A	LT	-	7.3	A
Overall Intersection		-	**-**	**5.9**	**A**	-	**-**	**4.4**	**A**	-	**-**	**5.4**	**A**	-	**-**	**5.6**	**A**
29. BROOME STREET AND SUFFOLK STREET																	
Broome Street	WB	LT	-	7.3	A	LT	-	7.3	A	LT	-	15.0	B	LT	-	7.2	A
Suffolk Street	SB	TR	-	10.8	B	TR	-	10.2	B	TR	-	11.9	B	TR	-	11.8	B
Overall Intersection		-	**-**	**1.7**	**A**	-	**-**	**1.3**	**A**	-	**-**	**2.5**	**A**	-	**-**	**0.9**	**A**
30. BROOME STREET AND CLINTON STREET																	
Broome Street	NB	LTR	-	8.5	A	LTR	-	8.7	A	LTR	-	9.3	A	LTR	-	9.9	A
	SB	LTR	-	8.8	A	LTR	-	9.3	A	LTR	-	9.3	A	LTR	-	8.1	A
Overall Intersection		-	**-**	**6.0**	**A**	-	**-**	**6.4**	**A**	-	**-**	**7.0**	**A**	-	**-**	**8.6**	**A**

Notes:
(1) Control delay is measured in seconds per vehicle.
(2) Overall intersection V/C ratio is the critical lane groups' V/C ratio.

This summary overview of existing conditions indicates that:

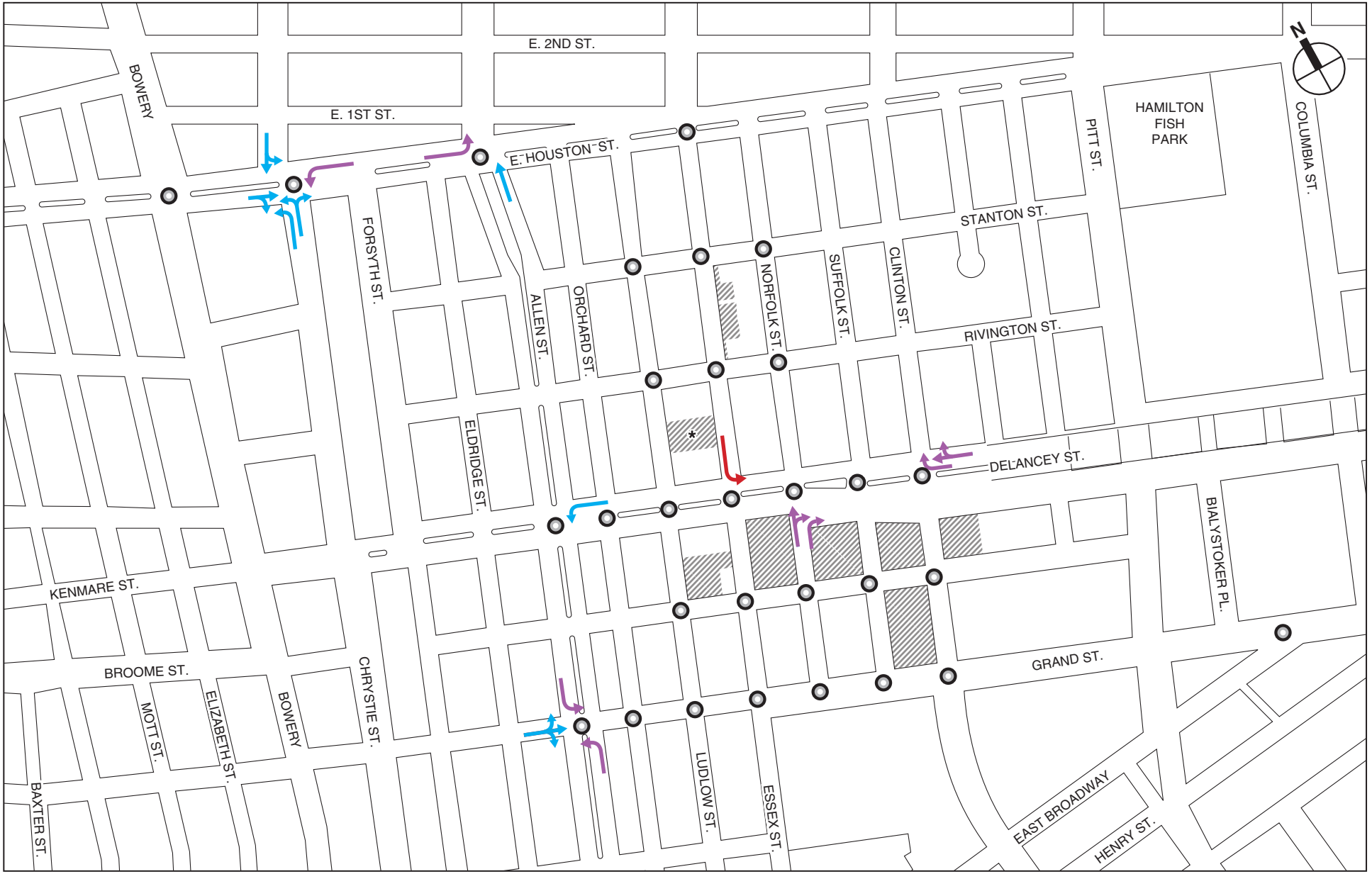
- In the weekday AM peak hour, none of the 25 signalized intersections analyzed are operating at overall LOS E or F, and three intersections are operating at marginally acceptable/unacceptable LOS D. "Overall" LOS E or F means that serious congestion exists—either one specific traffic movement has severe delays or two or more of the specific traffic movements at the intersection are at LOS E or F with significant delays (the overall intersection LOS is a weighted average of all the individual traffic movements). **Figure 13-4a** shows the location of these intersections. Nine individual traffic movements out of approximately 119 such movements analyzed are at LOS E or F (e.g., left turns from one street to another, through traffic on one street passing through the intersection, etc.) while seven are operating at unacceptable LOS D. Movements operating at unacceptable levels of service are shown in **Figure 13-4b**.
- In the weekday midday peak hour, no intersections operate at overall LOS E or F, and two intersections operate at marginally acceptable/unacceptable LOS D as shown in **Figure 13-5a**. Five individual traffic movements operate at LOS E or F and 10 other traffic movements operate at unacceptable LOS D. Movements operating at unacceptable levels of service are shown in **Figure 13-5b**.
- In the weekday PM peak hour, no intersections operate at overall LOS E or F, and six intersections operate at marginally acceptable/unacceptable LOS D as shown in **Figure 13-6a**. Eleven individual traffic movements operate at LOS E or F and six other traffic movements operate at unacceptable LOS D. Movements operating at unacceptable levels of service are shown in **Figure 13-6b**.
- In the Saturday midday peak hour, no intersections operate at overall LOS E or F, and four intersections operate at marginally acceptable/unacceptable LOS D as shown in **Figure 13-7a**. Nine individual traffic movements operate at LOS E or F and six other traffic



Existing Traffic Levels of Service - Overall Intersections
Weekday AM Peak Hour

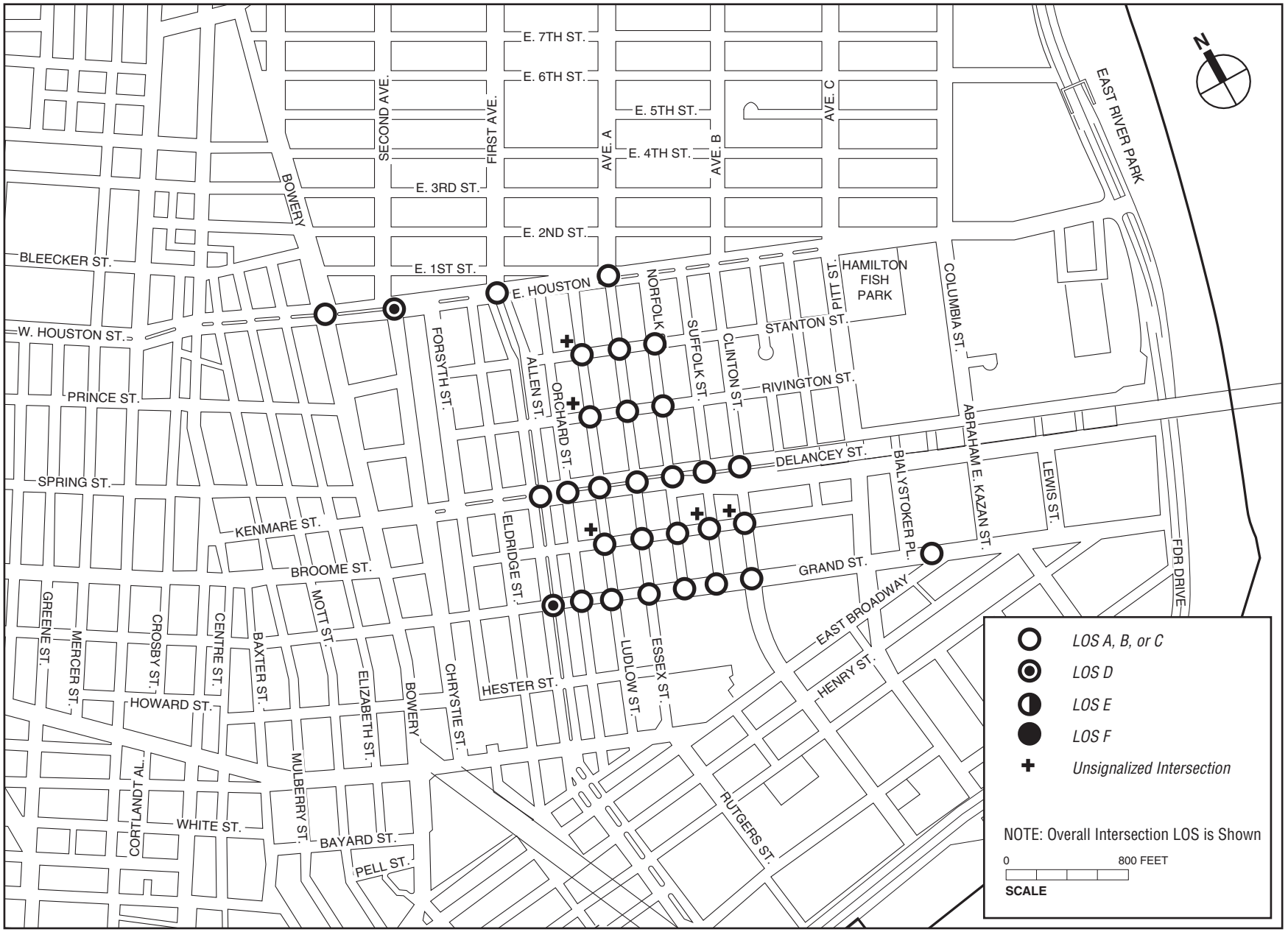
Figure 13-4a

3.22.12



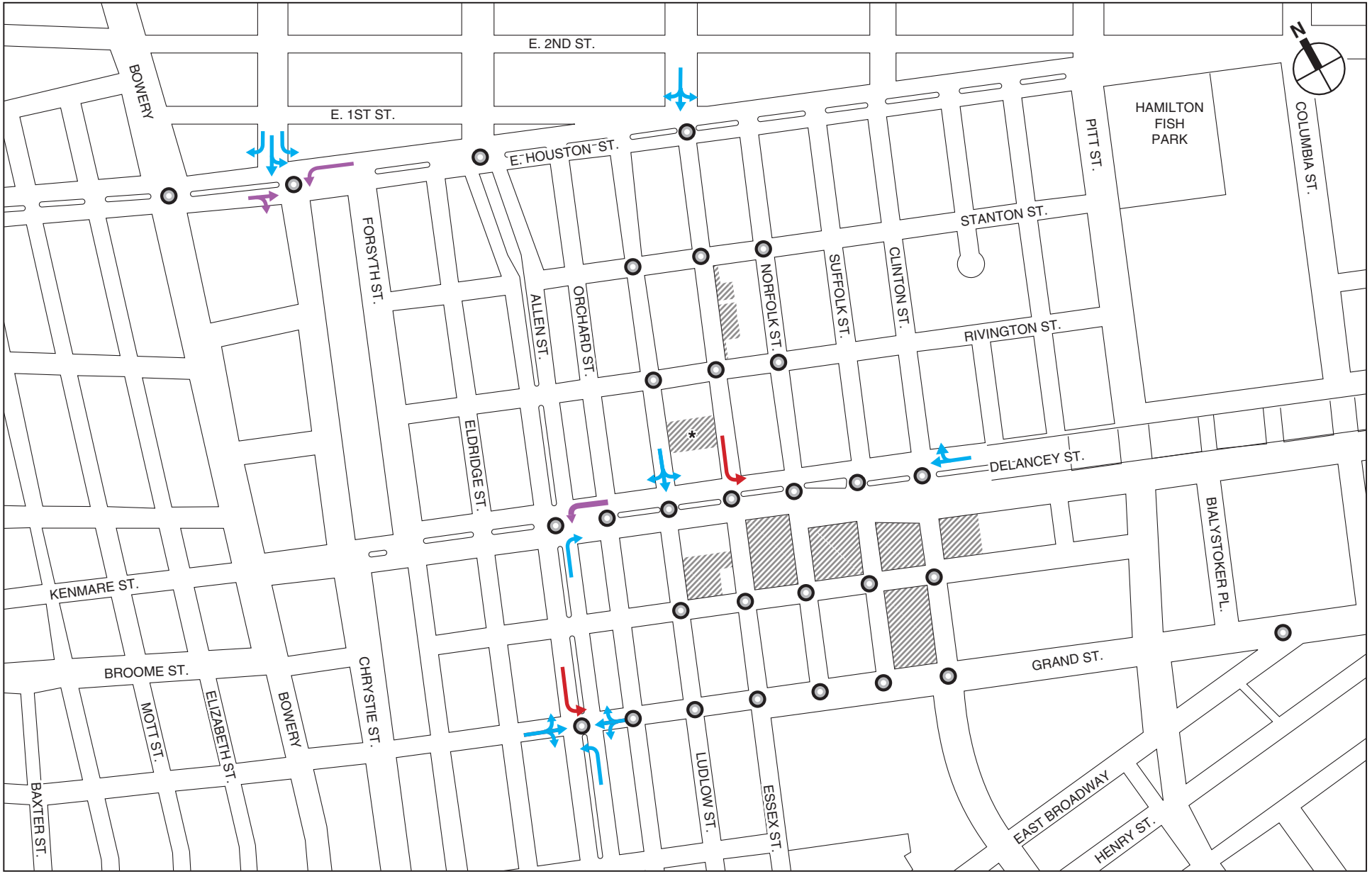
Proposed Development Sites
Intersection Analyzed
* *Site 7 Would Not Be Redeveloped Under the Proposed Actions*
Unacceptable LOS D
LOS E
LOS F

Existing Traffic Levels of Service - Unacceptable Traffic Movements
Weekday AM Peak Hour
Figure 13-4b



Existing Traffic Levels of Service - Overall Intersections
Weekday Midday Peak Hour

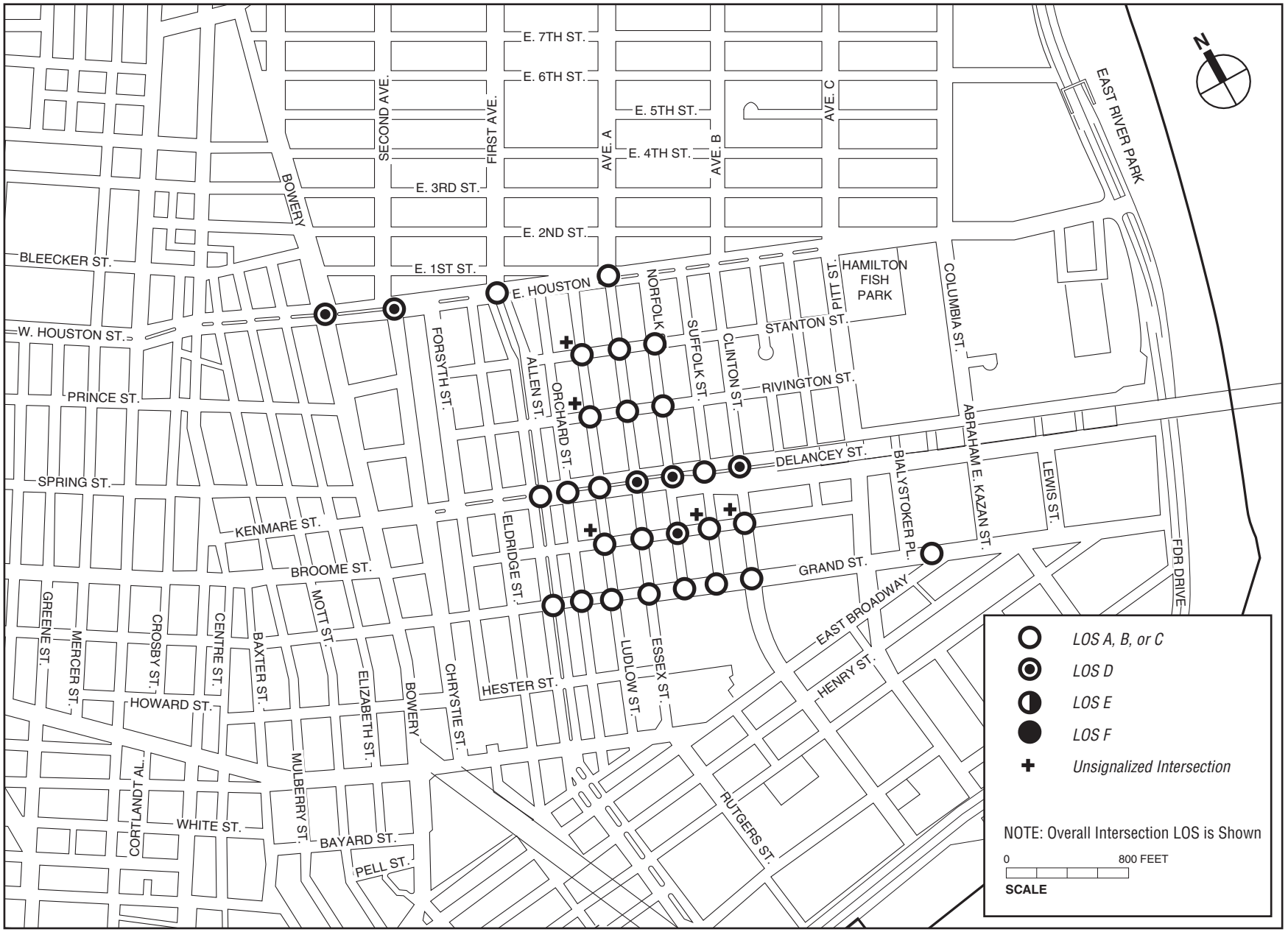
3.22.12



Proposed Development Sites
Intersection Analyzed
* *Site 7 Would Not Be Redeveloped Under the Proposed Actions*
Unacceptable LOS D
LOS E
LOS F

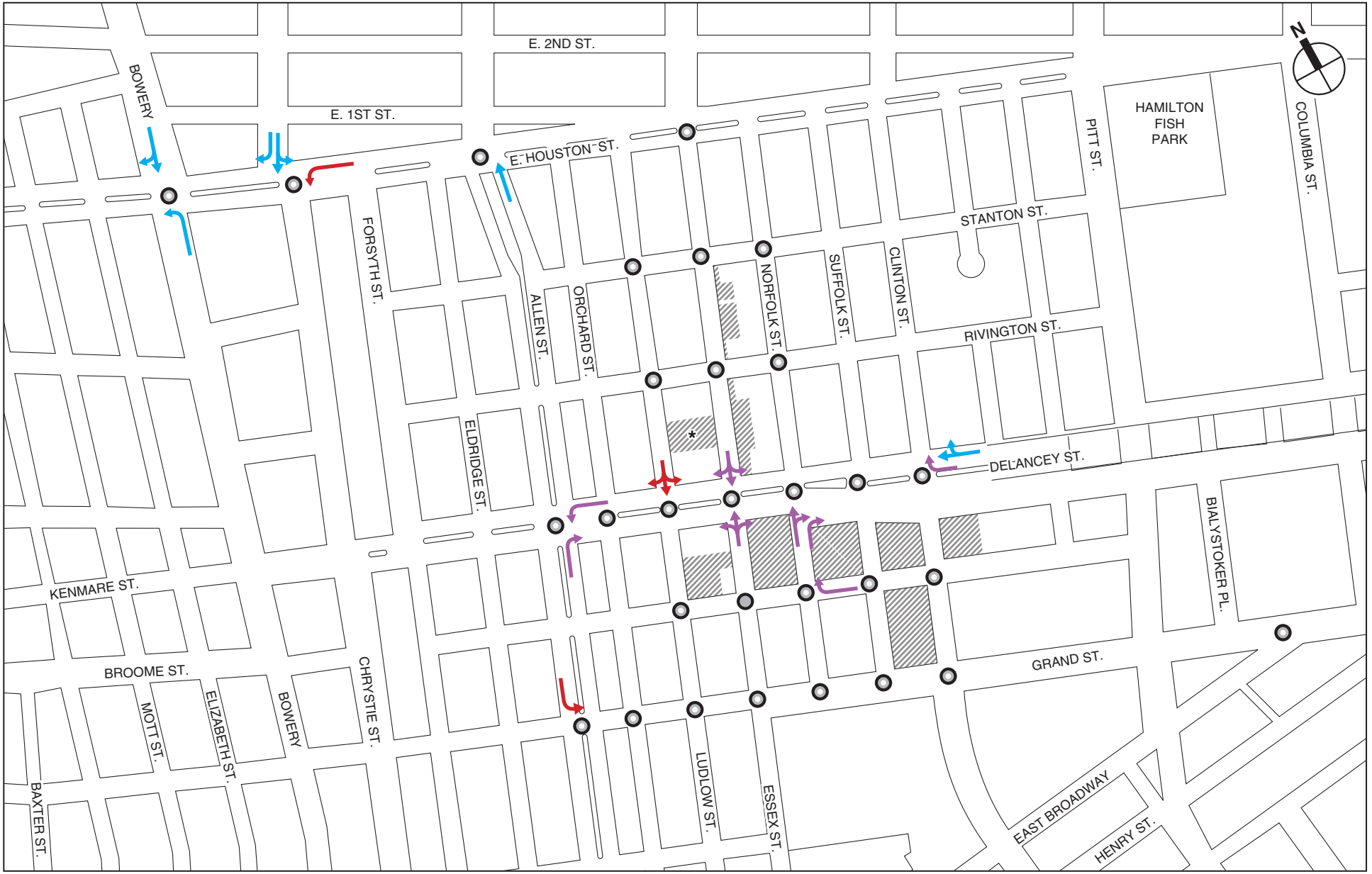
Existing Traffic Levels of Service - Unacceptable Traffic Movements
Weekday Midday Peak Hour

Figure 13-5b



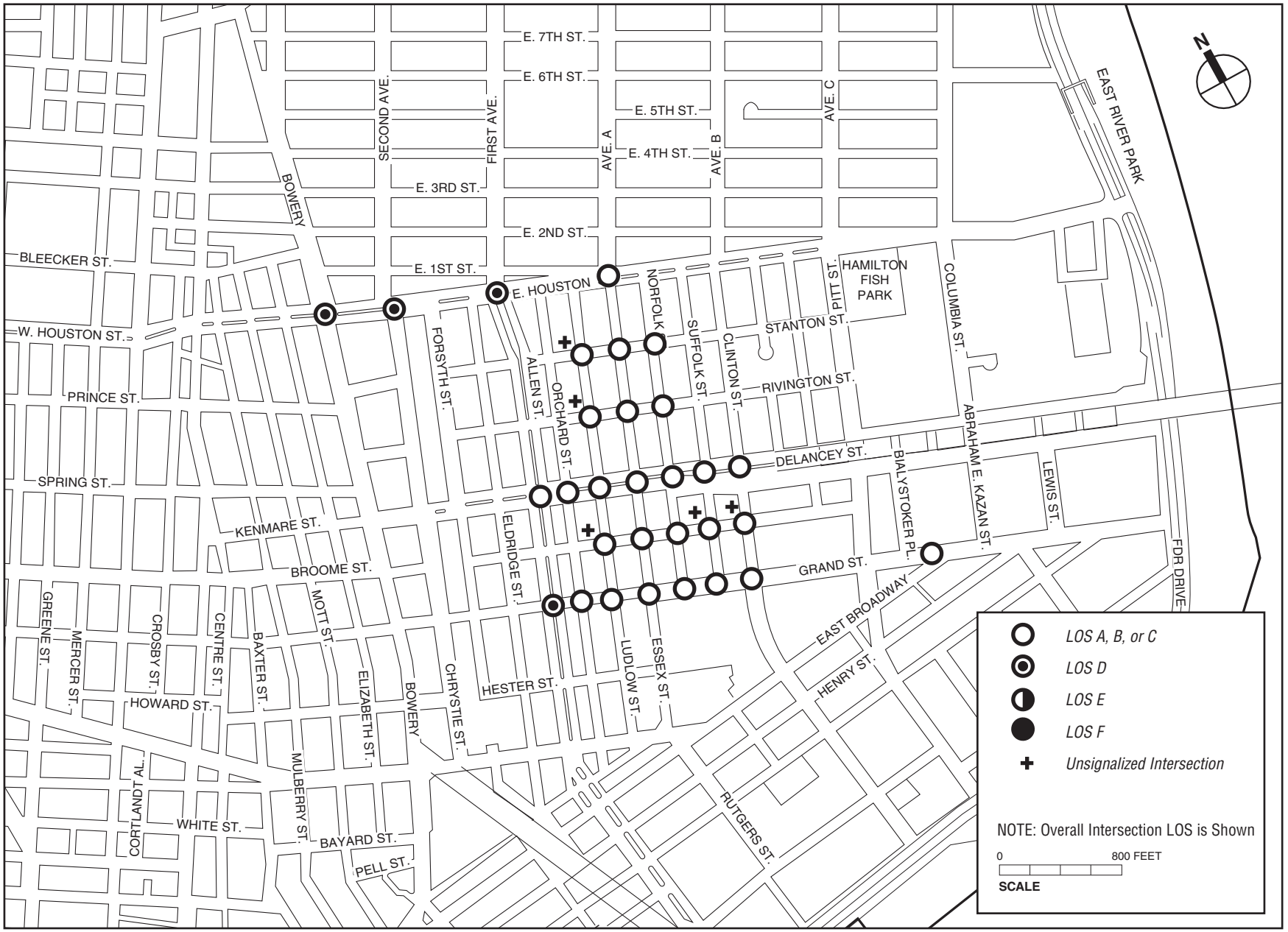
Existing Traffic Levels of Service - Overall Intersections
Weekday PM Peak Hour

3.22.12



Proposed Development Sites
Intersection Analyzed
* *Site 7 Would Not Be Redeveloped Under the Proposed Actions*
Unacceptable LOS D
LOS E
LOS F

Existing Traffic Levels of Service - Unacceptable Traffic Movements
Weekday PM Peak Hour
Figure 13-6b



Existing Traffic Levels of Service - Overall Intersections
Saturday Peak Hour

Figure 13-7a

movements operate at unacceptable LOS D. Movements operating at unacceptable levels of service are shown in **Figure 13-7b**.

- All of the five unsignalized intersections analyzed are operating at LOS A or B during all peak hours analyzed.

Traffic movements operating at unacceptable levels of service are listed below.

East Houston Street and Bowery

- Northbound Bowery left turn (weekday PM)
- Southbound Bowery through-right turn movement (weekday PM and Saturday)

East Houston Street and Chrystie Street/Second Avenue

- Eastbound East Houston Street through-right turn movement (weekday AM and midday)
- Westbound East Houston Street left turn (weekday AM, midday, PM, and Saturday)
- Northbound Chrystie Street left turn (weekday AM)
- Northbound Chrystie Street left-right turn movement (weekday AM)
- Southbound Second Avenue left turn (weekday midday and Saturday)
- Southbound Second Avenue left-through movement (weekday AM, midday, PM, and Saturday)
- Southbound Second Avenue right turn (weekday midday and PM)

East Houston Street and Allen Street/First Avenue

- Eastbound East Houston Street left turn (weekday AM)
- Northbound Allen Street through movement (weekday AM and PM)

East Houston Street and Essex Street/Avenue A

- Southbound Avenue A approach (weekday midday and Saturday)

Delancey Street and Allen Street

- Westbound Delancey Street left turn (weekday AM, midday, PM, and Saturday)
- Northbound Allen Street right turn (weekday midday, PM, and Saturday)

Delancey Street and Ludlow Street

- Southbound Ludlow Street approach (weekday midday, PM, and Saturday)

Delancey Street and Essex Street

- Northbound Essex Street approach (weekday PM)
- Southbound Essex Street de facto left turn (weekday AM, midday, and Saturday)
- Southbound Essex Street approach (weekday PM)

Delancey Street and Norfolk Street

- Northbound Norfolk Street through-right turn movement (weekday AM, PM, and Saturday)
- Northbound Norfolk Street right turn (weekday AM, PM, and Saturday)

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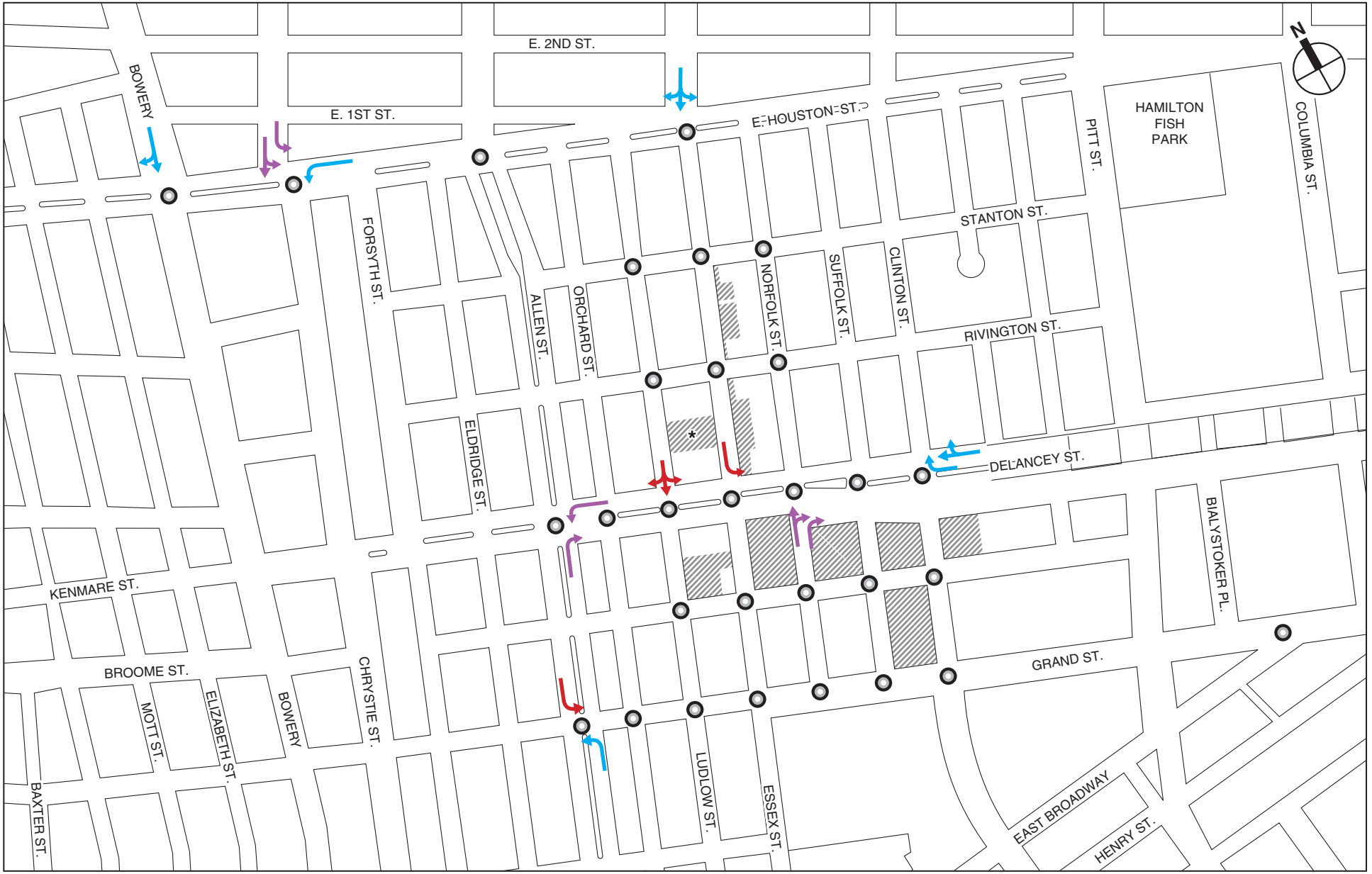


Proposed Development Sites
Intersection Analyzed
* *Site 7 Would Not Be Redeveloped Under the Proposed Actions*
Unacceptable LOS D
LOS E
LOS F

Existing Traffic Levels of Service - Unacceptable Traffic Movements
Saturday Peak Hour
Figure 13-7b

Delancey Street and Clinton Street

- Westbound Delancey Street right turn (weekday AM, PM, and Saturday)
- Westbound Delancey Street service road approach (weekday AM, midday, PM, and Saturday)

Broome Street and Norfolk Street

- Westbound Broome Street approach (weekday PM)

Grand Street and Allen Street

- Eastbound Grand Street approach (weekday AM and midday)
- Westbound Grand Street approach (weekday midday)
- Northbound Allen Street left turn (weekday AM, midday, and Saturday)
- Southbound Allen Street left turn (weekday AM, midday, PM, and Saturday)

The study area is generally characterized by heavy vehicular and pedestrian volumes, congestion at select key locations, illegal left turns and U-turn maneuvers, and the presence of traffic enforcement agents (TEAs) to process traffic flows. Although none of the 30 intersections analyzed operate at "overall" LOS E or F during the four peak analysis hours, several intersections have individual traffic movements that operate at unacceptable LOS E or F conditions, and there are persistent issues within the study area. The traffic analysis results, further supported by observed field conditions, are described below for key corridors and intersections with movements at LOS E or F.

As mentioned earlier, the Delancey Street corridor is characterized by heavy volumes especially in the section approaching and leaving the Williamsburg Bridge. In general, the perception of this corridor is that of a congested roadway with long queues and delays; however, the signal timings along this corridor favor the heavy eastbound-westbound movements along Delancey Street and provide a substantial amount of green time to this corridor. The majority of the vehicles often pass through intersections before having to stop, but the dense volumes and slow speeds along this corridor result in a perception that all vehicles stop repetitively, which is not the case.

Certain nearby intersections also create bottleneck issues which result in problems along this corridor. For example: vehicles trying to access the Williamsburg Bridge from local roadways have limited options — vehicles from sections south of Delancey Street primarily access the bridge via Norfolk Street by traveling on Clinton and Broome Streets. The northbound through and right turn movements along Norfolk Street at its intersection with Delancey Street operate at unacceptable LOS E during three of the four peak hours due to heavy volumes trying to access the bridge. The problem is exacerbated in the evening (4-7 PM Monday to Friday) when left turns from Essex Street onto Delancey Street are prohibited. Due to this prohibition, vehicles traveling south on Essex Street headed for the Williamsburg Bridge, travel past its intersection with Delancey Street and turn left onto Broome Street, and turn left again onto Norfolk Street. This adds to the congestion at the intersection of Norfolk Street and Broome Street, resulting in the westbound right turns at this intersection operating at LOS E during the weekday PM peak hour.

Southbound left turns from Essex Street onto Delancey Street operate at LOS F during the weekday AM, midday and Saturday peak hours. These vehicles, headed towards the Williamsburg Bridge, queue in the space in the middle of intersection due to blockage by

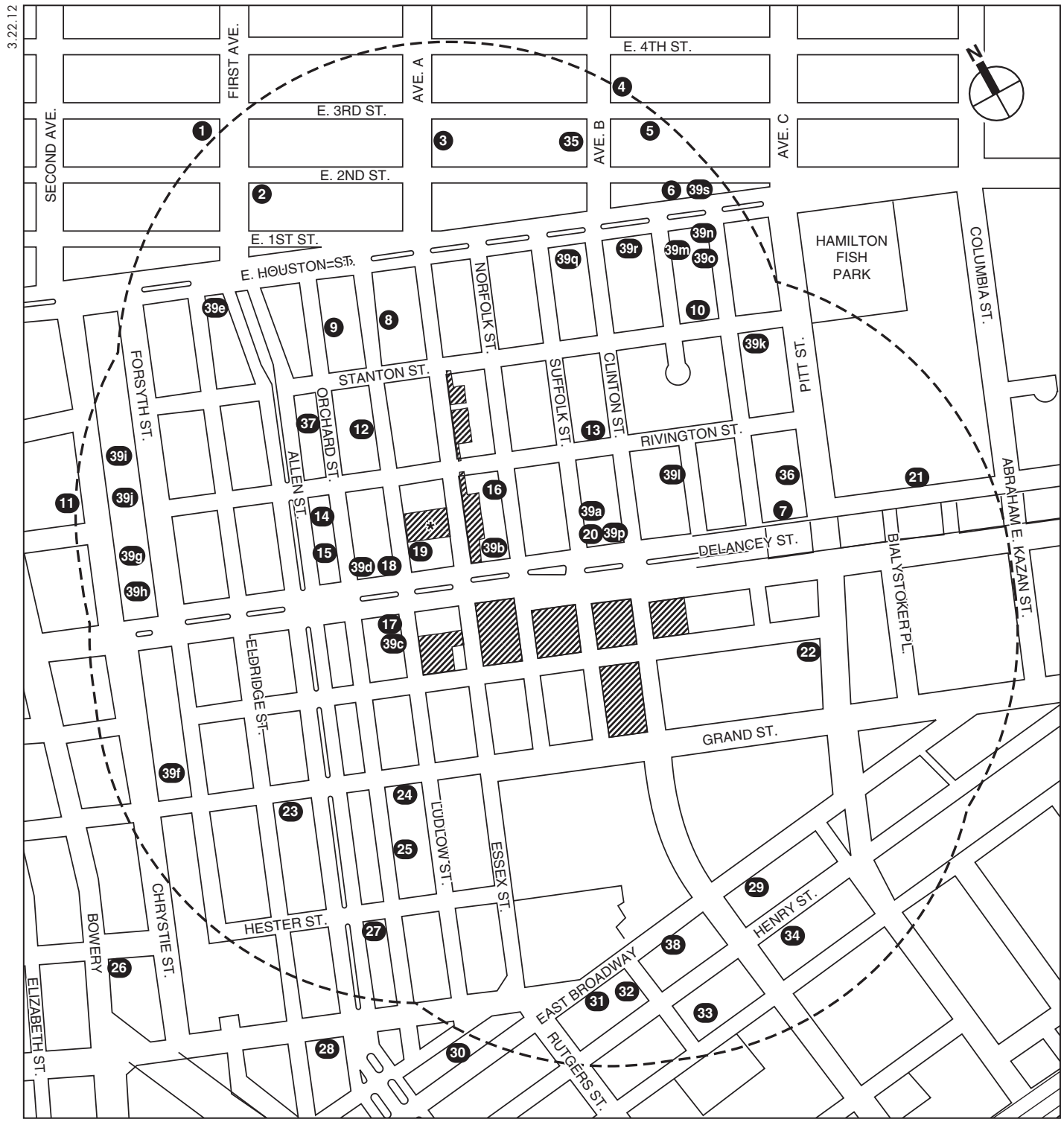
pedestrians crossing the east crosswalk and vehicles from the opposing northbound movement. This space can store approximately five to six vehicles ("sneakers") at the end of the northbound/southbound phase. The TEAs were observed to facilitate the southbound left turn movement through a number of ways including starting the southbound approach early (into the leading pedestrian interval phase), stopping the northbound movement early, or delaying the start of the eastbound/westbound movements to allow more southbound left "sneakers". Although southbound left turns from Essex Street onto Delancey Street are prohibited between 4-7 PM, this movement is characterized by illegal left turns (approximately 75 vph were counted during the 5:15 to 6:15 PM peak hour) and results in the southbound approach at this intersection operating at LOS E.

Left turns are prohibited at all times from eastbound and westbound Delancey Street onto local streets between the Williamsburg Bridge and Allen Street. As a result, there is a heavy westbound left turn movement from Delancey Street onto Allen Street during all peak analysis hours causing this movement to operate at LOS E during the weekday midday, PM, and Saturday peak hours. TEAs allow westbound left turns along Delancey Street to queue in the space at the middle of the intersection during the eastbound/westbound phase; then they allow these movements to go while stopping the eastbound movement. TEAs were also observed to stop the northbound/southbound phase early to "jump start" the westbound left turn phase.

2022 NO ACTION CONDITION

The 2022 No Action condition was developed by increasing existing (2011) traffic levels by the expected growth in overall travel through and within the study area. As per *CEQR* guidelines, an annual background growth rate of 0.25 percent was assumed for the first five years (year 2011 to year 2016) and then 0.125 percent for the remaining years (year 2016 to year 2022). In addition, a total of 39 No Action development projects were identified in coordination with the New York City Department of City Planning (DCP) as being planned for the study area (see **Figure 13-8** and **Table 13-15**). However, many of these planned projects are modest in size and would be modest traffic generators. After reviewing the development programs for each of the 39 planned and projected projects, it was determined that background growth will address the increase in traffic and pedestrian levels for 30 of the small-to-moderate-sized projects in the study area. Even though nineteen projected development sites from the 2008 East Village/Lower East Side Rezoning FEIS were included as one No Action project (number 39 in **Table 13-15**), these small-to-moderate-sized projected projects are dispersed throughout the study area and are not clustered together on any one city block. As a result, these sites would not add considerable development to any one city block and therefore were considered as part of the background growth. Person and vehicle trips generated by the remaining nine projects were then determined and incorporated in the 2022 No Action traffic analysis.

Overall, approximately 848 hotel rooms, 95 residential units, 108,000 square feet of modernized hospital space, 20,200 square feet of local retail space, 15,000 square feet of office space, and 9,800 square feet of medical office space are assumed to be built by 2022. As a result of this development, 196 (97 ins/99 outs), 272 (138 ins/134 outs), 271 (140 ins/131 outs) and 199 (102 ins/97 outs) vehicle trips are projected to be added to the street network during the weekday AM, midday and PM, and Saturday peak hours, respectively.



No Action Projects
Figure 13-8

Table 13-15
No Action Projects

Map No.	Project/Location	Description	With Action Year
1	49½ First Avenue *	Addition – Residential (I Unit)	2012
2	24 First Avenue *	Conversion – Residential (1 Unit)	Pending
3	28 Avenue A *	Addition – Residential (15 Units)	Pending
4	41 Avenue B *	Addition – Residential (1 Unit)	Pending
5	222 East 3rd Street *	Addition – Residential (9 Units)	2012
6	229 East 2nd Street *	Residential (5 Units) Community Facility (300 SF)	2011
7	210 Delancey Street	Residential (69 Units) Community Facility (8,400 SF) Parking (10 Spaces)	2012
8	180 Ludlow Street	Hotel (200 Rooms)	Under Construction
9	180 Orchard Street	Hotel (290 Rooms) Commercial (2,200 SF) Parking (58 Spaces)	2013
10	196 Stanton Street *	Conversion – Dormitory (15 Units)	2012
11	191 Chrystie Street *	Conversion – Residential (11 Units)	
12	145 Ludlow Street *	Residential (10 Units) Commercial (3,000 SF)	Pending
13	156 Rivington Street *	Community Facility (7,000 SF)	
14	139 Orchard Street	Hotel (80 Rooms)	2012
15	119 Orchard Street	Residential (3 Units) Hotel (40 Rooms) Community Facility (500 SF) Commercial (8,000 SF)	2012
16	115 Norfolk Street *	Residential (24 Units) Parking (12 Spaces)	2011
17	95 Delancey Street *	Addition – Commercial (3,500 SF)	Pending
18	101 Ludlow Street *	Addition – Commercial (3,300 SF)	Pending
19	100 Delancey Street *	Residential (21 Units)	2011
20	150 Delancey Street	Hotel (132 Rooms)	2011
21	231 Delancey Street *	Commercial (2,780 SF)	Pending
22	17 Pitt Street *	Addition – Commercial (3,417 SF)	2012
23	285 Grand Street *	Commercial (10,000 SF)	Pending
24	329 Grand Street *	Addition – Residential (4 Units)	Pending
25	48 Orchard Street *	Conversion – Residential (1 Unit)	2012
26	93 Bowery	Hotel (106 Rooms)	2011
27	92 Hester Street *	Conversion – Commercial (7,000 SF)	2012
28	86 Canal Street	Residential (23 Units) Community Facility (900 SF) Commercial (25,000 SF)	Under Construction
29	225 East Broadway *	Residential (22 Units)	
30	136 East Broadway *	Residential (22 Units) Commercial (2,700 SF)	2011
31	183 East Broadway *	Residential (21 Units)	Under Construction
32	14 Jefferson Street *	Addition – Residential (5 Units)	Under Construction
33	227 Madison Street	Addition – Community Facility (108,000 SF)	2013
34	152 Henry Street *	Addition – Community Facility (33,000 SF)	2013
35	26 Avenue B*	Residential (8 Units) Commercial (1,614 SF)	Pending
36	61 Pitt Street*	Residential (1 Unit)	Pending
37	163 Orchard Street*	Hotel (45 Rooms)	2013
38	197 East Broadway	Community Facility (3,200 SF)	2013
39a-s	Multiple Locations[1]*	Residential (220 Units across 19 sites) Parking (2 Spaces)	2017

Notes:

"Pending" projects have been filed with the NYC Department of Buildings (DOB) but are waiting for DOB approval.

* Project is included as part of the background growth due to the modest size of the development.

[1] Nineteen RWCDS sites from the 2008 East Village/Lower East Side Rezoning.

The No Action project-generated trips were assigned to the roadway network and, together with the background traffic growth, constitute the 2022 No Action traffic volume baseline. The 2022 No Action traffic volumes for the weekday AM, midday, and PM, and Saturday peak hours are included at the end of the chapter.

The traffic analyses for the 2022 No Action condition include changes at six intersections from approved roadway projects which were provided by NYCDOT and are expected to be implemented by 2022. These changes include signal timing and roadway geometry modifications, and are detailed below for each intersection. Furthermore, NYCDOT is currently developing an area wide plan to improve traffic and pedestrian safety along the Delancey Street corridor. In addition, signal timing modifications are being proposed by NYCDOT along Allen Street to improve service along the M15 bus line. Changes to the study area's transportation network resulting from these changes will be incorporated between the DGEIS and FGEIS, should the plan be adopted prior to the release of the FGEIS.

HOUSTON STREET AND THE BOWERY

A curb extension will be installed on the south side of the northeast corner. Westbound Houston Street will operate as one 10-foot wide left turn lane, two 10-foot wide through lanes, and one 19-foot wide right turn lane with curbside parking. The northbound approach of the Bowery will have a striped left turn lane in comparison to the existing conditions which operates with a de-facto left turn movement.

HOUSTON STREET AND CHRYSTIE STREET/SECOND AVENUE

Ongoing construction work at this intersection is expected to be completed by 2022. For the No Action condition in 2022, westbound Houston Street will operate as one 10-foot wide left turn lane, two 10-foot wide through lanes, and one 13-foot wide through lane with parking. Eastbound Houston Street approach will operate as two 11-foot wide through lanes and one 22-foot wide right turn lane with parking. The eastbound receiving side will be reduced from three lanes to two lanes. Along Houston Street, the curb will be extended on the northeast and southwest corners. A curb extension will be installed on the east side of the northwest corner. Signal timings will be modified at this intersection. A shift of two seconds of green time from the southbound phase to the northbound phase will be in place during all times.

HOUSTON STREET AND ALLEN STREET/FIRST AVENUE

Eastbound Houston Street will operate as one 10-foot wide left turn lane, two 11-foot wide through lanes, one 5-foot wide bike lane, and one 11-foot wide right turn lane. Parking will be prohibited along the eastbound approach. The eastbound receiving side will consist of two travel lanes and one bike lane with parking. The westbound approach will operate as one 11-foot wide left turn lane, two 11-foot wide through-right lanes, and a bus stop (with pull in/pull out operation for buses). The westbound receiving side will be reduced from three lanes to two lanes with a bike lane. The northbound Allen Street receiving side will also be modified in the future; the receiving side will be narrowed and reduced from five travel lanes to four travel lanes.

HOUSTON STREET AND ESSEX STREET/AVENUE A

In the future, East First Street will not begin from the intersection of Houston Street and Essex Street/Avenue A; it will be shifted to the intersection of Houston Street and Ludlow Street and operate as the north leg of that intersection. Houston Street and Essex Street/Avenue A will operate as a conventional four-legged intersection. The eastbound approach will operate as one 10-foot wide left turn lane, two 11-foot wide through-right lanes, and one 16-foot wide bus stop.

The eastbound receiving side will be reduced from three lanes to two lanes with a bike lane. The westbound approach will operate as one 10-foot wide left turn lane, one 11-foot wide through lane, one 15-foot wide through lane, and one 13-foot wide curbside lane that will operate as a bus stop and right turn lane.

DELANCEY STREET AND ALLEN STREET

Signal timings will be modified at this intersection. A shift of five seconds of green time from the eastbound/westbound phase to the westbound left turn lead phase will be in place during the weekday midday, PM, and the Saturday peak hours.

DELANCEY STREET AND ORCHARD STREET

Ongoing construction work along northbound Orchard Street will be completed by 2022. This approach will operate as one 25-foot wide travel lane with parking along the west curb during all peak hours.

GRAND STREET AND ALLEN STREET

Existing construction along the Allen Street corridor is expected to be completed by 2022. The northbound and southbound Allen Street approaches will revert to their original (pre-construction) conditions: one 5-foot wide bike lane, one 10-foot wide left turn lane, one 10-foot wide through lane, and one 19-foot wide through-right lane with parking.

GRAND STREET AND CLINTON STREET

The curb lane along westbound Grand Street will be restriped as an exclusive right turn lane. This lane currently functions like a right turn lane because of the parking prohibitions along this approach.

Projected traffic volume increases in the study area roadway network due to the cumulative effect of background projects and the annual growth in background traffic are quantified and discussed below.

Traffic volumes along Delancey Street are expected to increase by approximately 30 to 80 vph in eastbound direction west of Norfolk Street during the weekday AM, midday and PM, and Saturday peak hours. East of Norfolk Street and towards the Williamsburg Bridge, eastbound traffic volumes are expected to increase by approximately 75 to 110 vph during all peak hours. Traffic volumes in the westbound direction are expected to increase by approximately 65 to 105 vph in all peak hours. This represents an approximate increase of two to four percent increase in traffic volumes along Delancey Street.

Houston Street traffic volumes are expected to increase by approximately 20 to 75 vph during all peak hours.

Traffic volumes along Grand Street are generally expected to increase by 5 to 20 vph per direction during the weekday AM, midday and PM, and Saturday peak hours.

Allen Street traffic volumes are expected to increase by approximately 5 to 40 vph per direction for all peak hours.

Traffic volumes along Essex Street (in both directions) and Norfolk Street are expected to increase by less than 25 vph per direction during the weekday AM, midday and PM, and Saturday peak hours. Traffic volumes along Suffolk Street are expected to increase by less than 5 vph during the peak hours.

South of Delancey Street, traffic volumes along Clinton Street are expected to increase by less than 10 vph in both directions during analyzed peak hours. Along Clinton Street to the north of Delancey Street, traffic volumes would be expected to by approximately 25 vph in all peak hours.

Based on these traffic volume increases, No Action traffic levels of service were determined for the 30 analysis locations. **Tables 13-16a and 13-16b** shows a comparison of traffic levels of service for existing and No Action conditions. Detailed descriptions of the No Action conditions traffic levels of service are provided in **Table 13-17**.

Table 13-16a
Traffic Level of Service Summary Comparison – Overall Intersections: Existing vs. No Action Conditions (2022)

	Existing				2022 No Action			
	Weekday Peak Hours			Saturday Peak Hour	Weekday Peak Hours			Saturday Peak Hour
	AM	Midday	PM		AM	Midday	PM	
Intersections at Overall LOS A/B/C	27	28	24	26	22	27	18	24
Intersections at Overall LOS D	3	2	6	4	8	3	11	4
Intersections at Overall LOS E	0	0	0	0	0	0	1	2
Intersections at Overall LOS F	0	0	0	0	0	0	0	0

Note: Includes 30 analyzed intersections (25 signalized and 5 unsignalized). All 5 unsignalized intersections operate at overall LOS A or B during all four traffic analysis hours.

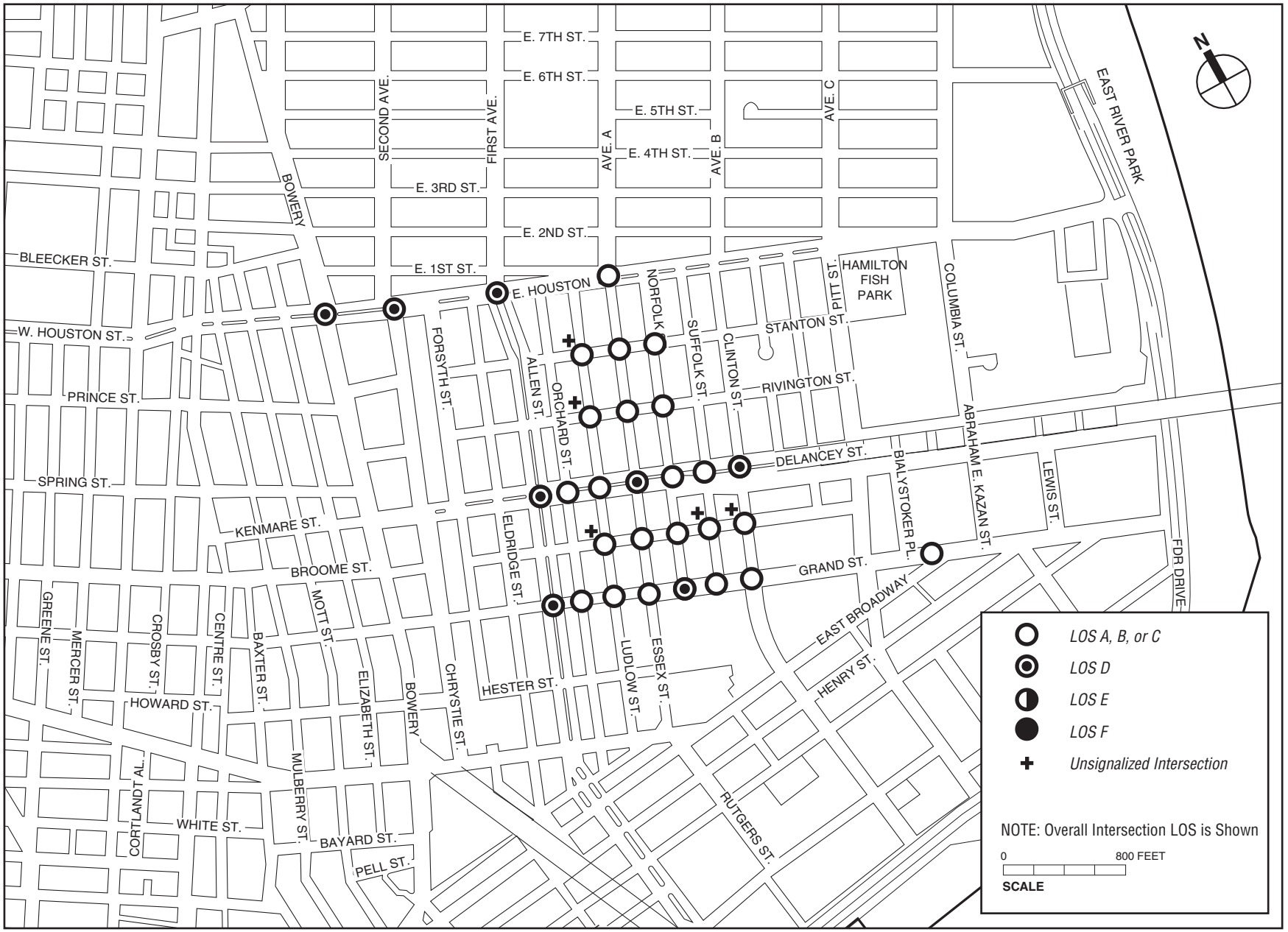
Table 13-16b
Traffic Level of Service Summary Comparison – Traffic Movements: Existing vs. No Action Conditions (2022)

	Existing				2022 No Action			
	Weekday Peak Hours			Saturday Peak Hour	Weekday Peak Hours			Saturday Peak Hour
	AM	Midday	PM		AM	Midday	PM	
Traffic movements at LOS A/B/C and acceptable LOS D	103	103	100	103	101	110	89	99
Traffic movements at unacceptable LOS D	7	10	6	6	9	2	10	8
Traffic movements at LOS E	8	3	8	6	8	3	13	7
Traffic movements at LOS F	1	2	3	3	4	6	8	7
Number of individual traffic movements*	119	118	117	118	122	121	120	121

Note: * Number of movements may vary between peak hours due to turn prohibitions, parking regulations, and the presence of de facto left turn movements.

The summary overview of the No Action condition indicates that:

- In the weekday AM peak hour, none of the 30 study area intersections analyzed would operate at overall LOS E or F, and eight intersections would operate at marginally acceptable/unacceptable LOS D as shown in **Figure 13-9a**. Twenty-one individual traffic movements out of approximately 122 movements analyzed would operate at unacceptable levels of service as compared to 16 in the existing conditions. Movements operating at unacceptable levels of service are shown in **Figure 13-9b**.
- In the weekday midday peak hour, none of the intersections would operate at overall LOS E or F, and three intersections would operate at marginally acceptable/unacceptable LOS D as shown in **Figure 13-10a**. Eleven individual movements would operate at unacceptable levels of service as compared to 15 in the existing conditions. Movements operating at unacceptable levels of service are shown in **Figure 13-10b.**



No Action Traffic Levels of Service - Overall Intersections
Weekday AM Peak Hour

Figure 13-9a

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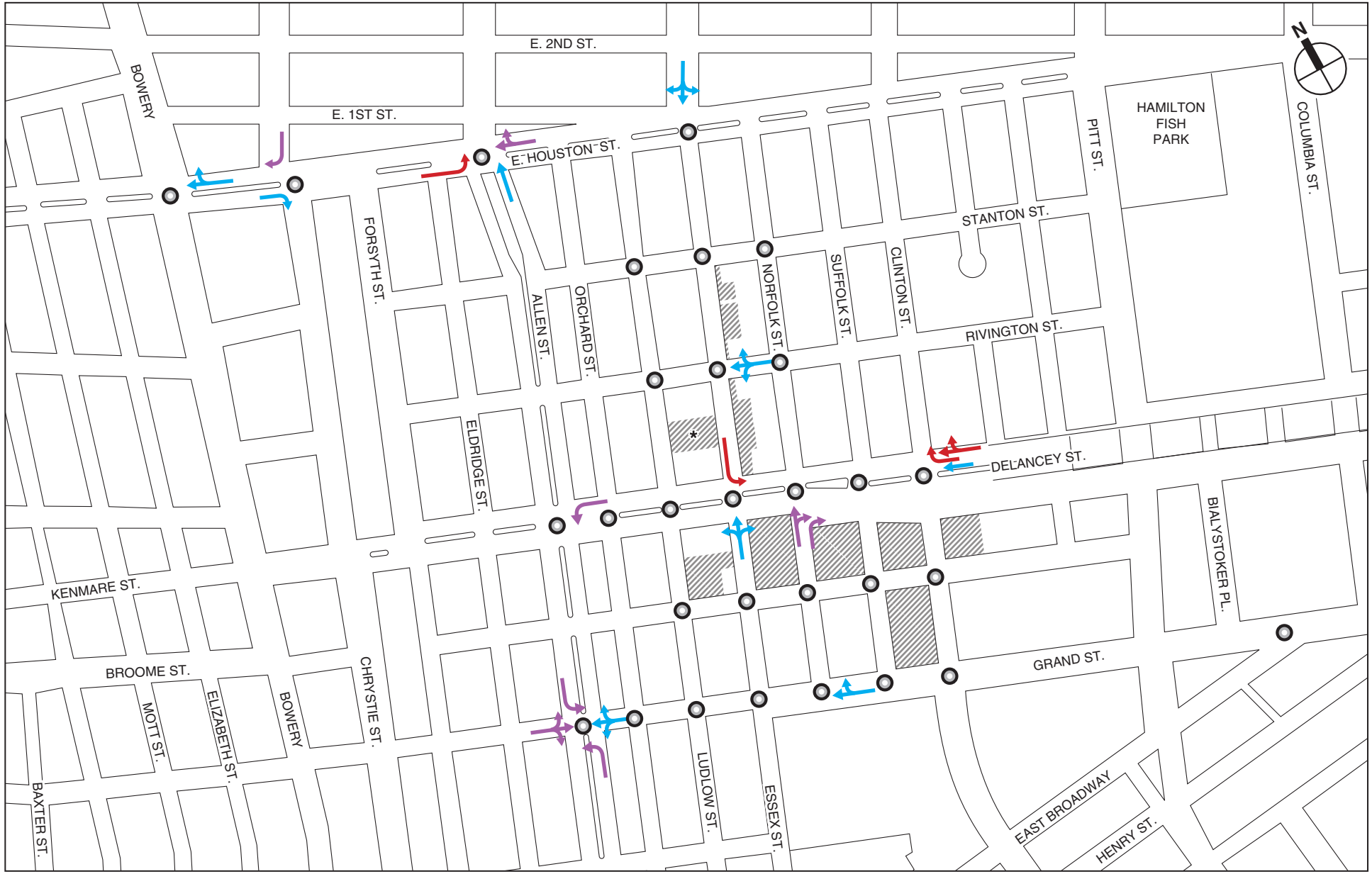

Proposed Development Sites
Intersection Analyzed
* *Site 7 Would Not Be Redeveloped Under the Proposed Actions*

Unacceptable LOS D
LOS E
LOS F

No Action Traffic Levels of Service - Unacceptable Traffic Movements
Weekday AM Peak Hour

Figure 13-9b

No Action Traffic Levels of Service - Overall Intersections
Weekday Midday Peak Hour

Figure 13-10a

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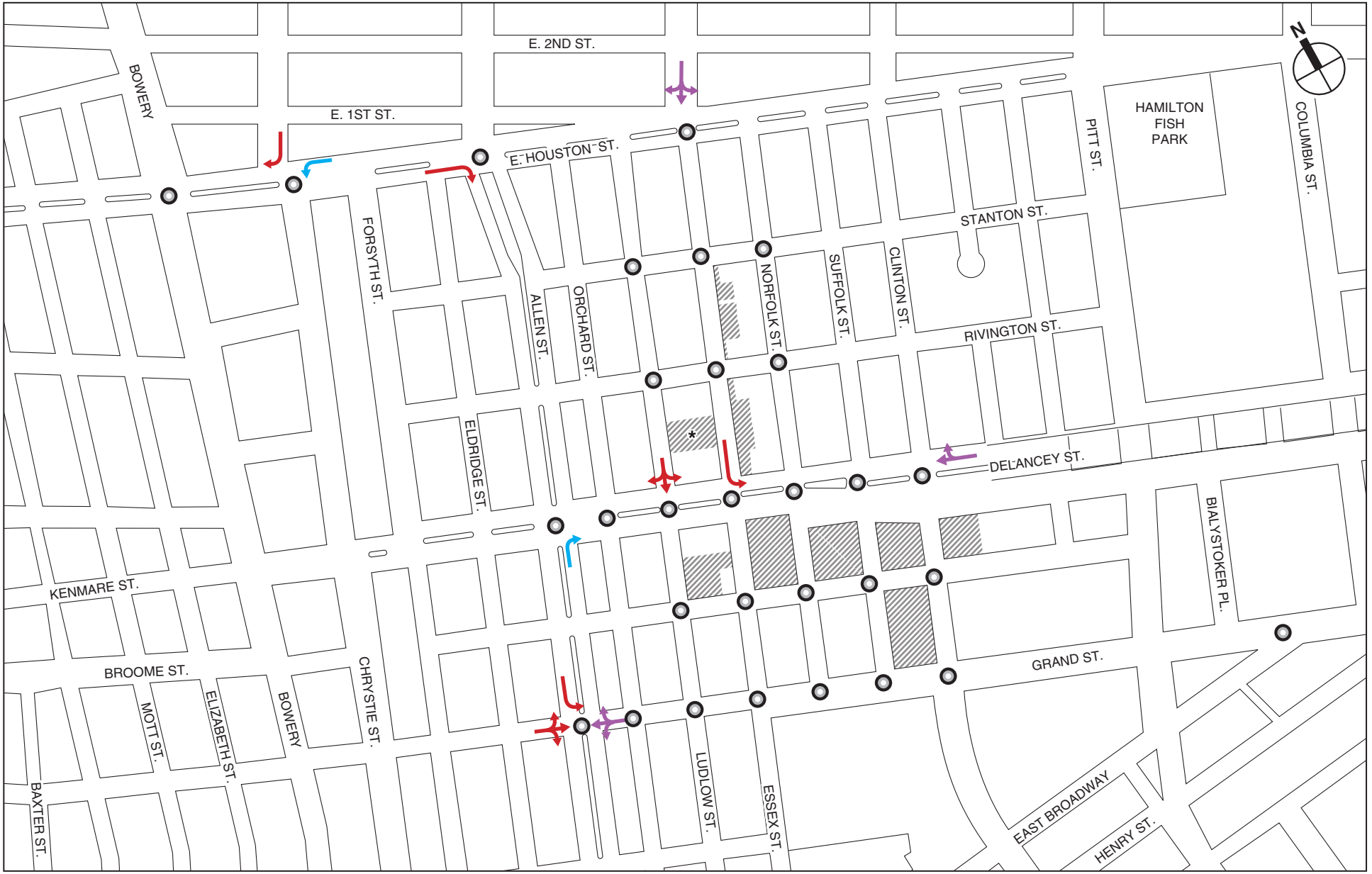


Proposed Development Sites
Intersection Analyzed
* *Site 7 Would Not Be Redeveloped Under the Proposed Actions*
Unacceptable LOS D
LOS E
LOS F

No Action Traffic Levels of Service - Unacceptable Traffic Movements
Weekday Midday Peak Hour
Figure 13-10b

Table 13-17
Seward Park Development EIS
2022 No Action Traffic Levels of Service

Intersection & Approach		Weekday AM (8:00 – 9:00 AM)				Weekday Midday (1:00 – 2:00 PM)				Weekday PM (5:15 – 6:15 PM)				Saturday (3:45 – 4:45 PM)			
		Mvt	V/C	Control Delay	LOS	Mvt	V/C	Control Delay	LOS	Mvt	V/C	Control Delay	LOS	Mvt	V/C	Control Delay	LOS
SIGNALIZED INTERSECTIONS																	
EAST HOUSTON STREET																	
1. EAST HOUSTON STREET AND BOWERY																	
East Houston Street	EB	L	0.28	30.4	C	L	0.43	32.5	C	L	0.41	33.1	C	L	0.69	39.6	D
		TR	0.68	29.2	C	TR	0.77	31.2	C	TR	0.74	30.2	C	TR	0.87	33.6	C
	WB	L	0.68	29.9	C	L	0.79	42.1	D	L	0.70	39.8	D	L	0.85	50.0	D
		TR	1.04	54.6	D	TR	0.89	34.6	C	TR	1.04	64.3	E	TR	1.01	50.6	D
Bowery	NB	L	0.84	42.3	D	L	0.50	29.2	C	L	0.80	50.1	D	L	0.73	37.5	D
		TR	0.91	40.3	D	TR	0.74	35.0	C	TR	0.68	33.0	C	TR	0.97	45.5	D
	SB	L	0.32	26.2	C	L	0.41	25.4	C	L	0.48	26.8	C	L	0.57	32.8	C
		TR	0.92	42.5	D	TR	0.82	38.0	D	TR	1.00	53.8	D	TR	1.02	54.3	D
Overall Intersection		-	**0.97**	**42.5**	**D**	-	**0.90**	**34.2**	**C**	-	**0.95**	**47.1**	**D**	-	**0.98**	**44.8**	**D**
2. EAST HOUSTON STREET AND CHRYSTIE STREET / SECOND AVENUE																	
East Houston Street	EB	T	0.56	29.3	C	T	0.77	33.9	C	T	0.72	32.4	C	T	0.86	35.9	D
		R	0.79	46.1	D	R	0.70	39.9	D	R	1.07	105.1	F	R	0.93	56.1	E
	WB	L	0.68	42.9	D	L	0.58	45.4	D	L	0.84	75.1	E	L	0.71	55.7	E
		T	0.74	31.6	C	T	0.66	30.5	C	T	0.64	30.1	C	T	0.92	38.7	D
Chrystie Street / Second Avenue	NB	L	0.85	39.9	D	L	0.55	35.1	D	L	0.68	37.3	D	L	0.51	33.8	C
		LR	0.87	42.5	D	LR	0.60	38.2	D	LR	0.68	39.0	D	LR	0.60	37.6	D
	SB	L	0.78	38.8	D	L	0.84	36.6	D	L	1.06	77.3	E	L	1.29	169.0	F
		LT	0.75	35.0	D	LT	0.86	35.3	D	LT	1.12	92.3	F	LT	1.28	163.6	F
		R	1.01	64.0	E	R	1.14	100.0	F	R	1.07	77.8	E	R	0.98	46.9	D
Overall Intersection		-	**0.87**	**38.5**	**D**	-	**0.82**	**42.2**	**D**	-	**0.97**	**59.4**	**E**	-	**0.94**	**76.2**	**E**
3. EAST HOUSTON STREET AND ALLEN STREET / FIRST AVENUE																	
East Houston Street	EB	L	1.12	102.6	F	L	0.81	33.5	C	L	0.85	44.2	D	L	0.82	40.7	D
		T	0.79	29.7	C	T	0.88	30.9	C	T	0.84	33.0	C	T	0.89	32.9	C
		R	0.82	37.6	D	R	1.29	165.2	F	R	0.90	53.4	D	R	1.27	160.2	F
	WB	L	0.43	28.0	C	L	0.27	26.2	C	L	0.36	27.6	C	L	0.44	31.9	C
		TR	1.04	67.8	E	TR	0.87	38.9	D	TR	0.83	35.0	C	TR	1.13	98.3	F
Allen Street	NB	L	0.62	32.6	C	L	0.46	29.4	C	L	0.39	28.1	C	L	0.38	27.7	C
		T	0.97	49.0	D	T	0.77	34.9	C	T	0.99	56.0	E	T	0.82	36.0	D
		R	0.35	28.5	C	R	0.29	28.0	C	R	0.19	26.1	C	R	0.24	26.8	C
Overall Intersection		-	**1.13**	**52.1**	**D**	-	**0.97**	**47.0**	**D**	-	**0.95**	**40.8**	**D**	-	**1.00**	**64.6**	**E**
4. EAST HOUSTON STREET AND ESSEX STREET / AVENUE A																	
East Houston Street	EB	L	0.56	21.1	C	L	0.42	14.3	B	L	0.30	14.6	B	L	0.34	15.7	B
		TR	0.68	27.1	C	TR	0.80	27.8	C	TR	0.77	29.0	C	TR	0.80	27.8	C
	WB	L	0.63	22.4	C	L	0.74	31.0	C	L	1.00	83.9	F	L	0.88	40.2	D
		T	0.76	29.8	C	T	0.62	26.2	C	T	0.65	26.7	C	T	0.84	32.2	C
		R	0.11	19.9	B	R	0.10	19.8	B	R	0.26	22.0	C	R	0.14	20.2	C
	NB	LTR	0.77	35.0	C	LTR	0.77	35.3	D	LTR	0.74	33.7	C	LTR	0.70	32.6	C
	SB	LTR	0.96	48.4	D	LTR	1.06	68.3	E	LTR	0.96	48.7	D	LTR	1.08	72.8	E
Overall Intersection		**-**	**0.81**	**31.4**	**C**	**-**	**0.85**	**33.6**	**C**	**-**	**0.99**	**36.0**	**D**	**-**	**0.90**	**36.4**	**D**
STANTON STREET																	
5. STANTON STREET AND ESSEX STREET																	
Stanton Street	EB	LTR	0.23	22.4	C	LTR	0.48	27.7	C	LTR	0.28	23.3	C	LTR	0.24	22.4	C
Essex Street	NB	TR	0.33	12.0	B	TR	0.25	11.2	B	TR	0.32	11.9	B	TR	0.30	11.7	B
	SB	LT	0.39	12.4	B	LT	0.36	12.0	B	LT	0.39	12.3	B	LT	0.53	14.0	B
Overall Intersection		**-**	**0.33**	**13.1**	**B**	**-**	**0.40**	**14.5**	**B**	**-**	**0.35**	**13.2**	**B**	**-**	**0.42**	**13.8**	**B**
6. STANTON STREET AND NORFOLK STREET																	
Stanton Street	EB	LT	0.23	16.4	B	LT	0.19	15.9	B	LT	0.16	15.5	B	LT	0.22	16.1	B
Norfolk Street	NB	TR	0.45	19.6	B	TR	0.51	20.6	C	TR	0.41	18.9	B	TR	0.39	18.6	B
Overall Intersection		**-**	**0.34**	**18.5**	**B**	**-**	**0.35**	**19.3**	**B**	**-**	**0.29**	**17.8**	**B**	**-**	**0.30**	**17.7**	**B**

Table 13-17 (cont'd)
Seward Park Development EIS
2022 No Action Traffic Levels of Service

Intersection & Approach		Weekday AM (8:00 – 9:00 AM)				Weekday Midday (1:00 – 2:00 PM)				Weekday PM (5:15 – 6:15 PM)				Saturday (3:45 – 4:45 PM)			
		Mvt	V/C	Control Delay	LOS	Mvt	V/C	Control Delay	LOS	Mvt	V/C	Control Delay	LOS	Mvt	V/C	Control Delay	LOS
SIGNALIZED INTERSECTIONS																	
RIVINGTON STREET																	
7. RIVINGTON STREET AND ESSEX STREET																	
Rivington Street	WB	LTR	0.89	49.3	D	LTR	0.64	32.4	C	LTR	0.75	37.6	D	LTR	0.70	35.0	C
Essex Street	NB	LT	0.35	11.9	B	LT	0.28	11.3	B	LT	0.33	11.5	B	LT	0.33	11.6	B
	SB	TR	0.33	12.0	B	TR	0.42	13.1	B	TR	0.44	13.4	B	TR	0.85	35.1	D
Overall Intersection		**-**	**0.56**	**23.0**	**C**	**-**	**0.50**	**16.7**	**B**	**-**	**0.56**	**18.4**	**B**	**-**	**0.78**	**27.6**	**C**
8. RIVINGTON STREET AND NORFOLK STREET																	
Rivington Street	WB	TR	0.54	21.8	C	TR	0.20	16.2	B	TR	0.45	19.8	B	TR	0.47	20.0	B
Norfolk Street	NB	LT	0.47	18.3	B	LT	0.63	20.9	C	LT	0.56	19.2	B	LT	0.42	17.8	B
Overall Intersection		**-**	**0.51**	**19.9**	**B**	**-**	**0.41**	**20.0**	**B**	**-**	**0.50**	**19.5**	**B**	**-**	**0.44**	**18.9**	**B**
DELANCEY STREET																	
9. DELANCEY STREET AND ALLEN STREET																	
Delancey Street	EB	TR	0.94	36.4	D	TR	0.82	27.9	C	TR	1.08	72.0	E	TR	0.87	29.3	C
	WB	L	0.88	55.3	E	L	0.75	41.9	D	L	0.73	43.9	D	L	0.76	40.8	D
		TR	1.02	41.4	D	TR	0.79	14.9	B	TR	1.01	39.6	D	TR	0.82	15.5	B
Allen Street	NB	T	0.70	35.1	D	T	0.67	34.7	C	T	0.66	33.8	C	T	0.74	36.8	D
		R	0.60	37.7	D	R	0.79	50.6	D	R	1.00	84.9	F	R	0.85	58.4	E
	SB	TR	0.55	32.0	C	TR	0.71	33.8	C	TR	0.56	31.7	C	TR	0.77	35.7	D
Overall Intersection		**-**	**0.92**	**39.6**	**D**	**-**	**0.79**	**25.4**	**C**	**-**	**1.01**	**53.0**	**D**	**-**	**0.84**	**26.8**	**C**
10. DELANCEY STREET AND ORCHARD STREET																	
Delancey Street	EB	T	0.41	9.7	A	T	0.57	11.4	B	T	0.66	12.3	B	T	0.58	11.4	B
	WB	TR	0.78	14.7	B	TR	0.72	13.6	B	TR	0.82	15.6	B	TR	0.77	14.6	B
Orchard Street	NB	LTR	0.26	26.2	C	LTR	0.34	27.9	C	LTR	0.33	27.4	C	LTR	0.29	26.7	C
Overall Intersection		**-**	**0.61**	**13.3**	**B**	**-**	**0.59**	**13.1**	**B**	**-**	**0.66**	**14.4**	**B**	**-**	**0.61**	**13.6**	**B**
11. DELANCEY STREET AND LUDLOW STREET																	
Delancey Street	EB	TR	0.43	10.1	B	TR	0.58	11.7	B	TR	0.70	13.3	B	TR	0.58	11.7	B
	WB	T	0.75	13.4	B	T	0.73	13.2	B	T	0.79	14.1	B	T	0.68	12.3	B
Ludlow Street	SB	LTR	0.72	41.5	D	LTR	1.00	84.2	F	LTR	1.25	168.9	F	LTR	1.15	130.5	F
Overall Intersection		**-**	**0.74**	**13.9**	**B**	**-**	**0.82**	**17.7**	**B**	**-**	**0.94**	**24.0**	**C**	**-**	**0.84**	**21.5**	**C**
12. DELANCEY STREET AND ESSEX STREET																	
Delancey Street	EB	TR	0.51	14.1	B	TR	0.68	16.5	B	TR	1.00	39.4	D	TR	0.88	25.3	C
	WB	TR	1.01	41.6	D	TR	0.96	23.6	C	TR	1.05	54.8	D	TR	1.02	39.6	D
Essex Street	NB	LTR	0.82	46.9	D	LTR	0.77	41.8	D	LTR	1.02	75.7	E	LTR	0.74	38.2	D
	SB	DefL	1.08	108.3	F	DefL	1.10	116.6	F	LTR	1.00	70.7	E	DefL	1.10	101.9	F
		TR	0.76	44.7	D	TR	0.76	44.4	D	-	-	-	-	TR	0.65	36.7	D
Overall Intersection		**-**	**1.04**	**37.2**	**D**	**-**	**1.02**	**27.6**	**C**	**-**	**1.04**	**51.9**	**D**	**-**	**1.07**	**37.6**	**D**
13. DELANCEY STREET AND NORFOLK STREET																	
Delancey Street	EB	T	0.61	12.6	B	T	0.72	14.2	B	T	1.06	53.4	D	T	0.77	14.9	B
	WB	TR	0.93	19.0	B	TR	0.98	27.9	C	TR	1.00	29.0	C	TR	0.93	21.2	C
Norfolk Street	NB	TR	0.95	61.9	E	TR	0.77	40.3	D	TR	1.01	71.5	E	TR	0.95	63.0	E
		R	0.93	58.7	E	R	0.82	44.7	D	R	1.02	74.4	E	R	0.93	59.8	E
Overall Intersection		**-**	**0.94**	**22.4**	**C**	**-**	**0.93**	**24.2**	**C**	**-**	**1.04**	**45.1**	**D**	**-**	**0.94**	**24.0**	**C**
14. DELANCEY STREET AND SUFFOLK STREET																	
Delancey Street	EB	T	0.79	17.4	B	T	0.81	16.1	B	T	1.07	52.7	D	T	0.99	27.3	C
	WB	T	0.94	20.0	B	T	0.78	14.8	B	T	0.85	16.0	B	T	0.75	14.3	B
Delancey Street Service Road	EB	TR	0.19	10.3	B	TR	0.14	8.5	A	TR	0.13	8.3	A	TR	0.11	8.2	A
Suffolk Street	SB	R	0.11	21.5	C	R	0.06	22.8	C	R	0.21	25.0	C	R	0.25	25.5	C
Overall Intersection		**-**	**0.63**	**18.6**	**B**	**-**	**0.56**	**15.3**	**B**	**-**	**0.78**	**35.4**	**D**	**-**	**0.74**	**21.4**	**C**

Table 13-17 (cont'd)
Seward Park Development EIS
2022 No Action Traffic Levels of Service

Intersection & Approach		Weekday AM (8:00 – 9:00 AM)				Weekday Midday (1:00 – 2:00 PM)				Weekday PM (5:15 – 6:15 PM)				Saturday (3:45 – 4:45 PM)			
		Mvt	V/C	Control Delay	LOS	Mvt	V/C	Control Delay	LOS	Mvt	V/C	Control Delay	LOS	Mvt	V/C	Control Delay	LOS
SIGNALIZED INTERSECTIONS																	
15. DELANCEY STREET AND CLINTON STREETL																	
Delancey Street	EB	T	0.64	10.1	B	T	0.74	11.6	B	T	1.06	48.7	D	T	0.93	15.1	B
Williamsburg Bridge	WB	T	1.07	54.1	D	T	0.89	18.3	B	T	1.07	55.1	E	T	0.84	15.4	B
		R	1.07	82.0	F	R	0.89	40.8	D	R	1.07	80.0	F	R	0.97	54.1	D
Delancey Street Service Road	EB	TR	0.14	6.5	A	TR	0.12	6.4	A	TR	0.09	6.2	A	TR	0.08	6.2	A
	WB	TR	1.01	88.5	F	TR	0.69	59.2	E	TR	0.93	83.1	F	TR	0.72	57.4	E
Clinton Street	NB	R	0.17	28.0	C	R	0.09	26.8	C	R	0.16	27.7	C	R	0.09	26.7	C
Overall Intersection		**-**	**0.82**	**39.8**	**D**	**-**	**0.67**	**17.8**	**B**	**-**	**0.82**	**53.9**	**D**	**-**	**0.70**	**19.3**	**B**
BROOME STREET																	
16. BROOME STREET AND ESSEX STREET																	
Broome Street	EB	LTR	0.17	21.3	C	LTR	0.13	20.9	C	LTR	0.13	20.9	C	LTR	0.18	21.4	C
Essex Street	NB	TR	0.30	11.6	B	TR	0.28	11.4	B	TR	0.43	12.9	B	TR	0.25	11.2	B
	SB	L	0.11	10.4	B	L	0.10	10.2	B	L	0.84	23.1	C	L	0.15	10.7	B
		T	0.26	11.4	B	T	0.25	11.3	B	T	0.29	11.3	B	T	0.22	11.0	B
Overall Intersection		-	**0.25**	**12.6**	**B**	-	**0.22**	**12.1**	**B**	-	**0.57**	**14.9**	**B**	-	**0.22**	**12.5**	**B**
17. BROOME STREET AND NORFOLK STREET																	
Broome Street	EB	L	0.12	10.3	B	L	0.09	10.0	B	L	0.65	36.7	D	L	0.12	10.3	B
	WB	R	0.41	13.7	B	R	0.32	12.5	B	R	0.93	68.8	E	R	0.58	17.1	B
Norfolk Street	NB	T	0.77	30.4	C	T	0.71	28.8	C	T	0.64	26.7	C	T	0.71	27.7	C
Overall Intersection		-	**0.55**	**21.9**	**C**	-	**0.47**	**21.2**	**C**	-	**0.77**	**43.6**	**D**	-	**0.63**	**21.0**	**C**
GRAND STREET																	
18. GRAND STREET AND ALLEN STREET																	
Grand Street	EB	LTR	1.05	66.9	E	LTR	1.14	97.5	F	LTR	0.98	57.5	E	LTR	0.96	53.4	D
	WB	LTR	0.79	45.1	D	LTR	0.90	57.9	E	LTR	0.65	35.6	D	LTR	0.68	36.9	D
Allen Street	NB	L	0.63	55.7	E	L	0.39	44.2	D	L	0.26	39.8	D	L	0.55	49.7	D
		TR	0.53	21.0	C	TR	0.45	19.9	B	TR	0.59	21.9	C	TR	0.47	20.1	C
	SB	L	0.86	73.7	E	L	1.07	111.1	F	L	0.95	86.0	F	L	1.06	112.3	F
		TR	0.58	21.8	C	TR	0.74	24.9	C	TR	0.64	22.7	C	TR	0.60	21.9	C
Overall Intersection		-	**0.76**	**37.0**	**D**	-	**0.84**	**47.8**	**D**	-	**0.78**	**34.6**	**C**	-	**0.72**	**38.1**	**D**
19. GRAND STREET AND ORCHARD STREET																	
Grand Street	EB	LT	0.63	21.1	C	LT	0.71	21.7	C	LT	0.68	22.4	C	LT	0.70	22.2	C
	WB	TR	0.50	20.9	C	TR	0.55	21.8	C	TR	0.46	20.0	C	TR	0.50	20.9	C
Orchard Street	NB	LTR	0.15	15.4	B	LTR	0.15	15.4	B	LTR	0.17	15.7	B	LTR	0.14	15.4	B
Overall Intersection		-	**0.39**	**20.3**	**C**	-	**0.43**	**21.0**	**C**	-	**0.43**	**20.7**	**C**	-	**0.42**	**21.1**	**C**
20. GRAND STREET AND LUDLOW STREET																	
Grand Street	EB	TR	0.59	22.5	C	TR	0.66	24.5	C	TR	0.60	22.4	C	TR	0.58	21.6	C
	WB	LT	0.34	17.3	B	LT	0.37	17.8	B	LT	0.34	17.1	B	LT	0.35	17.8	B
Ludlow Street	SB	LTR	0.28	17.4	B	LTR	0.27	17.2	B	LTR	0.18	15.9	B	LTR	0.24	16.6	B
Overall Intersection		-	**0.44**	**19.7**	**B**	-	**0.46**	**20.8**	**C**	-	**0.39**	**19.6**	**B**	-	**0.41**	**19.5**	**B**
21. GRAND STREET AND ESSEX STREET																	
Grand Street	EB	LTR	0.76	30.1	C	LTR	0.65	25.0	C	LTR	0.65	24.8	C	LTR	0.71	27.1	C
	WB	LTR	0.72	21.7	C	LTR	0.64	20.5	C	LTR	1.02	43.9	D	LTR	0.54	18.7	B
Essex Street	NB	LTR	0.38	17.9	B	LTR	0.30	16.9	B	LTR	0.38	17.8	B	LTR	0.24	16.1	B
	SB	DefL	0.40	21.5	C	LTR	0.33	17.6	B	LTR	0.35	17.8	B	LTR	0.26	16.5	B
		TR	0.29	17.5	B	-	-	-	-	-	-	-	-	-	-	-	-
Overall Intersection		-	**0.58**	**22.5**	**C**	-	**0.49**	**20.2**	**C**	-	**0.70**	**28.1**	**C**	-	**0.49**	**20.4**	**C**
22. GRAND STREET AND NORFOLK STREET																	
Grand Street	EB	L	0.31	15.0	B	L	0.23	13.5	B	L	0.25	14.1	B	L	0.15	12.1	B
		T	0.54	17.1	B	T	0.43	15.2	B	T	0.45	15.3	B	T	0.42	14.7	B
	WB	TR	1.02	49.2	D	TR	0.97	39.3	D	TR	1.05	52.3	D	TR	0.93	32.2	C
Overall Intersection		-	**1.01**	**37.0**	**D**	-	**0.98**	**31.0**	**C**	-	**1.05**	**40.1**	**D**	-	**0.94**	**26.3**	**C**

Table 13-17 (cont'd)
Seward Park Development EIS
2022 No Action Traffic Levels of Service

Intersection & Approach		Weekday AM (8:00 – 9:00 AM)				Weekday Midday (1:00 – 2:00 PM)				Weekday PM (5:15 – 6:15 PM)				Saturday (3:45 – 4:45 PM)			
		Mvt	V/C	Control Delay	LOS	Mvt	V/C	Control Delay	LOS	Mvt	V/C	Control Delay	LOS	Mvt	V/C	Control Delay	LOS
SIGNALIZED INTERSECTIONS																	
23. GRAND STREET AND SUFFOLK STREET																	
Grand Street	EB	T	0.49	15.9	B	T	0.38	14.3	B	T	0.38	14.2	B	T	0.41	14.7	B
	WB	T	0.89	30.8	C	T	0.85	27.6	C	T	0.99	44.7	D	T	0.88	29.2	C
Suffolk Street	SB	LR	0.10	19.2	B	LR	0.06	18.7	B	LR	0.08	19.0	B	LR	0.07	18.7	B
Overall Intersection		-	**0.56**	**25.3**	**C**	-	**0.53**	**23.6**	**C**	-	**0.62**	**35.7**	**D**	-	**0.54**	**24.5**	**C**
24. GRAND STREET AND CLINTON STREET																	
Grand Street	EB	LTR	0.73	26.9	C	LTR	0.55	19.6	B	LTR	0.90	48.2	D	LTR	0.77	30.7	C
	WB	L	0.05	11.8	B	L	0.06	11.8	B	L	0.04	11.6	B	L	0.04	11.7	B
		T	0.70	21.0	C	T	0.72	21.8	C	T	0.78	23.0	C	T	0.71	20.9	C
		R	0.68	25.7	C	R	0.47	17.8	B	R	0.75	28.3	C	R	0.71	25.2	C
Clinton Street	NB	LTR	0.67	29.3	C	LTR	0.46	24.2	C	LTR	0.69	30.8	C	LTR	0.52	24.8	C
	SB	LTR	0.02	17.0	B	LTR	0.03	17.1	B	LTR	0.01	16.9	B	LTR	0.01	16.9	B
Overall Intersection		-	**0.70**	**24.5**	**C**	-	**0.60**	**20.8**	**C**	-	**0.81**	**30.4**	**C**	-	**0.66**	**24.5**	**C**
25. GRAND STREET AND EAST BROADWAY																	
Grand Street	EB	T	0.16	7.1	A	T	0.13	6.9	A	T	0.12	6.8	A	T	0.12	6.8	A
	WB	LT	0.76	15.5	B	LT	0.82	17.2	B	LT	0.88	19.1	B	LT	0.81	16.7	B
East Broadway	NB	R	0.00	6.1	A	R	0.00	6.1	A	R	0.00	6.1	A	R	0.00	6.1	A
Overall Intersection		-	**0.76**	**13.9**	**B**	-	**0.82**	**15.7**	**B**	-	**0.88**	**17.5**	**B**	-	**0.81**	**15.3**	**B**
UNSIGNALIZED INTERSECTIONS																	
26. STANTON STREET AND LUDLOW STREET																	
Stanton Street	EB	TR	-	8.0	A	TR	-	9.0	A	TR	-	7.9	A	TR	-	8.5	A
Ludlow Street	SB	LT	-	9.2	A	LT	-	10.8	B	LT	-	9.7	A	LT	-	10.8	B
Overall Intersection		-	**-**	**8.9**	**A**	-	**-**	**10.3**	**B**	-	**-**	**9.4**	**A**	-	**-**	**10.2**	**B**
27. RIVINGTON STREET AND LUDLOW STREET																	
Rivington Street	WB	LT	-	10.3	B	LT	-	9.7	A	LT	-	10.8	B	LT	-	11.8	B
Ludlow Street	SB	TR	-	9.4	A	TR	-	10.2	B	TR	-	11.0	B	TR	-	12.4	B
Overall Intersection		-	**-**	**9.9**	**A**	-	**-**	**10.0**	**A**	-	**-**	**10.9**	**B**	-	**-**	**12.1**	**B**
28. BROOME STREET AND LUDLOW STREET																	
Broome Street	EB	TR	-	10.5	B	TR	-	14.0	B	TR	-	10.9	B	TR	-	12.2	B
Ludlow Street	SB	LT	-	7.5	A	LT	-	7.4	A	LT	-	7.3	A	LT	-	7.3	A
Overall Intersection		-	**-**	**1.8**	**A**	-	**-**	**1.3**	**A**	-	**-**	**5.5**	**A**	-	**-**	**5.6**	**A**
29. BROOME STREET AND SUFFOLK STREET																	
Broome Street	WB	LT	-	7.3	A	LT	-	7.3	A	LT	-	15.0	B	LT	-	7.2	A
Suffolk Street	SB	TR	-	10.9	B	TR	-	10.2	B	TR	-	12.0	B	TR	-	11.9	B
Overall Intersection		-	**-**	**1.8**	**A**	-	**-**	**1.3**	**A**	-	**-**	**2.5**	**A**	-	**-**	**0.9**	**A**
30. BROOME STREET AND CLINTON STREET																	
Broome Street	NB	LTR	-	8.5	A	LTR	-	8.7	A	LTR	-	9.4	A	LTR	-	10.0	B
	SB	LTR	-	8.8	A	LTR	-	9.3	A	LTR	-	9.4	A	LTR	-	8.1	A
Overall Intersection		-	**-**	**6.0**	**A**	-	**-**	**6.4**	**A**	-	**-**	**7.1**	**A**	-	**-**	**8.6**	**A**

Notes:
(1) Control delay is measured in seconds per vehicle.
(2) Overall intersection V/C ratio is the critical lane groups' V/C ratio.

- In the weekday PM peak hour, one intersection would operate at LOS E, and 11 intersections would operate at marginally acceptable/unacceptable LOS D, as shown in **Figure 13-11a**. Thirty-one individual traffic movements would operate at unacceptable levels of service as compared to 17 in the existing conditions. Movements operating at unacceptable levels of service are shown in **Figure 13-11b.**
- In the Saturday peak hour, two intersections would operate at LOS E, and five intersections would operate at marginally acceptable/unacceptable LOS D, as shown in **Figure 13-12a**. Twenty-four individual movements would operate at unacceptable levels of service as compared to 15 in the existing conditions. Movements operating at unacceptable levels of service are shown in **Figure 13-12b.**
- All five of the unsignalized intersections would continue to operate at overall LOS B or better during all peak hours.

Traffic movements expected to operate at unacceptable levels of service in the No Action condition are listed below.

East Houston Street and Bowery

- Westbound East Houston Street left turn (Saturday)
- Westbound East Houston Street through-right turn movement (weekday AM, PM, and Saturday)
- Northbound Bowery left turn (weekday PM)
- Northbound Bowery through-right turn movement (Saturday)
- Southbound Bowery through-right turn movement (weekday PM and Saturday)

East Houston Street and Chrystie Street/Second Avenue

- Eastbound East Houston Street right turn (weekday AM, PM, and Saturday)
- Westbound East Houston Street left turn (weekday midday, PM, and Saturday)
- Southbound Second Avenue left turn (weekday PM and Saturday)
- Southbound Second Avenue left-through movement (weekday PM and Saturday)
- Southbound Second Avenue right turn (weekday AM, midday, PM, and Saturday)

East Houston Street and Allen Street/First Avenue

- Eastbound East Houston Street left turn (weekday AM)
- Eastbound East Houston Street right turn (weekday midday, PM, and Saturday)
- Westbound East Houston Street through-right turn movement (weekday AM and Saturday)
- Northbound Allen Street through movement (weekday AM and PM)

East Houston Street and Essex Street/Avenue A

- Westbound East Houston Street left turn (weekday PM)
- Southbound Avenue A approach (weekday AM, midday, PM, and Saturday)

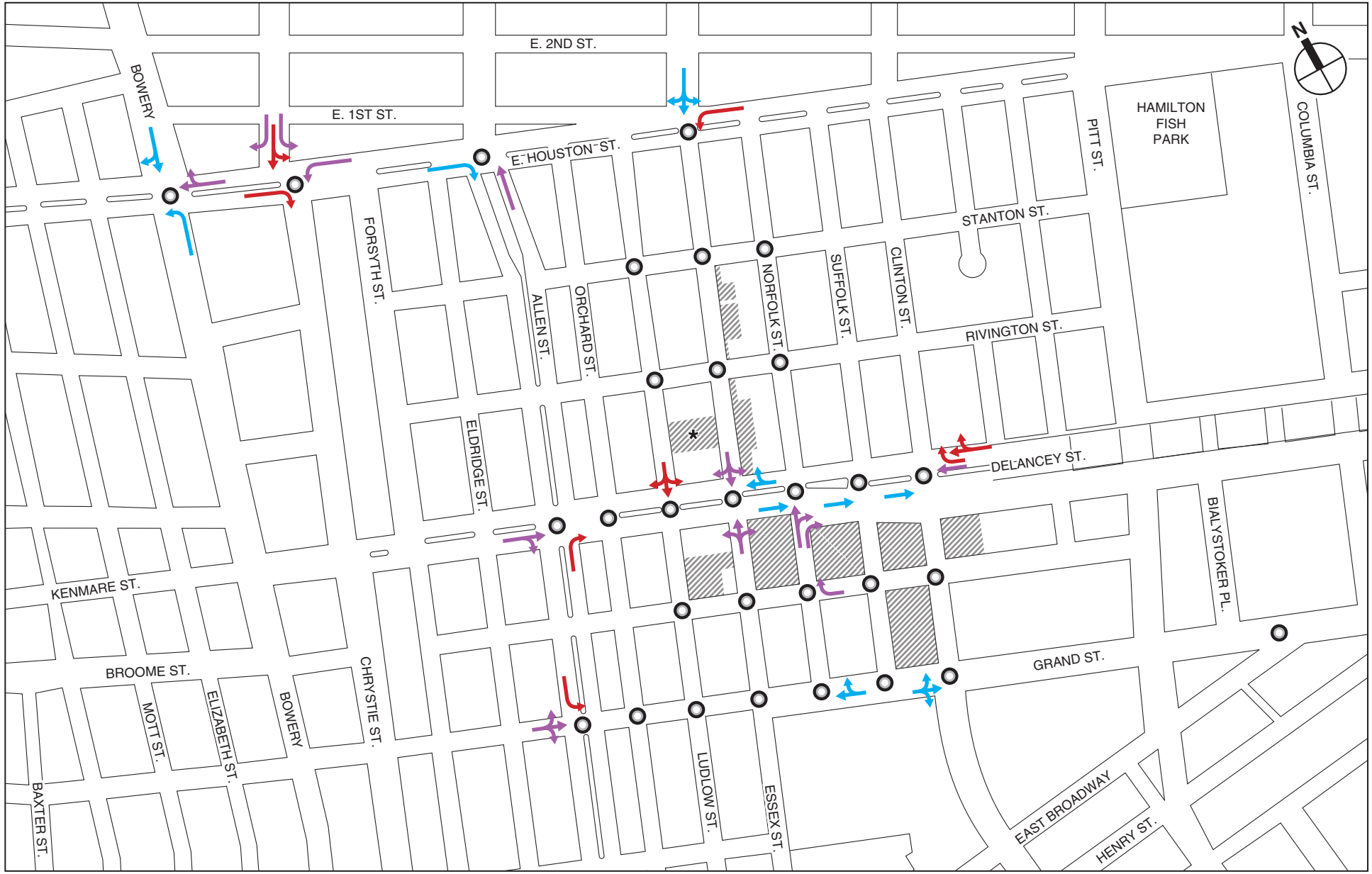
Rivington Street and Essex Street

- Westbound Rivington Street approach (weekday AM)

No Action Traffic Levels of Service - Overall Intersections
Weekday PM Peak Hour

Figure 13-11a

3.22.12



Proposed Development Sites
Intersection Analyzed
* *Site 7 Would Not Be Redeveloped Under the Proposed Actions*

Unacceptable LOS D
LOS E
LOS F

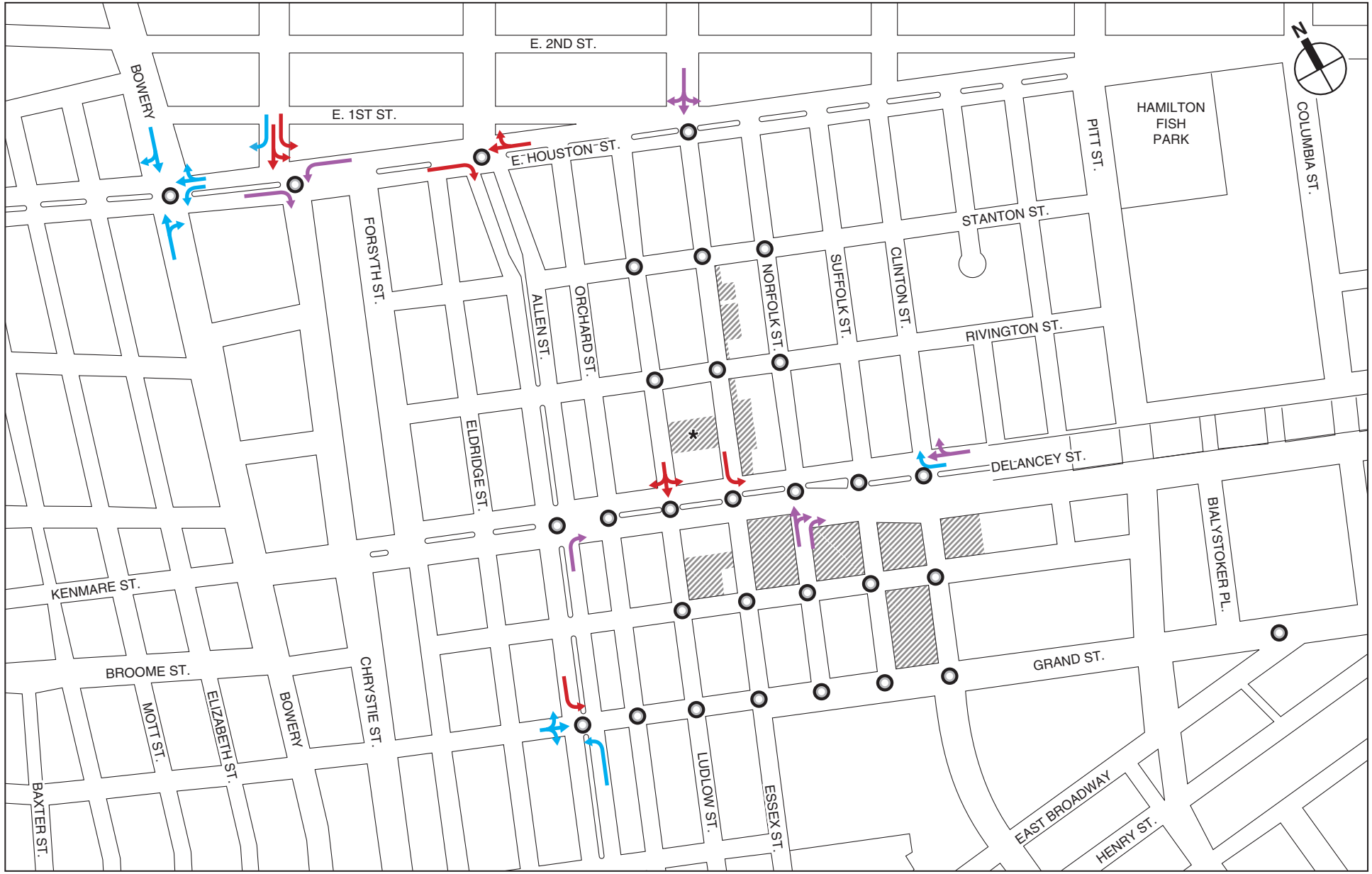
No Action Traffic Levels of Service - Unacceptable Traffic Movements
Weekday PM Peak Hour

Figure 13-11b

No Action Traffic Levels of Service - Overall Intersections
Saturday Peak Hour

Figure 13-12a

3.22.12



Proposed Development Sites
Intersection Analyzed
* *Site 7 Would Not Be Redeveloped Under the Proposed Actions*
Unacceptable LOS D
LOS E
LOS F

No Action Traffic Levels of Service - Unacceptable Traffic Movements
Saturday Peak Hour
Figure 13-12b

Delancey Street and Allen Street

- Eastbound Delancey Street approach (weekday PM)
- Westbound Delancey Street left turn (weekday AM)
- Northbound Allen Street right turn (weekday midday, PM, and Saturday)

Delancey Street and Ludlow Street

- Southbound Ludlow Street approach (weekday midday, PM, and Saturday)

Delancey Street and Essex Street

- Westbound Delancey Street approach (weekday PM)
- Northbound Essex Street approach (weekday AM and PM)
- Southbound Essex Street de facto left turn (weekday AM, midday, and Saturday)
- Southbound Essex Street approach (weekday PM)

Delancey Street and Norfolk Street

- Eastbound Delancey Street approach (weekday PM)
- Northbound Norfolk Street through-right turn movement (weekday AM, PM, and Saturday)
- Northbound Norfolk Street right turn (weekday AM, PM, and Saturday)

Delancey Street and Suffolk Street

- Eastbound Delancey Street approach (weekday PM)

Delancey Street and Clinton Street

- Eastbound Delancey Street approach (weekday PM)
- Westbound Delancey Street through movement (weekday AM and PM)
- Westbound Delancey Street right turn (weekday AM, PM, and Saturday)
- Westbound Delancey Street service road approach (weekday AM, midday, PM, and Saturday)

Broome Street and Norfolk Street

- Westbound Broome Street right turn (weekday PM)

Grand Street and Allen Street

- Eastbound Grand Street approach (weekday AM, midday, PM, and Saturday)
- Westbound Grand Street approach (weekday AM and midday)
- Northbound Allen Street left turn (weekday AM and Saturday)
- Southbound Allen Street left turn (weekday AM, midday, PM, and Saturday)

Grand Street and Norfolk Street

- Westbound Grand Street approach (weekday AM and PM)

Grand Street and Clinton Street

- Eastbound Grand Street approach (weekday PM)

The "overall" levels of service would be expected to deteriorate slightly for the No Action condition as compared to the existing conditions since traffic increases from background growth and other developments in the area would be relatively modest. There would be just two intersections expected to operate at "overall" LOS E—the intersections of Houston Street with Chrystie Street/Second Avenue and Houston Street with Allen Street/First Avenue during the weekday PM and/or the Saturday peak hours. However, the number of individual traffic movements that would operate at unacceptable levels of service would be higher under the 2022 No Action condition as noted above. Select traffic movements along the Delancey Street corridor and other intersections operating at unacceptable levels of service in the existing conditions would deteriorate further. In addition to these, certain movements at intersections along Houston Street and Grand Street would also deteriorate to unacceptable levels of service.

2022 WITH ACTION CONDITION

Overall, the proposed actions would generate a total of 371 vehicles per hour (vph) (209 in and 162 out) during the weekday AM peak hour, 527 vph (267 in and 260 out) during the weekday midday peak hour, 540 vph (244 in and 296 out) during the weekday PM peak hour, and 496 vph (250 in and 246 out) during the Saturday peak hour. The distribution of these vehicle trips and the resulting 2022 traffic volume increases and impacts on levels of service are presented below.

TRIP DISTRIBUTION AND ASSIGNMENT

AUTOS

Residential

Residential auto assignments were based on U.S. Census 2000 journey-to-work data. Most residential trips would occur within Manhattan (80 percent) with the remaining trips being made to Brooklyn (seven percent), New Jersey (six percent), Queens/Long Island (five percent), and Bronx/Westchester County/Upstate New York (two percent).

Of the 80 percent of trips within Manhattan, approximately 15 percent were assigned to points west and south (Chinatown, Tribeca, Lower Manhattan etc.) via local streets such as Grand, Centre, Worth and Canal Streets; 10 percent were assigned to areas south via the FDR Drive, East Broadway and Madison Street; 25 percent were assigned to points north along the east side of Manhattan via the FDR Drive; 30 percent were assigned to locations in Midtown and the west side of Manhattan via Houston Street and Avenue A; 20 percent were also assigned to points north and west via Avenue A, Allen Street/First Avenue, Chrystie Street/Second Avenue and the Bowery.

Of the seven percent of trips traveling to Brooklyn, approximately 75 percent were assigned to the Williamsburg Bridge and the remaining 25 percent were assigned to the Manhattan Bridge via Chrystie Street, East Broadway and Grand Street.

Of the six percent of trips traveling to New Jersey, approximately 80 percent were assigned to the Holland Tunnel via local streets such as Broome Street and the remaining 20 percent would travel north via the FDR Drive.

The majority of trips (80 percent) traveling to Queens and Long Island would use the Williamsburg Bridge while the remaining trips would use the Queensboro Bridge and Queens-Midtown Tunnel via local roadways such as Avenue A, Allen Street/First Avenue, Chrystie Street/Second Avenue and the Bowery.

All trips traveling to Westchester County, the Bronx or upstate New York would do so via the FDR Drive.

Reverse trips are expected to return along the same general routes on which they departed. Residential auto trips were assigned to the accessory parking garages included as part of the proposed development plan.

OFFICE

Office auto assignments were based on U.S. Census 2000 reverse journey-to-work data. Most office trips would occur within Manhattan (47 percent) with the remaining trips being made from Brooklyn (35 percent) and Queens/Long Island (18 percent).

Of the 47 percent of trips within Manhattan, approximately 30 percent were assigned from points north via the FDR Drive; 40 percent were assigned from points west and north via Houston Street and Avenue A; 30 percent were assigned these areas via Avenue A, Chrystie Street, and the Bowery.

Of the 35 percent of trips traveling from Brooklyn, approximately 60 percent would arrive via the Williamsburg Bridge and the remaining 40 percent would reach the site via the Manhattan Bridge.

The majority of trips (80 percent) traveling to Queens and Long Island were assigned to the site via the Williamsburg Bridge while the remaining trips were assigned from the Queensboro Bridge and Queens Midtown Tunnel via local roadways such as Avenue A, Allen Street/First Avenue, Chrystie Street/Second Avenue, and the Bowery to travel north.

Reverse trips are expected to depart along the same general routes on which they arrived. Office auto trips were assigned to the accessory parking garages included as part of the proposed development plan.

HOTEL

Hotel auto trip assignments were split evenly between area airports/trains (50 percent) and tourist, business, and shopping destinations (50 percent).

Most airport/train trips were assigned to area airports, and a small percentage was assigned to Penn Station. Of these trips, 60 percent of were assigned to JFK and LaGuardia Airports, and were split between the Williamsburg Bridge (45 percent) and the Triborough Bridge or Queens-Midtown Tunnel via the FDR Drive (15 percent); 30 percent were assigned to Newark Airport via the Holland Tunnel; and 10 percent were assigned to Penn Station via Houston Street.

Of tourist, business, and shopping destination trips, 90 percent were assigned to points in Manhattan which include 40 percent assigned to points north and west via Houston Street; 30 percent assigned to points north via Avenue A, Allen Street/First Avenue, Chrystie Street/Second Avenue and the Bowery; 10 percent assigned to points south via local streets such as Grand, Centre, Worth and Canal Streets; five percent assigned to points south via the FDR Drive and Pearl Street; and five percent assigned to points north via the FDR Drive. The remaining 10 percent of these trips were assigned to Brooklyn via the Williamsburg Bridge.

DESTINATION RETAIL

The destination retail component would be expected to draw customers from within a three-mile radius of the project site; therefore the majority of the auto trips are expected to come from within Manhattan (65 percent) with some trips expected to come from Brooklyn (30 percent) and Queens (five percent).

Of the 65 percent of trips within Manhattan, approximately 35 percent were assigned from points west and south via local streets such as Grand, Centre, Worth, Madison and Canal Streets; 25 percent were assigned from points north via the FDR Drive; 20 percent were assigned from locations west and northwest via Houston Street; 20 percent were assigned to points north and northwest via Avenue A, Chrystie Street and the Bowery.

Of the 30 percent of the trips from Brooklyn, approximately 60 percent would arrive via the Williamsburg Bridge and the remaining 40 percent would arrive at the site via the Manhattan Bridge.

The volume of auto trips from Queens would be low since most of the borough lies beyond a three-mile radius of the project site, and there are many destination retail options within Queens. All destination retail auto trips from Queens were assigned to the Williamsburg Bridge to access the site.

LOCAL RETAIL/PUBLIC MARKET

The local retail and public market uses are expected to serve the immediate surrounding area. Therefore, auto trips were generally assigned from local origins within the neighborhood and adjacent residential areas. Auto trips were assigned to the site along the roadways such as Essex Street, Norfolk Street, Ludlow Street, Allen Street, East Broadway, Grand Street, Broome Street, and local roadways within the area. Departing trips were assigned along the same routes as arrivals.

COMMUNITY OFFICE/COMMUNITY FACILITY/MEDICAL OFFICE

Auto trips generated by the community office use were assigned similar to general office trips, while community facility trips were assigned from local origins within the neighborhood and surrounding residential area, similar to other local uses (local retail, public market etc.). Medical office staff trips were assigned similar to the other office uses. For medical office visitor trips, 50 percent were assigned locally to reflect neighborhood medical facilities (i.e., neighborhood physician's office, local medical clinic), and 50 percent were assigned more regionally—similar to destination retail—to account for specialist offices or other facilities that would draw trips from beyond the local area.

TAXIS

The majority of taxi pick-ups and drop-offs for all development components were assigned to pick up and drop off along the building frontages on Essex Street, Delancey Street, Norfolk Street, Suffolk Street, Clinton Street, and Grand Street.

DELIVERIES

Truck delivery trips for all land uses were assigned to NYCDOT designated truck routes. Trucks were assigned to the study area from regional origins via the Williamsburg Bridge and Delancey Street. Trucks were assigned along regional and local truck routes as long as possible until reaching the project site.

TRAFFIC VOLUME INCREMENTS

All project-generated auto trips were assigned to the garages being proposed on Sites 2, 3, 4, and 5. Delivery trips for Sites 1 through 6 would occur at each site's respective loading docks. Deliveries to Sites 8, 9, and 10 would be made curbside. The 2022 proposed actions vehicle trip increments for the weekday AM, midday, and PM, and Saturday peak hours are provided at the end of the chapter.

The proposed actions would add approximately 50 to 70 vehicles per hour (vph) in the eastbound direction along Delancey Street approaching the project area (from the west) during the four peak analysis hours. Within the study area, projected westbound traffic volume increases between Essex Street and Clinton Streets range from about 70 to 215 vph during the peak hours. Volume increases along eastbound Delancey Street would be about 10 to 35 vph during all peak hours.

Volumes along the Williamsburg Bridge would increase by approximately 20 to 50 vph per direction during the peak hours as a result of the proposed actions.

Along Houston Street, eastbound traffic volumes would increase by approximately 20 to 35 vph during all peak hours, and by about 20 to 50 vph in the westbound direction.

Approaching Norfolk Street, traffic volumes along eastbound Broome Street would increase by about 40 to 70 vph (as indicated previously, Broome Street travels one-way eastbound between Essex and Norfolk Streets) and would increase by approximately 15 to 30 vph in the westbound direction (between Suffolk and Norfolk Streets). Volume increases along other sections of Broome Street would be about 5 to 15 vph per direction during all four peak hours.

Project-generated traffic increases along Grand Street (between Allen and Essex Streets) range from 25 to 45 vph in the eastbound direction, and from 40 to 70 vph in the westbound direction during the peak analysis hours. In the section of Grand Street between Essex and Clinton Streets, eastbound volumes would increase from about 5 to 45 vph, and westbound volumes would increase from about 50 to 150 vph during the peak hours. East of Clinton Street, project-generated increments during the four peak hours would be about 10 to 25 vph in the eastbound direction, and about 40 to 60 vph in the westbound direction.

Peak hour project traffic volume increments along Essex Street would generally be in the range of 25 to 40 vph per direction except for the section between Rivington and Delancey Streets where southbound volume increases (approaching Delancey Street) would be between 65 and 75 vph.

Volumes along Allen Street would increase from 5 to 25 vph in the northbound direction and by 5 vph or less in the southbound direction.

The total 2022 With Action traffic volumes for the weekday AM, midday, and PM, and Saturday peak hours are provided at the end of the chapter.

TRAFFIC LEVELS OF SERVICE AND SIGNIFICANT IMPACTS

The assessment of potential significant traffic impacts of the proposed actions is based on significant impact criteria defined in the *CEQR Technical Manual*. No Action LOS A, B, or C conditions that deteriorate to unacceptable With Action LOS D, E, or F conditions are considered a significant traffic impact.

For No Action LOS A, B, or C conditions that deteriorate to unacceptable LOS D, mitigation to mid-LOS D (45.0 seconds of delay for signalized intersections and 30.0 seconds of delay for unsignalized intersections) needs to be considered to fully mitigate the impact.

For a No Action LOS D, an increase of delay by five or more seconds in the With Action condition is considered a significant impact if the With Action delay meets or exceeds 45.0 seconds. For a No Action LOS E, the threshold is a four-second increase in With Action delay; for a No Action LOS F, a three-second increase in delay in the With Action condition is significant. For unsignalized intersections, for the minor street to generate a significant impact, 90 passenger car equivalents (PCEs) must be identified in the With Action condition in any peak hour.

The remainder of this section provides an overview of significant traffic impacts that would result under the 2022 With Action condition due to the proposed actions. The proposed actions would have significant traffic impacts at nine intersections in the weekday AM peak hour, seven intersections in the weekday midday peak hour, 18 intersections in the weekday PM peak hour, and 10 intersections in the Saturday peak hour.

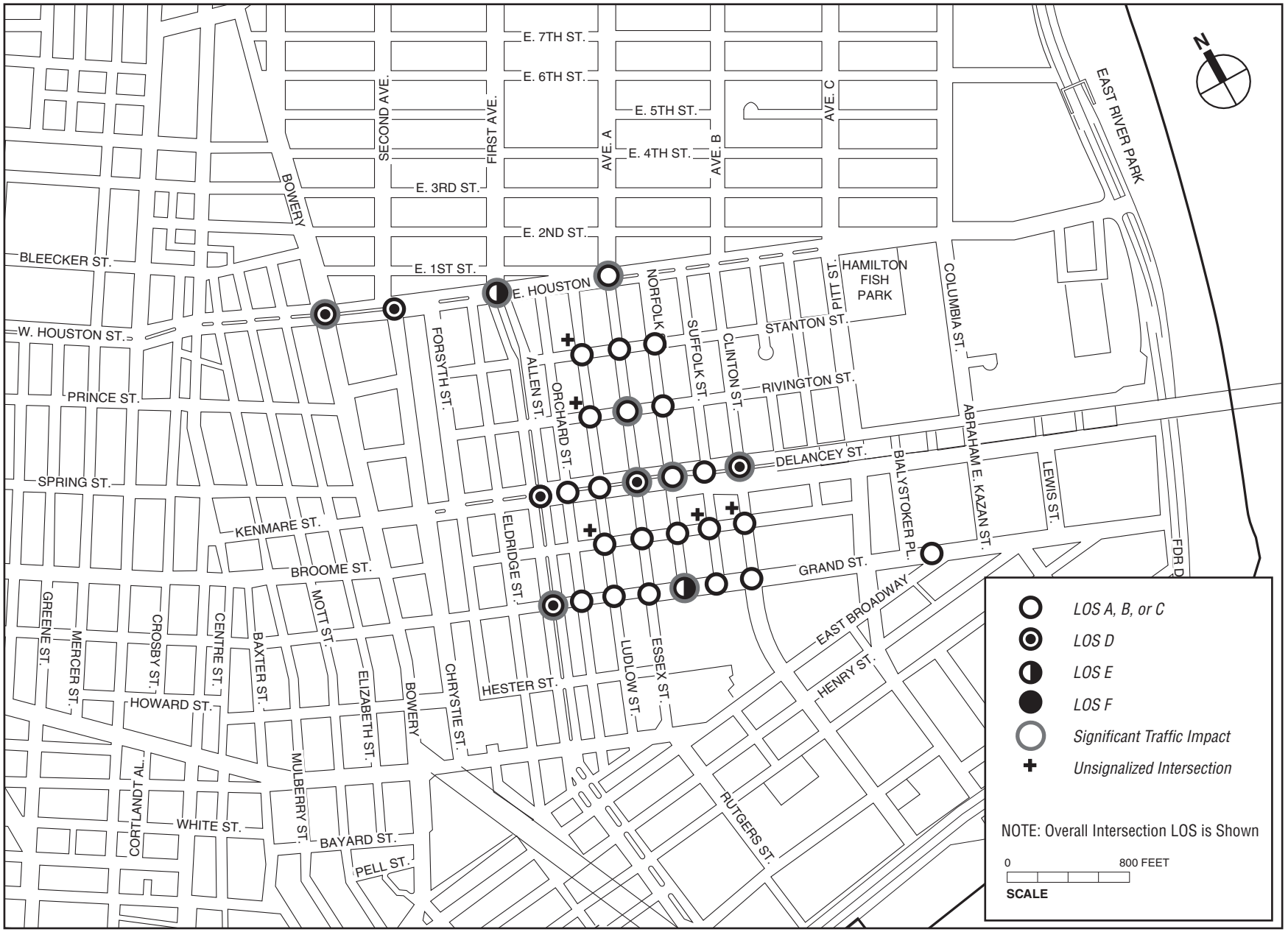
Detailed volume-to-capacity (v/c) ratios, average vehicle delay, and levels of service movement-by-movement at each intersection under the With Action condition, and the total With Action volume maps are provided at the end of this chapter. A summary of level of service findings and significant traffic impacts for the 30 intersections analyzed is presented in **Tables 13-18a and 13-18b,** and **Figures 13-13a through 13-16b.** Detailed descriptions of the With Action conditions traffic levels of service and significant impacts are provided in **Table 13-19**.

Table 13-18a
Traffic Level of Service Summary Comparison – Overall Intersections: No Action vs. With Action Conditions (2022)

	2022 No Action				2022 With Action			
	Weekday Peak Hours			Saturday	Weekday Peak Hours			Saturday
	AM	Midday	PM	Peak Hour	AM	Midday	PM	Peak Hour
Intersections at Overall LOS A/B/C	22	27	18	24	22	23	14	23
Intersections at Overall LOS D	8	3	11	4	6	6	8	5
Intersections at Overall LOS E	0	0	1	2	2	1	8	1
Intersections at Overall LOS F	0	0	0	0	0	0	0	1
Number of intersections with significant impacts	-	-	-	-	9	7	18	10

Table 13-18b
Traffic Level of Service Summary Comparison – Traffic Movements: No Action vs. With Action Conditions (2022)

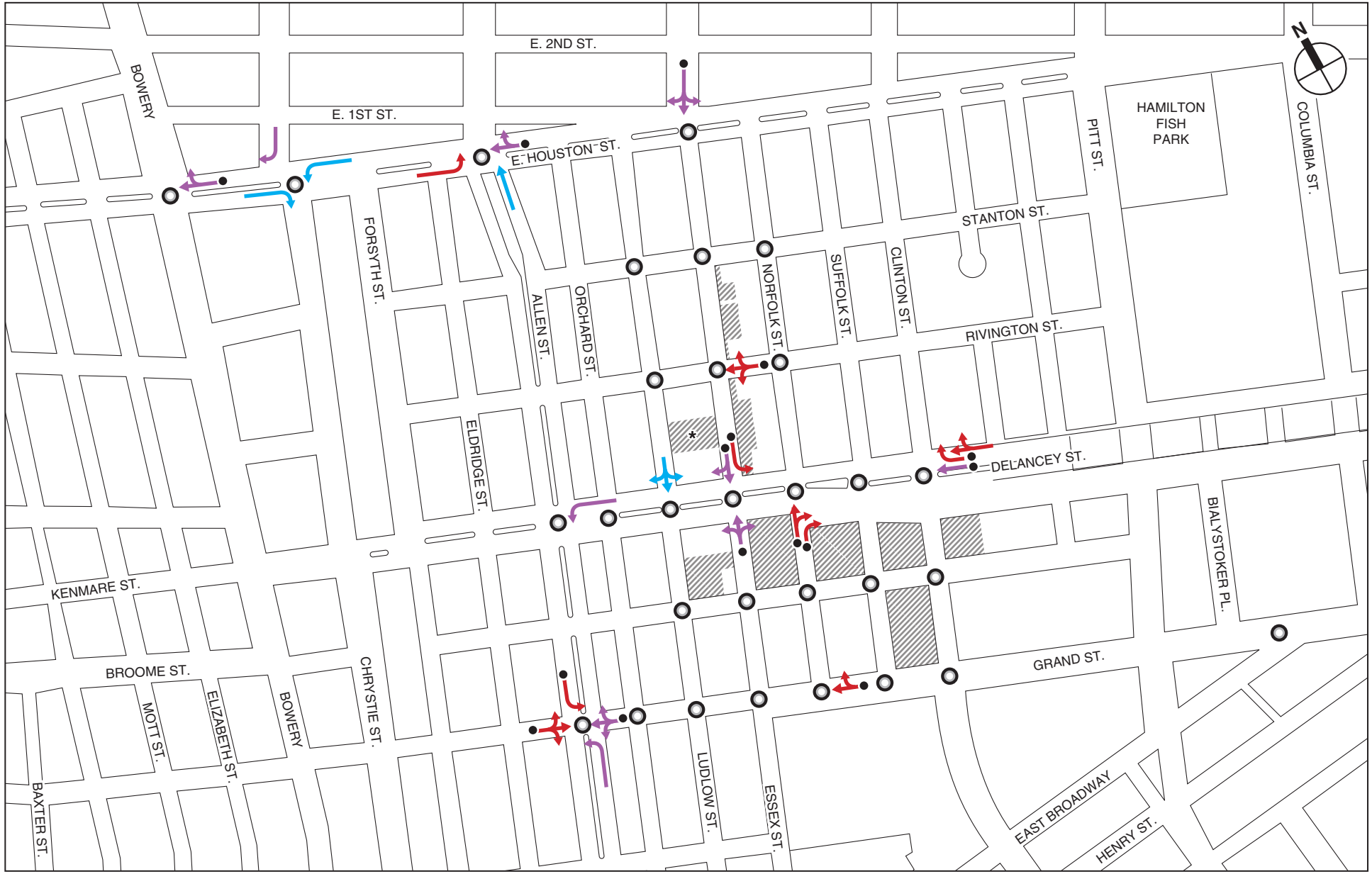
	2022 No Action				2022 With Action			
	Weekday Peak Hours			Saturday	Weekday Peak Hours			Saturday
	AM	Midday	PM	Peak Hour	AM	Midday	PM	Peak Hour
Traffic Movements at Acceptable LOS	101	110	89	99	98	105	81	95
Traffic Movements at Unacceptable LOS D	9	2	10	8	4	1	9	8
Traffic Movements at LOS E	8	3	13	7	10	6	10	6
Traffic Movements at LOS F	4	6	8	7	10	9	20	12
Number of significantly impacted movements	-	-	-	-	15	12	30	16
Number of individual traffic movements*	122	121	120	121	122	121	120	121
* Number of movements may vary between peak hours due to turn prohibitions, parking regulations, and the presence of de facto left turn movements.								



With Action Traffic Levels of Service - Overall Intersections
Weekday AM Peak Hour

Figure 13-13a

3.22.12

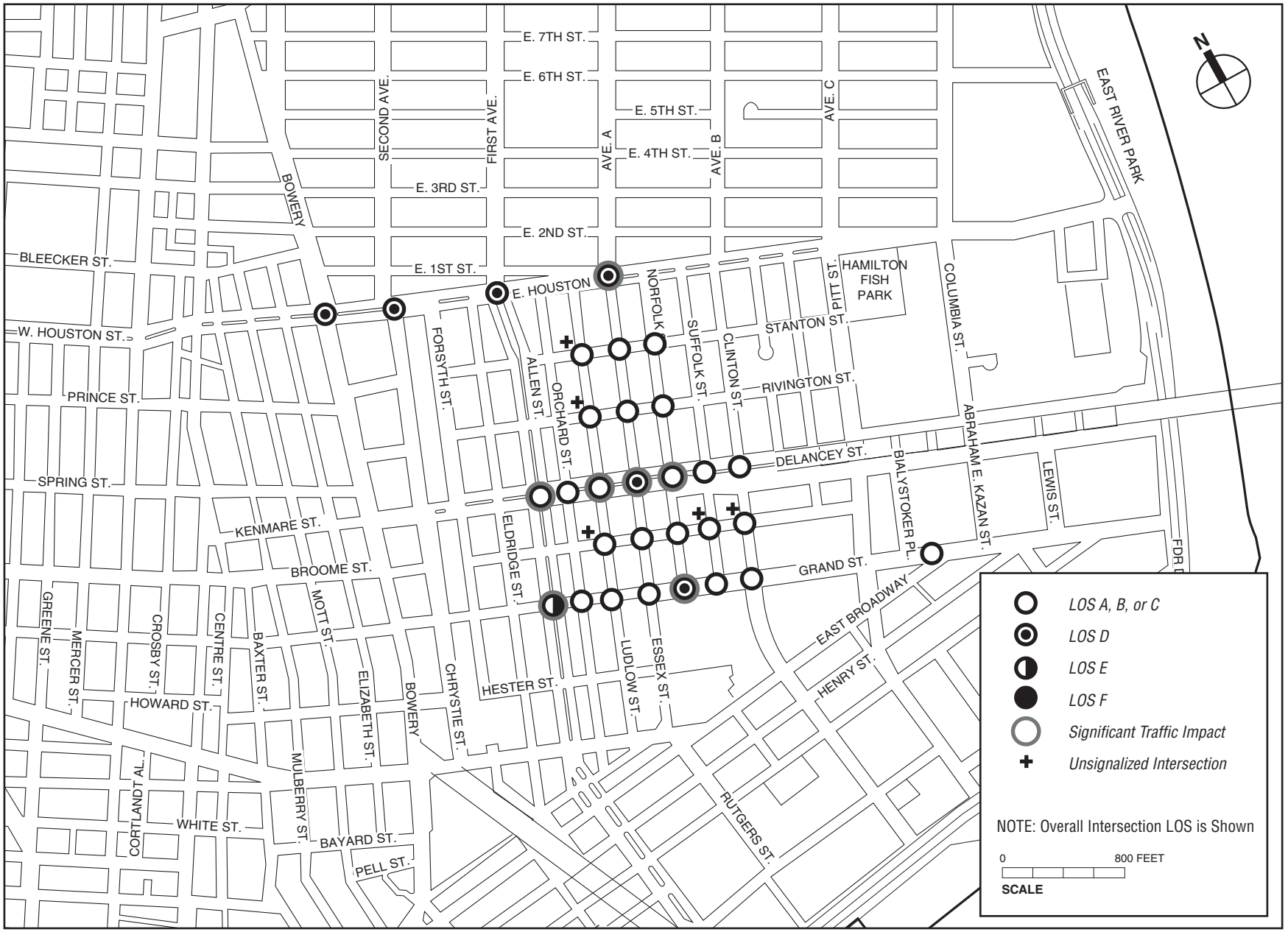


Proposed Development Sites
Intersection Analyzed
* *Site 7 Would Not Be Redeveloped Under the Proposed Actions*

Unacceptable LOS D
LOS E
LOS F

With Action Traffic Levels of Service - Unacceptable Traffic Movements
Weekday AM Peak Hour

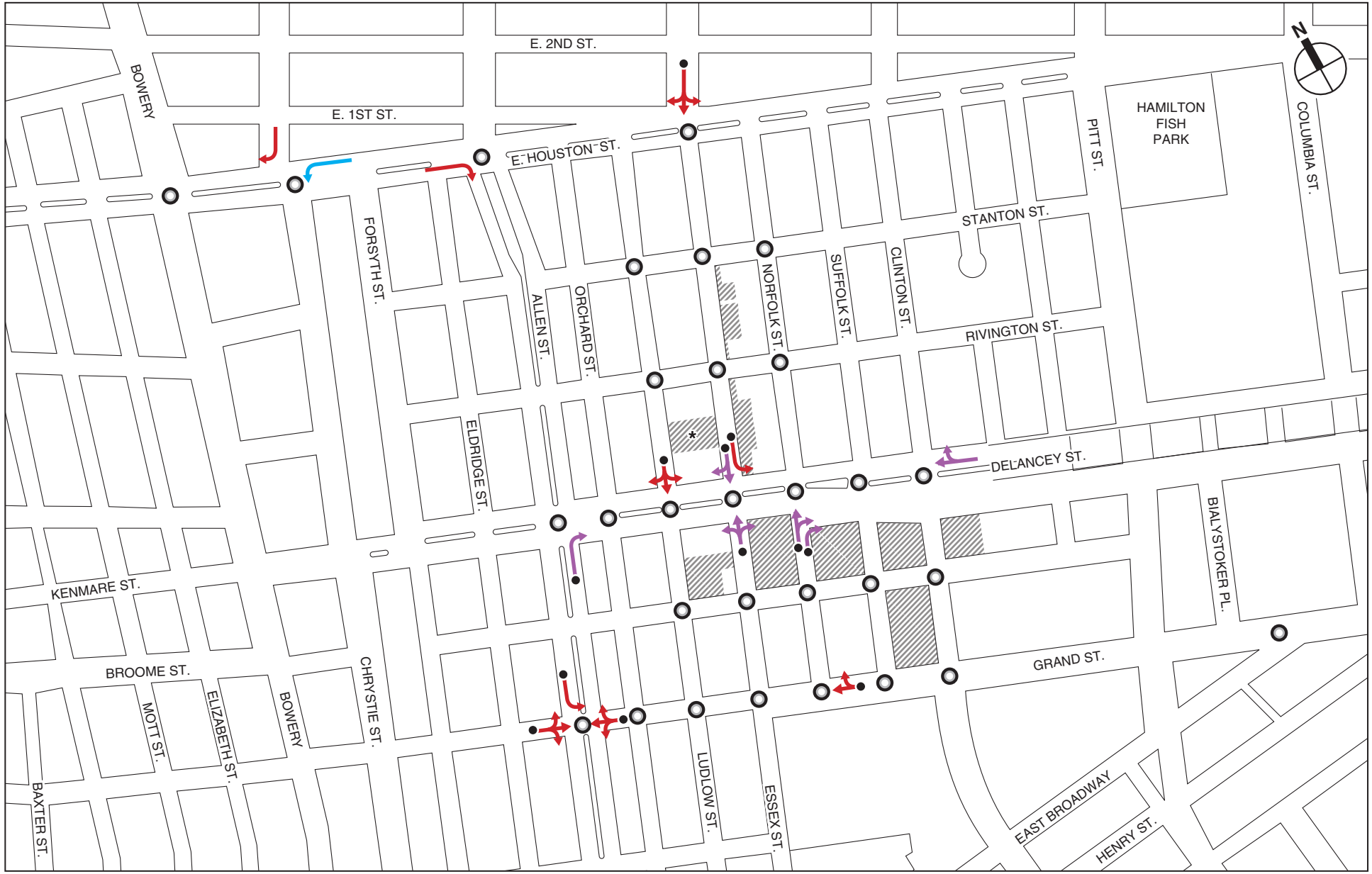
Figure 13-13b



With Action Traffic Levels of Service - Overall Intersections
Weekday Midday Peak Hour

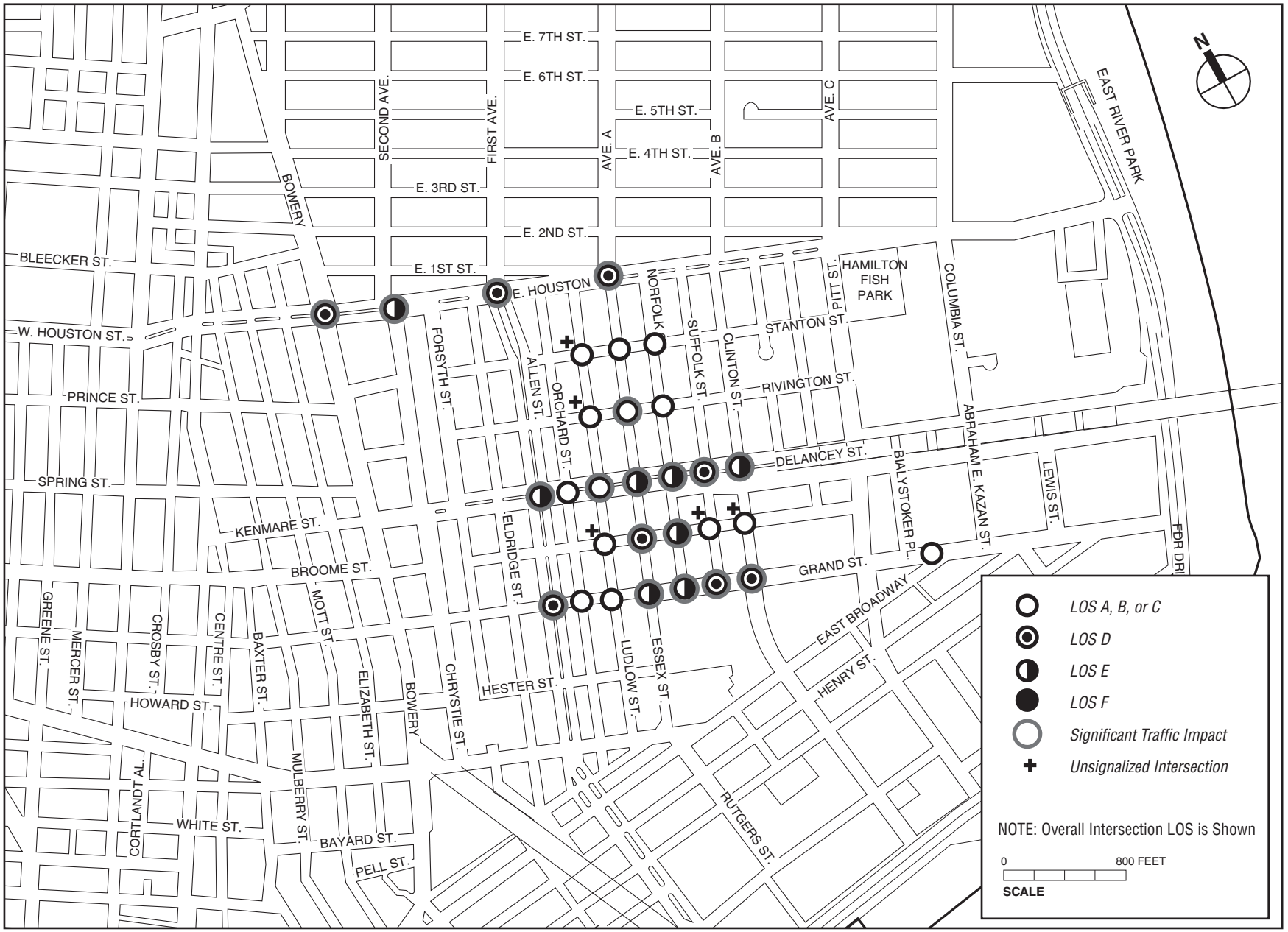
Figure 13-14a

3.22.12



With Action Traffic Levels of Service - Unacceptable Traffic Movements
Weekday Midday Peak Hour

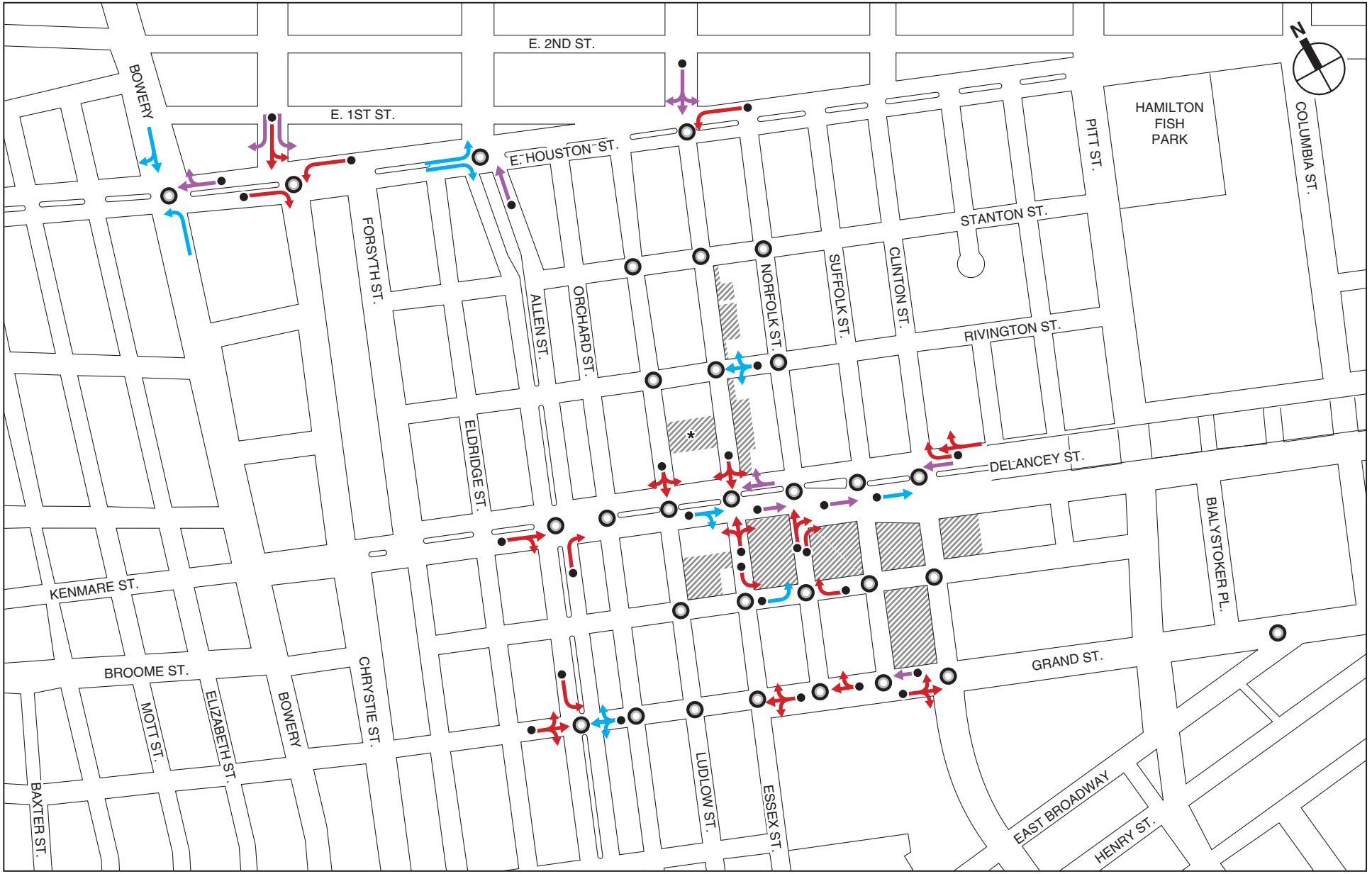
Figure 13-14b



With Action Traffic Levels of Service - Overall Intersections
Weekday PM Peak Hour

Figure 13-15a

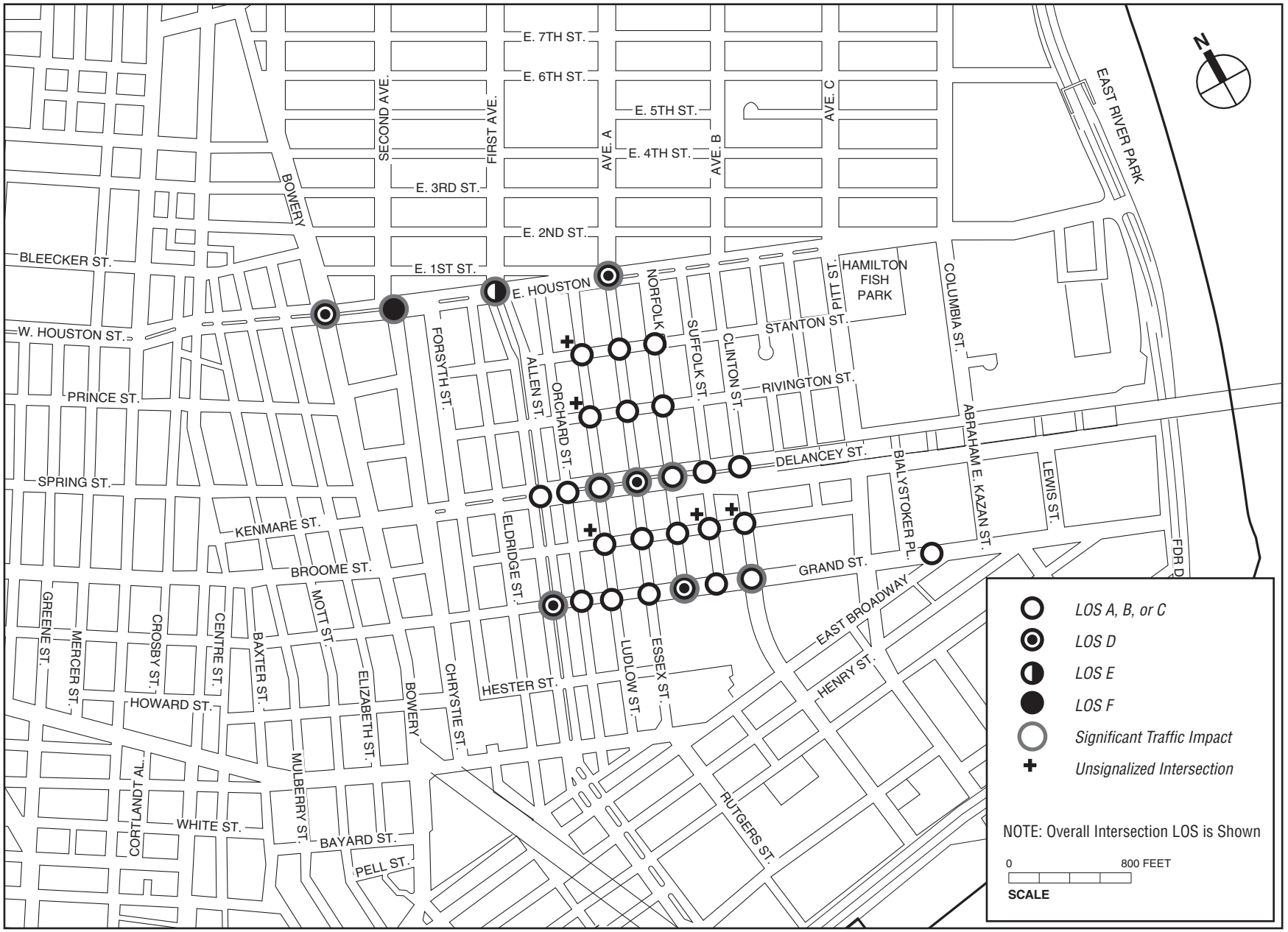
3.22.12



Proposed Development Sites
Intersection Analyzed
* *Site 7 Would Not Be Redeveloped Under the Proposed Actions*

Unacceptable LOS D
LOS E
LOS F

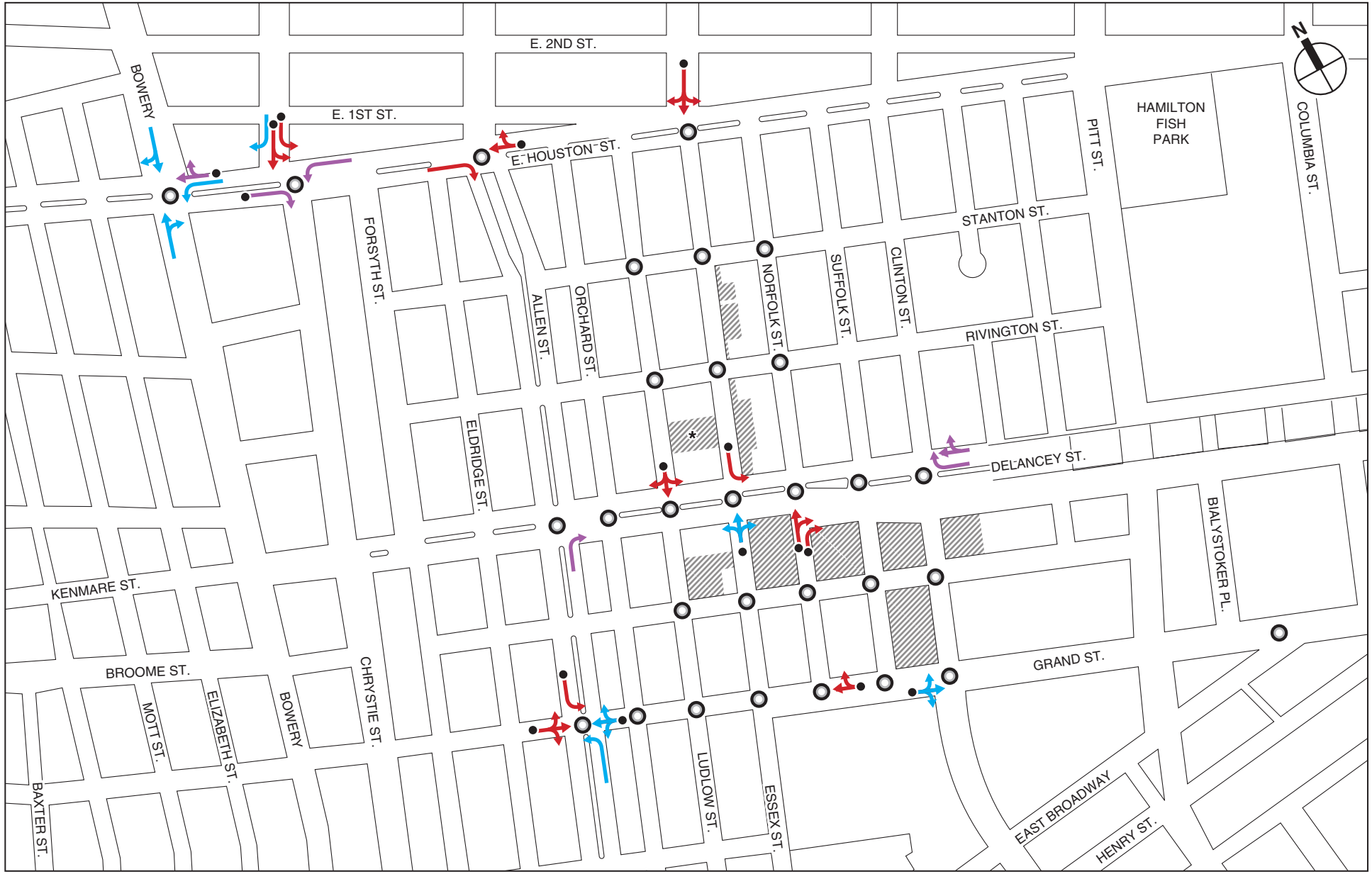
With Action Traffic Levels of Service - Unaccepatable Trafic Movements
Weekday PM Peak Hour
Figure 13-15b



With Action Traffic Levels of Service - Overall Intersections
Saturday Peak Hour

Figure 13-16a

3.22.12



Proposed Development Sites
Intersection Analyzed
* *Site 7 Would Not Be Redeveloped Under the Proposed Actions*
Unacceptable LOS D
LOS E
LOS F

With Action Traffic Levels of Service - Unaccepatable Trafic Movements
Saturday Peak Hour
Figure 13-16b

Table13-19
Seward Park Development EIS
2022 With Action Traffic Levels of Service

INTERSECTION & APPROACH		Weekday AM (8:00 - 9:00 AM)				Weekday Midday (1:00 - 2:00 PM)				Weekday PM (5:15 - 6:15 PM)				Saturday (3:45 - 4:45 PM)			
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS
SIGNALIZED INTERSECTIONS																	
EAST HOUSTON STREET																	
1. EAST HOUSTON STREET AND BOWERY																	
East Houston Street	EB	L	0.28	30.7	C	L	0.43	32.7	C	L	0.41	33.5	C	L	0.69	39.8	D
		TR	0.71	29.9	C	TR	0.80	32.1	C	TR	0.77	31.0	C	TR	0.90	35.0	D
	WB	L	0.69	30.9	C	L	0.80	43.5	D	L	0.71	41.3	D	L	0.85	50.1	D
		TR	1.07	66.1	E	TR	0.92	36.7	D	TR	1.09	79.6	E	TR	1.04	60.2	E
Bowery	NB	L	0.84	42.3	D	L	0.50	29.2	C	L	0.80	50.1	D	L	0.73	37.5	D
		TR	0.92	40.6	D	TR	0.75	35.3	D	TR	0.68	33.1	C	TR	0.98	46.7	D
	SB	L	0.32	26.2	C	L	0.41	25.6	C	L	0.48	27.0	C	L	0.57	32.9	C
		TR	0.92	42.5	D	TR	0.82	38.0	D	TR	1.00	53.8	D	TR	1.02	54.3	D
Overall Intersection		-	**0.97**	**46.7**	**D**	-	**0.90**	**35.2**	**D**	-	**0.95**	**52.5**	**D**	-	**1.00**	**48.1**	**D**
2. EAST HOUSTON STREET AND CHRYSTIE STREET / SECOND AVENUE																	
East Houston Street	EB	T	0.59	29.7	C	T	0.79	34.7	C	T	0.74	33.2	C	T	0.88	37.1	D
		R	0.83	50.7	D	R	0.74	41.8	D	R	1.14	125.7	F	R	0.98	67.6	E
	WB	L	0.71	45.5	D	L	0.63	50.4	D	L	0.90	88.6	F	L	0.73	57.1	E
		T	0.77	32.4	C	T	0.69	31.2	C	T	0.68	30.9	C	T	0.95	42.3	D
Chrystie Street / Second Avenue	NB	L	0.86	40.4	D	L	0.56	35.3	D	L	0.69	37.6	D	L	0.52	34.0	C
		LR	0.87	42.5	D	LR	0.60	38.2	D	LR	0.68	39.0	D	LR	0.60	37.7	D
	SB	L	0.78	38.8	D	L	0.85	36.7	D	L	1.06	78.5	E	L	1.31	179.0	F
		LT	0.79	35.8	D	LT	0.90	36.4	D	LT	1.15	107.1	F	LT	1.31	174.2	F
		R	1.01	64.0	E	R	1.14	100.0	F	R	1.07	77.8	E	R	0.98	46.9	D
Overall Intersection		-	**0.89**	**39.2**	**D**	-	**0.83**	**42.7**	**D**	-	**1.01**	**64.6**	**E**	-	**0.95**	**81.0**	**F**
3. EAST HOUSTON STREET AND ALLEN STREET / FIRST AVENUE																	
East Houston Street	EB	L	1.12	101.6	F	L	0.83	34.8	C	L	0.88	48.0	D	L	0.82	40.7	D
		T	0.82	30.4	C	T	0.91	31.7	C	T	0.87	34.5	C	T	0.91	34.1	C
		R	0.82	37.6	D	R	1.29	165.2	F	R	0.90	53.4	D	R	1.27	160.2	F
	WB	L	0.43	28.8	C	L	0.27	26.9	C	L	0.37	28.6	C	L	0.44	32.1	C
		TR	1.07	78.3	E	TR	0.91	43.3	D	TR	0.88	38.7	D	TR	1.17	114.9	F
Allen Street	NB	L	0.66	33.6	C	L	0.48	29.9	C	L	0.43	28.7	C	L	0.41	28.2	C
		T	0.98	51.3	D	T	0.78	35.5	D	T	1.01	60.2	E	T	0.84	36.7	D
		R	0.35	28.5	C	R	0.29	28.0	C	R	0.19	26.1	C	R	0.24	26.8	C
Overall Intersection		-	**1.17**	**55.5**	**E**	-	**0.99**	**48.3**	**D**	-	**0.97**	**43.4**	**D**	-	**1.00**	**70.1**	**E**
4. EAST HOUSTON STREET AND ESSEX STREET / AVENUE A																	
East Houston Street	EB	L	0.58	22.1	C	L	0.45	14.8	B	L	0.33	15.3	B	L	0.34	16.1	B
		TR	0.71	27.8	C	TR	0.83	28.7	C	TR	0.81	30.4	C	TR	0.83	28.7	C
	WB	L	0.65	23.0	C	L	0.76	32.6	C	L	1.02	90.5	F	L	0.90	43.7	D
		T	0.79	30.8	C	T	0.65	27.0	C	T	0.70	27.8	C	T	0.87	34.1	C
		R	0.11	19.9	B	R	0.11	19.9	B	R	0.27	22.2	C	R	0.15	20.2	C
Essex Street / Avenue A	NB	LTR	0.79	35.9	D	LTR	0.81	37.2	D	LTR	0.77	35.1	D	LTR	0.73	33.4	C
	SB	LTR	1.01	59.2	E	LTR	1.15	101.6	F	LTR	1.03	65.5	E	LTR	1.14	98.1	F
Overall Intersection		-	**0.84**	**33.6**	**C**	-	**0.91**	**39.4**	**D**	-	**1.04**	**39.5**	**D**	-	**0.94**	**41.2**	**D**
STANTON STREET																	
5. STANTON STREET AND ESSEX STREET																	
Stanton Street	EB	LTR	0.23	22.4	C	LTR	0.50	28.3	C	LTR	0.29	23.4	C	LTR	0.24	22.5	C
Essex Street	NB	TR	0.33	12.0	B	TR	0.27	11.4	B	TR	0.34	12.1	B	TR	0.32	11.9	B
	SB	LT	0.42	12.8	B	LT	0.39	12.4	B	LT	0.42	12.6	B	LT	0.57	14.4	B
Overall Intersection		-	**0.35**	**13.3**	**B**	-	**0.43**	**14.7**	**B**	-	**0.37**	**13.4**	**B**	-	**0.44**	**14.2**	**B**
6. STANTON STREET AND NORFOLK STREET																	
Stanton Street	EB	LT	0.23	16.4	B	LT	0.21	16.1	B	LT	0.17	15.6	B	LT	0.23	16.2	B
Norfolk Street	NB	TR	0.52	21.2	C	TR	0.63	23.8	C	TR	0.54	21.3	C	TR	0.51	20.9	C
Overall Intersection		-	**0.38**	**19.7**	**B**	-	**0.42**	**21.8**	**C**	-	**0.35**	**19.8**	**B**	-	**0.37**	**19.4**	**B**
RIVINGTON STREET																	
7. RIVINGTON STREET AND ESSEX STREET																	
Rivington Street	WB	LTR	1.03	80.2	F	LTR	0.80	41.9	D	LTR	0.86	47.8	D	LTR	0.82	43.7	D
Essex Street	NB	LT	0.36	11.9	B	LT	0.30	11.4	B	LT	0.35	11.7	B	LT	0.34	11.7	B
	SB	TR	0.36	12.3	B	TR	0.45	13.5	B	TR	0.48	13.8	B	TR	0.91	40.6	D
Overall Intersection		-	**0.62**	**33.3**	**C**	-	**0.58**	**19.5**	**B**	-	**0.63**	**21.4**	**C**	-	**0.87**	**32.4**	**C**

Table13-19 (cont'd)
Seward Park Development EIS
2022 With Action Traffic Levels of Service

INTERSECTION & APPROACH		Weekday AM (8:00 - 9:00 AM)				Weekday Midday (1:00 - 2:00 PM)				Weekday PM (5:15 - 6:15 PM)				Saturday (3:45 - 4:45 PM)			
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS
SIGNALIZED INTERSECTIONS																	
8. RIVINGTON STREET AND NORFOLK STREET																	
Rivington Street	WB	TR	0.56	22.2	C	TR	0.22	16.5	B	TR	0.47	20.1	C	TR	0.49	20.4	C
Norfolk Street	NB	LT	0.59	20.0	C	LT	0.82	26.5	C	LT	0.75	22.7	C	LT	0.60	20.4	C
Overall Intersection		-	**0.57**	**20.9**	**C**	-	**0.52**	**24.6**	**C**	-	**0.61**	**21.7**	**C**	-	**0.54**	**20.4**	**C**
DELANCEY STREET																	
9. DELANCEY STREET AND ALLEN STREET																	
Delancey Street	EB	TR	0.98	41.3	D	TR	0.86	29.3	C	TR	1.11	85.6	F	TR	0.91	31.2	C
	WB	L	0.90	58.1	E	L	0.77	43.1	D	L	0.75	44.8	D	L	0.78	41.5	D
		TR	1.03	44.1	D	TR	0.80	15.2	B	TR	1.02	42.4	D	TR	0.83	15.9	B
Allen Street	NB	T	0.73	36.1	D	T	0.71	35.7	D	T	0.70	34.8	C	T	0.77	38.2	D
		R	0.63	39.5	D	R	0.87	61.4	E	R	1.11	119.0	F	R	0.87	62.3	E
	SB	TR	0.56	32.2	C	TR	0.71	33.9	C	TR	0.56	31.7	C	TR	0.77	35.9	D
Overall Intersection		-	**0.94**	**42.6**	**D**	-	**0.84**	**26.6**	**C**	-	**1.05**	**60.9**	**E**	-	**0.86**	**28.0**	**C**
10. DELANCEY STREET AND ORCHARD STREET																	
Delancey Street	EB	T	0.43	9.8	A	T	0.59	11.7	B	T	0.68	12.6	B	T	0.60	11.7	B
	WB	TR	0.79	14.8	B	TR	0.72	13.8	B	TR	0.82	15.7	B	TR	0.78	14.8	B
Orchard Street	NB	LTR	0.26	26.2	C	LTR	0.34	27.9	C	LTR	0.33	27.4	C	LTR	0.29	26.7	C
Overall Intersection		-	**0.61**	**13.4**	**B**	-	**0.60**	**13.3**	**B**	-	**0.66**	**14.6**	**B**	-	**0.62**	**13.8**	**B**
11. DELANCEY STREET AND LUDLOW STREET																	
Delancey Street	EB	TR	0.45	10.3	B	TR	0.61	12.1	B	TR	0.73	13.8	B	TR	0.61	12.1	B
	WB	T	0.75	13.5	B	T	0.74	13.4	B	T	0.79	14.1	B	T	0.69	12.4	B
Ludlow Street	SB	LTR	0.77	45.8	D	LTR	1.10	114.2	F	LTR	1.32	200.4	F	LTR	1.25	168.3	F
Overall Intersection		-	**0.76**	**14.2**	**B**	-	**0.86**	**20.0**	**B**	-	**0.97**	**26.3**	**C**	-	**0.87**	**24.6**	**C**
12. DELANCEY STREET AND ESSEX STREET																	
Delancey Street	EB	TR	0.53	14.3	B	TR	0.71	17.0	B	TR	1.03	46.3	D	TR	0.90	26.7	C
	WB	TR	1.02	42.8	D	TR	0.97	24.4	C	TR	1.06	56.9	E	TR	1.03	41.8	D
Essex Street	NB	LTR	0.92	60.4	E	LTR	0.97	68.0	E	LTR	1.20	140.1	F	LTR	0.91	54.7	D
	SB	DefL	1.34	209.8	F	DefL	1.46	260.7	F	LTR	1.15	119.3	F	DefL	1.34	198.8	F
		TR	0.89	58.4	E	TR	0.90	60.2	E	-	-	-	-	TR	0.77	43.0	D
Overall Intersection		-	**1.14**	**45.4**	**D**	-	**1.17**	**39.0**	**D**	-	**1.11**	**65.7**	**E**	-	**1.18**	**47.1**	**D**
13. DELANCEY STREET AND NORFOLK STREET																	
Delancey Street	EB	T	0.64	13.0	B	T	0.76	15.0	B	T	1.08	63.3	E	T	0.81	15.6	B
	WB	TR	0.95	20.3	C	TR	1.01	33.5	C	TR	1.01	32.7	C	TR	0.95	22.9	C
Norfolk Street	NB	TR	1.07	93.6	F	TR	1.00	71.9	E	TR	1.27	166.4	F	TR	1.11	106.0	F
		R	1.08	97.2	F	R	1.01	76.6	E	R	1.27	165.4	F	R	1.13	114.2	F
Overall Intersection		-	**0.99**	**29.1**	**C**	-	**1.01**	**31.9**	**C**	-	**1.15**	**66.0**	**E**	-	**1.01**	**33.1**	**C**
14. DELANCEY STREET AND SUFFOLK STREET																	
Delancey Street	EB	T	0.80	17.6	B	T	0.83	16.4	B	T	1.08	59.3	E	T	1.00	29.5	C
	WB	T	0.96	20.6	C	T	0.79	15.0	B	T	0.85	16.1	B	T	0.75	14.4	B
Delancey Street Service Road	EB	TR	0.44	13.0	B	TR	0.45	11.5	B	TR	0.41	10.6	B	TR	0.41	10.9	B
Suffolk Street	SB	R	0.14	22.1	C	R	0.08	23.2	C	R	0.28	26.9	C	R	0.33	28.0	C
Overall Intersection		-	**0.65**	**18.9**	**B**	-	**0.58**	**15.5**	**B**	-	**0.81**	**38.4**	**D**	-	**0.78**	**22.4**	**C**
15. DELANCEY STREET AND CLINTON STREET																	
Delancey Street	EB	T	0.64	10.2	B	T	0.75	11.8	B	T	1.07	54.7	D	T	0.94	15.5	B
Williamsburg Bridge	WB	T	1.08	59.4	E	T	0.90	19.0	B	T	1.08	57.9	E	T	0.85	15.7	B
		R	1.08	86.3	F	R	0.91	43.3	D	R	1.09	86.8	F	R	0.99	57.4	E
Delancey Street Service Road	EB	TR	0.16	6.7	A	TR	0.16	6.7	A	TR	0.14	6.5	A	TR	0.15	6.6	A
	WB	TR	1.01	88.5	F	TR	0.73	62.8	E	TR	0.93	82.9	F	TR	0.74	59.8	E
Clinton Street	NB	R	0.17	28.0	C	R	0.09	26.8	C	R	0.16	27.7	C	R	0.09	26.7	C
Overall Intersection		-	**0.83**	**42.7**	**D**	-	**0.68**	**18.4**	**B**	-	**0.83**	**58.3**	**E**	-	**0.70**	**19.8**	**B**
BROOME STREET																	
16. BROOME STREET AND ESSEX STREET																	
Broome Street	EB	LTR	0.20	21.8	C	LTR	0.19	21.8	C	LTR	0.18	21.8	C	LTR	0.25	22.6	C
Essex Street	NB	TR	0.32	11.9	B	TR	0.32	11.9	B	TR	0.47	13.4	B	TR	0.29	11.6	B
	SB	L	0.25	12.3	B	L	0.28	12.7	B	L	1.22	126.1	F	L	0.32	13.3	B
		T	0.26	11.4	B	T	0.25	11.3	B	T	0.31	11.4	B	T	0.22	11.0	B
Overall Intersection		-	**0.27**	**12.8**	**B**	-	**0.27**	**12.7**	**B**	-	**0.82**	**38.7**	**D**	-	**0.29**	**13.1**	**B**

Table13-19 (cont'd)
Seward Park Development EIS
2022 With Action Traffic Levels of Service

INTERSECTION & APPROACH		Weekday AM (8:00 - 9:00 AM)				Weekday Midday (1:00 - 2:00 PM)				Weekday PM (5:15 - 6:15 PM)				Saturday (3:45 - 4:45 PM)			
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS
SIGNALIZED INTERSECTIONS																	
17. BROOME STREET AND NORFOLK STREET																	
Broome Street	EB	L	0.18	10.8	B	L	0.15	10.6	B	L	0.85	48.1	D	L	0.19	10.9	B
	WB	R	0.43	14.1	B	R	0.36	13.0	B	R	1.04	95.6	F	R	0.62	18.1	B
Norfolk Street	NB	T	0.92	40.0	D	T	0.91	39.0	D	T	0.81	31.1	C	T	0.88	33.3	C
Overall Intersection		-	**0.62**	**27.2**	**C**	-	**0.57**	**27.1**	**C**	-	**0.91**	**55.7**	**E**	-	**0.72**	**24.1**	**C**
GRAND STREET																	
18. GRAND STREET AND ALLEN STREET																	
Grand Street	EB	LTR	1.16	112.5	F	LTR	1.31	172.7	F	LTR	1.12	100.5	F	LTR	1.11	97.3	F
	WB	LTR	0.95	68.2	E	LTR	1.09	106.2	F	LTR	0.87	52.2	D	LTR	0.85	50.1	D
Allen Street	NB	L	0.63	55.7	E	L	0.39	44.2	D	L	0.26	39.8	D	L	0.55	49.7	D
		TR	0.54	21.2	C	TR	0.46	20.1	C	TR	0.60	22.1	C	TR	0.48	20.2	C
	SB	L	0.90	81.2	F	L	1.11	125.3	F	L	0.98	92.8	F	L	1.08	119.4	F
		TR	0.58	21.8	C	TR	0.75	24.9	C	TR	0.64	22.7	C	TR	0.60	21.9	C
Overall Intersection		-	**0.81**	**49.5**	**D**	-	**0.90**	**70.7**	**E**	-	**0.84**	**44.8**	**D**	-	**0.79**	**48.3**	**D**
19. GRAND STREET AND ORCHARD STREET																	
Grand Street	EB	LT	0.69	22.6	C	LT	0.85	25.5	C	LT	0.76	24.6	C	LT	0.78	24.1	C
	WB	TR	0.58	22.8	C	TR	0.65	25.0	C	TR	0.57	22.7	C	TR	0.59	23.2	C
Orchard Street	NB	LTR	0.15	15.4	B	LTR	0.15	15.4	B	LTR	0.17	15.7	B	LTR	0.14	15.4	B
Overall Intersection		-	**0.42**	**21.9**	**C**	-	**0.50**	**24.3**	**C**	-	**0.47**	**22.8**	**C**	-	**0.46**	**23.1**	**C**
20. GRAND STREET AND LUDLOW STREET																	
Grand Street	EB	TR	0.66	24.6	C	TR	0.76	28.4	C	TR	0.68	24.5	C	TR	0.66	23.6	C
	WB	LT	0.41	18.3	B	LT	0.48	19.6	B	LT	0.47	18.9	B	LT	0.47	20.0	B
Ludlow Street	SB	LTR	0.29	17.5	B	LTR	0.29	17.5	B	LTR	0.20	16.1	B	LTR	0.26	16.9	B
Overall Intersection		-	**0.48**	**21.1**	**C**	-	**0.52**	**23.3**	**C**	-	**0.44**	**21.2**	**C**	-	**0.46**	**21.2**	**C**
21. GRAND STREET AND ESSEX STREET																	
Grand Street	EB	LTR	0.86	38.1	D	LTR	0.78	30.8	C	LTR	0.76	29.7	C	LTR	0.84	35.4	D
	WB	LTR	0.88	26.3	C	LTR	0.90	28.8	C	LTR	1.24	134.9	F	LTR	0.76	22.4	C
Essex Street	NB	LTR	0.40	18.2	B	LTR	0.33	17.2	B	LTR	0.40	18.2	B	LTR	0.26	16.3	B
	SB	DefL	0.43	22.9	C	LTR	0.37	18.4	B	LTR	0.40	18.7	B	LTR	0.29	16.9	B
		TR	0.30	17.6	B	-	-	-	-	-	-	-	-	-	-	-	-
Overall Intersection		-	**0.66**	**26.5**	**C**	-	**0.64**	**24.9**	**C**	-	**0.82**	**63.5**	**E**	-	**0.56**	**24.4**	**C**
22. GRAND STREET AND NORFOLK STREET																	
Grand Street	EB	L	0.56	23.9	C	L	0.53	23.0	C	L	0.57	25.9	C	L	0.39	17.4	B
		T	0.54	17.1	B	T	0.44	15.3	B	T	0.47	15.6	B	T	0.42	14.8	B
	WB	TR	1.19	115.9	F	TR	1.22	128.2	F	TR	1.27	144.8	F	TR	1.15	98.2	F
Overall Intersection		-	**1.19**	**80.9**	**F**	-	**1.23**	**92.9**	**F**	-	**1.26**	**104.7**	**F**	-	**1.15**	**72.1**	**E**
23. GRAND STREET AND SUFFOLK STREET																	
Grand Street	EB	T	0.49	15.9	B	T	0.38	14.4	B	T	0.40	14.5	B	T	0.42	14.8	B
	WB	T	0.95	39.4	D	T	0.95	38.4	D	T	1.07	67.0	E	T	0.96	40.7	D
Suffolk Street	SB	LR	0.34	22.7	C	LR	0.39	23.6	C	LR	0.41	23.8	C	LR	0.32	22.2	C
Overall Intersection		-	**0.70**	**30.5**	**C**	-	**0.72**	**30.5**	**C**	-	**0.79**	**48.5**	**D**	-	**0.70**	**31.5**	**C**
24. GRAND STREET AND CLINTON STREET																	
Grand Street	EB	LTR	0.81	32.7	C	LTR	0.68	24.3	C	LTR	1.16	123.2	F	LTR	0.92	48.8	D
	WB	L	0.06	11.8	B	L	0.07	12.0	B	L	0.04	11.6	B	L	0.05	11.7	B
		T	0.75	22.7	C	T	0.79	24.8	C	T	0.84	26.1	C	T	0.78	23.3	C
		R	0.75	30.2	C	R	0.55	20.3	C	R	0.79	31.9	C	R	0.83	34.9	C
Clinton Street	NB	LTR	0.72	31.4	C	LTR	0.53	26.3	C	LTR	0.79	37.4	D	LTR	0.59	27.1	C
	SB	LTR	0.04	17.2	B	LTR	0.06	17.4	B	LTR	0.05	17.3	B	LTR	0.05	17.3	B
Overall Intersection		-	**0.77**	**27.6**	**C**	-	**0.68**	**23.9**	**C**	-	**1.00**	**50.1**	**D**	-	**0.78**	**31.6**	**C**
25. GRAND STREET AND EAST BROADWAY																	
Grand Street	EB	T	0.17	7.2	A	T	0.14	6.9	A	T	0.13	6.9	A	T	0.13	6.9	A
	WB	LT	0.81	17.7	B	LT	0.90	21.9	C	LT	0.95	25.6	C	LT	0.88	20.0	B
East Broadway	NB	R	0.00	6.1	A	R	0.00	6.1	A	R	0.00	6.1	A	R	0.00	6.1	A
Overall Intersection		-	**0.81**	**15.7**	**B**	-	**0.90**	**19.7**	**B**	-	**0.95**	**23.3**	**C**	-	**0.87**	**18.1**	**B**
UNSIGNALIZED INTERSECTIONS																	
26. STANTON STREET AND LUDLOW STREET																	
Stanton Street	EB	TR	-	8.0	A	TR	-	9.0	A	TR	-	7.9	A	TR	-	8.5	A
Ludlow Street	SB	LT	-	9.2	A	LT	-	10.9	B	LT	-	9.8	A	LT	-	10.9	B
Overall Intersection		-	**-**	**8.9**	**A**	-	**-**	**10.3**	**B**	-	**-**	**9.4**	**A**	-	**-**	**10.2**	**B**
27. RIVINGTON STREET AND LUDLOW STREET																	
Rivington Street	WB	LT	-	10.3	B	LT	-	9.7	A	LT	-	10.9	B	LT	-	11.9	B
Ludlow Street	SB	TR	-	9.5	A	TR	-	10.3	B	TR	-	11.1	B	TR	-	12.5	B
Overall Intersection		-	**-**	**10.0**	**A**	-	**-**	**10.1**	**B**	-	**-**	**11.0**	**B**	-	**-**	**12.2**	**B**

Table13-19 (cont'd)
Seward Park Development EIS
2022 With Action Traffic Levels of Service

INTERSECTION & APPROACH		Weekday AM (8:00 - 9:00 AM)				Weekday Midday (1:00 - 2:00 PM)				Weekday PM (5:15 - 6:15 PM)				Saturday (3:45 - 4:45 PM)			
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS
UNSIGNALIZED INTERSECTIONS																	
28. BROOME STREET AND LUDLOW STREET																	
Broome Street	EB	TR	-	10.7	B	TR	-	14.5	B	TR	-	11.1	B	TR	-	12.7	B
Ludlow Street	SB	LT	-	7.5	A	LT	-	7.5	A	LT	-	7.3	A	LT	-	7.3	A
Overall Intersection		-	**-**	**6.0**	**A**	-	**-**	**4.6**	**A**	-	**-**	**5.3**	**A**	-	**-**	**5.6**	**A**
29. BROOME STREET AND SUFFOLK STREET																	
Broome Street	WB	LT	-	7.4	A	LT	-	7.3	A	LT	-	15.5	C	LT	-	7.2	A
Suffolk Street	SB	TR	-	13.9	B	TR	-	12.2	B	TR	-	15.8	C	TR	-	15.2	C
Overall Intersection		-	**-**	**5.2**	**A**	-	**-**	**5.5**	**A**	-	**-**	**6.8**	**A**	-	**-**	**4.7**	**A**
30. BROOME STREET AND CLINTON STREET																	
Broome Street	NB	LTR	-	8.6	A	LTR	-	8.8	A	LTR	-	9.7	A	LTR	-	10.2	B
	SB	LTR	-	8.8	A	LTR	-	9.3	A	LTR	-	9.4	A	LTR	-	8.1	A
Overall Intersection		-	**-**	**5.9**	**A**	-	**-**	**5.9**	**A**	-	**-**	**6.9**	**A**	-	**-**	**8.3**	**A**

Notes:
(1) Control delay is measured in seconds per vehicle.
(2) Overall intersection V/C ratio is the critical lane groups' V/C ratio.
Denotes a significant impact

This summary overview of the With Action condition indicates that:

- During the weekday AM peak hour, the number of intersections analyzed that are projected to operate at overall LOS E or F would increase from none under the No Action condition to two under the With Action condition. The number of traffic movements projected to operate at unacceptable levels of service would increase from 21 under the No Action condition to 24 under the With Action condition. Overall, nine of the 30 intersections would have significant impacts. **Figure 13-13a** shows overall levels of service and intersections where significant impacts would occur. **Figure 13-13b** shows significantly impacted movements along with movements that would operate at unacceptable levels of service.
- During the weekday midday peak hour, the number of intersections that would operate at overall LOS E or F would increase from none under the No Action condition to one under the With Action condition. The number of traffic movements at unacceptable levels of service would increase from 11 to 16. Overall, seven intersections would be significantly impacted, as shown in **Figure 13-14a**. **Figure 13-14b** shows significantly impacted movements along with movements that would operate at unacceptable levels of service.
- During the weekday PM peak hour, the number of intersections that are projected to operate at overall LOS E or F would increase from one under the No Action condition to eight under the With Action condition. The number of traffic movements projected to operate at unacceptable levels of service would increase from 31 to 39. As shown in **Figure 13-15a**, 18 intersections would experience significant impacts. **Figure 13-15b** shows significantly impacted movements along with movements that would operate at unacceptable levels of service.
- During the Saturday peak hour, the number of intersections that are projected to operate at overall LOS E or F would remain as two intersections under the With Action condition. The number of traffic movements projected to operate at unacceptable levels of service would increase from 22 to 26. As shown in **Figure 13-16a**, 10 intersections would experience significant impacts. **Figure 13-16b** shows significantly impacted movements along with movements that would operate at unacceptable levels of service.

- All five unsignalized intersections analyzed would continue to operate at overall LOS A or B during all peak hours and would not be significantly impacted.

Traffic movements expected to operate at unacceptable levels of service under the No Action condition would continue to do so under the With Action condition. Additional movements expected to operate at unacceptable levels of service as a result of the proposed actions are listed below.

East Houston Street and Chrystie Street/Second Avenue

- Westbound East Houston Street left turn (weekday AM)

East Houston Street and Allen Street/First Avenue

- Eastbound East Houston Street left turn (weekday PM)

Rivington Street and Essex Street

- Westbound Rivington Street approach (weekday PM)

Delancey Street and Ludlow Street

- Southbound Ludlow Street approach (weekday AM)

Delancey Street and Essex Street

- Eastbound Delancey Street approach (weekday PM)
- Northbound Essex Street approach (weekday midday and Saturday)
- Southbound Essex Street through-right turn movement (weekday AM and midday)

Delancey Street and Norfolk Street

- Northbound Norfolk Street through-right turn movement (weekday midday)
- Northbound Norfolk Street right turn (weekday midday)

Broome Street and Essex Street

- Southbound Essex Street left turn (weekday PM)

Broome Street and Norfolk Street

- Eastbound Broome Street approach (weekday PM)

Grand Street and Allen Street

- Westbound Grand Street approach (weekday PM and Saturday)

Grand Street and Essex Street

- Westbound Grand Street approach (weekday PM)

Grand Street and Norfolk Street

- Westbound Grand Street through-right turn movement (weekday midday and Saturday)

Grand Street and Suffolk Street

- Westbound Grand Street approach (weekday PM)

Grand Street and Clinton Street

- Eastbound Grand Street approach (Saturday)

Significant Impacts

Of the 30 study area intersections analyzed, the proposed actions would cause significant traffic impacts at nine intersections in the weekday AM peak hour, seven in the weekday midday peak hour, 18 in the weekday PM peak hour, and 10 in the Saturday peak hour. Impacted traffic movements and the peak hours in which they are impacted are identified below.

East Houston Street and Bowery

- Westbound East Houston Street through-right turn movement (weekday AM, PM, and Saturday)

East Houston Street and Chrystie Street/Second Avenue

- Eastbound East Houston Street right turn (weekday PM and Saturday)
- Westbound East Houston Street left turn (weekday PM)
- Southbound Second Avenue left turn (Saturday)
- Southbound Second Avenue left-through movement (weekday PM and Saturday)

East Houston Street and Allen Street/First Avenue

- Westbound East Houston Street through-right turn movement (weekday AM and Saturday)
- Northbound Allen Street through movement (weekday PM)

East Houston Street and Essex Street/Avenue A

- Westbound East Houston Street left turn (weekday PM)
- Southbound Avenue A approach (weekday AM, midday, PM, and Saturday)

Rivington Street and Essex Street

- Westbound Rivington Street approach (weekday AM and PM)

Delancey Street and Allen Street

- Eastbound Delancey Street through-right turn movement (weekday PM)
- Northbound Allen Street right turn (weekday midday and PM)

Delancey Street and Ludlow Street

- Southbound Ludlow Street approach (weekday midday, PM, and Saturday)

Delancey Street and Essex Street

- Eastbound Delancey Street approach (weekday PM)
- Northbound Essex Street approach (weekday AM, midday, PM, and Saturday)

- Southbound Essex Street de facto left turn (weekday AM, midday, and Saturday)
- Southbound Essex Street through-right turn movement (weekday AM and midday)
- Southbound Essex Street approach (weekday PM)

Delancey Street and Norfolk Street

- Eastbound Delancey Street approach (weekday PM)
- Northbound Norfolk Street through-right turn movement (weekday AM, midday, PM, and Saturday)
- Northbound Norfolk Street right turn (weekday AM, midday, PM, and Saturday)

Delancey Street and Suffolk Street

- Eastbound Delancey Street approach (weekday PM)

Delancey Street and Clinton Street

- Eastbound Delancey Street approach (weekday PM)
- Westbound Delancey Street through movement (weekday AM)
- Westbound Delancey Street right turn (weekday AM and PM)

Broome Street and Essex Street

- Southbound Essex Street left turn (weekday PM)

Broome Street and Norfolk Street

- Eastbound Broome Street approach (weekday PM)
- Westbound Broome Street approach (weekday PM)

Grand Street and Allen Street

- Eastbound Grand Street approach (weekday AM, midday, PM, and Saturday)
- Westbound Grand Street approach (weekday AM, midday, PM, and Saturday)
- Southbound Allen Street left turn (weekday AM, midday, PM, and Saturday)

Grand Street and Essex Street

- Westbound Grand Street approach (weekday PM)

Grand Street and Norfolk Street

- Westbound Grand Street approach (weekday AM, midday, PM, and Saturday)

Grand Street and Suffolk Street

- Westbound Grand Street approach (weekday PM)

Grand Street and Clinton Street

- Eastbound Grand Street approach (weekday PM and Saturday)

Five of the intersections where significant impacts would occur would have those impacts during all four peak hours analyzed. These intersections include: Houston Street and Essex Street/Avenue A; Delancey Street and Essex Street; Delancey Street and Norfolk Street; Grand Street and Allen Street; and Grand Street and Norfolk Street. Other intersections would be significantly impacted in one, two, or three of the four peak hours analyzed, while many intersections would not be significantly impacted during any of the peak hours analyzed.

As mentioned earlier, NYCDOT is currently developing a Delancey Street corridor plan to improve traffic and pedestrian safety. Incorporation of the plan may result in some changes to significant traffic impact locations or time periods when impacts would occur. Details related to this plan would be included in the FGEIS and the effects of the plan on traffic and pedestrian conditions will be addressed between completion of the DGEIS and FGEIS should the plans be adopted prior to release of the FGEIS.

The identification and evaluation of traffic capacity improvements needed to mitigate significant adverse traffic impacts created by the proposed actions are presented in Chapter 21, "Mitigation Measures."

G. TRANSIT

Mass transit options serving the study area are provided by the NYCT and include the F, J, M, and Z subway lines at the Delancey Street/Essex Street Station and the M9, M14A, M15, M15 SBS, M21, and M22 bus routes. A detailed analysis of transit operations during the critical weekday AM and PM peak periods is presented below. During other time periods, background transit ridership and station utilization, as well as project trip generation, are comparatively lower. Hence, potential transit impacts were evaluated only for the weekday AM and PM peak periods.

TRANSIT STUDY AREAS

SUBWAY SERVICE

Below is the summary of subway lines that would most likely serve the project site. Subway lines serving stations further away are shown in the transit map (see **Figure 13-2**) but are not included in the description below.

- The F subway line (Queens Boulevard Express/6th Avenue Local) operates between Stillwell Avenue, Brooklyn and Jamaica, Queens via the 63rd Street connector. The F line runs express along Queens Boulevard.
- The J/Z subway lines operate between Broad Street, Manhattan and Jamaica Center, Queens. During weekdays, J trains run express in Brooklyn between Myrtle Avenue and Marcy Avenue from about 7 AM to 1 PM for Manhattan-bound trains and from 1:30 PM and 8 PM for the Queens-bound trains.
- The M subway line (Queens Boulevard Local/Sixth Avenue Local/Myrtle Avenue Local) operates between Middle Village-Metropolitan Avenue, Queens and Myrtle Avenue, Brooklyn at all times, and between Flushing Avenue, Brooklyn, and Forest Hills-71st Avenue, Queens part time (weekdays from 6 AM to 11 PM).

BUS SERVICE

Based on the travel demand estimates and the availability and service frequencies of the bus routes in the study area, it was determined that three bus routes near the project sites (i.e., M9, M14A, and M15/M15 SBS) serving the area would experience 50 or more peak hour bus trips in one

direction—the CEQR recommended threshold for undertaking a quantified bus analysis. A quantitative bus line-haul analysis is conducted to determine the potential for significant bus line-haul impacts due to the proposed actions. **Table 13-20** provides a summary of the NYCT bus routes that provide regular service to the study area and their weekday frequency of operation. The M14A and M15/M15 SBS routes use articulated buses with a guideline capacity of 85 passengers per bus while the M9 route uses standard buses with a guideline capacity of 54 passengers per bus.

Table 13-20
NYCT Local Bus Routes Serving The Study Area

Bus Route	Start Point	End Point	Routing in Study Area	Freq. of Bus Service (Headway in Minutes)		
				AM	Afternoon	PM
M9 N/S	Peter Cooper Village	City Hall	Essex St/Delancey St – Essex St/Grand St	10/9	15/12	12/12
M14A E/W	West Village	Lower East Side	Essex St/Delancey St – Essex St/Grand St	10/9	10/12	10/10
M15 N/S	East Harlem	South Ferry	Allen Street	8/7	9/9	9/9
M15 SBS N/S	East Harlem	South Ferry	Allen Street	3/4	7/7	5/5
M21 E/W	Lower East Side	West Village	Allen Street	15/15	30/30	20/20
M22 E/W	Lower East Side	Battery Park City	Grand Street	10/6	20/20	12/10

Notes: N/S = North/South; E/W = East/West.
Source: MTA NYCT Bus Timetables (2011/2012).

2011 EXISTING CONDITIONS—SUBWAY STATION OPERATIONS

As presented in **Table 13-3**, "Level 1 Screening Assessment," the full build-out of the proposed actions in 2022 is expected to result in approximately 801 and 1,279 project-generated subway trips during the AM and PM peak hours, respectively. These trips were all assigned to the Delancey Street/Essex Street station and the corresponding station elements. As detailed in Section D, "Level 2 Screening Assessment," the following station elements were identified for analysis.

- Station stairway at Essex Street between Delancey Street and Broome Street on the east sidewalk (S-4) and the adjoining control area elements which include five two-way turnstiles and two High Entry /Exit Turnstiles (HEETs); and
- Station stairways at Delancey Street between Essex Street and Suffolk Street (S-6 and S-7) on the north sidewalk and adjoining control area (A-61) element. A total of 7 two-way turnstiles serve this control area.

Field surveys conducted on October 26, 2011 during the hours of 7:00 to 9:30 AM and 4:00 to 6:30 PM provided the baseline volumes for the analysis of the above subway station elements. As shown in **Tables 13-21** and **13-22**, all analyzed stairways and control areas currently operate at acceptable levels during the weekday AM and PM peak periods, with the exception of the northeast stairway (S-6) at the Delancey Street and Norfolk Street entrance during the AM peak period (LOS D, v/c= 1.069).

2011 EXISTING CONDITIONS—BUS LINE-HAUL OPERATIONS

To assess the potential impacts on the study area bus routes, the most recent line-haul data for the M9, M14A, and M15/M15 SBS bus routes were acquired from NYCT.

Table 13-21
2011 Existing Conditions: Subway Stairway Analysis

Stairway	Width (ft.)	Effective Width (ft.)	15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS
			Down	Up				
Weekday AM Peak 15 Minutes								
Delancey Street and Essex Street Entrance								
SE (S-4)	4.9	3.9	90	72	0.80	0.90	0.342	A
Delancey Street and Norfolk Street Entrance								
NE (S-6)	5.3	4.3	315	229	0.75	0.90	1.069	D
NW (S-7)	5.3	4.3	31	124	0.75	0.90	0.338	A
Weekday PM Peak 15 Minutes								
Delancey Street and Essex Street Entrance								
SE (S-4)	4.9	3.9	40	110	0.80	0.90	0.337	A
Delancey Street and Essex Street Entrance								
NE (S-6)	5.3	4.3	180	93	0.75	0.90	0.524	B
NW (S-7)	5.3	4.3	26	39	0.75	0.90	0.134	A

Notes:
Capacities were calculated based on rates presented in the *CEQR Technical Manual* (January 2012 edition).
Surging factors are only applied to the exiting pedestrian volume (*CEQR Technical Manual*).
V/C = [Vin / (150 * We * Sf * Ff)]+ [Vx/ (150 * We * Sf * Ff)]
Where
Vin = Peak 15-minute entering passenger volume
Vx = Peak 15-minute exiting passenger volume
We = Effective width of stairs
Sf = Surging factor (if applicable)
Ff = Friction factor (if applicable)

Table 13-22
2011 Existing Conditions: Subway Control Area Analysis

Station Elements	Qty.	15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS
		Into Control Area	Out from Control Area				
AM Peak 15- Minutes							
Location 1. Delancey Street/Norfolk Street (A61)							
Two-Way Turnstiles	7	346	353	0.75	0.90	0.25	A
Location 2. Delancey Street/Essex Street (Entrance located south of Delancey Street)							
HEET	2	35	25	0.80	0.90	0.11	A
Two-Way Turnstiles	5	99	232	0.80	0.90	0.15	A
PM Peak 15- Minutes							
Location 1. Delancey Street/Norfolk Street (A61)							
Two-Way Turnstiles	7	163	137	0.75	0.90	0.11	A
Location 2. Delancey Street/Essex Street (Entrance located south of Delancey Street)							
HEET	2	15	46	0.80	0.90	0.09	A
Two-Way Turnstiles	5	128	123	0.80	0.90	0.12	A

Notes: Capacities were calculated based on rates presented in the *CEQR Technical Manual* (January 2012 edition).
V/C =Vin / (Cin x Ff)+ Vx / (Cx x Sf x Ff)
Vin = Peak 15 Min Entering Passenger Volume
Cin= Total 15-Minute Capacity of all turnstiles for entering Passengers
Vx = Peak 15- Minute Exiting Passenger
Cx = Total 15-minute Capacity of all turnstile for exiting Passengers
Sf = Surging Factor
Ff = Friction Factor

It was conservatively assumed that project-generated bus riders would likely be on board the bus at the peak load points while travelling to and from the project sites. For the M9 route, during the AM peak period, the northbound peak load point is at Essex Street and Grand Street while the southbound peak load point is at Essex Street and Houston Street. During the PM peak period, the northbound M9 peak load point is at Houston Street and Norfolk Street while the southbound peak load point is at Essex Street and Grand Street. For the M14A route, during the AM and PM peak periods, the eastbound and westbound peak load point is at 14th Street and Avenue A.

For the M15/M15 SBS routes, during the AM and PM peak periods, the northbound peak load point is at 1st Avenue and East 2nd Street while the southbound peak load point is at Allen Street and Houston Street. As shown in **Table 13-23**, under the existing conditions, during the AM peak period, the southbound M9 and westbound M14A would exceed guideline capacity (54 passengers per bus capacity for the M9 route and 85 passengers per bus capacity for the M14A route).

2022 NO ACTION CONDITION—SUBWAY STATION OPERATIONS

Estimates of peak hour transit volumes in the 2022 No Action condition were developed by applying the *CEQR Technical Manual* recommended annual background growth rates. An annual compounded background growth rate of 0.25 percent was applied to the transit volumes from 2011 to 2016, and an annual compounded background growth rate of 0.125 percent was applied to the transit volumes from 2016 to 2022. In addition, trips associated with No Action projects were incorporated into the No Action transit volumes.

The No Action peak period volume projections were allocated to the transit analysis elements described above.

As shown in **Tables 13-24** and **13-25**, all station stairways and control area elements would continue to operate at acceptable levels, except for the northeast stairway (S-6) at the Delancey Street and Norfolk Street entrance, which would operate at LOS D with a v/c ratio of 1.121 during the AM peak period.

Table 13-23
2011 Existing Conditions: Bus Line-Haul Analysis

Route	Direction	Peak Load Point	Hourly Volumes	Buses/ Hour	AP
AM Peak Hour					
M9	**North**	Essex Street/ Grand Street	164	8	21
	South	Essex Street/ E. Houston	351	6	(59)
M14A*	**East**	14th Street / Avenue A	308	7	44
	West	14th Street / Avenue A	696	8	(87)
M15*	**North**	1st Avenue/E. 2nd Street	327	9	37
	South	Allen Street/ E. Houston Street	107	9	12
M15 SBS*	**North**	1st Avenue/E. 2nd Street	678	17	40
	South	Allen Street/ E. Houston Street	418	8	53
PM Peak Hour					
M9	**North**	E. Houston St / Norfolk Street	256	5	52
	South	Essex Street/ Grand Street	138	4	35
M14A*	**East**	14th Street / Avenue A	347	5	70
	West	14th Street / Avenue A	278	5	56
M15*	**North**	1st Avenue/ E. 2nd Street	192	7	28
	South	Allen Street/ E. Houston Street	131	9	15
M15 SBS*	**North**	1st Avenue/E. 2nd Street	496	9	56
	South	Allen Street/ E. Houston Street	296	9	33

Notes: AP=average passengers per bus;
***** Articulated buses with guideline capacity of 85 passengers/bus
(#)=exceeds NYCT guideline capacity.
Source: NYCT Bus ridership data (2010/2011).

Table 13-24
2022 No Action Condition: Subway Stairway Analysis

Stairway	Width (ft.)	Effective Width (ft.)	15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS
			Down	Up				
Weekday AM Peak 15 Minutes								
Delancey Street and Essex Street								
SE (S-4)	4.9	3.9	94	75	0.80	0.90	0.357	A
Delancey Street and Norfolk Street								
NE (S-6)	5.3	4.3	332	239	0.75	0.90	1.121	D
NW (S-7)	5.3	4.3	32	127	0.75	0.90	0.347	A
Weekday PM Peak 15 Minutes								
Delancey Street and Essex Street								
SE (S-4)	4.9	3.9	43	114	0.80	0.90	0.352	A
Delancey Street and Essex Street								
NE (S-6)	5.3	4.3	193	104	0.75	0.90	0.571	B
NW (S-7)	5.3	4.3	27	40	0.75	0.90	0.138	A

Notes:
Capacities were calculated based on rates presented in the *CEQR Technical Manual* (January 2012 edition).
Surging factors are only applied to the exiting pedestrian volume (*CEQR Technical Manual*).
V/C = [Vin / (150 * We * Sf * Ff)]+ [Vx/ (150 * We * Sf * Ff)]
Where
Vin = Peak 15-minute entering passenger volume
Vx = Peak 15-minute exiting passenger volume
We = Effective width of stairs
Sf = Surging factor (if applicable)
Ff = Friction factor (if applicable)

Table 13-25
2022 No Action Condition: Subway Control Area Analysis

Station Elements	Qty.	15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS
		Into Control Area	Out from Control Area				
AM Peak 15- Minutes							
Location 1. Delancey Street/Norfolk Street (A61)							
Two-Way Turnstiles	7	364	365	0.75	0.90	0.26	A
Location 2. Delancey Street/Essex Street (Entrance located south of Delancey Street)							
HEET	2	37	26	0.80	0.90	0.11	A
Two-Way Turnstiles	5	102	239	0.80	0.90	0.16	A
PM Peak 15- Minutes							
Location 1. Delancey Street/Norfolk Street Station (A61)							
Two-Way Turnstiles	7	175	149	0.75	0.90	0.12	A
Location 2. Delancey Street/Essex Street (Entrance located south of Delancey Street)							
HEET	2	15	48	0.80	0.90	0.09	A
Two-Way Turnstiles	5	133	126	0.80	0.90	0.12	A

Notes: Capacities were calculated based on rates presented in the *CEQR Technical Manual* (January 2012 edition).
V/C =Vin / (Cin x Ff)+ Vx / (Cx x Sf x Ff)
Vin = Peak 15 Min Entering Passenger Volume
Cin= Total 15-Minute Capacity of all turnstiles for entering Passengers
Vx = Peak 15- Minute Exiting Passenger
Cx = Total 15-minute Capacity of all turnstile for exiting Passengers
Sf = Surging Factor
Ff = Friction Factor

2022 NO ACTION CONDITION—BUS LINE-HAUL LEVELS

Estimates of peak hour bus volumes in the No Action condition were developed by applying *CEQR Technical Manual* recommended annual background growth rates as mentioned above. In addition, bus trips generated by No Action projects in the study area were added to the projected 2022 volumes to generate the 2022 No Action bus volumes used in the analysis. Bus trips were split among the seven study area bus routes—the M9, M14A, M15, M15 SBS, M21, M22, and M103 bus routes.

The bus trips were assigned based on the anticipated destinations of potential riders to/from the No Action project sites. It was assumed that 60 percent of the riders would be evenly distributed among the M9, and M14A routes (i.e., 30 percent for each route), 30 percent of the riders would be evenly distributed among the M15 and M15 SBS routes (i.e., 15 percent for each route) and the remaining 10 percent of riders would take the M21, M22, and M103 routes.

As shown in **Table 13-26**, under the No Action condition, during the AM peak period, the southbound M9 and westbound M14A would exceed guideline capacity while the northbound M9 would exceed guideline capacity during the PM peak (54 passengers per bus capacity for the M9 route and 85 passengers per bus capacity for the M14A route).

2022 WITH ACTION CONDITION—SUBWAY STATION OPERATIONS

The 801 (376 in and 425 out) AM peak hour and 1,279 (638 in and 641 out) PM peak hour project-generated subway trips under RWCDS (see **Table 13-3**) were all assigned to the Delancey Street/Essex Street station and the corresponding station elements.

Table 13-26
2022 No Action Condition: Bus Line-Haul Analysis

Route	Direction	Peak Load Point	Hourly Volumes	Buses/ Hour	AP
AM Peak Hour					
M9	**North**	Essex Street/ Grand Street	177	8	22
	South	Essex Street/ E. Houston	369	6	(62)
M14A*	**East**	14th Street / Avenue A	319	7	46
	West	14th Street / Avenue A	716	8	(90)
M15*	**North**	1st Avenue/E. 2nd Street	338	9	38
	South	Allen Street/ E. Houston Street	112	9	12
M15 SBS*	**North**	1st Avenue/E. 2nd Street	696	17	41
	South	Allen Street/ E. Houston Street	429	8	54
PM Peak Hour					
M9	**North**	E. Houston St / Norfolk Street	274	5	(55)
	South	Essex Street/ Grand Street	154	4	39
M14A*	**East**	14th Street / Avenue A	365	5	73
	West	14th Street / Avenue A	296	5	59
M15*	**North**	1st Avenue/ E. 2nd Street	200	7	29
	South	Allen Street/ E. Houston Street	140	9	16
M15 SBS*	**North**	1st Avenue/E. 2nd Street	510	9	57
	South	Allen Street/ E. Houston Street	308	9	34

Notes: AP=average passengers per bus;
***** Articulated buses with guideline capacity of 85 passengers/bus
(#)=exceeds NYCT guideline capacity.
Source: NYCT Bus ridership data (2010/2011).

As shown in **Tables 13-27** and **13-28**, all station stairways and control elements would continue to operate at acceptable levels, except for the northeast stairway (S-6) at the Delancey Street and Norfolk Street, which would operate at LOS D with a v/c ratio of 1.251 during the AM peak

period. Compared to the No Action service levels (LOS D, v/c ratio of 1.121), the WIT for this stairway was calculated to be 5.96 inches, which is less than the *CEQR Technical Manual* WIT impact threshold of 6.0 inches (for stairway v/c ratios between 1.20 and 1.29 in the With Action condition; see **Table 13-9**). Therefore, the proposed actions would not result in any significant adverse subway impacts.

Based on the transit analysis of the Essex Street/Delancey Street station, no potentially significant adverse subway station impacts at the Essex Street/Delancey Street station have so far been determined during the peak analysis periods. At the direction of MTA NYCT, analyses of the following interior transfer and platform stairways will be undertaken for the FGEIS:

- PL4 (A61) - platform stair at uptown J/M/Z platform;
- P9 (N525) - leading to uptown F train platform;
- PL2 & PL9 (leading to PL11B on uptown F train platform) – Brooklyn bound J/M/Z platform; and
- PL18 (connecting to downtown F train platform) - Brooklyn bound J/M/Z platform.

As part of incorporating these stairway elements in the subway analyses, the distribution of project generated subway trips will be refined to reflect the connectivity of the interior and platform stairways with the street-level stairways analyzed in this DGEIS.

Table 13-27
2022 With Action Condition: Subway Stairway Analysis

Stairway	Width (ft.)	Effective Width (ft.)	15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS
			Down	Up				
Weekday AM Peak 15 Minutes								
Delancey Street and Essex Street								
SE (S-4)	4.9	3.9	147	121	0.80	0.90	0.566	B
Delancey Street and Norfolk Street								
NE (S-6)	5.3	4.3	370	267	0.75	0.90	1.251	D
NW (S-7)	5.3	4.3	36	138	0.75	0.90	0.379	A
Weekday PM Peak 15 Minutes								
Delancey Street and Essex Street								
SE (S-4)	4.9	3.9	136	182	0.80	0.90	0.690	B
Delancey Street and Essex Street								
NE (S-6)	5.3	4.3	239	153	0.75	0.90	0.763	C
NW (S-7)	5.3	4.3	41	57	0.75	0.90	0.202	A

Notes:
Capacities were calculated based on rates presented in the *CEQR Technical Manual* (January 2012 edition).
Surging factors are only applied to the exiting pedestrian volume (*CEQR Technical Manual*).
V/C = [Vin / (150 * We * Sf * Ff)]+ [Vx/ (150 * We * Sf * Ff)]
Where
Vin = Peak 15-minute entering passenger volume
Vx = Peak 15-minute exiting passenger volume
We = Effective width of stairs
Sf = Surging factor (if applicable)
Ff = Friction factor (if applicable)

Table 13-28
2022 With Action Condition: Subway Control Area Analysis

Station Elements	Qty.	15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS
		Into Control Area	Out from Control Area				
AM Peak 15- Minutes							
Location 1. Delancey Street/Norfolk Street (A61)							
Two-Way Turnstiles	7	400	404	0.75	0.90	0.28	A
Location 2. Delancey Street/Essex Street (Entrance located south of Delancey Street)							
HEET	2	46	30	0.80	0.90	0.14	A
Two-Way Turnstiles	5	129	274	0.80	0.90	0.19	A
PM Peak 15- Minutes							
Location 1. Delancey Street/Norfolk Street (A61)							
Two-Way Turnstiles	7	266	246	0.75	0.90	0.18	A
Location 2. Delancey Street/Essex Street (Entrance located south of Delancey Street)							
HEET	2	21	63	0.80	0.90	0.05	A
Two-Way Turnstiles	5	189	167	0.80	0.90	0.17	A

Notes: Capacities were calculated based on rates presented in the *CEQR Technical Manual* (January 2012 edition).
V/C =Vin / (Cin x Ff)+ Vx / (Cx x Sf x Ff)
Vin = Peak 15 Min Entering Passenger Volume
Cin= Total 15-Minute Capacity of all turnstiles for entering Passengers
Vx = Peak 15- Minute Exiting Passenger
Cx = Total 15-minute Capacity of all turnstile for exiting Passengers
Sf = Surging Factor
Ff = Friction Factor

The above amendments to the analysis may result in significant adverse subway station impacts that are being conservatively disclosed in this DGEIS. Should the results of the analyses identify significant adverse impacts, measures to increase capacity would be recommended to mitigate such impacts. The practicability and feasibility of such mitigation measures will be further assessed in the FGEIS.

2022 WITH ACTION CONDITION—BUS LINE-HAUL LEVELS

Peak period bus ridership for the With Action conditions was generated by adding the incremental trips associated with the proposed actions to the No Action bus line-haul volumes. It was assumed that 60 percent of the project generated bus riders would be evenly distributed among the M9, and M14A routes (i.e., 30 percent for each route), 30 percent of the riders would be evenly distributed among the M15 and M15 SBS routes (i.e., 15 percent for each route) and the remaining 10 percent of riders would take the M21 and M22 routes.

As described in Section E, "Transportation Analysis Methodologies," impacts on bus line-haul levels are considered significant if a proposed action would result in operating conditions above guideline capacities. As shown in **Table 13-29**, under the With Action condition, during the AM peak period, the southbound M9 and westbound M14A would exceed guideline capacity while both the northbound and southbound M9 would exceed guideline capacity during the PM peak (54 passengers per bus capacity for the M9 route and 85 passengers per bus capacity for the M14A route). These projected increases in bus ridership beyond guideline capacities constitute significant adverse bus line-haul impacts.

Potential measures to mitigate the significant adverse bus line-haul impacts include scheduling additional buses to increase capacity. NYCT routinely monitors changes in bus ridership and would make the necessary service adjustments where warranted. These service adjustments are subject to fiscal and operational constraints and, if implemented, are expected to occur over time. These measures are discussed in greater detail in Chapter 21, "Mitigation Measures."

Table 13-29
2022 With Action Condition: Bus Line-Haul Analysis

Route	Direction	Peak Load Point	Hourly Volumes	Buses/ Hour	AP
AM Peak Hour					
M9	**North**	Essex Street/ Grand Street	211	8	27
	South	Essex Street/ E. Houston	403	6	(68)
M14A*	**East**	14th Street / Avenue A	350	7	50
	West	14th Street / Avenue A	748	8	(94)
M15*	**North**	1st Avenue/E. 2nd Street	354	9	40
	South	Allen Street/ E. Houston Street	128	9	15
M15 SBS*	**North**	1st Avenue/E. 2nd Street	712	17	42
	South	Allen Street/ E. Houston Street	445	8	56
PM Peak Hour					
M9	**North**	E. Houston St / Norfolk Street	338	5	(68)
	South	Essex Street/ Grand Street	217	4	(55)
M14A*	**East**	14th Street / Avenue A	424	5	85
	West	14th Street / Avenue A	357	5	72
M15*	**North**	1st Avenue/ E. 2nd Street	230	7	33
	South	Allen Street/ E. Houston Street	172	9	20
M15 SBS*	**North**	1st Avenue/E. 2nd Street	540	9	60
	South	Allen Street/ E. Houston Street	340	9	38

Notes: AP=average passengers per bus;
***** Articulated buses with guideline capacity of 85 passengers/bus
(#)=exceeds NYCT guideline capacity.
Source: NYCT Bus ridership data (2010/2011).

H. PEDESTRIANS

2011 EXISTING CONDITIONS

Pedestrian data were collected in October 2011 at key locations near the project site during the weekday hours of 7:00 AM to 9:30 AM, 11:00 AM to 2:00 PM, and 4:00 PM to 6:30 PM and Saturday 12:00 PM to 5:00 PM.

Peak hours were determined by comparing rolling hourly averages and the highest 15-minute volumes within the selected peak hours were selected for analysis. The existing peak 15-minute pedestrian volume maps for the weekday AM, midday, and PM, and Saturday peak hours are provided at the end of the chapter. As shown in **Tables 13-30** to **13-32**, all sidewalk, corner reservoir, and crosswalk analysis locations operate at acceptable mid-LOS D or better (maximum of 8.5 PMF platoon flows for sidewalks; minimum of 19.5 SFP for corners and crosswalks), except at the following location:

- The north crosswalk of Clinton Street and Delancey Street, which operates at LOS F with 7.3 SFP during the AM peak 15-minute period, LOS E with 8.2 SFP during the PM peak 15-minute period, and LOS D with 16.9 and 15.2 SFP during the midday and Saturday peak 15-minute periods, respectively.

Detailed descriptions of the existing pedestrian levels of service for sidewalk, corners and crosswalks are provided in **Tables 13-33** to **13-35**.

Table 13-30
Existing Pedestrian Sidewalk Level of Service Summary

	Weekday			
	AM Peak Hour	Midday Peak Hour	PM Peak Hour	Saturday Peak Hour
Overall LOS A/B/C	56	58	58	58
Overall LOS D	2	0	0	0
Overall LOS E	0	0	0	0
Overall LOS F	0	0	0	0
Note: Includes 58 sidewalk analysis locations.				

Table 13-31
Existing Pedestrian Corner Level of Service Summary

	Weekday			
	AM Peak Hour	Midday Peak Hour	PM Peak Hour	Saturday Peak Hour
Overall LOS A/B/C	52	52	52	52
Overall LOS D	0	0	0	0
Overall LOS E	0	0	0	0
Overall LOS F	0	0	0	0
Note: Includes 52 corner analysis locations.				

Table 13-32
Existing Pedestrian Crosswalk Level of Service Summary

	Weekday			
	AM Peak Hour	Midday Peak Hour	PM Peak Hour	Saturday Peak Hour
Overall LOS A/B/C	29	29	29	29
Overall LOS D	0	1	0	1
Overall LOS E	0	0	1	0
Overall LOS F	1	0	0	0
Note: Includes 30 crosswalk analysis locations.				

Table 13-33
2011 Existing Condition Sidewalk Analysis

Intersection No.	Location	Sidewalk	Effective Width (ft)	15 Minute Two-Way Volume	Platoon Flow	
					PMF	LOS
AM Peak Period						
1	Essex Street between Stanton Street and Rivington Street	East	6.2	168	1.81	B
2	Essex Street between Rivington Street and Stanton Street	East	6.2	184	1.98	B
	Essex Street between Rivington Street and Delancey Street	East	5.0	481	6.41	D
3	Delancey Street between Allen Street and Orchard Street	South	13.0	53	0.27	A
4	Delancey Street between Orchard Street and Ludlow Street	South	15.0	67	0.30	A
5	Delancey Street between Ludlow Street and Essex Street	South	15.0	198	0.88	B

Table 13-33 (cont'd)
2011 Existing Condition Sidewalk Analysis

Intersection No.	Location	Sidewalk	Effective Width (ft)	15 Minute Two-Way Volume	Platoon Flow	
					PMF	LOS
AM Peak Period (cont'd)						
6	Delancey Street between Essex Street and Norfolk Street	North[1]	11.0	365	2.21	B
		South[1]	5.0	52	0.69	B
	Essex Street between Delancey Street and Rivington Street	East[1]	4.0	224	3.73	C
	Essex Street between Delancey Street and Broome Street	East	4.0	110	1.83	B
		West	4.0	363	6.05	D
7	Delancey Street between Norfolk Street and Essex Street	North	11.0	365	2.21	B
		South	12.8	52	0.27	A
	Delancey Street between Norfolk Street and Suffolk Street	North	10.0	602	4.01	C
		South[1]	3.0	34	0.76	B
	Norfolk Street between Delancey Street and Broome Street	West	4.0	36	0.60	B
8	Delancey Street between Suffolk Street and Norfolk Street	South[1]	3.0	34	0.76	B
	Delancey Street between Suffolk Street and Clinton Street	North[1]	6.0	457	5.08	C
		South	8.0	41	0.34	A
	Suffolk Street between Delancey Street and Broome Street	East	11.0	14	0.08	A
		West	5.0	20	0.27	A
9	Delancey Street between Clinton Street and Suffolk Street	South	5.0	41	0.55	B
	Clinton Street between Delancey Street and Broome Street	East	3.0	26	0.58	B
		West	3.0	39	0.87	B
10	Broome Street between Allen Street and Orchard Street	North	4.0	37	0.62	B
		South	5.0	25	0.33	A
11	Broome Street between Ludlow Street and Essex Street	North	3.0	41	0.91	B
	Broome Street between Ludlow Street and Orchard Street	North	3.0	75	1.67	B
		South	4.0	37	0.62	B
12	Broome Street between Essex Street and Ludlow Street	North	3.0	41	0.91	B
	Broome Street between Essex Street and Norfolk Street	North	5.0	40	0.53	B
	Essex Street between Broome Street and Delancey Street	East	6.5	164	1.68	B
		West	6.0	242	2.69	B
	Essex Street between Broome Street and Grand Street	East	10.0	131	0.87	B
		West	7.0	191	1.82	B
13	Broome Street between Norfolk Street and Essex Street	North	5.0	40	0.53	B
	Broome Street between Norfolk Street and Suffolk Street	North	2.5	25	0.67	B
		South	5.0	37	0.49	A
	Norfolk Street between Broome Street and Delancey Street	West	6.0	36	0.40	A
14	Broome Street between Suffolk Street and Norfolk Street	North	3.0	25	0.56	B
	Broome Street between Suffolk Street and Clinton Street	North	4.0	24	0.40	A
	Suffolk Street between Broome Street and Delancey Street	East	5.0	14	0.19	A
		West	5.0	20	0.27	A
	Suffolk Street between Broome Street and Grand Street	East	7.0	48	0.46	A

Table 13-33 (cont'd)
2011 Existing Condition Sidewalk Analysis

Intersection No.	Location	Sidewalk	Effective Width (ft)	15 Minute Two-Way Volume	Platoon Flow	
					PMF	LOS
AM Peak Period (cont'd)						
15	Broome Street between Clinton Street and Suffolk Street	North	3.0	24	0.53	B
	Broome Street between Clinton Street and Ridge Street	North	4.0	27	0.45	A
	Clinton Street between Broome Street and Delancey Street	East	3.0	26	0.58	B
		West	2.5	39	1.04	B
	Clinton Street between Broome Street and Grand Street	West	5.0	50	0.67	B
16	Grand Street between Allen Street and Orchard Street	North	8.0	180	1.50	B
17	Grand Street between Ludlow Street and Orchard Street	North[1]	5.0	205	2.73	B
	Grand Street between Ludlow Street and Essex Street	North	8.0	196	1.63	B
18	Grand Street between Essex Street and Norfolk Street	North	12.0	137	0.76	B
19	Grand Street between Norfolk Street and Suffolk Street	North	12.0	116	0.64	B
20	Grand Street between Suffolk Street and Clinton Street	North	10.0	76	0.51	B
	Suffolk Street between Grand Street and Broome Street	East	5.0	48	0.64	B
21	Grand Street between Clinton Street and Suffolk Street	North	7.8	76	0.65	B
	Clinton Street between Grand Street and Broome Street	West	4.0	50	0.83	B
Midday Peak Period						
1	Essex Street between Stanton Street and Rivington Street	East	6.2	136	1.46	B
2	Essex Street between Rivington Street and Stanton Street	East	6.2	82	0.88	B
	Essex Street between Rivington Street and Delancey Street	East	5.0	222	2.96	B
3	Delancey Street between Allen Street and Orchard Street	South	13.0	143	0.73	B
4	Delancey Street between Orchard Street and Ludlow Street	South	15.0	93	0.41	A
5	Delancey Street between Ludlow Street and Essex Street	South	15.0	155	0.69	B
6	Delancey Street between Essex Street and Norfolk Street	North[1]	11.0	393	2.38	B
		South[1]	5.0	45	0.60	B
	Essex Street between Delancey Street and Rivington Street	East[1]	4.0	201	3.35	C
	Essex Street between Delancey Street and Broome Street	East	4.0	122	2.03	B
		West	4.0	242	4.03	C
7	Delancey Street between Norfolk Street and Essex Street	North	11.0	393	2.38	B
		South	12.8	45	0.23	A
	Delancey Street between Norfolk Street and Suffolk Street	North	10.0	341	2.27	B
		South[1]	3.0	26	0.58	B
	Norfolk Street between Delancey Street and Broome Street	West	4.0	36	0.60	B

Table 13-33 (cont'd)
2011 Existing Condition Sidewalk Analysis

Intersection No.	Location	Sidewalk	Effective Width (ft)	15 Minute Two-Way Volume	Platoon Flow	
					PMF	LOS
Midday Peak Period (cont'd)						
8	Delancey Street between Suffolk Street and Norfolk Street	South[1]	3.0	26	0.58	B
	Delancey Street between Suffolk Street and Clinton Street	North[1]	6.0	315	3.50	C
		South	8.0	27	0.23	A
	Suffolk Street between Delancey Street and Broome Street	East	11.0	18	0.11	A
		West	5.0	11	0.15	A
9	Delancey Street between Clinton Street and Suffolk Street	South	5.0	27	0.36	A
	Clinton Street between Delancey Street and Broome Street	East	3.0	23	0.51	B
		West	3.0	38	0.84	B
10	Broome Street between Allen Street and Orchard Street	North	4.0	74	1.23	B
		South	5.0	26	0.35	A
11	Broome Street between Ludlow Street and Essex Street	North	3.0	35	0.78	B
	Broome Street between Ludlow Street and Orchard Street	North	3.0	29	0.64	B
		South	4.0	47	0.78	B
12	Broome Street between Essex Street and Ludlow Street	North	3.0	35	0.78	B
	Broome Street between Essex Street and Norfolk Street	North	5.0	27	0.36	A
	Essex Street between Broome Street and Delancey Street	East	6.5	113	1.16	B
		West	6.0	213	2.37	B
	Essex Street between Broome Street and Grand Street	East	10.0	163	1.09	B
		West	7.0	193	1.84	B
13	Broome Street between Norfolk Street and Essex Street	North	5.0	27	0.36	A
	Broome Street between Norfolk Street and Suffolk Street	North	2.5	20	0.53	B
		South	5.0	18	0.24	A
	Norfolk Street between Broome Street and Delancey Street	West	6.0	36	0.40	A
14	Broome Street between Suffolk Street and Norfolk Street	North	3.0	20	0.44	A
	Broome Street between Suffolk Street and Clinton Street	North	4.0	27	0.45	A
	Suffolk Street between Broome Street and Delancey Street	East	5.0	18	0.24	A
		West	5.0	11	0.15	A
	Suffolk Street between Broome Street and Grand Street	East	7.0	22	0.21	A
15	Broome Street between Clinton Street and Suffolk Street	North	3.0	27	0.60	B
	Broome Street between Clinton Street and Ridge Street	North	4.0	19	0.32	A
	Clinton Street between Broome Street and Delancey Street	East	3.0	23	0.51	B
		West	2.5	38	1.01	B
	Clinton Street between Broome Street and Grand Street	West	5.0	48	0.64	B
16	Grand Street between Allen Street and Orchard Street	North	8.0	132	1.10	B
17	Grand Street between Ludlow Street and Orchard Street	North[1]	5.0	106	1.41	B
	Grand Street between Ludlow Street and Essex Street	North	8.0	134	1.12	B

Table 13-33 (cont'd)
2011 Existing Condition Sidewalk Analysis

Intersection No.	Location	Sidewalk	Effective Width (ft)	15 Minute Two-Way Volume	Platoon Flow	
					PMF	LOS
Midday Peak Period (cont'd)						
18	Grand Street between Essex Street and Norfolk Street	North	12.0	128	0.71	B
19	Grand Street between Norfolk Street and Suffolk Street	North	12.0	118	0.66	B
20	Grand Street between Suffolk Street and Clinton Street	North	10.0	67	0.45	A
	Suffolk Street between Grand Street and Broome Street	East	5.0	22	0.29	A
21	Grand Street between Clinton Street and Suffolk Street	North	7.8	67	0.57	B
	Clinton Street between Grand Street and Broome Street	West	4.0	48	0.80	B
PM Peak Period						
1	Essex Street between Stanton Street and Rivington Street	East	6.2	154	1.66	B
2	Essex Street between Rivington Street and Stanton Street	East	6.2	194	2.09	B
	Essex Street between Rivington Street and Delancey Street	East	5.0	295	3.93	C
3	Delancey Street between Allen Street and Orchard Street	South	13.0	191	0.98	B
4	Delancey Street between Orchard Street and Ludlow Street	South	15.0	238	1.06	B
5	Delancey Street between Ludlow Street and Essex Street	South	15.0	159	0.71	B
6	Delancey Street between Essex Street and Norfolk Street	North[1]	11.0	496	3.01	C
		South[1]	5.0	82	1.09	B
	Essex Street between Delancey Street and Rivington Street	East[1]	4.0	250	4.17	C
	Essex Street between Delancey Street and Broome Street	East	4.0	99	1.65	B
		West	4.0	186	3.10	C
7	Delancey Street between Norfolk Street and Essex Street	North	11.0	496	3.01	C
		South	12.8	82	0.43	A
	Delancey Street between Norfolk Street and Suffolk Street	North	10.0	603	4.02	C
		South[1]	3.0	41	0.91	B
	Norfolk Street between Delancey Street and Broome Street	West	4.0	32	0.53	B
8	Delancey Street between Suffolk Street and Norfolk Street	South[1]	3.0	41	0.91	B
	Delancey Street between Suffolk Street and Clinton Street	North[1]	6.0	426	4.73	C
		South	8.0	77	0.64	B
	Suffolk Street between Delancey Street and Broome Street	East	11.0	22	0.13	A
		West	5.0	20	0.27	A
9	Delancey Street between Clinton Street and Suffolk Street	South	5.0	77	1.03	B
	Clinton Street between Delancey Street and Broome Street	East	3.0	52	1.16	B
		West	3.0	68	1.51	B
10	Broome Street between Allen Street and Orchard Street	North	4.0	50	0.83	B
		South	5.0	34	0.45	A
11	Broome Street between Ludlow Street and Essex Street	North	3.0	62	1.38	B
	Broome Street between Ludlow Street and Orchard Street	North	3.0	44	0.98	B
		South	4.0	55	0.92	B

Table 13-33 (cont'd)
2011 Existing Condition Sidewalk Analysis

Intersection No.	Location	Sidewalk	Effective Width (ft)	15 Minute Two-Way Volume	Platoon Flow	
					PMF	LOS
PM Peak Period (cont'd)						
12	Broome Street between Essex Street and Ludlow Street	North	3.0	62	1.38	B
	Broome Street between Essex Street and Norfolk Street	North	5.0	44	0.59	B
	Essex Street between Broome Street and Delancey Street	East	6.5	154	1.58	B
		West	6.0	123	1.37	B
	Essex Street between Broome Street and Grand Street	East	10.0	129	0.86	B
		West	7.0	91	0.87	B
13	Broome Street between Norfolk Street and Essex Street	North	5.0	44	0.59	B
	Broome Street between Norfolk Street and Suffolk Street	North	2.5	24	0.64	B
		South	5.0	30	0.40	A
	Norfolk Street between Broome Street and Delancey Street	West	6.0	32	0.36	A
14	Broome Street between Suffolk Street and Norfolk Street	North	3.0	24	0.53	B
	Broome Street between Suffolk Street and Clinton Street	North	4.0	43	0.72	B
	Suffolk Street between Broome Street and Delancey Street	East	5.0	22	0.29	A
		West	5.0	20	0.27	A
	Suffolk Street between Broome Street and Grand Street	East	7.0	22	0.21	A
15	Broome Street between Clinton Street and Suffolk Street	North	3.0	43	0.96	B
	Broome Street between Clinton Street and Ridge Street	North	4.0	28	0.47	A
	Clinton Street between Broome Street and Delancey Street	East	3.0	52	1.16	B
		West	2.5	68	1.81	B
	Clinton Street between Broome Street and Grand Street	West	5.0	59	0.79	B
16	Grand Street between Allen Street and Orchard Street	North	8.0	208	1.73	B
17	Grand Street between Ludlow Street and Orchard Street	North[1]	5.0	183	2.44	B
	Grand Street between Ludlow Street and Essex Street	North	8.0	163	1.36	B
18	Grand Street between Essex Street and Norfolk Street	North	12.0	118	0.66	B
19	Grand Street between Norfolk Street and Suffolk Street	North	12.0	124	0.69	B
20	Grand Street between Suffolk Street and Clinton Street	North	10.0	98	0.65	B
	Suffolk Street between Grand Street and Broome Street	East	5.0	22	0.29	A
21	Grand Street between Clinton Street and Suffolk Street	North	7.8	98	0.84	B
	Clinton Street between Grand Street and Broome Street	West	4.0	59	0.98	B

Table 13-33 (cont'd)
2011 Existing Condition Sidewalk Analysis

Intersection No.	Location	Sidewalk	Effective Width (ft)	15 Minute Two-Way Volume	Platoon Flow	
					PMF	LOS
Saturday Peak Period						
1	Essex Street between Stanton Street and Rivington Street	East	6.2	144	1.55	B
2	Essex Street between Rivington Street and Stanton Street	East	6.2	187	2.01	B
	Essex Street between Rivington Street and Delancey Street	East	5.0	284	3.79	C
3	Delancey Street between Allen Street and Orchard Street	South	13.0	201	1.03	B
4	Delancey Street between Orchard Street and Ludlow Street	South	15.0	126	0.56	B
5	Delancey Street between Ludlow Street and Essex Street	South	15.0	134	0.60	B
6	Delancey Street between Essex Street and Norfolk Street	North[1]	11.0	435	2.64	B
		South[1]	5.0	65	0.87	B
	Essex Street between Delancey Street and Rivington Street	East[1]	4.0	297	4.95	C
	Essex Street between Delancey Street and Broome Street	East	4.0	149	2.48	B
		West	4.0	165	2.75	B
7	Delancey Street between Norfolk Street and Essex Street	North	11.0	435	2.64	B
		South	12.8	65	0.34	A
	Delancey Street between Norfolk Street and Suffolk Street	North	10.0	470	3.13	C
		South[1]	3.0	46	1.02	B
	Norfolk Street between Delancey Street and Broome Street	West	4.0	28	0.47	A
8	Delancey Street between Suffolk Street and Norfolk Street	South[1]	3.0	46	1.02	B
	Delancey Street between Suffolk Street and Clinton Street	North[1]	6.0	404	4.49	C
		South	8.0	39	0.33	A
	Suffolk Street between Delancey Street and Broome Street	East	11.0	27	0.16	A
		West	5.0	19	0.25	A
9	Delancey Street between Clinton Street and Suffolk Street	South	5.0	39	0.52	B
	Clinton Street between Delancey Street and Broome Street	East	3.0	22	0.49	A
		West	3.0	45	1.00	B
10	Broome Street between Allen Street and Orchard Street	North	4.0	109	1.82	B
		South	5.0	71	0.95	B
11	Broome Street between Ludlow Street and Essex Street	North	3.0	44	0.98	B
	Broome Street between Ludlow Street and Orchard Street	North	3.0	106	2.36	B
		South	4.0	117	1.95	B
12	Broome Street between Essex Street and Ludlow Street	North	3.0	44	0.98	B
	Broome Street between Essex Street and Norfolk Street	North	5.0	37	0.49	A
	Essex Street between Broome Street and Delancey Street	East	6.5	134	1.37	B
		West	6.0	129	1.43	B
	Essex Street between Broome Street and Grand Street	East	10.0	104	0.69	B
		West	7.0	90	0.86	B
13	Broome Street between Norfolk Street and Essex Street	North	5.0	37	0.49	A
	Broome Street between Norfolk Street and Suffolk Street	North	2.5	30	0.80	B
		South	5.0	21	0.28	A
	Norfolk Street between Broome Street and Delancey Street	West	6.0	28	0.31	A

Table 13-33 (cont'd)
2011 Existing Condition Sidewalk Analysis

Intersection No.	Location	Sidewalk	Effective Width (ft)	15 Minute Two-Way Volume	Platoon Flow	
					PMF	LOS
Saturday Peak Period (cont'd)						
14	Broome Street between Suffolk Street and Norfolk Street	North	3.0	30	0.67	B
	Broome Street between Suffolk Street and Clinton Street	North	4.0	19	0.32	A
	Suffolk Street between Broome Street and Delancey Street	East	5.0	27	0.36	A
		West	5.0	19	0.25	A
	Suffolk Street between Broome Street and Grand Street	East	7.0	20	0.19	A
15	Broome Street between Clinton Street and Suffolk Street	North	3.0	19	0.42	A
	Broome Street between Clinton Street and Ridge Street	North	4.0	19	0.32	A
	Clinton Street between Broome Street and Delancey Street	East	3.0	22	0.49	A
		West	2.5	45	1.20	B
	Clinton Street between Broome Street and Grand Street	West	5.0	42	0.56	B
16	Grand Street between Allen Street and Orchard Street	North	8.0	172	1.43	B
17	Grand Street between Ludlow Street and Orchard Street	North[1]	5.0	152	2.03	B
	Grand Street between Ludlow Street and Essex Street	North	8.0	124	1.03	B
18	Grand Street between Essex Street and Norfolk Street	North	12.0	114	0.63	B
19	Grand Street between Norfolk Street and Suffolk Street	North	12.0	110	0.61	B
20	Grand Street between Suffolk Street and Clinton Street	North	10.0	78	0.52	B
	Suffolk Street between Grand Street and Broome Street	East	5.0	20	0.27	A
21	Grand Street between Clinton Street and Suffolk Street	North	7.8	78	0.67	B
	Clinton Street between Grand Street and Broome Street	West	4.0	42	0.70	B

Notes:
PMF = pedestrians per minute per foot
[1] Effective width narrowed by existing construction activity

Table 13-34
2011 Existing Condition Corner Analysis

Intersection No.	Location	Corner	AM Peak Period		Midday Peak Period		PM Peak Period		Saturday Peak Period	
			SFP	LOS	SFP	LOS	SFP	LOS	SFP	LOS
1	Stanton Street and Essex Street	Southeast	104.8	A	149.6	A	72.2	A	86.0	A
		Southwest	162.0	A	212.9	A	163.7	A	82.2	A
2	Rivington Street and Essex Street	Northeast	81.0	A	154.7	A	74.5	A	61.7	A
		Southeast	36.0	C	78.6	A	36.9	C	48.8	B
		Southwest	126.9	A	112.1	A	51.9	B	64.5	A
3	Delancey Street and Allen Street	Southeast	474.2	A	344.9	A	221.0	A	188.3	A
		Southwest	463.4	A	234.5	A	235.6	A	194.5	A
4	Delancey Street and Orchard Street	Southeast	661.8	A	220.6	A	231.4	A	131.8	A
		Southwest	706.3	A	215.6	A	183.2	A	160.5	A
5	Delancey Street and Ludlow Street	Northeast	199.5	A	142.5	A	117.8	A	117.9	A
		Southeast	276.4	A	166.2	A	252.9	A	221.7	A
		Southwest	554.8	A	186.4	A	314.9	A	222.1	A
		Northwest	258.9	A	154.4	A	131.1	A	115.9	A
6	Delancey Street and Essex Street	Northeast	67.3	A	61.3	A	55.0	B	49.6	B
		Southeast	289.3	A	219.4	A	221.6	A	157.5	A
		Southwest	163.0	A	127.2	A	165.3	A	172.3	A
		Northwest	86.0	A	67.9	A	73.1	A	83.2	A
7	Delancey Street and Norfolk Street	Northeast	174.3	A	161.3	A	108.1	A	133.1	A
		Southeast	467.9	A	646.2	A	348.1	A	440.7	A
		Southwest	669.7	A	702.7	A	444.3	A	499.2	A
		Northwest	184.0	A	174.8	A	120.0	A	146.4	A
8	Delancey Street and Suffolk Street	Northeast	76.6	A	130.0	A	80.2	A	102.1	A
		Southeast	604.6	A	786.7	A	346.9	A	336.5	A
		Southwest	486.0	A	554.0	A	472.8	A	383.3	A
		Northwest	68.1	A	118.1	A	76.4	A	102.1	A
9	Delancey Street and Clinton Street	Southwest	51.3	B	51.6	B	27.3	C	44.4	B
		Northwest	51.6	B	100.7	A	53.1	B	82.1	A
12	Broome Street and Essex Street	Northeast	127.4	A	173.9	A	157.0	A	159.6	A
		Southeast	431.2	A	562.9	A	581.3	A	492.9	A
		Southwest	69.7	A	99.9	A	160.4	A	152.4	A
		Northwest	69.5	A	105.6	A	129.6	A	140.8	A
13	Broome Street and Norfolk Street	Northeast	291.6	A	333.6	A	344.3	A	411.8	A
		Southeast	533.5	A	688.5	A	470.5	A	633.9	A
		Southwest	1608.1	A	1963.3	A	1962.0	A	2011.5	A
		Northwest	405.5	A	581.3	A	457.4	A	412.6	A
16	Grand Street and Allen Street	Northeast	77.7	A	146.7	A	111.5	A	88.1	A
		Southeast	76.9	A	111.9	A	83.3	A	60.6	A
17	Grand Street and Orchard Street	Northeast	93.5	A	192.0	A	101.4	A	135.0	A
		Northwest	88.9	A	149.2	A	93.3	A	108.3	A
18	Grand Street and Ludlow Street	Northeast	252.0	A	335.9	A	277.0	A	268.4	A
		Southeast	127.6	A	177.6	A	121.5	A	113.7	A
		Northwest	117.1	A	243.8	A	153.3	A	132.4	A
19	Grand Street and Essex Street	Northeast	286.4	A	322.4	A	247.8	A	343.4	A
		Southeast	226.5	A	210.6	A	221.7	A	241.4	A
		Southwest	137.4	A	113.8	A	126.7	A	113.2	A
		Northwest	96.3	A	119.3	A	138.0	A	177.4	A
20	Grand Street and Norfolk Street	Northeast	794.1	A	725.1	A	670.7	A	654.7	A
		Northwest	1902.4	A	1730.5	A	1547.4	A	1536.5	A
21	Grand Street and Suffolk Street	Northeast	310.6	A	418.6	A	266.3	A	288.9	A
		Northwest	346.1	A	419.4	A	279.7	A	341.6	A
22	Grand Street and Clinton Street	Southwest	659.8	A	525.6	A	491.9	A	554.6	A
		Northwest	124.0	A	121.1	A	102.7	A	107.0	A

Note: SFP = square feet per pedestrian

Table 13-35
2011 Existing Condition Crosswalk Analysis

Intersection No.	Location	Crosswalk	Street Width (feet)	Crosswalk Width (feet)	Conditions with conflicting vehicles											
					AM			Midday			PM			Saturday		
					2-way Volume	SFP	LOS	2-way Volume	SFP	LOS	2-way Volume	SFP	LOS	2-way Volume	SFP	LOS
2	Rivington Street and Essex Street	East	24.0	11.0	267	36.4	C	108	103.9	A	197	54.6	B	180	60.8	A
3	Delancey Street and Allen Street	South[1]	44.0	20.0	58	132.1	A	95	127.4	A	124	102.6	A	160	80.5	A
4	Delancey Street and Orchard Street	South	25.0	22.0	51	516.5	A	155	170.6	A	165	157.2	A	192	134.3	A
5	Delancey Street and Ludlow Street	North	25.0	20.0	159	131.3	A	233	87.8	A	297	68.4	A	274	73.3	A
		South	26.0	22.0	68	378.5	A	193	130.9	A	103	251.5	A	138	183.5	A
6	Delancey Street and Essex Street	North	54.0	19.0	291	68.3	A	325	61.1	A	329	58.1	B	317	60.0	B
		East	110.0	14.0	98	66.2	A	119	54.0	B	113	50.0	B	144	43.9	B
		South	54.0	19.0	62	351.2	A	86	250.7	A	90	243.8	A	122	176.3	A
		West	110.0	14.0	190	36.3	C	273	24.7	C	152	46.1	B	133	52.7	B
7	Delancey Street and Norfolk Street	North	26.0	20.0	172	109.7	A	230	80.0	A	317	56.4	B	270	72.4	A
		South	24.0	10.0	21	494.1	A	25	413.0	A	51	202.3	A	37	279.6	A
		West	105.0	14.0	46	114.6	A	35	150.9	A	51	103.2	A	44	119.6	A
8	Delancey Street and Suffolk Street	North	26.0	20.0	494	41.0	B	303	73.4	A	439	48.9	B	330	68.0	A
		East[1]	56.0	20.0	30	425.6	A	16	691.0	A	63	174.7	A	64	169.8	A
		South	23.0	14.0	23	637.7	A	24	660.2	A	31	508.9	A	30	530.5	A
		West[1]	51.0	18.0	30	378.3	A	22	451.7	A	26	366.8	A	40	236.8	A
9	Delancey Street and Clinton Street	North	24.0	16.0	344	7.3	F	172	16.9	D	313	8.2	E	186	15.2	D
		South	26.0	17.0	48	453.4	A	38	582.7	A	74	299.8	A	48	461.2	A
		West (North of Median)	68.0	23.0	133	62.7	A	117	71.5	A	173	47.4	B	120	69.2	A
		West (South of Median)	68.0	23.0	77	108.5	A	81	103.1	A	129	64.3	A	92	90.9	A
12	Broome Street and Essex Street	North	54.0	11.0	25	293.5	A	21	351.1	A	30	244.1	A	42	174.4	A
		East	30.0	11.0	142	81.6	A	112	103.7	A	115	101.7	A	104	113.3	A
		South	54.0	15.0	38	258.5	A	26	385.3	A	18	557.2	A	27	368.1	A
13	Broome Street and Norfolk Street	North	25.0	12.0	24	426.5	A	15	718.1	A	17	588.7	A	19	471.0	A
		South	24.0	12.0	24	532.9	A	11	1180.3	A	24	538.8	A	17	758.4	A
17	Grand Street and Orchard Street	North	24.0	13.0	207	41.3	B	77	120.5	A	186	47.4	B	133	66.1	A
18	Grand Street and Ludlow Street	North	24.0	15.0	145	74.5	A	84	133.5	A	116	95.2	A	145	74.2	A
19	Grand Street and Essex Street	North	54.0	15.0	105	104.3	A	108	100.0	A	125	77.5	A	73	153.4	A
20	Grand Street and Norfolk Street	North	24.0	14.0	92	62.4	A	107	54.4	B	121	46.6	B	117	43.8	B
21	Grand Street and Suffolk Street	North	25.0	13.0	95	139.1	A	67	198.3	A	105	123.3	A	86	152.4	A

Notes: SFP = square feet per pedestrian
[1] Critical width (north/east or south/west of pedestrian refuge median) used for analysis street width

2022 NO ACTION CONDITION

No Action pedestrian volumes were estimated by increasing existing pedestrian levels to reflect expected growth in overall travel through and within the study area. As per CEQR guidelines, an annual background growth rate of 0.25 percent was assumed for the first five years (year 2011 to year 2016) and then 0.125 percent for the remaining years (year 2016 to year 2022). Pedestrian volumes from anticipated projects in the study area were also added to arrive at the 2022 No Action pedestrian volumes. The 2022 No Action peak 15-minute pedestrian volume maps for the weekday AM, midday, and PM, and Saturday peak hours are provided at the end of the chapter. As shown in **Tables 13-36** to **13-38**, all sidewalk, corner reservoir, and crosswalk analysis locations will continue to operate at acceptable mid-LOS D or better (maximum of 8.5 PMF platoon flows for sidewalks; minimum of 19.5 SFP for corners and crosswalks), except at the following location:

- The north crosswalk of Clinton Street and Delancey Street, which operates at LOS F with 6.5 and 7.0 SFP during the AM and PM peak 15-minute periods, respectively and LOS E with 14.3 and 13.1 SFP during the midday and Saturday peak 15-minute periods, respectively.

Detailed descriptions of the 2022 No Action pedestrian levels of service for sidewalk, corners and crosswalks are provided in **Tables 13-39** to **13-41**.

Table 13-36
Pedestrian Sidewalk Level of Service Summary Comparison
Existing vs. No Action Conditions (2022)

	Existing				2022 No Action			
	Weekday Peak Hours			Saturday	Weekday Peak Hours			Saturday
	AM	Midday	PM	Peak Hour	AM	Midday	PM	Peak Hour
Overall LOS A/B/C	56	58	58	58	56	58	58	58
Overall LOS D	2	0	0	0	2	0	0	0
Overall LOS E	0	0	0	0	0	0	0	0
Overall LOS F	0	0	0	0	0	0	0	0
Note: Includes 58 sidewalk analysis locations.								

Table 13-37
Pedestrian Corner Level of Service Summary Comparison
Existing vs. No Action Conditions (2022)

	Existing				2022 No Action			
	Weekday Peak Hours			Saturday	Weekday Peak Hours			Saturday
	AM	Midday	PM	Peak Hour	AM	Midday	PM	Peak Hour
Overall LOS A/B/C	52	52	52	52	52	52	52	52
Overall LOS D	0	0	0	0	0	0	0	0
Overall LOS E	0	0	0	0	0	0	0	0
Overall LOS F	0	0	0	0	0	0	0	0
Note: Includes 52 corner analysis locations.								

Table 13-38
Pedestrian Crosswalk Level of Service Summary Comparison
Existing vs. No Action Conditions (2022)

	Existing				2022 No Action			
	Weekday Peak Hours			Saturday	Weekday Peak Hours			Saturday
	AM	Midday	PM	Peak Hour	AM	Midday	PM	Peak Hour
Overall LOS A/B/C	29	29	29	29	29	28	29	29
Overall LOS D	0	1	0	1	0	1	0	0
Overall LOS E	0	0	1	0	0	1	0	1
Overall LOS F	1	0	0	0	1	0	1	0

Note: Includes 30 crosswalk analysis locations.

Table 13-39
2022 No Action Condition Sidewalk Analysis

Intersection No.	Location	Sidewalk	Effective Width (ft)	15 Minute Two-Way Volume	Platoon Flow	
					PMF	LOS
AM Peak Period						
1	Essex Street between Stanton Street and Rivington Street	East	6.2	177	1.90	B
2	Essex Street between Rivington Street and Stanton Street	East	6.2	194	2.09	B
	Essex Street between Rivington Street and Delancey Street	East	5.0	496	6.61	D
3	Delancey Street between Allen Street and Orchard Street	South	13.0	61	0.31	A
4	Delancey Street between Orchard Street and Ludlow Street	South	15.0	74	0.33	A
5	Delancey Street between Ludlow Street and Essex Street	South	15.0	206	0.92	B
6	Delancey Street between Essex Street and Norfolk Street	North	11.0	391	2.37	B
		South	15.0	56	0.25	A
	Essex Street between Delancey Street and Rivington Street	East	4.0	237	3.95	C
	Essex Street between Delancey Street and Broome Street	East	4.0	118	1.97	B
		West	4.0	380	6.33	D
7	Delancey Street between Norfolk Street and Essex Street	North	11.0	391	2.37	B
		South	12.8	56	0.29	A
	Delancey Street between Norfolk Street and Suffolk Street	North	10.0	648	4.32	C
		South	10.0	37	0.25	A
	Norfolk Street between Delancey Street and Broome Street	West	4.0	36	0.60	B
8	Delancey Street between Suffolk Street and Norfolk Street	South	10.0	37	0.25	A
	Delancey Street between Suffolk Street and Clinton Street	North	10.0	506	3.37	C
		South	8.0	42	0.35	A
	Suffolk Street between Delancey Street and Broome Street	East	11.0	16	0.10	A
		West	5.0	22	0.29	A
9	Delancey Street between Clinton Street and Suffolk Street	South	5.0	44	0.59	B
	Clinton Street between Delancey Street and Broome Street	East	3.0	26	0.58	B
		West	3.0	39	0.87	B
10	Broome Street between Allen Street and Orchard Street	North	4.0	40	0.67	B
		South	5.0	28	0.37	A

Table 13-39 (cont'd)
2022 No Action Condition Sidewalk Analysis

Intersection No.	Location	Sidewalk	Effective Width (ft)	15 Minute Two-Way Volume	Platoon Flow	
					PMF	LOS
AM Peak Period (cont'd)						
11	Broome Street between Ludlow Street and Essex Street	North	3.0	43	0.96	B
	Broome Street between Ludlow Street and Orchard Street	North	3.0	78	1.73	B
		South	4.0	40	0.67	B
12	Broome Street between Essex Street and Ludlow Street	North	3.0	43	0.96	B
	Broome Street between Essex Street and Norfolk Street	North	5.0	42	0.56	B
	Essex Street between Broome Street and Delancey Street	East	6.5	177	1.82	B
		West	6.0	256	2.84	B
	Essex Street between Broome Street and Grand Street	East	10.0	141	0.94	B
		West	7.0	202	1.92	B
13	Broome Street between Norfolk Street and Essex Street	North	5.0	41	0.55	B
	Broome Street between Norfolk Street and Suffolk Street	North	2.5	26	0.69	B
		South	5.0	38	0.51	B
	Norfolk Street between Broome Street and Delancey Street	West	6.0	36	0.40	A
14	Broome Street between Suffolk Street and Norfolk Street	North	3.0	26	0.58	B
	Broome Street between Suffolk Street and Clinton Street	North	4.0	24	0.40	A
	Suffolk Street between Broome Street and Delancey Street	East	5.0	16	0.21	A
		West	5.0	22	0.29	A
	Suffolk Street between Broome Street and Grand Street	East	7.0	48	0.46	A
15	Broome Street between Clinton Street and Suffolk Street	North	3.0	24	0.53	B
	Broome Street between Clinton Street and Ridge Street	North	4.0	28	0.47	A
	Clinton Street between Broome Street and Delancey Street	East	3.0	26	0.58	B
		West	2.5	39	1.04	B
	Clinton Street between Broome Street and Grand Street	West	5.0	53	0.71	B
16	Grand Street between Allen Street and Orchard Street	North	8.0	186	1.55	B
17	Grand Street between Ludlow Street and Orchard Street	North	7.8	212	1.81	B
	Grand Street between Ludlow Street and Essex Street	North	8.0	202	1.68	B
18	Grand Street between Essex Street and Norfolk Street	North	12.0	144	0.80	B
19	Grand Street between Norfolk Street and Suffolk Street	North	12.0	123	0.68	B
20	Grand Street between Suffolk Street and Clinton Street	North	10.0	80	0.53	B
	Suffolk Street between Grand Street and Broome Street	East	5.0	48	0.64	B
21	Grand Street between Clinton Street and Suffolk Street	North	7.8	81	0.69	B
	Clinton Street between Grand Street and Broome Street	West	4.0	53	0.88	B

Table 13-39 (cont'd)
2022 No Action Condition Sidewalk Analysis

Intersection No.	Location	Sidewalk	Effective Width (ft)	15 Minute Two-Way Volume	Platoon Flow	
					PMF	LOS
Midday Peak Period						
1	Essex Street between Stanton Street and Rivington Street	East	6.2	152	1.63	B
2	Essex Street between Rivington Street and Stanton Street	East	6.2	98	1.05	B
	Essex Street between Rivington Street and Delancey Street	East	5.0	244	3.25	C
3	Delancey Street between Allen Street and Orchard Street	South	13.0	164	0.84	B
4	Delancey Street between Orchard Street and Ludlow Street	South	15.0	109	0.48	A
5	Delancey Street between Ludlow Street and Essex Street	South	15.0	169	0.75	B
6	Delancey Street between Essex Street and Norfolk Street	North	11.0	436	2.64	B
		South	15.0	53	0.24	A
	Essex Street between Delancey Street and Rivington Street	East	4.0	222	3.70	C
	Essex Street between Delancey Street and Broome Street	East	4.0	143	2.38	B
		West	4.0	271	4.52	C
7	Delancey Street between Norfolk Street and Essex Street	North	11.0	436	2.64	B
		South	12.8	53	0.28	A
	Delancey Street between Norfolk Street and Suffolk Street	North	10.0	393	2.62	B
		South	10.0	33	0.22	A
	Norfolk Street between Delancey Street and Broome Street	West	4.0	36	0.60	B
8	Delancey Street between Suffolk Street and Norfolk Street	South	10.0	33	0.22	A
	Delancey Street between Suffolk Street and Clinton Street	North	10.0	387	2.58	B
		South	8.0	27	0.23	A
	Suffolk Street between Delancey Street and Broome Street	East	11.0	21	0.13	A
		West	5.0	14	0.19	A
9	Delancey Street between Clinton Street and Suffolk Street	South	5.0	29	0.39	A
	Clinton Street between Delancey Street and Broome Street	East	3.0	23	0.51	B
		West	3.0	40	0.89	B
10	Broome Street between Allen Street and Orchard Street	North	4.0	82	1.37	B
		South	5.0	35	0.47	A
11	Broome Street between Ludlow Street and Essex Street	North	3.0	37	0.82	B
	Broome Street between Ludlow Street and Orchard Street	North	3.0	34	0.76	B
		South	4.0	55	0.92	B
12	Broome Street between Essex Street and Ludlow Street	North	3.0	37	0.82	B
	Broome Street between Essex Street and Norfolk Street	North	5.0	33	0.44	A
	Essex Street between Broome Street and Delancey Street	East	6.5	136	1.39	B
		West	6.0	242	2.69	B
	Essex Street between Broome Street and Grand Street	East	10.0	185	1.23	B
		West	7.0	220	2.10	B
13	Broome Street between Norfolk Street and Essex Street	North	5.0	31	0.41	A
	Broome Street between Norfolk Street and Suffolk Street	North	2.5	24	0.64	B
		South	5.0	22	0.29	A
	Norfolk Street between Broome Street and Delancey Street	West	6.0	36	0.40	A

Table 13-39 (cont'd)
2022 No Action Condition Sidewalk Analysis

Intersection No.	Location	Sidewalk	Effective Width (ft)	15 Minute Two-Way Volume	Platoon Flow	
					PMF	LOS
Midday Peak Period (cont'd)						
14	Broome Street between Suffolk Street and Norfolk Street	North	3.0	24	0.53	B
	Broome Street between Suffolk Street and Clinton Street	North	4.0	29	0.48	A
	Suffolk Street between Broome Street and Delancey Street	East	5.0	21	0.28	A
		West	5.0	14	0.19	A
	Suffolk Street between Broome Street and Grand Street	East	7.0	24	0.23	A
15	Broome Street between Clinton Street and Suffolk Street	North	3.0	29	0.64	B
	Broome Street between Clinton Street and Ridge Street	North	4.0	21	0.35	A
	Clinton Street between Broome Street and Delancey Street	East	3.0	23	0.51	B
		West	2.5	40	1.07	B
	Clinton Street between Broome Street and Grand Street	West	5.0	53	0.71	B
16	Grand Street between Allen Street and Orchard Street	North	8.0	140	1.17	B
17	Grand Street between Ludlow Street and Orchard Street	North	7.8	116	0.99	B
	Grand Street between Ludlow Street and Essex Street	North	8.0	142	1.18	B
18	Grand Street between Essex Street and Norfolk Street	North	12.0	142	0.79	B
19	Grand Street between Norfolk Street and Suffolk Street	North	12.0	131	0.73	B
20	Grand Street between Suffolk Street and Clinton Street	North	10.0	79	0.53	B
	Suffolk Street between Grand Street and Broome Street	East	5.0	24	0.32	A
21	Grand Street between Clinton Street and Suffolk Street	North	7.8	79	0.68	B
	Clinton Street between Grand Street and Broome Street	West	4.0	53	0.88	B
PM Peak Period						
1	Essex Street between Stanton Street and Rivington Street	East	6.2	167	1.80	B
2	Essex Street between Rivington Street and Stanton Street	East	6.2	208	2.24	B
	Essex Street between Rivington Street and Delancey Street	East	5.0	313	4.17	C
3	Delancey Street between Allen Street and Orchard Street	South	13.0	207	1.06	B
4	Delancey Street between Orchard Street and Ludlow Street	South	15.0	252	1.12	B
5	Delancey Street between Ludlow Street and Essex Street	South	15.0	169	0.75	B
6	Delancey Street between Essex Street and Norfolk Street	North	11.0	535	3.24	C
		South	15.0	89	0.40	A
	Essex Street between Delancey Street and Rivington Street	East	4.0	270	4.50	C
	Essex Street between Delancey Street and Broome Street	East	4.0	112	1.87	B
		West	4.0	206	3.43	C

Table 13-39 (cont'd)
2022 No Action Condition Sidewalk Analysis

Intersection No.	Location	Sidewalk	Effective Width (ft)	15 Minute Two-Way Volume	Platoon Flow	
					PMF	LOS
PM Peak Period (cont'd)						
7	Delancey Street between Norfolk Street and Essex Street	North	11.0	535	3.24	C
		South	12.8	89	0.46	A
	Delancey Street between Norfolk Street and Suffolk Street	North	10.0	661	4.41	C
		South	10.0	47	0.31	A
	Norfolk Street between Delancey Street and Broome Street	West	4.0	32	0.53	B
8	Delancey Street between Suffolk Street and Norfolk Street	South	10.0	47	0.31	A
	Delancey Street between Suffolk Street and Clinton Street	North	10.0	491	3.27	C
		South	8.0	79	0.66	B
	Suffolk Street between Delancey Street and Broome Street	East	11.0	24	0.15	A
		West	5.0	22	0.29	A
9	Delancey Street between Clinton Street and Suffolk Street	South	5.0	81	1.08	B
	Clinton Street between Delancey Street and Broome Street	East	3.0	53	1.18	B
		West	3.0	71	1.58	B
10	Broome Street between Allen Street and Orchard Street	North	4.0	56	0.93	B
		South	5.0	41	0.55	B
11	Broome Street between Ludlow Street and Essex Street	North	3.0	65	1.44	B
	Broome Street between Ludlow Street and Orchard Street	North	3.0	48	1.07	B
		South	4.0	62	1.03	B
12	Broome Street between Essex Street and Ludlow Street	North	3.0	65	1.44	B
	Broome Street between Essex Street and Norfolk Street	North	5.0	48	0.64	B
	Essex Street between Broome Street and Delancey Street	East	6.5	171	1.75	B
		West	6.0	141	1.57	B
	Essex Street between Broome Street and Grand Street	East	10.0	144	0.96	B
		West	7.0	108	1.03	B
13	Broome Street between Norfolk Street and Essex Street	North	5.0	47	0.63	B
	Broome Street between Norfolk Street and Suffolk Street	North	2.5	27	0.72	B
		South	5.0	32	0.43	A
	Norfolk Street between Broome Street and Delancey Street	West	6.0	32	0.36	A
14	Broome Street between Suffolk Street and Norfolk Street	North	3.0	27	0.60	B
	Broome Street between Suffolk Street and Clinton Street	North	4.0	46	0.77	B
	Suffolk Street between Broome Street and Delancey Street	East	5.0	24	0.32	A
		West	5.0	22	0.29	A
	Suffolk Street between Broome Street and Grand Street	East	7.0	23	0.22	A
15	Broome Street between Clinton Street and Suffolk Street	North	3.0	46	1.02	B
	Broome Street between Clinton Street and Ridge Street	North	4.0	30	0.50	A
	Clinton Street between Broome Street and Delancey Street	East	3.0	53	1.18	B
		West	2.5	71	1.89	B
	Clinton Street between Broome Street and Grand Street	West	5.0	62	0.83	B
16	Grand Street between Allen Street and Orchard Street	North	8.0	215	1.79	B

Table 13-39 (cont'd)
2022 No Action Condition Sidewalk Analysis

Intersection No.	Location	Sidewalk	Effective Width (ft)	15 Minute Two-Way Volume	Platoon Flow	
					PMF	LOS
PM Peak Period (cont'd)						
17	Grand Street between Ludlow Street and Orchard Street	North	7.8	191	1.63	B
	Grand Street between Ludlow Street and Essex Street	North	8.0	172	1.43	B
18	Grand Street between Essex Street and Norfolk Street	North	12.0	128	0.71	B
19	Grand Street between Norfolk Street and Suffolk Street	North	12.0	133	0.74	B
20	Grand Street between Suffolk Street and Clinton Street	North	10.0	107	0.71	B
	Suffolk Street between Grand Street and Broome Street	East	5.0	23	0.31	A
21	Grand Street between Clinton Street and Suffolk Street	North	7.8	107	0.91	B
	Clinton Street between Grand Street and Broome Street	West	4.0	62	1.03	B
Saturday Peak Period						
1	Essex Street between Stanton Street and Rivington Street	East	6.2	155	1.67	B
2	Essex Street between Rivington Street and Stanton Street	East	6.2	199	2.14	B
	Essex Street between Rivington Street and Delancey Street	East	5.0	300	4.00	C
3	Delancey Street between Allen Street and Orchard Street	South	13.0	215	1.10	B
4	Delancey Street between Orchard Street and Ludlow Street	South	15.0	137	0.61	B
5	Delancey Street between Ludlow Street and Essex Street	South	15.0	142	0.63	B
6	Delancey Street between Essex Street and Norfolk Street	North	11.0	466	2.82	B
		South	15.0	70	0.31	A
	Essex Street between Delancey Street and Rivington Street	East	4.0	315	5.25	C
	Essex Street between Delancey Street and Broome Street	East	4.0	162	2.70	B
		West	4.0	181	3.02	C
7	Delancey Street between Norfolk Street and Essex Street	North	11.0	466	2.82	B
		South	12.8	70	0.36	A
	Delancey Street between Norfolk Street and Suffolk Street	North	10.0	516	3.44	C
		South	10.0	51	0.34	A
	Norfolk Street between Delancey Street and Broome Street	West	4.0	28	0.47	A
8	Delancey Street between Suffolk Street and Norfolk Street	South	10.0	51	0.34	A
	Delancey Street between Suffolk Street and Clinton Street	North	10.0	456	3.04	C
		South	8.0	39	0.33	A
	Suffolk Street between Delancey Street and Broome Street	East	11.0	29	0.18	A
		West	5.0	21	0.28	A
9	Delancey Street between Clinton Street and Suffolk Street	South	5.0	41	0.55	B
	Clinton Street between Delancey Street and Broome Street	East	3.0	22	0.49	A
		West	3.0	46	1.02	B
10	Broome Street between Allen Street and Orchard Street	North	4.0	115	1.92	B
		South	5.0	79	1.05	B

Table 13-39 (cont'd)
2022 No Action Condition Sidewalk Analysis

Intersection No.	Location	Sidewalk	Effective Width (ft)	15 Minute Two-Way Volume	Platoon Flow	
					PMF	LOS
Saturday Peak Period (cont'd)						
11	Broome Street between Ludlow Street and Essex Street	North	3.0	46	1.02	B
	Broome Street between Ludlow Street and Orchard Street	North	3.0	110	2.44	B
		South	4.0	122	2.03	B
12	Broome Street between Essex Street and Ludlow Street	North	3.0	46	1.02	B
	Broome Street between Essex Street and Norfolk Street	North	5.0	39	0.52	B
	Essex Street between Broome Street and Delancey Street	East	6.5	149	1.53	B
		West	6.0	144	1.60	B
	Essex Street between Broome Street and Grand Street	East	10.0	118	0.79	B
		West	7.0	104	0.99	B
13	Broome Street between Norfolk Street and Essex Street	North	5.0	39	0.52	B
	Broome Street between Norfolk Street and Suffolk Street	North	2.5	32	0.85	B
		South	5.0	23	0.31	A
	Norfolk Street between Broome Street and Delancey Street	West	6.0	28	0.31	A
14	Broome Street between Suffolk Street and Norfolk Street	North	3.0	32	0.71	B
	Broome Street between Suffolk Street and Clinton Street	North	4.0	21	0.35	A
	Suffolk Street between Broome Street and Delancey Street	East	5.0	29	0.39	A
		West	5.0	21	0.28	A
	Suffolk Street between Broome Street and Grand Street	East	7.0	20	0.19	A
15	Broome Street between Clinton Street and Suffolk Street	North	3.0	21	0.47	A
	Broome Street between Clinton Street and Ridge Street	North	4.0	21	0.35	A
	Clinton Street between Broome Street and Delancey Street	East	3.0	22	0.49	A
		West	2.5	46	1.23	B
	Clinton Street between Broome Street and Grand Street	West	5.0	44	0.59	B
16	Grand Street between Allen Street and Orchard Street	North	8.0	178	1.48	B
17	Grand Street between Ludlow Street and Orchard Street	North	7.8	159	1.36	B
	Grand Street between Ludlow Street and Essex Street	North	8.0	131	1.09	B
18	Grand Street between Essex Street and Norfolk Street	North	12.0	122	0.68	B
19	Grand Street between Norfolk Street and Suffolk Street	North	12.0	118	0.66	B
20	Grand Street between Suffolk Street and Clinton Street	North	10.0	85	0.57	B
	Suffolk Street between Grand Street and Broome Street	East	5.0	20	0.27	A
21	Grand Street between Clinton Street and Suffolk Street	North	7.8	86	0.74	B
	Clinton Street between Grand Street and Broome Street	West	4.0	44	0.73	B

Note: PMF = pedestrians per minute per foot

Table 13-40
2022 No Action Condition Corner Analysis

Intersection No.	Location	Corner	AM Peak Period		Midday Peak Period		PM Peak Period		Saturday Peak Period	
			SFP	LOS	SFP	LOS	SFP	LOS	SFP	LOS
1	Stanton Street and Essex Street	Southeast	99.5	A	135.2	A	68.5	A	81.5	A
		Southwest	142.6	A	166.6	A	133.8	A	74.8	A
2	Rivington Street and Essex Street	Northeast	77.5	A	131.5	A	69.3	A	57.6	B
		Southeast	34.6	C	70.6	A	34.9	C	45.8	B
		Southwest	112.4	A	92.2	A	46.7	B	58.3	B
3	Delancey Street and Allen Street	Southeast	430.7	A	287.4	A	200.9	A	174.4	A
		Southwest	428.7	A	207.4	A	215.5	A	180.3	A
4	Delancey Street and Orchard Street	Southeast	565.1	A	184.8	A	203.8	A	121.7	A
		Southwest	626.3	A	189.8	A	168.5	A	148.9	A
5	Delancey Street and Ludlow Street	Northeast	180.4	A	122.5	A	105.3	A	107.0	A
		Southeast	258.7	A	151.6	A	229.4	A	206.3	A
		Southwest	503.8	A	171.0	A	290.2	A	208.4	A
		Northwest	230.6	A	132.6	A	117.3	A	105.9	A
6	Delancey Street and Essex Street	Northeast	98.3	A	85.1	A	78.4	A	72.0	A
		Southeast	270.3	A	194.7	A	202.9	A	147.6	A
		Southwest	154.5	A	115.4	A	152.0	A	159.7	A
		Northwest	80.3	A	60.6	A	66.7	A	76.1	A
7	Delancey Street and Norfolk Street	Northeast	158.8	A	140.3	A	98.8	A	122.4	A
		Southeast	442.4	A	567.7	A	327.1	A	417.9	A
		Southwest	633.0	A	635.7	A	415.9	A	478.6	A
		Northwest	168.6	A	152.0	A	109.1	A	134.8	A
8	Delancey Street and Suffolk Street	Northeast	131.8	A	200.8	A	133.2	A	169.1	A
		Southeast	546.3	A	594.4	A	311.3	A	307.8	A
		Southwest	447.4	A	463.1	A	423.3	A	349.2	A
		Northwest	62.8	A	101.0	A	68.1	A	91.2	A
9	Delancey Street and Clinton Street	Southwest	48.7	B	48.0	B	26.0	C	42.2	B
		Northwest	48.4	B	90.2	A	49.0	B	75.9	A
12	Broome Street and Essex Street	Northeast	119.1	A	147.5	A	140.4	A	142.5	A
		Southeast	402.0	A	468.4	A	506.4	A	440.2	A
		Southwest	65.6	A	82.2	A	132.5	A	130.5	A
		Northwest	65.4	A	90.4	A	113.5	A	124.8	A
13	Broome Street and Norfolk Street	Northeast	283.9	A	296.9	A	314.5	A	383.0	A
		Southeast	502.7	A	558.4	A	435.8	A	572.1	A
		Southwest	1551.4	A	1605.2	A	1801.4	A	1843.3	A
		Northwest	396.5	A	485.7	A	424.2	A	394.0	A
16	Grand Street and Allen Street	Northeast	74.7	A	131.7	A	105.4	A	84.0	A
		Southeast	73.7	A	102.5	A	78.7	A	58.1	B
17	Grand Street and Orchard Street	Northeast	89.9	A	168.7	A	95.4	A	126.2	A
		Northwest	85.7	A	135.9	A	88.6	A	102.5	A
18	Grand Street and Ludlow Street	Northeast	243.3	A	304.8	A	262.3	A	255.8	A
		Southeast	122.6	A	160.5	A	114.7	A	107.8	A
		Northwest	112.7	A	218.3	A	144.7	A	126.4	A
19	Grand Street and Essex Street	Northeast	268.0	A	277.6	A	226.8	A	312.2	A
		Southeast	212.4	A	187.3	A	202.2	A	221.8	A
		Southwest	129.1	A	101.7	A	115.0	A	104.9	A
		Northwest	91.7	A	105.2	A	124.3	A	160.7	A
20	Grand Street and Norfolk Street	Northeast	759.3	A	664.8	A	633.9	A	619.7	A
		Northwest	1820.4	A	1589.0	A	1466.4	A	1456.4	A
21	Grand Street and Suffolk Street	Northeast	295.9	A	366.4	A	250.4	A	272.3	A
		Northwest	327.4	A	357.4	A	259.5	A	317.6	A
22	Grand Street and Clinton Street	Southwest	626.2	A	483.8	A	462.6	A	528.1	A
		Northwest	116.5	A	107.7	A	94.4	A	99.9	A

Note: SFP = square feet per pedestrian

Table 13-41
2022 No Action Condition Crosswalk Analysis

Intersection No.	Location	Crosswalk	Street Width (feet)	Crosswalk Width (feet)	Conditions with conflicting vehicles											
					AM			Midday			PM			Saturday		
					2-way Volume	SFP	LOS	2-way Volume	SFP	LOS	2-way Volume	SFP	LOS	2-way Volume	SFP	LOS
2	Rivington Street and Essex Street	East	24.0	11.0	278	34.8	C	126	88.3	A	212	50.4	B	194	56.0	B
3	Delancey Street and Allen Street	South[1]	44.0	20.0	64	118.6	A	112	107.1	A	136	92.9	A	171	74.9	A
4	Delancey Street and Orchard Street	South	25.0	22.0	57	461.3	A	171	154.1	A	177	146.2	A	203	126.7	A
5	Delancey Street and Ludlow Street	North	25.0	20.0	180	115.5	A	275	73.7	A	336	60.0	B	306	65.2	A
		South	26.0	22.0	75	342.3	A	208	121.0	A	114	226.5	A	148	170.6	A
6	Delancey Street and Essex Street	North	54.0	19.0	311	63.6	A	365	54.0	B	360	52.5	B	344	55.0	B
		East	110.0	14.0	105	61.6	A	135	47.3	B	125	44.7	B	155	40.5	B
		South	54.0	19.0	66	329.5	A	96	224.1	A	97	226.0	A	129	166.5	A
		West	110.0	14.0	201	34.2	C	300	22.4	D	168	41.6	B	147	47.6	B
7	Delancey Street and Norfolk Street	North	26.0	20.0	194	95.7	A	270	66.7	A	353	49.8	B	298	64.6	A
		South	24.0	10.0	24	431.5	A	32	321.7	A	57	180.6	A	41	251.9	A
		West	105.0	14.0	47	112.2	A	35	150.9	A	52	101.2	A	44	119.6	A
8	Delancey Street and Suffolk Street	North	26.0	20.0	539	37.2	C	358	61.3	A	497	42.5	B	374	59.3	B
		East[1]	56.0	20.0	33	386.7	A	23	479.8	A	69	159.3	A	69	157.3	A
		South	23.0	14.0	26	562.6	A	31	509.4	A	36	437.1	A	34	467.3	A
		West[1]	51.0	18.0	32	354.1	A	25	397.3	A	28	340.0	A	43	219.9	A
9	Delancey Street and Clinton Street	North	24.0	16.0	368	6.5	F	192	14.3	E	338	7.0	F	206	13.1	E
		South	26.0	17.0	50	434.7	A	40	553.3	A	78	284.2	A	50	442.5	A
		West (North of Median)	68.0	23.0	139	60.0	B	131	63.7	A	184	44.5	B	128	64.7	A
		West (South of Median)	68.0	23.0	81	103.0	A	87	95.9	A	133	62.3	A	96	87.1	A
12	Broome Street and Essex Street	North	54.0	11.0	26	282.2	A	23	320.3	A	32	228.7	A	44	166.3	A
		East	30.0	11.0	152	75.9	A	132	87.2	A	130	89.3	A	118	99.2	A
		South	54.0	15.0	41	239.3	A	34	293.9	A	23	435.5	A	31	320.2	A
13	Broome Street and Norfolk Street	North	25.0	12.0	25	407.2	A	19	563.4	A	20	496.6	A	21	421.9	A
		South	24.0	12.0	26	491.4	A	17	761.4	A	27	478.5	A	20	644.0	A
17	Grand Street and Orchard Street	North	24.0	13.0	213	40.0	C	85	108.2	A	193	45.3	B	139	62.8	A
18	Grand Street and Ludlow Street	North	24.0	15.0	150	71.8	A	94	118.8	A	123	89.5	A	152	70.5	A
19	Grand Street and Essex Street	North	54.0	15.0	111	98.4	A	123	87.4	A	136	70.8	A	81	137.9	A
20	Grand Street and Norfolk Street	North	24.0	14.0	98	57.3	B	120	47.3	B	130	42.4	B	125	39.9	C
21	Grand Street and Suffolk Street	North	25.0	13.0	101	130.5	A	80	165.2	A	114	113.2	A	94	138.9	A

Note: SFP = square feet per pedestrian
[1] Critical width (north/east or south/west of pedestrian refuge median) used for analysis street width

2022 WITH ACTION CONDITION

As part of the 2022 With Action condition, sidewalks would be reconfigured at various intersections adjacent to Sites 1–6, resulting in different sidewalk widths at these locations as compared to the existing and No Action conditions. The new sidewalk widths as a result of the proposed actions are shown in **Figure 13-17**.

The project-generated pedestrian volumes were assigned to the pedestrian network considering current land uses in the area, nearby parking locations, available transit services, and surrounding pedestrian facilities. Based on the "Level 2 Screening Assessment," peak 15-minute incremental pedestrian volumes were developed by dividing the hourly incremental volumes by four and accounting for peaking characteristics within the peak hours. These pedestrian volumes were added to the projected 2022 No Action volumes to generate the 2022 With Action pedestrian volumes for analysis. The peak hour project-generated pedestrian trips and the total 2022 With Action peak 15-minute pedestrian volumes are shown in maps provided at the end of the chapter.

The pedestrian analyses conducted for the 2022 With Action condition accounted for the project-generated pedestrian volumes and physical changes to the pedestrian environment described above. As presented in **Tables 13-42** to **13-44**, all sidewalk, corner reservoir, and crosswalk locations would continue to operate at acceptable levels (within mid-LOS D, with a maximum of 8.5 PMF in sidewalk platoon flows or a minimum of 19.5 SFP for corners and crosswalks) or incur degradations that, when compared to the No Action condition, do not exceed the *CEQR Technical Manual* sliding scale impact thresholds (see **Tables 13-11** and **13-12**), except for the four analysis locations listed below, where significant adverse pedestrian impacts have been identified. Measures that can be implemented to mitigate these significant adverse pedestrian impacts are discussed in Chapter 21, "Mitigation Measures."

- The west crosswalk of Essex Street and Delancey Street, which would deteriorate to beyond mid-LOS D (18.4 SFP) from a no action below mid-LOS D (22.4 SFP) during the midday peak 15-minute period.
- The east crosswalk of Essex Street and Delancey Street, which would deteriorate to beyond mid-LOS D (18.5 SFP) from a no action LOS B (40.5 SFP) during the Saturday peak 15-minute period.
- The west sidewalk of Essex Street between Delancey Street and Broome Street, which would deteriorate to LOS E (11.1 PMF) from a no action below mid-LOS D (6.3 PMF) and to beyond mid-LOS D (9.2 PMF) from a no action LOS C (4.5 PMF) during the AM and midday peak 15-minute periods, respectively.
- The east sidewalk of Essex Street between Delancey Street and Rivington Street, which would deteriorate to beyond mid-LOS D (8.8 PMF) from a no action LOS C (5.3 PMF) during the Saturday peak 15-minute period.

Detailed descriptions of the 2022 With Action pedestrian levels of service for sidewalk, corners and crosswalks are provided in **Tables 13-45** to **13-47**.

NOTES:

* The locations of **parking and loading entries** are only illustrative. The actual locations will be within the identified CURB CUT ZONES but not necessarily in the exact locations shown. CURB CUT ZONES indicate where curb cuts for loading and parking are permissible, but they are not intended to represent one continuous curb cut.

** The number of **loading berths** is illustrative only. The actual number of loading berths will be based on the amount of commercial floor area at each site, per the requirements of ZR36-62.

FOR ILLUSTRATIVE PURPOSES ONLY

Proposed Sidewalk Configurations

Figure 13-17

Table 13-42
Pedestrian Sidewalk Level of Service Summary Comparison
No Action vs. With Action Conditions (2022)

	2022 No Action				2022 With Action			
	Weekday Peak Hours			Saturday	Weekday Peak Hours			Saturday
	AM	Midday	PM	Peak Hour	AM	Midday	PM	Peak Hour
Overall LOS A/B/C	56	58	58	58	56	55	55	55
Overall LOS D	2	0	0	0	1	3	3	3
Overall LOS E	0	0	0	0	1	0	0	0
Overall LOS F	0	0	0	0	0	0	0	0
Number of analysis locations with significant impacts	-	-	-	-	1	1	0	1

Note: Includes 58 sidewalk analysis locations.

Table 13-43
Pedestrian Corner Level of Service Summary Comparison
No Action vs. With Action Conditions (2022)

	2022 No Action				2022 With Action			
	Weekday Peak Hours			Saturday	Weekday Peak Hours			Saturday
	AM	Midday	PM	Peak Hour	AM	Midday	PM	Peak Hour
Overall LOS A/B/C	52	52	52	52	52	52	52	52
Overall LOS D	0	0	0	0	0	0	0	0
Overall LOS E	0	0	0	0	0	0	0	0
Overall LOS F	0	0	0	0	0	0	0	0
Number of analysis locations with significant impacts	-	-	-	-	0	0	0	0

Note: Includes 52 corner analysis locations.

Table 13-44
Pedestrian Crosswalk Level of Service Summary Comparison
No Action vs. With Action Conditions (2022)

	2022 No Action				2022 With Action			
	Weekday Peak Hours			Saturday	Weekday Peak Hours			Saturday
	AM	Midday	PM	Peak Hour	AM	Midday	PM	Peak Hour
Overall LOS A/B/C	29	28	29	29	29	27	27	27
Overall LOS D	0	1	0	0	0	2	2	2
Overall LOS E	0	1	0	1	0	1	0	1
Overall LOS F	1	0	1	0	1	0	1	0
Number of analysis locations with significant impacts	-	-	-	-	0	1	0	1

Note: Includes 30 crosswalk analysis locations.

Table 13-45
2022 With Action Condition Sidewalk Analysis

Intersection No.	Location	Sidewalk	Effective Width (ft)	15 Minute Two-Way Volume	Platoon Flow	
					PMF	LOS
AM Peak Period						
1	Essex Street between Stanton Street and Rivington Street	East	6.2	228	2.45	B
2	Essex Street between Rivington Street and Stanton Street	East	6.2	260	2.80	B
	Essex Street between Rivington Street and Delancey Street	East	5.0	582	7.76	D
3	Delancey Street between Allen Street and Orchard Street	South	13.0	100	0.51	B
4	Delancey Street between Orchard Street and Ludlow Street	South	15.0	113	0.50	A
5	Delancey Street between Ludlow Street and Essex Street	South	15.0	268	1.19	B
6	Delancey Street between Essex Street and Norfolk Street	North	11.0	413	2.50	B
		South	15.0	162	0.72	B
	Essex Street between Delancey Street and Rivington Street	East	4.0	314	5.23	C
	Essex Street between Delancey Street and Broome Street	East	4.0	210	3.50	C
		West	2.5	415	11.07	E+
7	Delancey Street between Norfolk Street and Essex Street	North	11.0	424	2.57	B
		South	13.8	136	0.66	B
	Delancey Street between Norfolk Street and Suffolk Street	North	10.0	742	4.95	C
		South	9.0	106	0.79	B
	Norfolk Street between Delancey Street and Broome Street	West	7.0	86	0.82	B
8	Delancey Street between Suffolk Street and Norfolk Street	South	8.0	105	0.88	B
	Delancey Street between Suffolk Street and Clinton Street	North	10.0	542	3.61	C
		South	5.0	92	1.23	B
	Suffolk Street between Delancey Street and Broome Street	East	10.0	54	0.36	A
		West	7.0	46	0.44	A
9	Delancey Street between Clinton Street and Suffolk Street	South	6.0	76	0.84	B
	Clinton Street between Delancey Street and Broome Street	East	7.0	48	0.46	A
		West	8.0	66	0.55	B
10	Broome Street between Allen Street and Orchard Street	North	4.0	62	1.03	B
		South	5.0	50	0.67	B
11	Broome Street between Ludlow Street and Essex Street	North	6.0	83	0.92	B
	Broome Street between Ludlow Street and Orchard Street	North	3.0	100	2.22	B
		South	4.0	62	1.03	B
12	Broome Street between Essex Street and Ludlow Street	North	6.0	89	0.99	B
	Broome Street between Essex Street and Norfolk Street	North	5.0	176	2.35	B
	Essex Street between Broome Street and Delancey Street	East	8.5	340	2.67	B
		West	6.0	291	3.23	C
	Essex Street between Broome Street and Grand Street	East	10.0	201	1.34	B
		West	7.0	229	2.18	B
13	Broome Street between Norfolk Street and Essex Street	North	6.0	129	1.43	B
	Broome Street between Norfolk Street and Suffolk Street	North	5.0	105	1.40	B
		South	5.0	71	0.95	B
	Norfolk Street between Broome Street and Delancey Street	West	10.0	60	0.40	A

Table 13-45 (cont'd)
2022 With Action Condition Sidewalk Analysis

Intersection No.	Location	Sidewalk	Effective Width (ft)	15 Minute Two-Way Volume	Platoon Flow	
					PMF	LOS
AM Peak Period (cont'd)						
14	Broome Street between Suffolk Street and Norfolk Street	North	6.0	98	1.09	B
	Broome Street between Suffolk Street and Clinton Street	North	8.0	74	0.62	B
	Suffolk Street between Broome Street and Delancey Street	East	6.0	49	0.54	B
		West	7.0	40	0.38	A
	Suffolk Street between Broome Street and Grand Street	East	7.0	91	0.87	B
15	Broome Street between Clinton Street and Suffolk Street	North	7.0	63	0.60	B
	Broome Street between Clinton Street and Ridge Street	North	8.0	63	0.53	B
	Clinton Street between Broome Street and Delancey Street	East	8.0	34	0.28	A
		West	8.0	57	0.48	A
	Clinton Street between Broome Street and Grand Street	West	8.0	72	0.60	B
16	Grand Street between Allen Street and Orchard Street	North	8.0	217	1.81	B
17	Grand Street between Ludlow Street and Orchard Street	North	7.8	243	2.08	B
	Grand Street between Ludlow Street and Essex Street	North	8.0	223	1.86	B
18	Grand Street between Essex Street and Norfolk Street	North	12.0	184	1.02	B
19	Grand Street between Norfolk Street and Suffolk Street	North	12.0	165	0.92	B
20	Grand Street between Suffolk Street and Clinton Street	North	10.0	125	0.83	B
	Suffolk Street between Grand Street and Broome Street	East	5.0	57	0.76	B
21	Grand Street between Clinton Street and Suffolk Street	North	4.8	105	1.46	B
	Clinton Street between Grand Street and Broome Street	West	8.0	58	0.48	A
Midday Peak Period						
1	Essex Street between Stanton Street and Rivington Street	East	6.2	283	3.04	C
2	Essex Street between Rivington Street and Stanton Street	East	6.2	274	2.95	B
	Essex Street between Rivington Street and Delancey Street	East	5.0	460	6.13	D
3	Delancey Street between Allen Street and Orchard Street	South	13.0	236	1.21	B
4	Delancey Street between Orchard Street and Ludlow Street	South	15.0	181	0.80	B
5	Delancey Street between Ludlow Street and Essex Street	South	15.0	285	1.27	B
6	Delancey Street between Essex Street and Norfolk Street	North	11.0	504	3.05	C
		South	15.0	210	0.93	B
	Essex Street between Delancey Street and Rivington Street	East	4.0	453	7.55	D
	Essex Street between Delancey Street and Broome Street	East	4.0	348	5.80	C
		West	2.5	343	9.15	D+

Table 13-45 (cont'd)
2022 With Action Condition Sidewalk Analysis

Intersection No.	Location	Sidewalk	Effective Width (ft)	15 Minute Two-Way Volume	Platoon Flow	
					PMF	LOS
Midday Peak Period (cont'd)						
7	Delancey Street between Norfolk Street and Essex Street	North	11.0	515	3.12	C
		South	13.8	175	0.85	B
	Delancey Street between Norfolk Street and Suffolk Street	North	10.0	532	3.55	C
		South	9.0	141	1.04	B
	Norfolk Street between Delancey Street and Broome Street	West	7.0	116	1.10	B
8	Delancey Street between Suffolk Street and Norfolk Street	South	8.0	137	1.14	B
	Delancey Street between Suffolk Street and Clinton Street	North	10.0	449	2.99	B
		South	5.0	136	1.81	B
	Suffolk Street between Delancey Street and Broome Street	East	10.0	66	0.44	A
		West	7.0	51	0.49	A
9	Delancey Street between Clinton Street and Suffolk Street	South	6.0	108	1.20	B
	Clinton Street between Delancey Street and Broome Street	East	7.0	93	0.89	B
		West	8.0	76	0.63	B
10	Broome Street between Allen Street and Orchard Street	North	4.0	124	2.07	B
		South	5.0	82	1.09	B
11	Broome Street between Ludlow Street and Essex Street	North	6.0	123	1.37	B
	Broome Street between Ludlow Street and Orchard Street	North	3.0	76	1.69	B
		South	4.0	102	1.70	B
12	Broome Street between Essex Street and Ludlow Street	North	6.0	136	1.51	B
	Broome Street between Essex Street and Norfolk Street	North	5.0	255	3.40	C
	Essex Street between Broome Street and Delancey Street	East	8.5	420	3.29	C
		West	6.0	307	3.41	C
	Essex Street between Broome Street and Grand Street	East	10.0	298	1.99	B
		West	7.0	286	2.72	B
13	Broome Street between Norfolk Street and Essex Street	North	6.0	187	2.08	B
	Broome Street between Norfolk Street and Suffolk Street	North	5.0	173	2.31	B
		South	5.0	78	1.04	B
	Norfolk Street between Broome Street and Delancey Street	West	10.0	82	0.55	B
14	Broome Street between Suffolk Street and Norfolk Street	North	6.0	162	1.80	B
	Broome Street between Suffolk Street and Clinton Street	North	8.0	149	1.24	B
	Suffolk Street between Broome Street and Delancey Street	East	6.0	57	0.63	B
		West	7.0	41	0.39	A
	Suffolk Street between Broome Street and Grand Street	East	7.0	82	0.78	B
15	Broome Street between Clinton Street and Suffolk Street	North	7.0	129	1.23	B
	Broome Street between Clinton Street and Ridge Street	North	8.0	139	1.16	B
	Clinton Street between Broome Street and Delancey Street	East	8.0	41	0.34	A
		West	8.0	68	0.57	B
	Clinton Street between Broome Street and Grand Street	West	8.0	84	0.70	B
16	Grand Street between Allen Street and Orchard Street	North	8.0	217	1.81	B

Table 13-45 (cont'd)
2022 With Action Condition Sidewalk Analysis

Intersection No.	Location	Sidewalk	Effective Width (ft)	15 Minute Two-Way Volume	Platoon Flow	
					PMF	LOS
Midday Peak Period (cont'd)						
17	Grand Street between Ludlow Street and Orchard Street	North	7.8	193	1.65	B
	Grand Street between Ludlow Street and Essex Street	North	8.0	193	1.61	B
18	Grand Street between Essex Street and Norfolk Street	North	12.0	208	1.16	B
19	Grand Street between Norfolk Street and Suffolk Street	North	12.0	199	1.11	B
20	Grand Street between Suffolk Street and Clinton Street	North	10.0	152	1.01	B
	Suffolk Street between Grand Street and Broome Street	East	5.0	43	0.57	B
21	Grand Street between Clinton Street and Suffolk Street	North	4.8	125	1.74	B
	Clinton Street between Grand Street and Broome Street	West	8.0	66	0.55	B
PM Peak Period						
1	Essex Street between Stanton Street and Rivington Street	East	6.2	280	3.01	C
2	Essex Street between Rivington Street and Stanton Street	East	6.2	352	3.78	C
	Essex Street between Rivington Street and Delancey Street	East	5.0	494	6.59	D
3	Delancey Street between Allen Street and Orchard Street	South	13.0	281	1.44	B
4	Delancey Street between Orchard Street and Ludlow Street	South	15.0	326	1.45	B
5	Delancey Street between Ludlow Street and Essex Street	South	15.0	290	1.29	B
6	Delancey Street between Essex Street and Norfolk Street	North	11.0	586	3.55	C
		South	15.0	283	1.26	B
	Essex Street between Delancey Street and Rivington Street	East	4.0	450	7.50	D
	Essex Street between Delancey Street and Broome Street	East	4.0	299	4.98	C
		West	2.5	284	7.57	D
7	Delancey Street between Norfolk Street and Essex Street	North	11.0	605	3.67	C
		South	13.8	232	1.12	B
	Delancey Street between Norfolk Street and Suffolk Street	North	10.0	819	5.46	C
		South	9.0	168	1.24	B
	Norfolk Street between Delancey Street and Broome Street	West	7.0	131	1.25	B
8	Delancey Street between Suffolk Street and Norfolk Street	South	8.0	167	1.39	B
	Delancey Street between Suffolk Street and Clinton Street	North	10.0	555	3.70	C
		South	5.0	177	2.36	B
	Suffolk Street between Delancey Street and Broome Street	East	10.0	83	0.55	B
		West	7.0	63	0.60	B
9	Delancey Street between Clinton Street and Suffolk Street	South	6.0	145	1.61	B
	Clinton Street between Delancey Street and Broome Street	East	7.0	98	0.93	B
		West	8.0	116	0.97	B
10	Broome Street between Allen Street and Orchard Street	North	4.0	98	1.63	B
		South	5.0	87	1.16	B

Table 13-45 (cont'd)
2022 With Action Condition Sidewalk Analysis

Intersection No.	Location	Sidewalk	Effective Width (ft)	15 Minute Two-Way Volume	Platoon Flow	
PM Peak Period (cont'd)						
11	Broome Street between Ludlow Street and Essex Street	North	6.0	148	1.64	B
	Broome Street between Ludlow Street and Orchard Street	North	3.0	90	2.00	B
		South	4.0	108	1.80	B
12	Broome Street between Essex Street and Ludlow Street	North	6.0	162	1.80	B
	Broome Street between Essex Street and Norfolk Street	North	5.0	297	3.96	C
	Essex Street between Broome Street and Delancey Street	East	8.5	473	3.71	C
		West	6.0	212	2.36	B
	Essex Street between Broome Street and Grand Street	East	10.0	259	1.73	B
		West	7.0	169	1.61	B
13	Broome Street between Norfolk Street and Essex Street	North	6.0	208	2.31	B
	Broome Street between Norfolk Street and Suffolk Street	North	5.0	173	2.31	B
		South	5.0	92	1.23	B
	Norfolk Street between Broome Street and Delancey Street	West	10.0	83	0.55	B
14	Broome Street between Suffolk Street and Norfolk Street	North	6.0	160	1.78	B
	Broome Street between Suffolk Street and Clinton Street	North	8.0	148	1.23	B
	Suffolk Street between Broome Street and Delancey Street	East	6.0	72	0.80	B
		West	7.0	53	0.50	A
	Suffolk Street between Broome Street and Grand Street	East	7.0	89	0.85	B
15	Broome Street between Clinton Street and Suffolk Street	North	7.0	126	1.20	B
	Broome Street between Clinton Street and Ridge Street	North	8.0	109	0.91	B
	Clinton Street between Broome Street and Delancey Street	East	8.0	67	0.56	B
		West	8.0	102	0.85	B
	Clinton Street between Broome Street and Grand Street	West	8.0	94	0.78	B
16	Grand Street between Allen Street and Orchard Street	North	8.0	284	2.37	B
17	Grand Street between Ludlow Street and Orchard Street	North	7.8	260	2.22	B
	Grand Street between Ludlow Street and Essex Street	North	8.0	219	1.83	B
18	Grand Street between Essex Street and Norfolk Street	North	12.0	196	1.09	B
19	Grand Street between Norfolk Street and Suffolk Street	North	12.0	204	1.13	B
20	Grand Street between Suffolk Street and Clinton Street	North	10.0	185	1.23	B
	Suffolk Street between Grand Street and Broome Street	East	5.0	40	0.53	B
21	Grand Street between Clinton Street and Suffolk Street	North	4.8	153	2.13	B
	Clinton Street between Grand Street and Broome Street	West	8.0	74	0.62	B

Table 13-45 (cont'd)
2022 With Action Condition Sidewalk Analysis

Intersection No.	Location	Sidewalk	Effective Width (ft)	15 Minute Two-Way Volume	Platoon Flow	
Saturday Peak Period						
1	Essex Street between Stanton Street and Rivington Street	East	6.2	292	3.14	C
2	Essex Street between Rivington Street and Stanton Street	East	6.2	370	3.98	C
	Essex Street between Rivington Street and Delancey Street	East	5.0	511	6.81	D
3	Delancey Street between Allen Street and Orchard Street	South	13.0	304	1.56	B
4	Delancey Street between Orchard Street and Ludlow Street	South	15.0	226	1.00	B
5	Delancey Street between Ludlow Street and Essex Street	South	15.0	286	1.27	B
6	Delancey Street between Essex Street and Norfolk Street	North	11.0	529	3.21	C
		South	15.0	290	1.29	B
	Essex Street between Delancey Street and Rivington Street	East	4.0	528	8.80	D+
	Essex Street between Delancey Street and Broome Street	East	4.0	360	6.00	C
		West	2.5	278	7.41	D
7	Delancey Street between Norfolk Street and Essex Street	North	11.0	544	3.30	C
		South	13.8	238	1.15	B
	Delancey Street between Norfolk Street and Suffolk Street	North	10.0	678	4.52	C
		South	9.0	194	1.44	B
	Norfolk Street between Delancey Street and Broome Street	West	7.0	140	1.33	B
8	Delancey Street between Suffolk Street and Norfolk Street	South	8.0	192	1.60	B
	Delancey Street between Suffolk Street and Clinton Street	North	10.0	523	3.49	C
		South	5.0	154	2.05	B
	Suffolk Street between Delancey Street and Broome Street	East	10.0	94	0.63	B
		West	7.0	64	0.61	B
9	Delancey Street between Clinton Street and Suffolk Street	South	6.0	116	1.29	B
	Clinton Street between Delancey Street and Broome Street	East	7.0	70	0.67	B
		West	8.0	96	0.80	B
10	Broome Street between Allen Street and Orchard Street	North	4.0	163	2.72	B
		South	5.0	133	1.77	B
11	Broome Street between Ludlow Street and Essex Street	North	6.0	150	1.67	B
	Broome Street between Ludlow Street and Orchard Street	North	3.0	158	3.51	C
		South	4.0	176	2.93	B
12	Broome Street between Essex Street and Ludlow Street	North	6.0	167	1.86	B
	Broome Street between Essex Street and Norfolk Street	North	5.0	313	4.17	C
	Essex Street between Broome Street and Delancey Street	East	8.5	463	3.63	C
		West	6.0	228	2.53	B
	Essex Street between Broome Street and Grand Street	East	10.0	247	1.65	B
		West	7.0	180	1.71	B
13	Broome Street between Norfolk Street and Essex Street	North	6.0	217	2.41	B
	Broome Street between Norfolk Street and Suffolk Street	North	5.0	199	2.65	B
		South	5.0	95	1.27	B
	Norfolk Street between Broome Street and Delancey Street	West	10.0	91	0.61	B

Table 13-45 (cont'd)
2022 With Action Condition Sidewalk Analysis

Intersection No.	Location	Sidewalk	Effective Width (ft)	15 Minute Two-Way Volume	Platoon Flow	
Saturday Peak Period (cont'd)						
14	Broome Street between Suffolk Street and Norfolk Street	North	6.0	184	2.04	B
	Broome Street between Suffolk Street and Clinton Street	North	8.0	143	1.19	B
	Suffolk Street between Broome Street and Delancey Street	East	6.0	75	0.83	B
		West	7.0	58	0.55	B
	Suffolk Street between Broome Street and Grand Street	East	7.0	91	0.87	B
15	Broome Street between Clinton Street and Suffolk Street	North	7.0	115	1.10	B
	Broome Street between Clinton Street and Ridge Street	North	8.0	111	0.93	B
	Clinton Street between Broome Street and Delancey Street	East	8.0	36	0.30	A
		West	8.0	83	0.69	B
	Clinton Street between Broome Street and Grand Street	West	8.0	81	0.68	B
16	Grand Street between Allen Street and Orchard Street	North	8.0	264	2.20	B
17	Grand Street between Ludlow Street and Orchard Street	North	7.8	245	2.09	B
	Grand Street between Ludlow Street and Essex Street	North	8.0	189	1.58	B
18	Grand Street between Essex Street and Norfolk Street	North	12.0	195	1.08	B
19	Grand Street between Norfolk Street and Suffolk Street	North	12.0	195	1.08	B
20	Grand Street between Suffolk Street and Clinton Street	North	10.0	173	1.15	B
	Suffolk Street between Grand Street and Broome Street	East	5.0	40	0.53	B
21	Grand Street between Clinton Street and Suffolk Street	North	4.8	140	1.94	B
	Clinton Street between Grand Street and Broome Street	West	8.0	61	0.51	B

Note: PMF = pedestrians per minute per foot
+ Denotes a significant adverse pedestrian impact

Table 13-46
2022 With Action Condition Corner Analysis

Intersection No.	Location	Corner	AM Peak Period		Midday Peak Period		PM Peak Period		Saturday Peak Period	
			SFP	LOS	SFP	LOS	SFP	LOS	SFP	LOS
1	Stanton Street and Essex Street	Southeast	81.9	A	80.2	A	51.6	B	55.0	B
		Southwest	124.3	A	116.4	A	103.0	A	61.4	A
2	Rivington Street and Essex Street	Northeast	63.2	A	65.5	A	46.8	B	38.1	C
		Southeast	30.2	C	41.1	B	25.8	C	30.5	C
		Southwest	96.4	A	68.4	A	39.8	C	46.1	B
3	Delancey Street and Allen Street	Southeast	319.7	A	203.7	A	154.0	A	132.7	A
		Southwest	308.3	A	152.4	A	154.6	A	129.4	A
4	Delancey Street and Orchard Street	Southeast	401.6	A	147.3	A	158.1	A	99.7	A
		Southwest	419.7	A	146.7	A	133.1	A	115.8	A
5	Delancey Street and Ludlow Street	Northeast	153.9	A	97.8	A	86.7	A	84.3	A
		Southeast	218.9	A	125.4	A	163.8	A	143.0	A
		Southwest	323.8	A	125.1	A	182.3	A	137.1	A
		Northwest	197.3	A	109.2	A	99.7	A	88.4	A
6	Delancey Street and Essex Street	Northeast	81.0	A	56.0	B	56.5	B	50.2	B
		Southeast	140.0	A	79.3	A	81.9	A	65.0	A
		Southwest	120.7	A	79.7	A	96.4	A	91.4	A
		Northwest	74.2	A	51.9	B	57.9	B	62.2	A
7	Delancey Street and Norfolk Street	Northeast	141.4	A	109.8	A	83.9	A	96.0	A
		Southeast	274.1	A	228.9	A	172.0	A	167.9	A
		Southwest	324.8	A	227.4	A	181.7	A	168.0	A
		Northwest	132.4	A	99.7	A	78.0	A	84.3	A
8	Delancey Street and Suffolk Street	Northeast	114.1	A	144.7	A	104.6	A	123.1	A
		Southeast	273.2	A	190.8	A	151.5	A	135.8	A
		Southwest	228.0	A	155.0	A	143.7	A	122.0	A
		Northwest	51.7	B	64.8	A	47.5	B	56.1	B
9	Delancey Street and Clinton Street	Southwest	185.7	A	135.3	A	106.9	A	129.7	A
		Northwest	45.0	B	74.0	A	42.8	B	62.5	A
12	Broome Street and Essex Street	Northeast	90.5	A	67.4	A	62.5	A	57.4	B
		Southeast	238.6	A	178.0	A	186.3	A	158.4	A
		Southwest	53.4	B	48.1	B	68.0	A	58.3	B
		Northwest	70.6	A	66.2	A	72.8	A	66.7	A
13	Broome Street and Norfolk Street	Northeast	329.5	A	210.0	A	209.0	A	196.3	A
		Southeast	237.5	A	186.1	A	157.1	A	152.4	A
		Southwest	822.8	A	635.1	A	603.6	A	533.9	A
		Northwest	264.0	A	172.8	A	161.9	A	142.9	A
16	Grand Street and Allen Street	Northeast	68.3	A	95.5	A	82.7	A	65.4	A
		Southeast	66.1	A	73.7	A	61.4	A	45.5	B
17	Grand Street and Orchard Street	Northeast	80.9	A	113.5	A	75.2	A	89.0	A
		Northwest	76.8	A	96.0	A	70.6	A	74.9	A
18	Grand Street and Ludlow Street	Northeast	204.3	A	192.3	A	181.0	A	164.5	A
		Southeast	107.7	A	110.4	A	88.4	A	79.0	A
		Northwest	98.8	A	137.4	A	106.6	A	89.9	A
19	Grand Street and Essex Street	Northeast	214.8	A	185.2	A	162.6	A	193.7	A
		Southeast	191.4	A	155.7	A	169.5	A	176.1	A
		Southwest	113.7	A	81.5	A	92.1	A	81.8	A
		Northwest	80.8	A	76.0	A	88.5	A	98.5	A
20	Grand Street and Norfolk Street	Northeast	580.4	A	462.4	A	443.3	A	423.8	A
		Northwest	1397.8	A	1111.6	A	1040.8	A	1006.1	A
21	Grand Street and Suffolk Street	Northeast	260.1	A	227.1	A	184.6	A	178.6	A
		Northwest	216.9	A	180.9	A	149.3	A	157.8	A
22	Grand Street and Clinton Street	Southwest	576.9	A	407.6	A	404.1	A	437.3	A
		Northwest	233.4	A	195.7	A	179.1	A	179.3	A

Note: SFP = square feet per pedestrian

Table 13-47
2022 With Action Condition Crosswalk Analysis

Intersection No.	Location	Crosswalk	Street Width (feet)	Crosswalk Width (feet)	Conditions with conflicting vehicles											
					AM			Midday			PM			Saturday		
					2-way Volume	SFP	LOS	2-way Volume	SFP	LOS	2-way Volume	SFP	LOS	2-way Volume	SFP	LOS
2	Rivington Street and Essex Street	East	24.0	11.0	341	27.7	C	291	35.2	C	349	28.6	C	357	28.2	C
3	Delancey Street and Allen Street	South[1]	44.0	20.0	95	79.2	A	168	70.5	A	193	64.7	A	238	53.0	B
4	Delancey Street and Orchard Street	South	25.0	22.0	96	271.2	A	243	106.7	A	251	101.4	A	292	86.4	A
5	Delancey Street and Ludlow Street	North	25.0	20.0	207	99.8	A	332	60.3	A	390	51.1	B	372	52.9	B
		South	26.0	22.0	121	209.1	A	289	85.0	A	197	127.9	A	247	99.1	A
6	Delancey Street and Essex Street	North	54.0	19.0	331	59.5	B	419	46.5	B	404	46.4	B	397	47.1	B
		East	110.0	14.0	170	37.3	C	305	20.1	D	269	20.0	D	327	18.5	D+
		South	54.0	19.0	134	160.2	A	227	92.5	A	229	93.3	A	289	72.2	A
		West	110.0	14.0	227	30.1	C	359	18.4	D+	225	30.7	C	223	30.9	C
7	Delancey Street and Norfolk Street	North	26.0	20.0	225	79.8	A	348	49.8	B	423	40.4	B	387	47.9	B
		South	24.0	10.0	95	104.6	A	147	66.5	A	186	52.3	B	196	49.0	B
		West	105.0	14.0	90	58.0	B	111	46.8	B	140	37.0	C	148	34.8	C
8	Delancey Street and Suffolk Street	North	26.0	20.0	596	33.3	C	447	48.1	B	595	34.7	C	478	45.3	B
		East[1]	56.0	20.0	60	211.3	A	77	141.5	A	118	92.0	A	126	85.0	A
		South	23.0	14.0	83	151.7	A	128	103.7	A	138	98.4	A	153	87.9	A
		West[1]	51.0	18.0	86	129.7	A	119	81.1	A	129	71.7	A	158	57.9	B
9	Delancey Street and Clinton Street	North	24.0	16.0	373	6.4	F	204	13.3	E	349	6.8	F	222	12.1	E
		South	26.0	17.0	72	297.7	A	108	198.4	A	123	175.1	A	96	224.3	A
		West (North of Median)	68.0	23.0	172	48.2	B	185	44.6	B	240	33.8	C	188	43.6	B
		West (South of Median)	68.0	23.0	127	65.1	A	163	50.4	B	217	37.6	C	192	42.7	B
12	Broome Street and Essex Street	North	54.0	11.0	95	74.9	A	157	44.4	B	173	40.0	C	217	31.4	C
		East	30.0	11.0	243	45.3	B	307	34.7	C	307	34.9	C	321	33.2	C
		South	54.0	15.0	79	122.9	A	122	79.7	A	104	93.8	A	132	73.0	A
13	Broome Street and Norfolk Street	North	25.0	12.0	113	85.3	A	179	53.9	B	181	48.9	B	201	39.3	C
		South	24.0	12.0	61	205.4	A	75	167.8	A	91	137.7	A	96	129.2	A
17	Grand Street and Orchard Street	North	24.0	13.0	244	34.3	C	162	54.7	B	262	32.4	C	225	37.2	C
18	Grand Street and Ludlow Street	North	24.0	15.0	181	58.7	B	169	64.0	A	190	56.4	B	236	43.9	B
19	Grand Street and Essex Street	North	54.0	15.0	132	81.4	A	170	61.4	A	180	52.2	B	136	79.7	A
20	Grand Street and Norfolk Street	North	24.0	14.0	140	35.5	C	188	25.6	C	199	23.6	D	202	20.8	D
21	Grand Street and Suffolk Street	North	25.0	13.0	155	83.0	A	176	71.8	A	211	58.6	B	206	60.3	A

Notes: SFP = square feet per pedestrian
[1] Critical width (north/east or south/west of pedestrian refuge median) used for analysis street width
+ Denotes a significant adverse pedestrian impact

I. VEHICULAR AND PEDESTRIAN SAFETY

Accident data for the study area intersections were obtained from NYSDOT for the most recent three-year period available, which is from February 29, 2008 through February 28, 2011. Although there subsequently have been accidents involving pedestrians at the study area intersections, the most recent three-year accident records released by NYSDOT only covers this period.

The data obtained quantify the total number of reportable accidents (involving fatality, injury, or more than $1,000 in property damage), fatalities, and injuries during the study period, as well as a yearly breakdown of pedestrian- and bicycle-related accidents at each location. According to the *CEQR Technical Manual,* a high pedestrian accident location is one where there were five or more pedestrian/bicyclist-related accidents or 48 or more reportable and non-reportable accidents in any consecutive 12 months of the most recent three-year period for which data are available.

During this period, a total of 587 reportable and non-reportable accidents, 3 fatalities, 475 injuries, and 175 pedestrian/bicyclist-related accidents occurred at the study area intersections. A rolling total of accident data identifies ten study area intersections as high pedestrian accident locations in the 2008 to 2011 period. These intersections are Allen Street at Delancey Street, Clinton Street at Delancey Street, Essex Street at Delancey Street, Norfolk Street at Delancey Street, Suffolk Street at Delancey Street, Avenue A at Houston Street, Bowery at Houston Street, Allen Street at Grand Street, Clinton Street at Grand Street and Essex Street at Grand Street. **Table 13-48** depicts total accident characteristics by intersection during the study period, as well as, a breakdown of pedestrian and bicycle accidents by year and location.

Table 13-49 shows a detailed description of each pedestrian/bicyclist-related accident at the ten intersections listed above during the three year period.

ALLEN STREET AND DELANCEY STREET

During the three year period mentioned above, a total of 71 reportable and non-reportable accidents, 48 injuries, and 13 pedestrian/bicyclist-related accidents occurred at the Allen Street and Delancey Street intersection. No prevailing trends with regard to geometric deficiencies were identified as the primary causes of recorded accidents at this intersection. With respect to geometric deficiencies that could potentially cause safety hazards, the intersection of Allen Street and Delancey Street is signalized and provides four high visibility crosswalks. Signs warning turning vehicles to yield to pedestrians in the crosswalk are present for northbound vehicles. In addition, there are countdown timers on all crosswalks. As discussed earlier, NYCDOT is currently developing a Delancey Street corridor plan to improve traffic and pedestrian safety. Once this plan is finalized and implemented, it is expected that the pedestrian safety conditions at this intersection could improve. Details related to this plan would be included in the FGEIS should the plan be adopted prior to the release of the FGEIS.

Table 13-48
Accident Summary

Intersection		Study Period						Accidents by Year							
North-South Roadway	East-West Roadway	All Accidents by Year				Total Fatalities	Total Injuries	Pedestrian				Bicycle			
		2008	2009	2010	2011			2008	2009	2010	2011	2008	2009	2010	2011
Clinton Street	Broome Street	2	4	1	0		3		1				1	1	
Essex Street	Broome Street	1	3	4	0		7	1	1				1	1	
Ludlow Street	Broome Street	2	2		0		1						1		
Norfolk Street	Broome Street	2	2	2	0		6	1	1	1			1		
Suffolk Street	Broome Street	2	1	1	0		4	1						1	
Allen Street	**Delancey Street**	32	23	14	2		48	2				6	4	1	
Clinton Street	**Delancey Street**	22	24	29	1		77		2			3	2	6	
Essex Street	**Delancey Street**	30	23	26	1	1	79	12	6	1		6	2	3	
Ludlow Street	Delancey Street	10	4	6	4		13	1	1	2	1	1		1	
Norfolk Street	**Delancey Street**	5	7	17	2		21		1	4	1	1		2	
Orchard Street	Delancey Street	6	15	7	3		26	1	1			1	3	2	
Suffolk Street	**Delancey Street**	8	14	15	2		54		2			1	4	2	
First Avenue	E. Houston Street	11	1	2	0		9	2				1	1	1	
Avenue A	**E. Houston Street**	7	3	5	0	1	10	2		3		1	1	1	
Bowery	**E. Houston Street**	16	10	14	0		31			5		5			
Allen Street	**Grand Street**	6	5	7	0		18	1	4	2				1	
Clinton Street	**Grand Street**	10	11	4	1	1	16	2	2	2	1	1	2		
E. Broadway	Grand Street	0	4	2	1		5		2						
Essex Street	**Grand Street**	5	8	6	0		16		1	2		1	4		
Ludlow Street	Grand Street	1	1	1	1		0								
Norfolk Street	Grand Street	2	1	1	0		4	2						1	
Suffolk Street	Grand Street	2	1	2	0		3					1			
Essex Street	Rivington Street	9	6	6	0		9	2		2				2	
Ludlow Street	Rivington Street	3	4	1	0		1	1							
Norfolk Street	Rivington Street	1	2	1	0		3	1	1					1	
Essex Street	Stanton Street	3	5	0	1		5		1		1		2		
Ludlow Street	Stanton Street	2	3	2	0		2	1						1	
Norfolk Street	Stanton Street	3	2	0	0		4	1	1			1	1		

Note: **Bold** intersections are high pedestrian accident locations.
Source: NYSDOT February 29, 2008 and February 28, 2011 accident data.

Table 13-49
Vehicle and Pedestrian Accident Details

Intersection	Year	Date	Time	Accident Class		Action of Vehicle	Action of Pedestrian	Cause of Accident			
				Injured	Killed			Left / Right Turns	Pedestrian Error/ Confusion	Driver Inattention	Other
Allen Street @ Delancey Street	2008	4/23	18:15 PM	X		Going straight – Northeast	Crossing against signal			X	
		7/14	14:20 PM	X		Going straight – West	Crossing against signal		X		
		8/1	15:08 PM	X		Unknown – East	Unknown				Unknown
		8/19	9:40 AM	X		Making left turn – East	Along highway with traffic	X	X		
		8/21	12:45 PM	X		Making left turn – South	Unknown	X			
		8/26	10:00 AM	X		Going straight – West	Along highway with traffic				Passing or lane usage improperly
		9/9	20:30 PM	X		Making left turn – Northeast	Unknown	X			
		12/7	15;20 PM	X		Going straight – North	Unknown				Unknown
	2009	5/2	2:35 AM	X		Making right turn – North	Crossing with signal	X		X	Failure to yield R.O.W.
		5/19	18:00 PM	X		Making left turn – South	Crossing against signal	X			
		9/8	14:30 PM	X		Going straight – West	Along highway with traffic				Unknown
		12/17	18:56 PM	X		Unknown	Crossing with signal				Unknown
	2010	7/15	17:30 PM	X		Unknown	Along highway with traffic				Unknown
Clinton Street @ Delancey Street	2008	7/30	9:00 AM	X		Making left turn – West	Along highway with traffic	X			
		8/12	3:30 AM	X		Going straight – East	Crossing with signal				Unknown
		8/18	15:15 PM	X		Going straight – East	Unknown				Unknown
	2009	4/4	17:55 PM	X		Going straight – West	Crossing against signal		X		
		9/28	10:00 AM	X		Going straight – West	Crossing		X		
		9/30	17:40 PM	X		Going straight – East	Crossing against signal				Unknown
		11/1	13:30 PM	X		Going straight – East	Unknown				Unknown
	2010	7/26	21:39 PM	X		Unknown	Crossing with signal				Unknown
		7/31	7:00 AM	X		Unknown	Along highway with traffic				Unknown
		8/24	9:15 AM	x		Unknown	Crossing with signal				Unknown
		8/29	23:50 PM	X		Unknown	Crossing with signal				Unknown
		9/1	2:17 AM	X		Unknown	Other actions in roadway				Unknown
		10/5	20:15 PM	X		Unknown	Unknown				Unknown

Table 13-49 (cont'd)
Vehicle and Pedestrian Accident Details

Intersection	Year	Date	Time	Accident Class		Action of Vehicle	Action of Pedestrian	Cause of Accident			
				Injured	Killed			Left / Right Turns	Pedestrian Error/ Confusion	Driver Inattention	Other
Essex Street @ Delancey Street	2008	3/15	22:59 PM	X		Going straight – West	Unknown				Failure to yield R.O.W.
		3/23	14:10 PM	X		Backing	Unknown				Backing unsafely
		4/9	19:10 PM	X		Going straight – South	Crossing with signal				Unknown
		5/3	8:00 AM	X		Going straight – South	Crossing with signal				Unknown
		5/3	18:10 PM	X		Going straight – East	Crossing against signal			X	
		5/30	8:42 AM	X		Going straight – South	Unknown				Unknown
		6/9	19:35 PM	x		Going straight – North	Crossing with signal				Unknown
		6/29	12:13 PM	X		Unknown	Crossing against signal		X		
		6/30	3:45 AM	X		Going straight – West	Crossing with signal		X		
		8/12	5:25 AM	X		Going straight – West	Crossing against signal		X		
		8/22	10:20 AM	X		Going straight – West	Crossing against signal				View obstructed/limited
		9/10	00:23 AM	X		Going straight – East	Other actions in roadway			X	
		9/17	10:19 AM	X		Going straight – West	Along highway with traffic		X		
		10/18	11:40 AM	X		Going straight – South	Crossing with signal				Other
		11/14	22:55 PM	X		Making right turn – North	Crossing with signal	X			
		11/21	21:07 PM	X		Going straight – West	Crossing with signal				Unknown
		11/22	7:20 AM	X		Making left turn – East	Crossing with signal	X			
		12/20	00:40 AM	X		Making right turn – North	Crossing against signal	X	X		Failure to yield R.O.W., Alcohol Involvement(ped)
	2009	4/10	8:25 AM	X		Making left turn – South	Crossing with signal	X			
		5/7	14:58 PM	X		Going straight – South	Emerge from behind parked vehicle				Unknown
		8/8	14:00 PM	X		Going straight – South	Along highway with traffic				Passing or lane usage improperly
		8/15	5:15 AM	X		Going straight- East	Crossing against signal		X		
		10/16	11:05 AM	X		Going straight – West	Along highway with traffic			X	
		10/17	20:10 PM	X		Going straight – East	Crossing against signal		X		
		10/19	14:28 PM	X		Making left turn – East	Crossing with signal	X	X	X	
		11/6	7:15 AM	X		Making left turn – Southeast	Working in roadway	X		X	
	2010	4/12	4:56 AM		X	Unknown	Crossing against signal		X		
		5/18	16:45 PM	X		Unknown	Unknown				Unknown
		6/30	9:10 AM	X		Unknown	Crossing against signal		X		
		8/14	5:15 AM	X		Unknown	Other actions in roadway				Unknown

Table 13-49 (cont'd)
Vehicle and Pedestrian Accident Details

Intersection	Year	Date	Time	Accident Class		Action of Vehicle	Action of Pedestrian	Cause of Accident			
				Injured	Killed			Left / Right Turns	Pedestrian Error/ Confusion	Driver Inattention	Other
Norfolk Street @ Delancey Street	2008	6/16	21:18 PM	X		Going straight – North	Crossing with signal				Unknown
	2009	2/15	3:55 AM	X		Going straight – West	Other actions in roadway		X		Failure to yield R.O.W.
	2010	1/21	19:40 PM	X		Unknown	Crossing against signal		X		
		5/15	4:00 AM	X		Unknown	Crossing with signal				Unknown
		8/4	6:45 PM	x		Unknown	Along highway with traffic				Unknown
		9/30	11:47 AM	X		Unknown	Crossing with signal				Unknown
		11/19	14:05 PM	X		Unknown	Getting on/off vehicle				Unknown
		12/3	4:00 AM	x		Unknown	Along highway with traffic				Unknown
	2011	1/21	16:17 PM	X		Unknown	Crossing with signal				Unknown
Suffolk Street @ Delancey Street	2008	10/10	16:25 PM	X		Making right turn – Southeast	Crossing	X		X	
	2009	5/2	14:30 PM	X		Making right turn – Unknown	Crossing with signal	X			
		6/10	10:40 AM	X		Making left turn – West	Along highway with traffic	X			
		8/19	17:10 PM	X		Going straight – West	Along highway with traffic				Unknown
		9/15	10:40 AM	X		Unknown	Unknown				Unknown
		12/2	17:30 PM	X		Unknown	Unknown				Unknown
		12/17	18:00 PM	X		Going straight – West	Along highway with traffic				Unknown
	2010	6/7	21:35 PM	X		Unknown	Emerge from behind parked vehicle		x		
		9/17	11:05 PM	X		Unknown	Along highway with traffic				Unknown
Avenue A @ E. Houston Street	2008	8/6	16:58 PM	X		Going straight – West	Along highway with traffic				Unknown
		9/22	20:10 PM	X		Making right turn – West	Crossing against signal	X			
		11/13	3:55 AM	X		Making left turn – Southwest	Crossing with signal	X			
	2009	7/31	11:04 AM	X		Making right turn – North	Crossing with signal	X		X	Failure to yield R.O.W.
	2010	1/21	20:30 PM	X		Going straight – North	Crossing				Unknown
		1/26	21:40 PM	X		Going straight – North	Crossing against signal				Unknown
		4/27	21:40 PM		X	Going straight – North	Crossing		X		
		8/8	10:30 AM	X		Unknown	Unknown				Unknown

Table 13-49 (cont'd)
Vehicle and Pedestrian Accident Details

Intersection	Year	Date	Time	Accident Class		Action of Vehicle	Action of Pedestrian	Cause of Accident			
				Injured	Killed			Left / Right Turns	Pedestrian Error/ Confusion	Driver Inattention	Other
Bowery @ E. Houston Street	2008	5/15	14:45 PM	X		Making right turn – North	Going straight – Northeast	X		X	
		5/19	21:40 PM	X		Making right turn – East	Crossing with signal	X			
		8/3	15:00 PM	X		Making right turn – North	Along highway with traffic	X			
		9/12	20:45 PM	X		Making right turn – West	Along highway with traffic	X	X		Pavement slippery
		11/20	15:30 PM	X		Going straight – South	Along highway with traffic				Passenger distraction
	2010	6/16	3:00 AM	X		Unknown	Crossing with signal				Unknown
		6/16	21:50 PM	X		Unknown	Crossing with signal				Unknown
		7/1	22:45 PM	X		Unknown	Emerge from behind parked vehicle				Unknown
		7/31	1:50 AM	x		Unknown	Other actions in roadway				Unknown
		8/22	5:05 AM	X		Unknown	Crossing against signal		X		
Allen Street @ Grand Street	2008	11/15	20:24 PM	X		Making left turn – North	Crossing with signal	X			Driver Inexperience, Failure to yield R.O.W.
	2009	5/18	10:23 AM	X		Making left turn – North	Crossing with signal	X			
		7/22	14:00 PM	X		Making left turn – Southwest	Crossing with signal	X			
		9/13	9:37 AM	X		Making left turn – Northeast	Unknown	x			Other (vehicle)
		11/26	18:09 PM	X		Making left turn – Northeast	Unknown	X	X		
	2010	1/14	10:46 AM	X		Unknown	Working in roadway				Unknown
		3/7	19:20 PM	X		Unknown	Crossing with signal				Unknown
		6/21	13:20 PM	X		Unknown	Along highway with traffic				Unknown
Clinton Street @ Grand Street	2008	8/25	15:00 PM	X		Making right turn – East	Along highway with traffic	X		X	
		10/10	8:20 AM	X		Going straight – East	Crossing with signal				Aggressive driving, Road rage
		11/12	20:00 PM	X		Going straight – East	Crossing with signal				Unknown
	2009	3/19	22:21 PM		x	Making right turn – South	Crossing with signal	X			Failure to yield R.O.W.
		6/26	8:00 AM	X		Going straight – North	Crossing with signal			X	Other (vehicle)
		6/26	20:29 PM	X		Going straight – South	Emerge from behind parked vehicle		X		
		12/23	21:05 PM	X		Going straight – West	Along highway with traffic				Unknown
	2010	1/8	16:15 PM	X		Making right turn – East	Crossing	X			
		3/3	9:30 AM	X		Unknown	Crossing with signal				Unknown
		8/27	19:24 PM	X		Unknown	Along highway with traffic				Unknown
	2011	2/16	11:30 AM	X		Unknown	Crossing with signal				Unknown

Table 13-49 (cont'd)
Vehicle and Pedestrian Accident Details

Intersection	Year	Date	Time	Accident Class		Action of Vehicle	Action of Pedestrian	Cause of Accident			
				Injured	Killed			Left / Right Turns	Pedestrian Error/ Confusion	Driver Inattention	Other
Essex Street @ Grand Street	2008	9/21	19:22 PM	X		Going straight – North	Crossing against signal		X		
	2009	4/7	13:50 PM	X		Backing	Crossing				Backing unsafely
		9/27	17:46 PM	X		Other – South	Overtaking – South				Passing or lane usage improperly
		10/19	20:20 PM	X		Parked	Along highway with traffic				Unknown
		10/31	11:10 AM	X		Going straight – North	Crossing against signal		X		
		12/10	10:32 AM	X		Unknown	Crossing with signal				Unknown
	2010	3/19	9:31 AM	X		Unknown	Unknown				Unknown
		11/21	13:15 PM	X		Unknown	Crossing with signal				Unknown

Source: NYSDOT February 29, 2008 and February 28, 2011 accident data.

CLINTON STREET AND DELANCEY STREET

During the three year period mentioned above, a total of 76 reportable and non-reportable accidents, 77 injuries, and 13 pedestrian/bicyclist-related accidents occurred at the Clinton Street and Delancey Street intersection. No prevailing trends with regard to geometric deficiencies were identified as the primary causes of recorded accidents at this intersection. With respect to geometric deficiencies that could potentially cause safety hazards, the intersection of Clinton Street and Delancey Street is signalized and provides high-visibility crosswalks on the north, west and south legs (the eastern leg functions as a bicycle lane). As discussed earlier, NYCDOT is currently developing a Delancey Street corridor plan to improve traffic and pedestrian safety. Once this plan is finalized and implemented, it is expected that the pedestrian safety conditions at this intersection could improve. Details related to this plan would be included in the FGEIS should the plan be adopted prior to the release of the FGEIS.

ESSEX STREET AND DELANCEY STREET

During the three year period mentioned above, a total of 80 reportable and non-reportable accidents, 1 fatality, 79 injuries, and 30 pedestrian/bicyclist-related accidents occurred at the Essex Street and Delancey Street intersection. No prevailing trends with regard to geometric deficiencies were identified as the primary causes of recorded accidents at this intersection. With respect to geometric deficiencies that could potentially cause safety hazards, the intersection of Essex Street and Delancey Street is signalized and provides high visibility crosswalks. In addition, countdown timers are present at all approaches. As discussed earlier, NYCDOT is currently developing a Delancey Street corridor plan to improve traffic and pedestrian safety. Once this plan is finalized and implemented, it is expected that the pedestrian safety conditions at this intersection could improve. Details related to this plan would be included in the FGEIS should the plan be adopted prior to the release of the FGEIS.

NORFOLK STREET AND DELANCEY STREET

During the three year period mentioned above, a total of 31 reportable and non-reportable accidents, 21 injuries, and 9 pedestrian/bicyclist-related accidents occurred at the Norfolk Street and Delancey Street intersection. No prevailing trends with regard to geometric deficiencies

were identified as the primary causes of recorded accidents at this intersection. With respect to geometric deficiencies that could potentially cause safety hazards, the intersection of Norfolk Street and Delancey Street is signalized and provides high visibility crosswalks to the north, west and south; there is no eastern crosswalk. Additionally, an Advance School Warning Sign is posted on the eastbound and westbound approaches. As discussed earlier, NYCDOT is currently developing a Delancey Street corridor plan to improve traffic and pedestrian safety. Once this plan is finalized and implemented, it is expected that the pedestrian safety conditions at this intersection could improve. Details related to this plan would be included in the FGEIS should the plan be adopted prior to the release of the FGEIS.

SUFFOLK STREET AND DELANCEY STREET

During the three year period mentioned above, a total of 39 reportable and non-reportable accidents, 54 injuries, and 9 pedestrian/bicyclist-related accidents occurred at the Suffolk Street and Delancey Street intersection. No prevailing trends with regard to geometric deficiencies were identified as the primary causes of recorded accidents at this intersection. With respect to geometric deficiencies that could potentially cause safety hazards, the intersection of Suffolk Street and Delancey Street is signalized and provides four high visibility crosswalks. In addition, countdown timers are present on the eastern and western crosswalks. As discussed earlier, NYCDOT is currently developing a Delancey Street corridor plan to improve traffic and pedestrian safety. Once this plan is finalized and implemented, it is expected that the pedestrian safety conditions at this intersection could improve. Details related to this plan would be included in the FGEIS should the plan be adopted prior to the release of the FGEIS.

AVENUE A AND HOUSTON STREET

During the three year period mentioned above, a total of 15 reportable and non-reportable accidents, 1 fatality, 10 injuries, and 8 pedestrian/bicyclist-related accidents occurred at the Avenue A and Houston Street intersection. No prevailing trends with regard to geometric deficiencies were identified as the primary causes of recorded accidents at this intersection. With respect to geometric deficiencies that could potentially cause safety hazards, the intersection of Avenue A and Houston Street is signalized and provides one regular and three school crosswalks. Measures to increase pedestrian safety at this intersection could include the installation of crosswalk countdown timers on all the approaches to provide pedestrians with a better understanding of crossing times. In addition, the northern crosswalk and a portion of the southern crosswalk are heavily faded and could be restriped to provide better visibility.

BOWERY AND HOUSTON STREET

During the three year period mentioned above, a total of 40 reportable and non-reportable accidents, 31 injuries, and 10 pedestrian/bicyclist-related accidents occurred at the Bowery and Houston Street intersection. No prevailing trends with regard to geometric deficiencies were identified as the primary causes of recorded accidents at this intersection. With respect to geometric deficiencies that could potentially cause safety hazards, the intersection of Bowery and Houston Street is signalized and provides four high-visibility crosswalks. In addition, signs warning turning vehicles to yield to pedestrians in the crosswalk are present on all approaches at this intersection. Measures to increase pedestrian safety at this intersection could include the installation of countdown timers for all crosswalks to provide pedestrians with a better understanding of crossing times.

ALLEN STREET AND GRAND STREET

During the three year period mentioned above, a total of 18 reportable and non-reportable accidents, 18 injuries, and 8 pedestrian/bicyclist-related accidents occurred at the Allen Street and Grand Street intersection. Based on the review of the accident history at the intersection of Allen Street and Grand Street, five out of eight pedestrian/bicyclist-related accidents were caused by vehicles making left turns. It seems probable that pedestrians involved in accidents were struck by turning vehicles while crossing the mid-intersection crosswalk. With respect to geometric deficiencies that could potentially cause safety hazards, the intersection of Allen Street and Grand Street is signalized and provides four school crosswalks as well as one mid-intersection north/south crosswalk. In addition, Advance School Warning Signs are present at all approaches. Measures to increase pedestrian safety at this intersection could include the installation of crosswalk countdown timers on all the approaches to provide pedestrians with a better understanding of crossing times. In addition, the mid-intersection crosswalk could be removed, thereby prohibiting pedestrian access to the center of the intersection to avoid unnecessary conflict with turning vehicles.

CLINTON STREET AND GRAND STREET

During the three year period mentioned above, a total of 26 reportable and non-reportable accidents, 1 fatality, 16 injuries, and 10 pedestrian/bicyclist-related accidents occurred at the Clinton Street and Grand Street intersection. No prevailing trends with regard to geometric deficiencies were identified as the primary causes of recorded accidents at this intersection. With respect to geometric deficiencies that could potentially cause safety hazards, the intersection of Clinton Street and Grand Street is signalized and provides two regular crosswalks and two school crosswalks. A School Advance Warning Sign is posted on the northbound approach and signs warning turning vehicles to yield to pedestrians in the crosswalk are present at the eastbound and westbound and northbound approaches to this intersection. Measures to increase pedestrian safety at this intersection could include the installation of countdown timers for all crosswalks to provide pedestrians with a better understanding of crossing times, and a sign reminding drivers to yield to pedestrians in the crosswalk at the southern approach.

ESSEX STREET AND GRAND STREET

During the three year period mentioned above, a total of 19 reportable and non-reportable accidents, 16 injuries, and 8 pedestrian/bicyclist-related accidents occurred at the Essex Street and Grand Street intersection. No prevailing trends with regard to geometric deficiencies were identified as the primary causes of recorded accidents at this intersection. With respect to geometric deficiencies that could potentially cause safety hazards, the intersection of Essex Street and Grand Street is signalized and provides four school crosswalks. In addition, Advance School Warning Signs are present at all approaches except the southbound approach. Measures to increase pedestrian safety at this intersection could include the installation of crosswalk countdown timers on all the approaches to provide pedestrians with a better understanding of crossing times, as well as installing the Advance School Warning Sign at the southbound approach.

As mentioned above, NYCDOT is currently developing a Delancey Street corridor plan to improve traffic and pedestrian safety. Once this plan is finalized and implemented, it is expected that the pedestrian safety conditions in the study area would improve. Details related to this plan would be included in the FGEIS should the plan be adopted prior to the release of the FGEIS.

J. PARKING

2011 EXISTING CONDITIONS

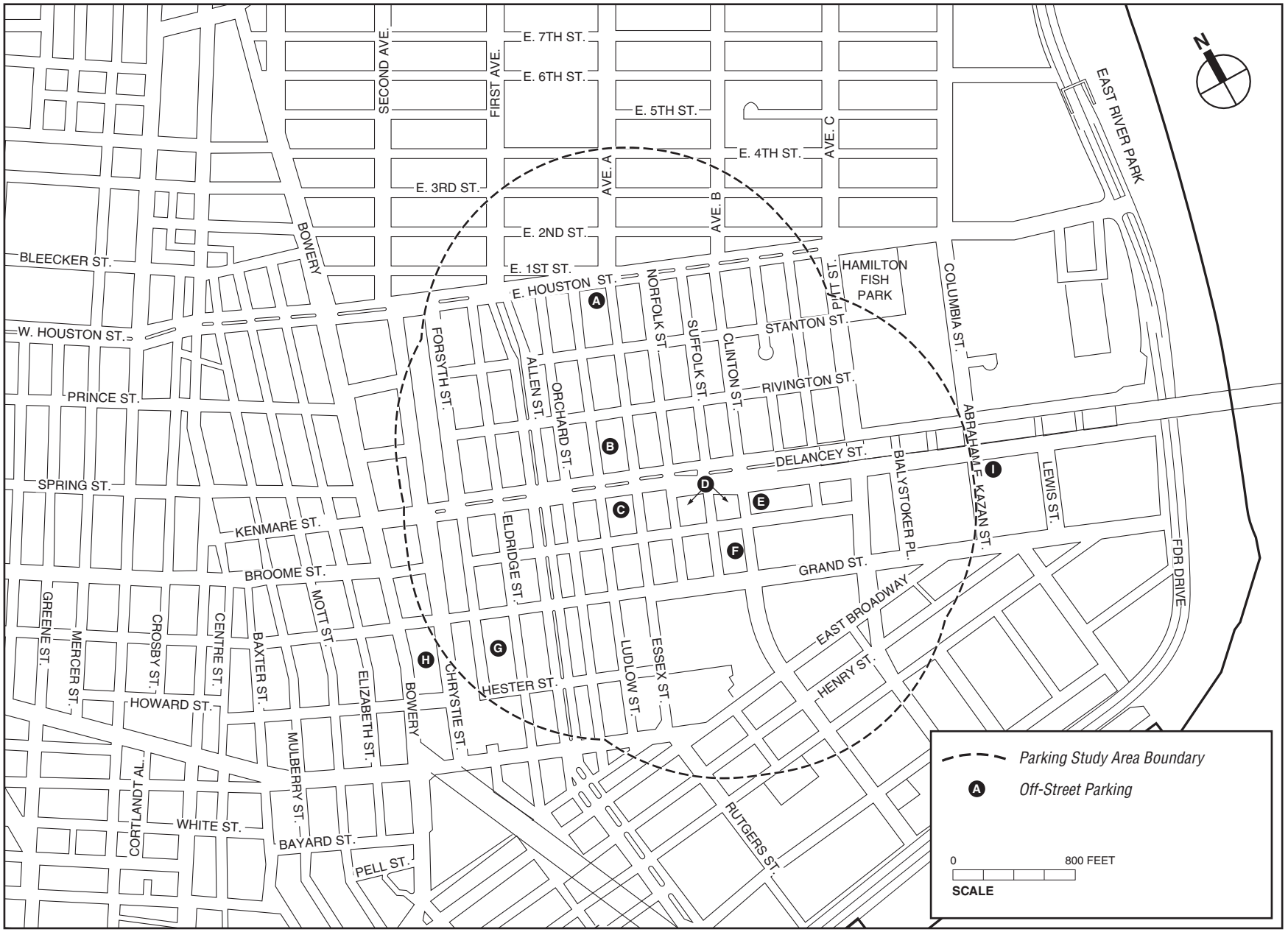
A detailed inventory of on-street parking and off-street public parking lots and garages within approximately a quarter-mile of the project sites was conducted on a typical weekday and Saturday. This quarter-mile distance was used as an acceptable walking distance to from the project sites to parking. Overall, there are nine public parking lots or garages within or close to this quarter-mile area, as shown in **Figure 13-18.**

Table 13-50 presents the capacity and occupancy of these off-street public parking facilities during the weekday AM, midday, PM, and Saturday peak periods. The overall occupancy of the public lots and garages in the general vicinity is approximately 63 to 66 percent during the weekday AM, midday, and Saturday peak periods, and approximately 56 percent during the weekday PM peak period. Only two of the garages in the study area exceed 90 percent occupancy during peak hours: the Delancey-Essex Municipal Garage (which is also Site 7 within the development area) which is 90 percent occupied during the weekday AM, midday, and Saturday peak periods; and 135-163 Delancey Street (Location D) which is 90 percent occupied during the weekday AM and midday peak periods, and 95 percent occupied during the weekday PM peak period. A total of approximately 600 to 650 spaces are available within the 10 public parking facilities during the weekday AM, midday, and Saturday peak parking periods, while about 770 spaces are available during the weekday PM peak period.

Table 13-50
Inventory of Existing Public Parking Lots and Garages (Quarter-Mile Radius)

Location	Capacity	Occupancy			
		Weekday			
		AM (7:00 - 9:30 AM)	Midday (11 AM – 2 PM)	Evening (4:00 – 6:30 PM)	Saturday (3 - 5 PM)
A. 184 - 194 Ludlow – Lic. No. 926761	182	80	81	80	80
Essex Street between Houston Street and Stanton Street		44%	45%	44%	44%
B. Municipal Parking: Delancey – Essex	362	326	326	181	326
Essex Street between Rivington Street and Delancey Street		90%	90%	50%	90%
C. Municipal Parking: Broome – Ludlow	65	35	35	31	28
Ludlow Street between Delancey Street and Broome Street		54%	54%	48%	43%
D. 135 - 163 Delancey Street – Lic. No. 1220509	294	265	265	279	206
Broome St between Norfolk Street and Clinton Street		90%	90%	95%	70%
E. Broome Street Parking Lot LLC – Lic. No. 1234764	48	42	35	37	32
Broome Street between Clinton Street and Ridge Street		88%	73%	77%	67%
F. Suffolk Parking Inc. – Lic. No. 1226909	100	20	30	30	30
Suffolk Street between Broome Street and Grand Street		20%	30%	30%	30%
G. 59 Allen Street Garage Corp. – Lic. No. 1192853	200	150	150	100	140
Allen Street between Grand Street and Hester Street		75%	75%	50%	70%
H. MTP Operating Corp. – Lic. No. 1344945	50	10	35	20	40
Chrystie Street between Grand Street and Hester Street		20%	70%	40%	80%
I. Area Garage – Lic. No. 0429851	457	229	160	229	274
Delancey Street and Columbia Street		50%	35%	50%	60%
Total	**1,758**	**1,157**	**1,112**	**987**	**1,156**
Percent Occupied (%)		**65.8%**	**63.3%**	**56.1%**	**65.8%**

Note: As per the *CEQR Technical Manual*, garages/lots at 98 percent capacity or greater in the existing conditions are considered at capacity and no additional vehicles should be assigned to them.



Parking Study Area
Figure 13-18

The proposed actions would displace parking at Locations C, D, E, and F, and develop parking garages at the current Locations D and F. Location C is a 65 space municipal lot with a maximum occupancy of 35 spaces during the peak periods. Location D (which consists of two sites) has a capacity of 294 spaces with 95 percent maximum occupancy during the peak periods. The site located between Norfolk and Suffolk Streets provides monthly parking (with highly subsidized rates for the merchants of the Essex Street Market - $105 per month), and also allows parking for shoppers. The site located between Suffolk and Clinton Streets is partially occupied by long-term commercial vehicles (such as vans and single unit trucks). Location E allows public parking with a capacity of 48 spaces and maximum observed occupancy of 42 spaces during the peak periods. Location F allows public parking with hourly rates, and has a capacity of 100 spaces with a maximum observed occupancy of 30 spaces during the peak periods.

On-street parking regulations, capacities, and occupancies were also inventoried for the same quarter-mile radius on a block-by-block basis. The majority of streets within the study area have "No Parking" restrictions at certain times due to street cleaning restrictions. Metered spaces are found primarily along the commercial corridors such as Delancey Street, Houston Street, and Grand Street. There are a total of 3,616 legal on-street parking spaces within the entire parking study area, out of which approximately 87 percent are occupied during the weekday AM peak period. The occupancy increases to about 95 to 100 percent during the weekday midday, PM, and Saturday peak periods.

2022 NO ACTION CONDITION

To estimate future parking conditions, existing occupancies for public off-street parking facilities and for on-street parking were increased by the background traffic growth rate of approximately two percent. Vehicle trips generated by No Action project sites within the study area would park on-site, where parking is provided, or were otherwise assumed to park on-street.

Available on- and off-street parking is expected to decrease slightly under the No Action condition due to the projected increase of traffic in the area. Under the No Action condition, approximately 89 percent of the on-street parking is expected to be occupied during the weekday AM peak parking period. The on-street occupancy would increase to almost 100 percent during the weekday midday and PM peak parking periods, and would reach 97 percent during the Saturday peak period. Off-street parking occupancy would increase slightly to 57 to 67 percent during the weekday and Saturday peak parking periods. As a result, overall off-street parking availability in the area would decrease slightly with a range of about 575 to750 available spaces during peak parking periods.

2022 WITH ACTION CONDITION

The proposed actions are expected to include up to 500 off-street parking spaces within Sites 2, 3, 4, and 5 to accommodate peak parking demand levels generated by the proposed actions as well as replace the number of public parking spaces that could be lost as a result of the proposed actions.

In the existing conditions, there are approximately 507 parking spaces (approximately 400 public spaces, and approximately 100 spaces being used by commercial vehicles such as vans and trucks) within surface lots that currently occupy Sites 3, 4, 5, and 6. Approximately 400 public spaces on these four sites would be displaced as part of the proposed actions. Vehicles currently parked on those sites may still be able to park on these development sites while some might need to find parking elsewhere in the surrounding area; some vehicles currently parking on these sites may not be able to be accommodated in the area or may choose to park elsewhere. This may be especially true for vehicles that are parked long-term on Site 4, which attracts trucks and other commercial vehicles that may not be accommodated within underground

parking garages and longer-term parkers rather than the more typical daily in/out parkers. All existing trips to surface parking lots at the development sites have been retained in the street network. This may be somewhat conservative since some parkers may have shorter trips to other sites within the study area while others may have somewhat longer trips, and while others may no longer be made to the study area at all.

Parking demands during the weekday AM, midday, PM, and the Saturday peak traffic hours would be fully accommodated by the parking garages. The maximum project-generated capacity of 257 spaces would be reached during 9-10 AM and 2-3 PM on a typical weekday. The maximum accumulation of 254 spaces for a Saturday would occur between 4-5 PM. There would be a surplus capacity of about 240 to 250 spaces which could accommodate a portion of the displaced parkers. Approximately 140 vehicles would need to find parking elsewhere in the area, and would likely park within the 375 to 625 off-street spaces that would be available within off-street lots/garages in the study area. **Tables 13-51a and 13-51b** provide the projected parking accumulation at the project garage for weekday and Saturday conditions.

Table 13-51a
Weekday Garage Parking Accumulation—2022 With Action Condition

Time	Site 2 Garage			Site 3 Garage			Site 4 Garage			Site 5 Garage			Total Demand		
	In	Out	Accum.	In	Out	Accum.	In	Out	Accum.	In	Out	Accum.	In	Out	Accum.
12 - 1 AM	2	1	55	1	1	35	2	2	72	1	1	48	6	5	210
1 - 2 AM	2	1	56	0	0	35	1	1	72	1	1	48	4	3	211
2 - 3 AM	0	0	56	0	0	35	0	0	72	0	0	48	0	0	211
3 - 4 AM	0	0	56	0	0	35	0	0	72	0	0	48	0	0	211
4 - 5 AM	0	0	56	0	0	35	0	0	72	0	0	48	0	0	211
5 - 6 AM	0	0	56	0	0	35	0	0	72	0	0	48	0	0	211
6 - 7 AM	0	0	56	0	0	35	1	1	72	0	0	48	1	1	211
7 - 8 AM	7	10	53	1	5	31	3	9	66	3	5	46	14	29	196
8 - 9 AM	55	29	79	17	12	36	28	25	69	31	17	60	131	83	244
9 - 10 AM	44	31	92	14	15	35	24	23	71	26	27	59	108	96	257
10 - 11 AM	29	31	90	13	15	33	17	22	66	20	24	55	79	92	244
11 AM - 12 PM	40	38	92	17	17	33	23	25	64	29	30	54	109	110	243
12 - 1 PM	42	42	92	15	13	35	22	22	64	17	16	55	96	93	246
1 - 2 PM	54	50	96	18	17	36	28	26	66	24	23	56	124	116	254
2 - 3 PM	57	56	97	20	19	37	25	24	67	18	18	56	120	117	257
3 - 4 PM	43	47	93	14	15	36	20	22	65	14	14	56	91	98	250
4 - 5 PM	41	53	81	14	15	35	22	23	64	16	19	53	93	110	233
5 - 6 PM	54	80	55	18	23	30	31	37	56	21	35	39	124	175	180
6 - 7 PM	43	48	50	15	17	28	25	24	58	16	15	40	99	104	176
7 - 8 PM	43	36	57	14	10	32	21	14	66	15	9	46	93	69	201
8 - 9 PM	22	21	58	8	6	34	10	8	68	7	5	48	47	40	208
9 - 10 PM	12	20	50	5	7	32	7	9	66	4	7	45	28	43	193
10 - 11 PM	6	5	51	3	1	34	6	2	70	4	3	46	19	11	201
11 PM - 12 midnight	5	2	54	2	1	35	4	2	72	3	1	48	14	6	209
Daily Total	601	601	-	209	209	-	320	320	-	270	270	-	1,400	1,400	-
Overnight Demand	-	-	56	-	-	35	-	-	72	-	-	48	-	-	211

Table 13-51b
Saturday Garage Parking Accumulation—2022 With Action Condition

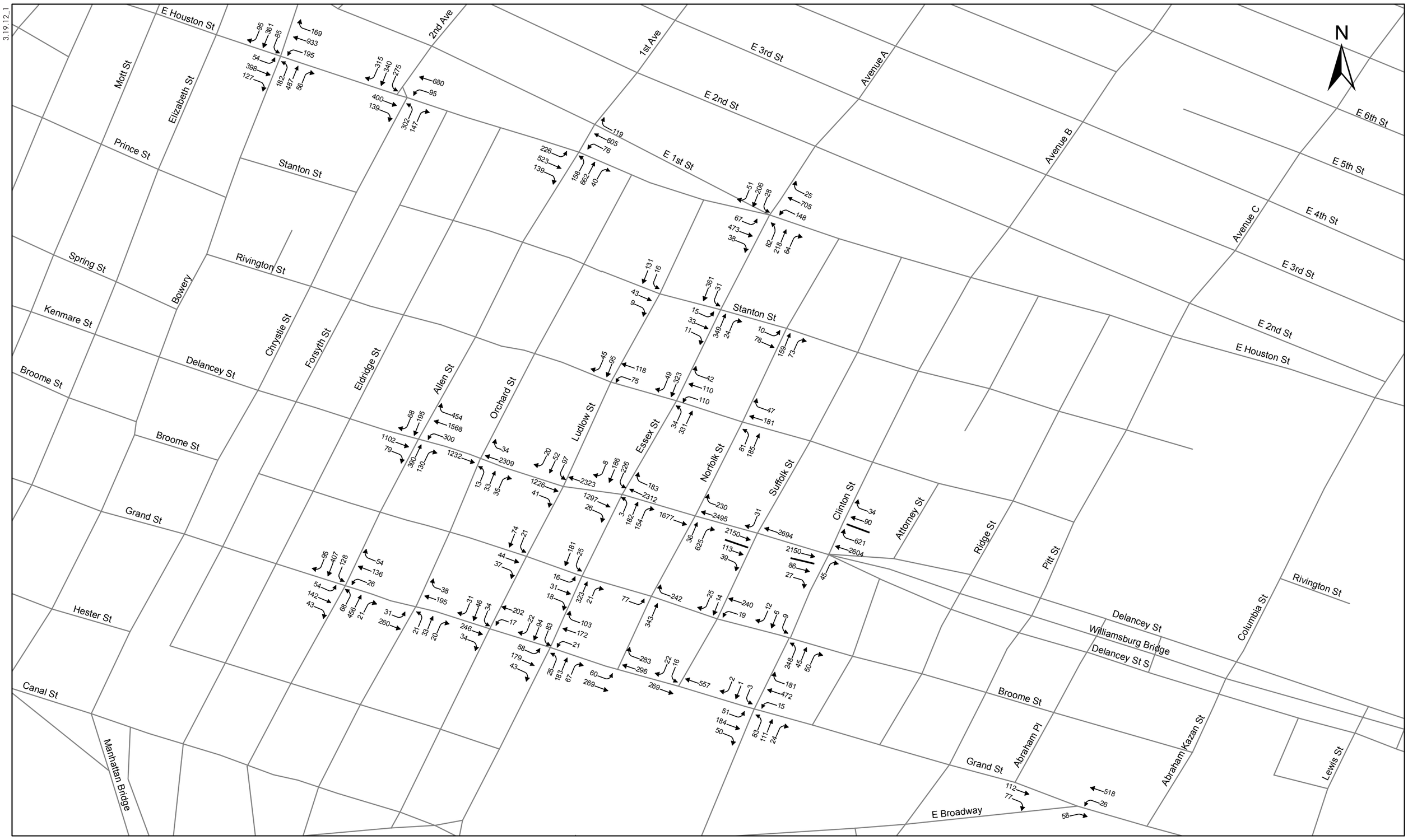
Time	Site 2 Garage			Site 3 Garage			Site 4 Garage			Site 5 Garage			Total Demand		
	In	Out	Accum.	In	Out	Accum.	In	Out	Accum.	In	Out	Accum.	In	Out	Accum.
12 - 1 AM	1	0	55	0	0	35	1	1	72	0	0	48	2	1	210
1 - 2 AM	1	0	56	0	0	35	1	1	72	0	0	48	2	1	211
2 - 3 AM	0	0	56	0	0	35	0	0	72	0	0	48	0	0	211
3 - 4 AM	0	0	56	0	0	35	0	0	72	0	0	48	0	0	211
4 - 5 AM	0	0	56	0	0	35	0	0	72	0	0	48	0	0	211
5 - 6 AM	1	1	56	1	1	35	1	1	72	1	1	48	4	4	211
6 - 7 AM	0	1	55	0	2	33	1	2	71	0	1	47	1	6	206
7 - 8 AM	7	7	55	2	3	32	4	7	68	4	5	46	17	22	201
8 - 9 AM	25	11	69	6	4	34	13	9	72	14	7	53	58	31	228
9 - 10 AM	24	22	71	7	9	32	11	15	68	12	15	50	54	61	221
10 - 11 AM	28	26	73	9	10	31	14	17	65	13	17	46	64	70	215
11 AM - 12 noon	56	44	85	20	17	34	27	29	63	22	24	44	125	114	226
12 - 1 PM	40	41	84	13	14	33	21	24	60	14	16	42	88	95	219
1 - 2 PM	49	50	83	17	16	34	26	25	61	17	16	43	109	107	221
2 - 3 PM	50	49	84	19	16	37	27	23	65	18	15	46	114	103	232
3 - 4 PM	52	46	90	19	16	40	26	21	70	18	15	49	115	98	249
4 - 5 PM	60	57	93	21	20	41	30	29	70	23	22	50	134	128	254
5 - 6 PM	47	55	85	16	18	39	25	30	66	15	21	44	103	124	234
6 - 7 PM	45	49	81	15	14	40	24	21	69	15	14	45	99	98	235
7 - 8 PM	40	47	74	14	16	38	23	21	71	15	13	47	92	97	230
8 - 9 PM	33	42	65	12	14	36	19	18	72	12	11	48	76	85	221
9 - 10 PM	23	34	54	9	11	34	16	15	73	10	10	48	58	70	209
10 - 11 PM	6	6	54	3	2	35	4	5	72	3	3	48	16	16	209
11 PM - 12 midnight	3	3	54	1	1	35	1	1	72	1	1	48	6	6	209
Daily Total	591	591	-	204	204	-	315	315	-	227	227	-	1,227	1,337	-
Overnight Demand	-	-	56	-	-	35	-	-	72	-	-	48	-	-	211

Among the proposed actions of the ULURP application are four special permits for public parking facilities on Sites 2, 3, 4 and 5. Consistent with the overall limit in the number of spaces that would be permitted under the LSGD, the DGEIS analyzed up to 500 off-street parking spaces in accordance with the *CEQR Technical Manual*. Given that the special permits would allow for flexibility with respect to the distribution of these spaces among Sites 2, 3, 4 and 5, an assessment was conducted to project conditions that could arise if the parking spaces were distributed only on two or three of the sites. That assessment found that the resulting conditions would be generally similar to those in the DGEIS and affected locations could require standard traffic improvements. Based on this analysis, it was determined that the streets providing access to the public parking garages would be adequate to handle traffic generated thereby.

✷

Volume Map Figures

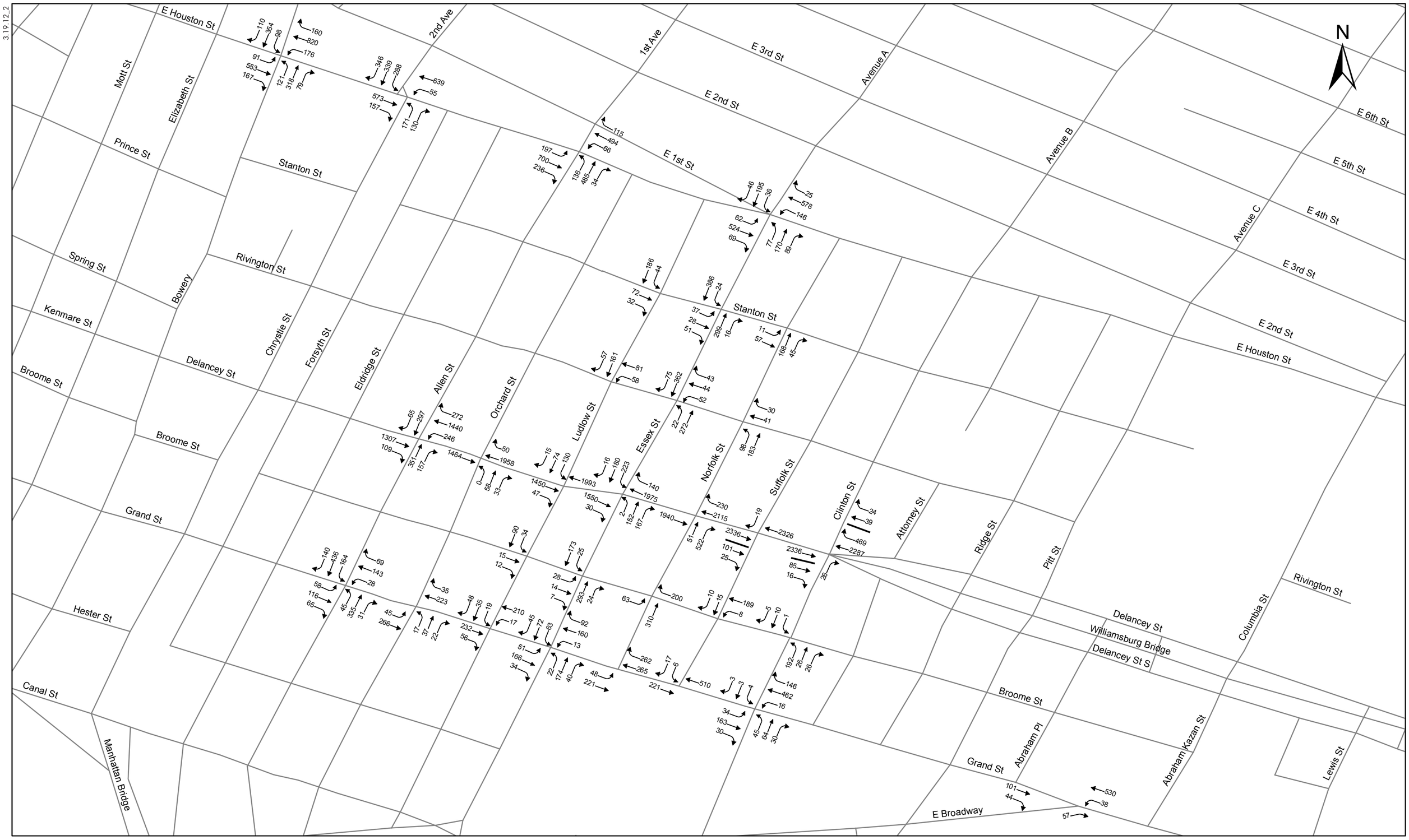
3.19.12.1



SEWARD PARK MIXED-USE DEVELOPMENT PROJECT

Existing Traffic Volumes
Weekday AM Peak Hour

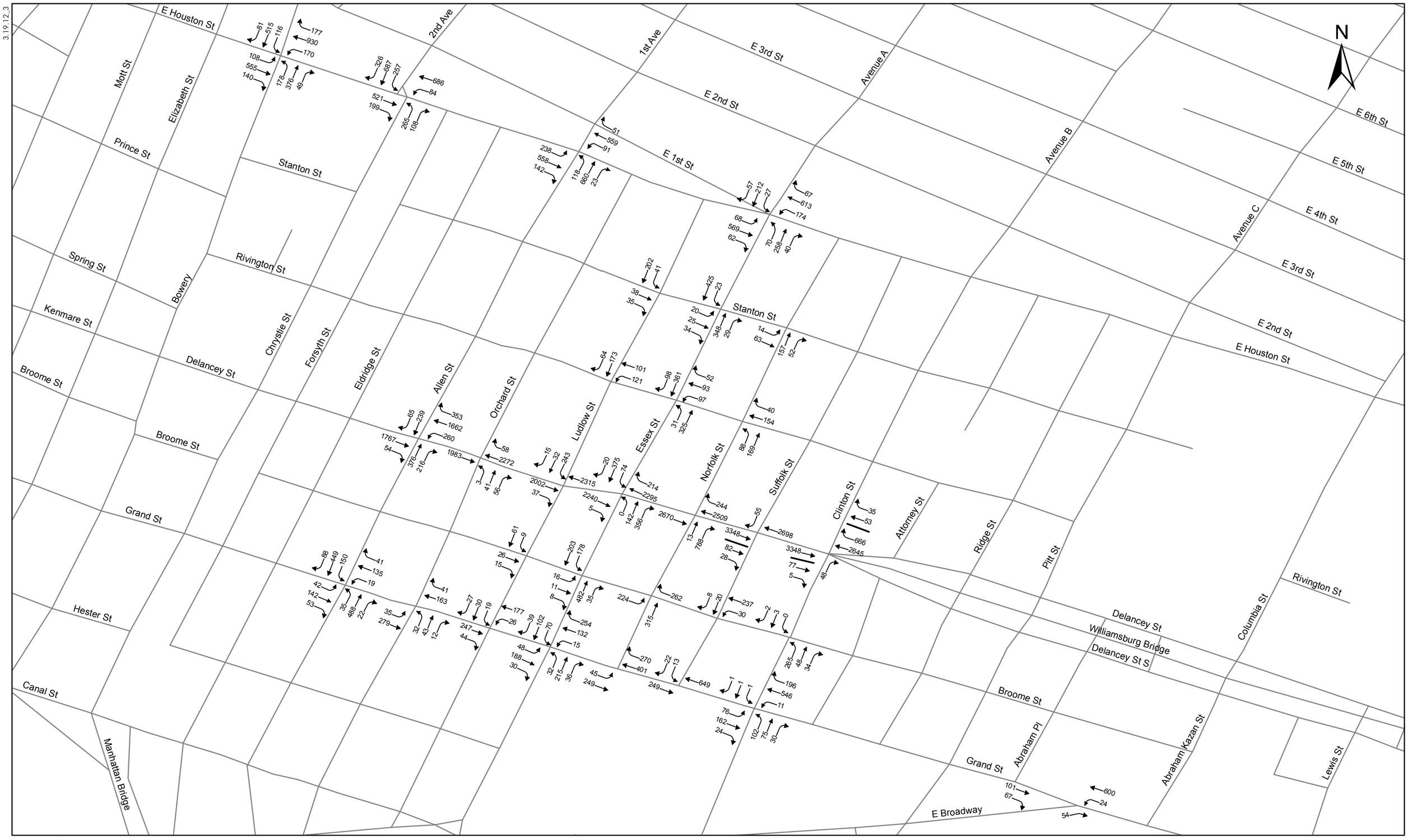
3.19.12.2



SEWARD PARK MIXED-USE DEVELOPMENT PROJECT

Existing Traffic Volumes
Weekday Midday Peak Hour

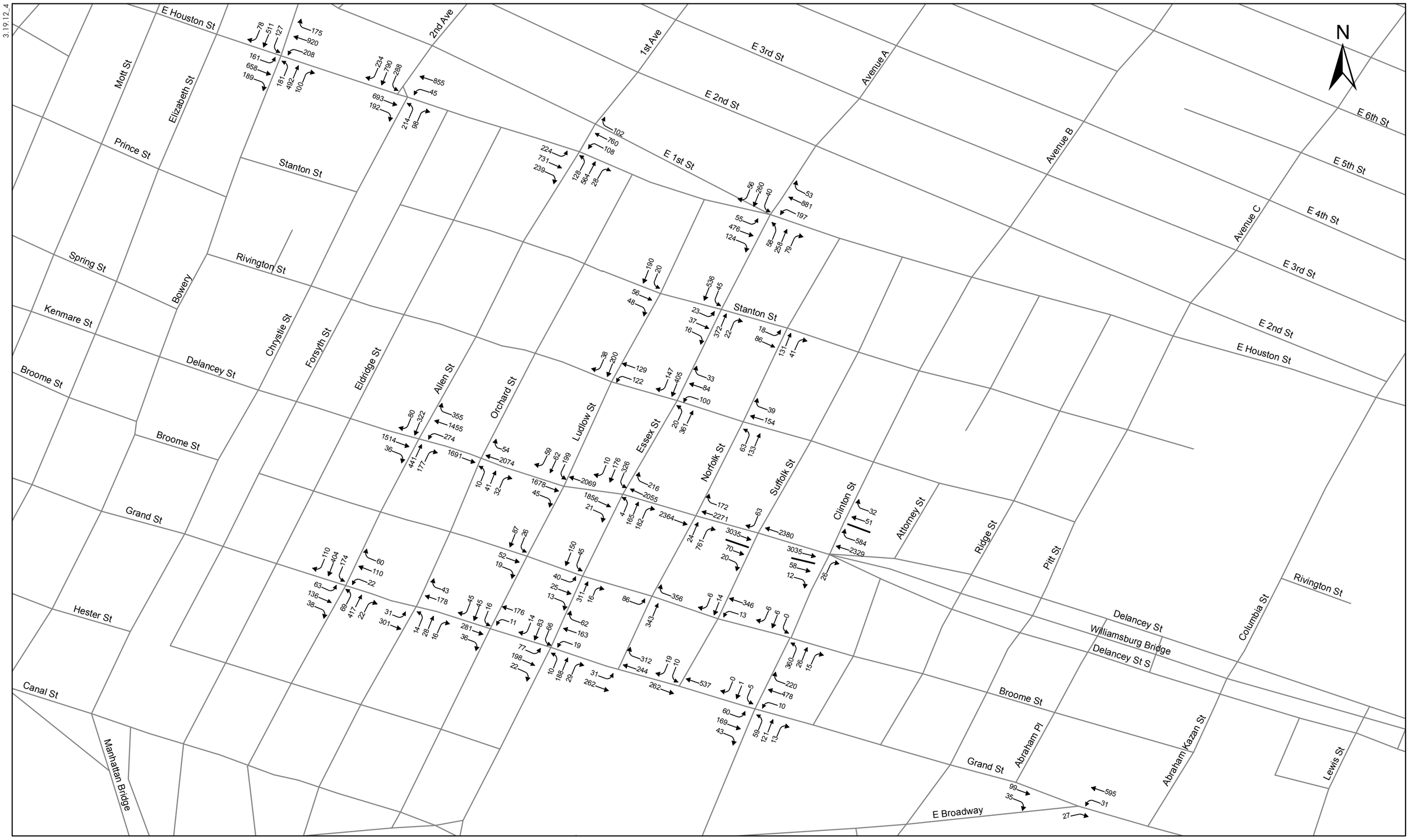
3.19.12.3



Note: Left turns are prohibited in the northbound and southbound directions at the intersection of Delancey Street and Essex Street during the weekday PM peak hour. Traffic volumes shown are illegal left turns.

Exsting Traffic Volumes
Weekday PM Peak Hour

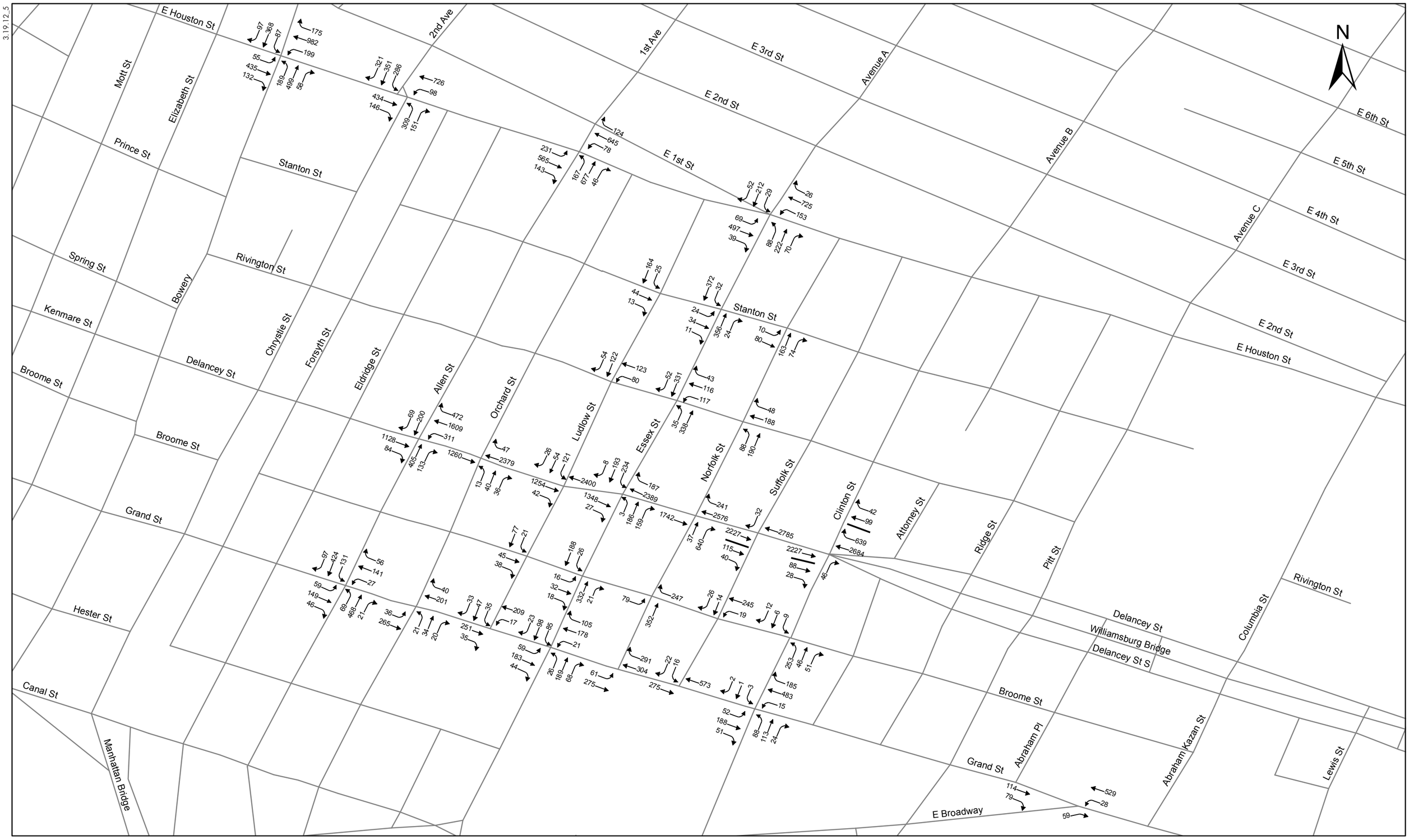
3.19.12_4



SEWARD PARK MIXED-USE DEVELOPMENT PROJECT

Existing Traffic Volumes
Saturday Peak Hour

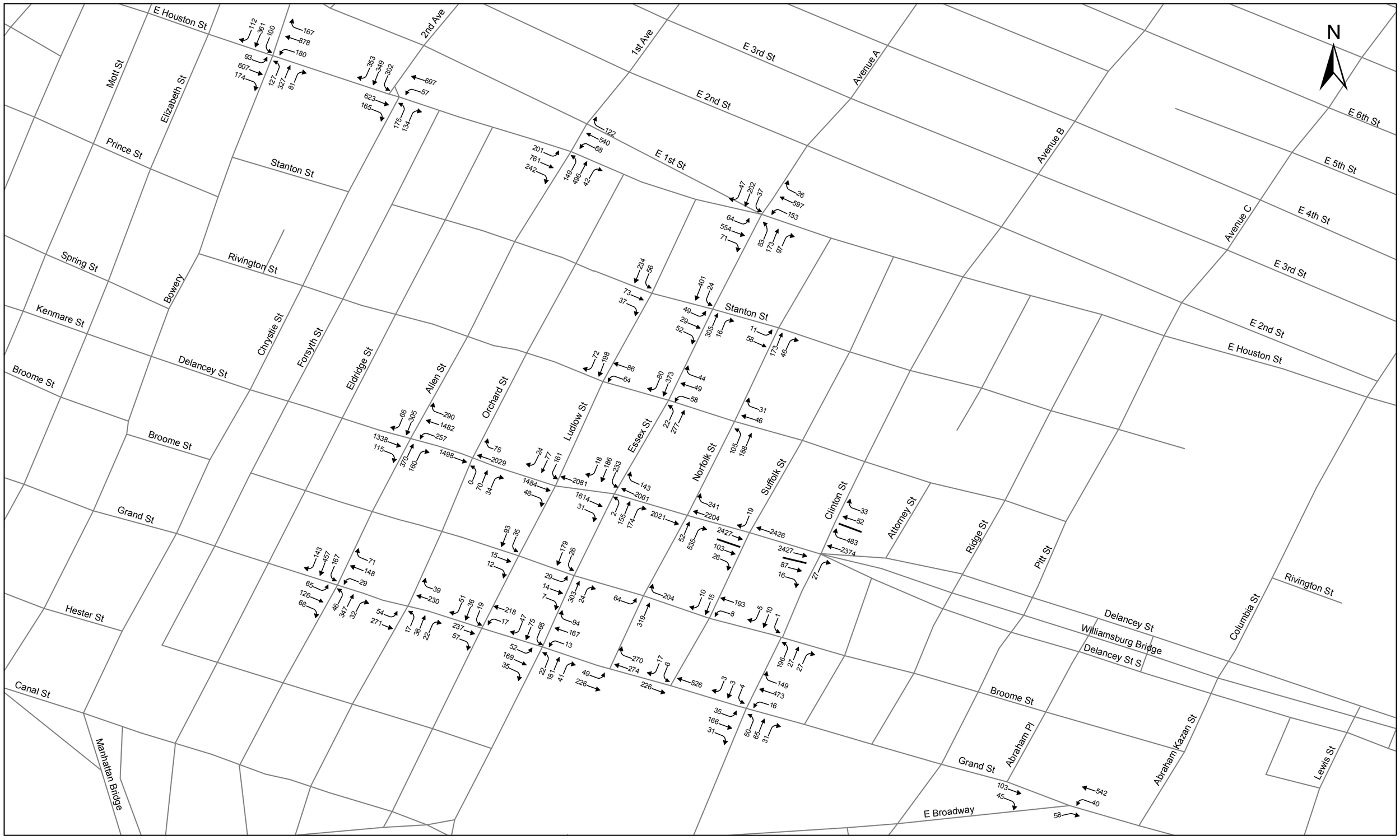
3.19.12.5



SEWARD PARK MIXED-USE DEVELOPMENT PROJECT

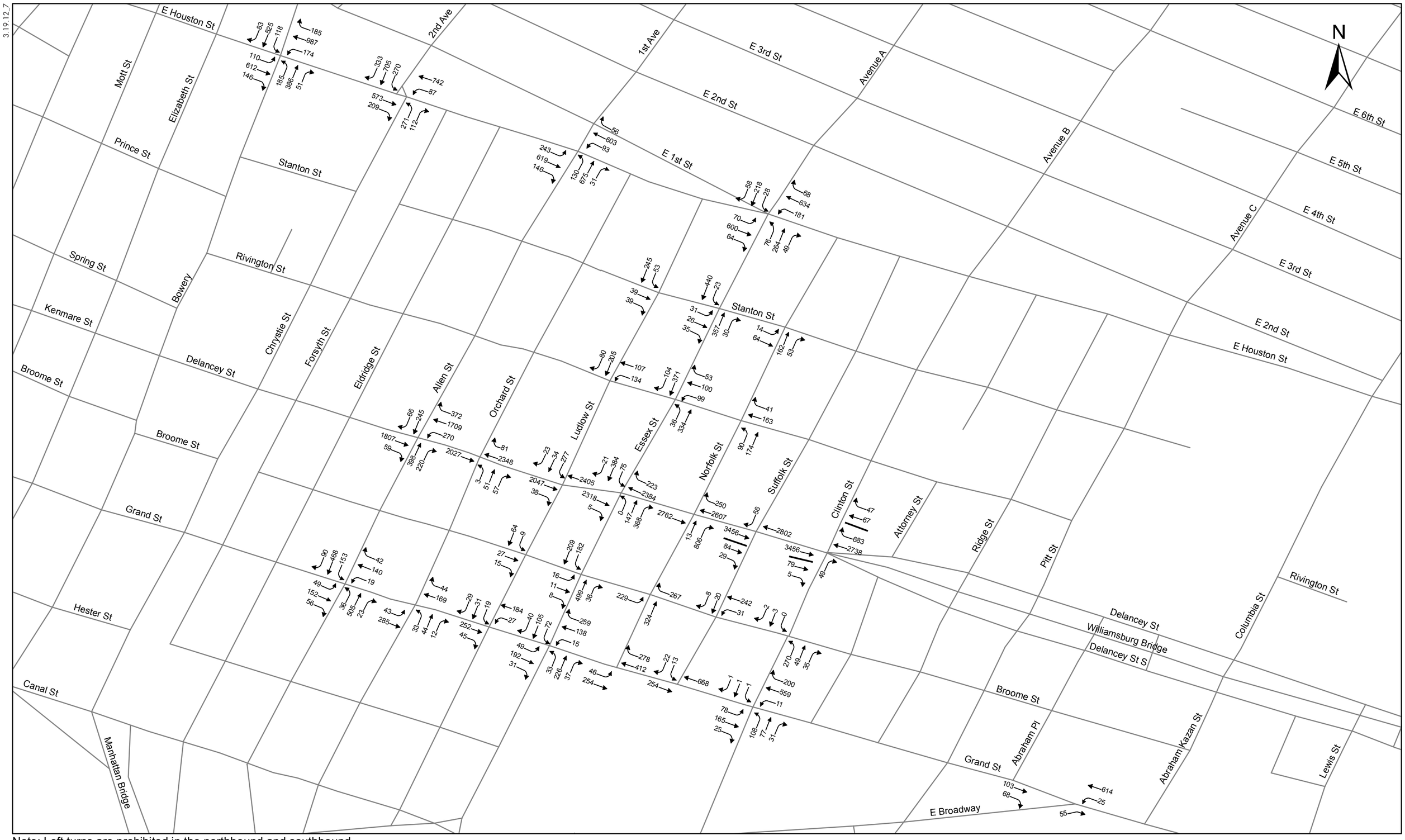
No Action Traffic Volumes
Weekday AM Peak Hour

3.19.12_6



SEWARD PARK MIXED-USE DEVELOPMENT PROJECT

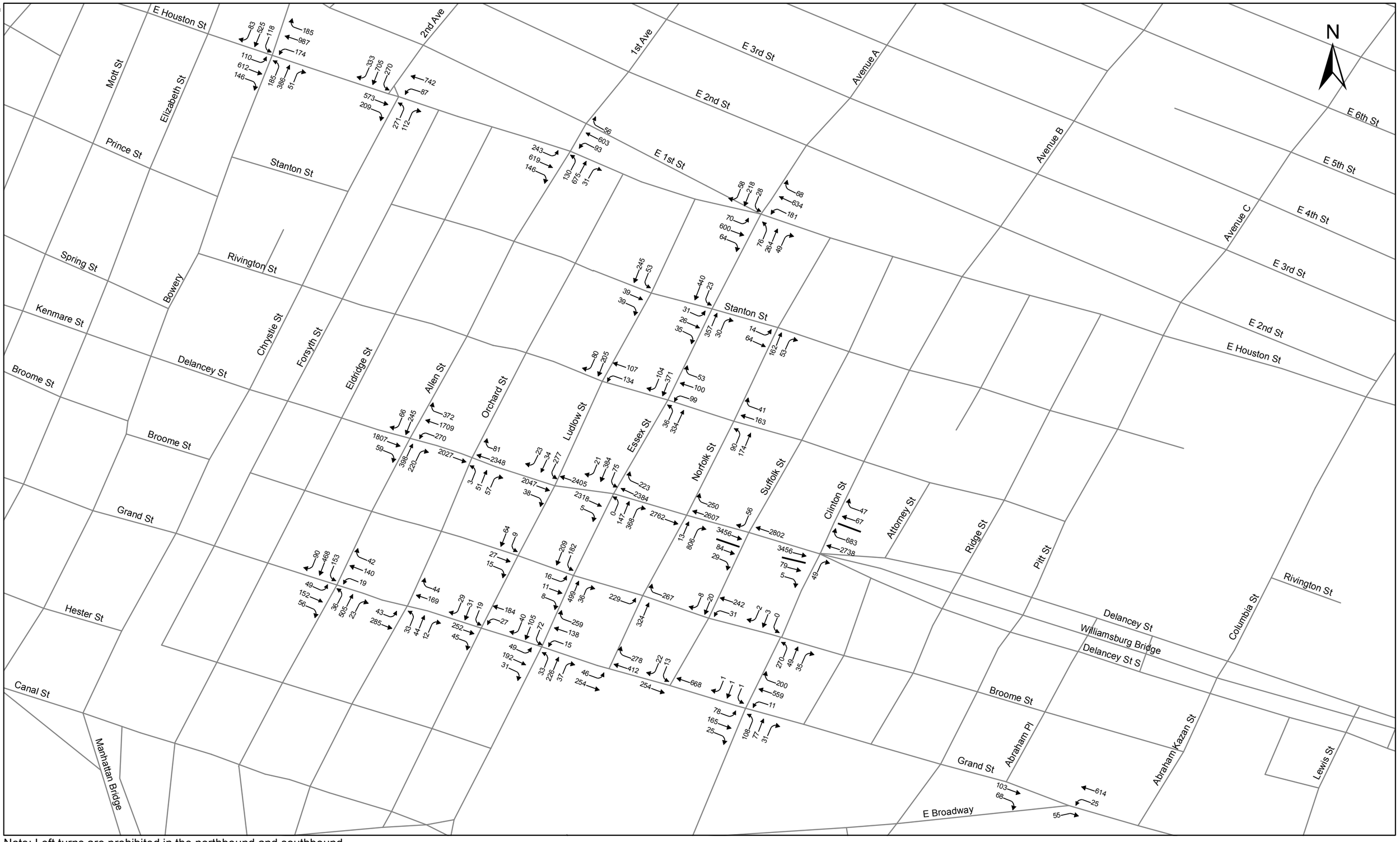
No Action Traffic Volumes
Weekday Midday Peak Hour



Note: Left turns are prohibited in the northbound and southbound directions at the intersection of Delancey Street and Essex Street during the weekday PM peak hour. Traffic volumes shown are illegal left turns.

No Action Traffic Volumes
Weekday PM Peak Hour

3.19.12.8



Note: Left turns are prohibited in the northbound and southbound directions at the intersection of Delancey Street and Essex Street during the weekday PM peak hour. Traffic volumes shown are illegal left turns.

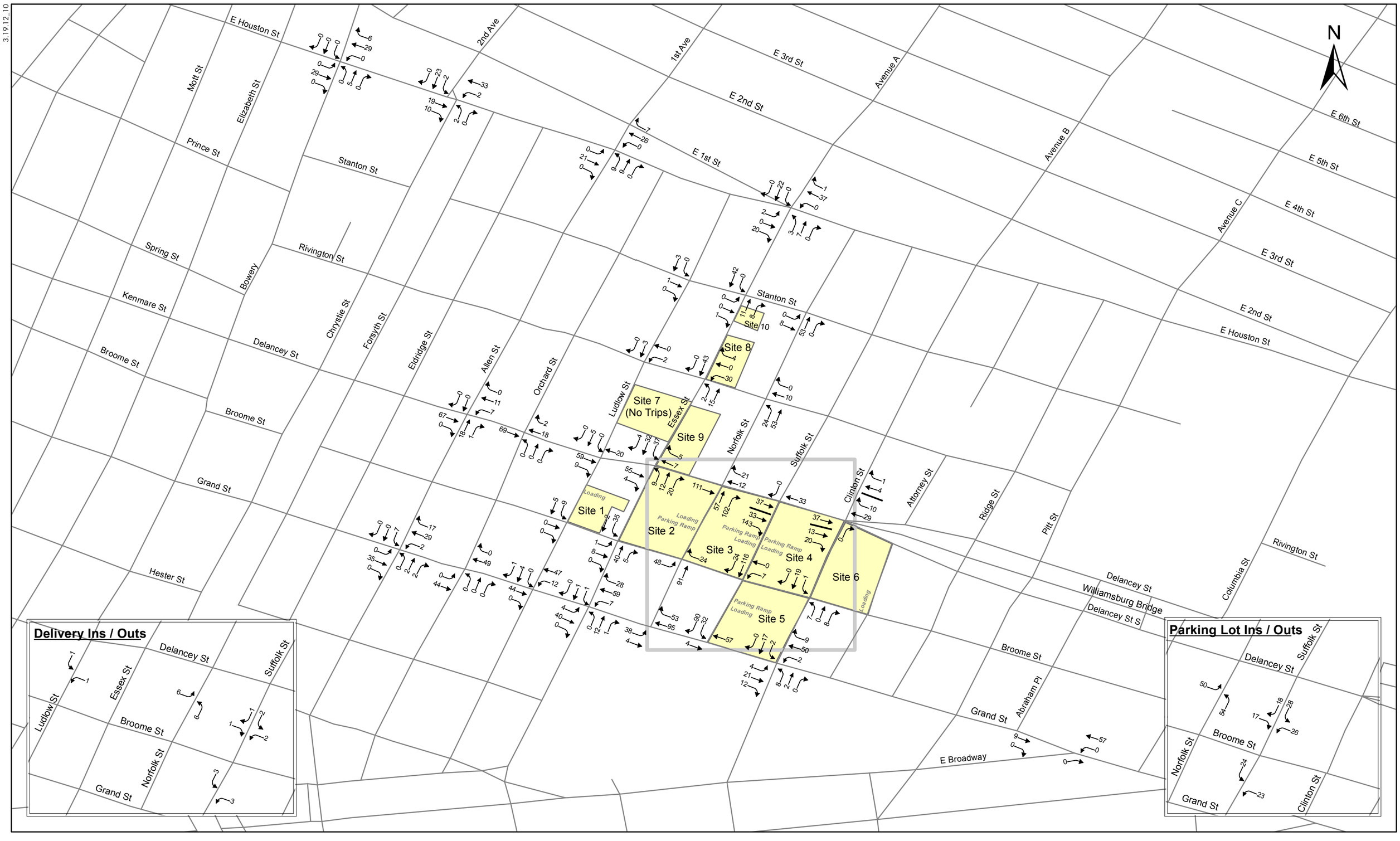
No Action Traffic Volumes
Saturday Peak Hour

3.19.12_9

SEWARD PARK MIXED-USE DEVELOPMENT PROJECT

2022 With Action Traffic Volume Increments
Weekday AM Peak Hour

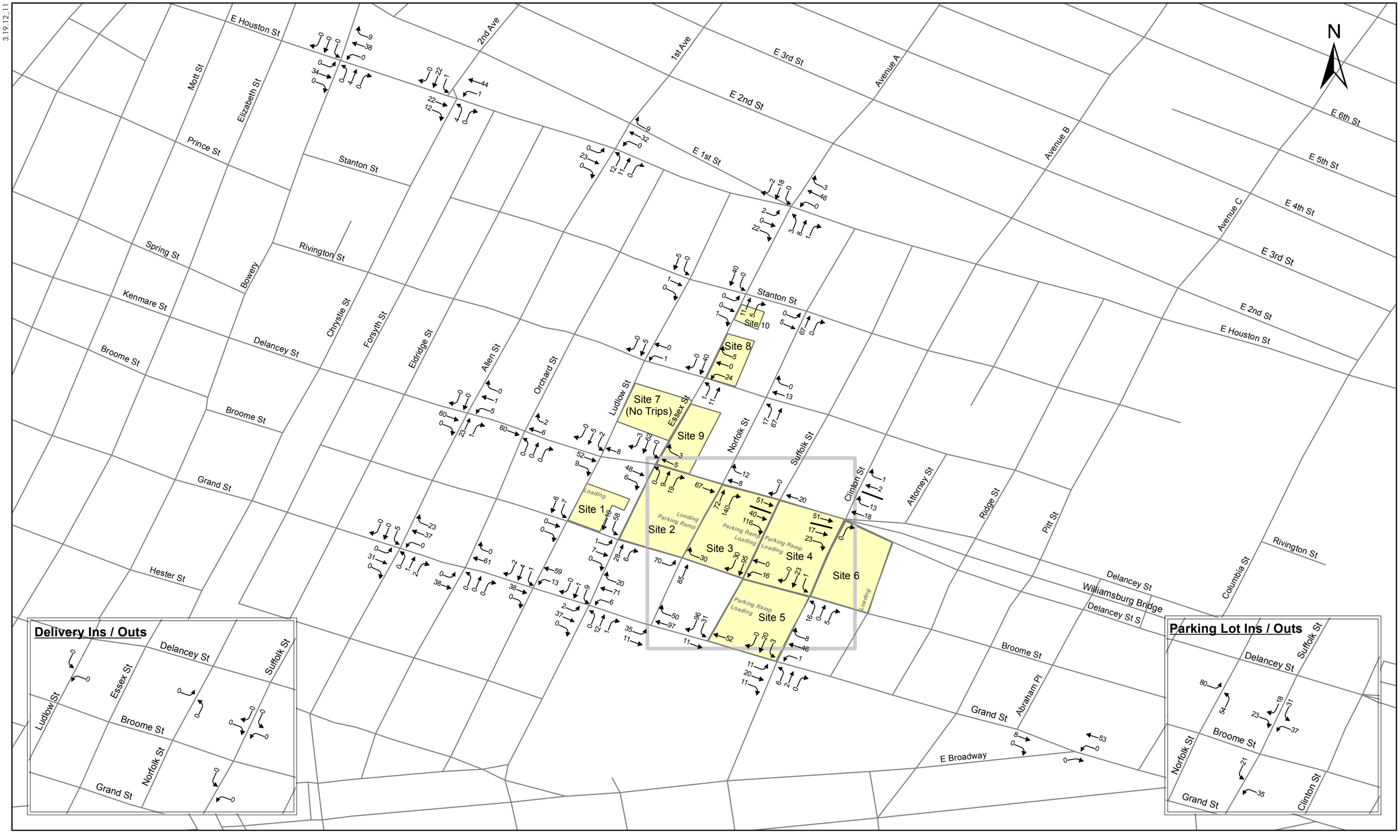
3.19.12_10



SEWARD PARK MIXED-USE DEVELOPMENT PROJECT

2022 wIth Action Traffic Volume Increments
Weekday Midday Peak Hour

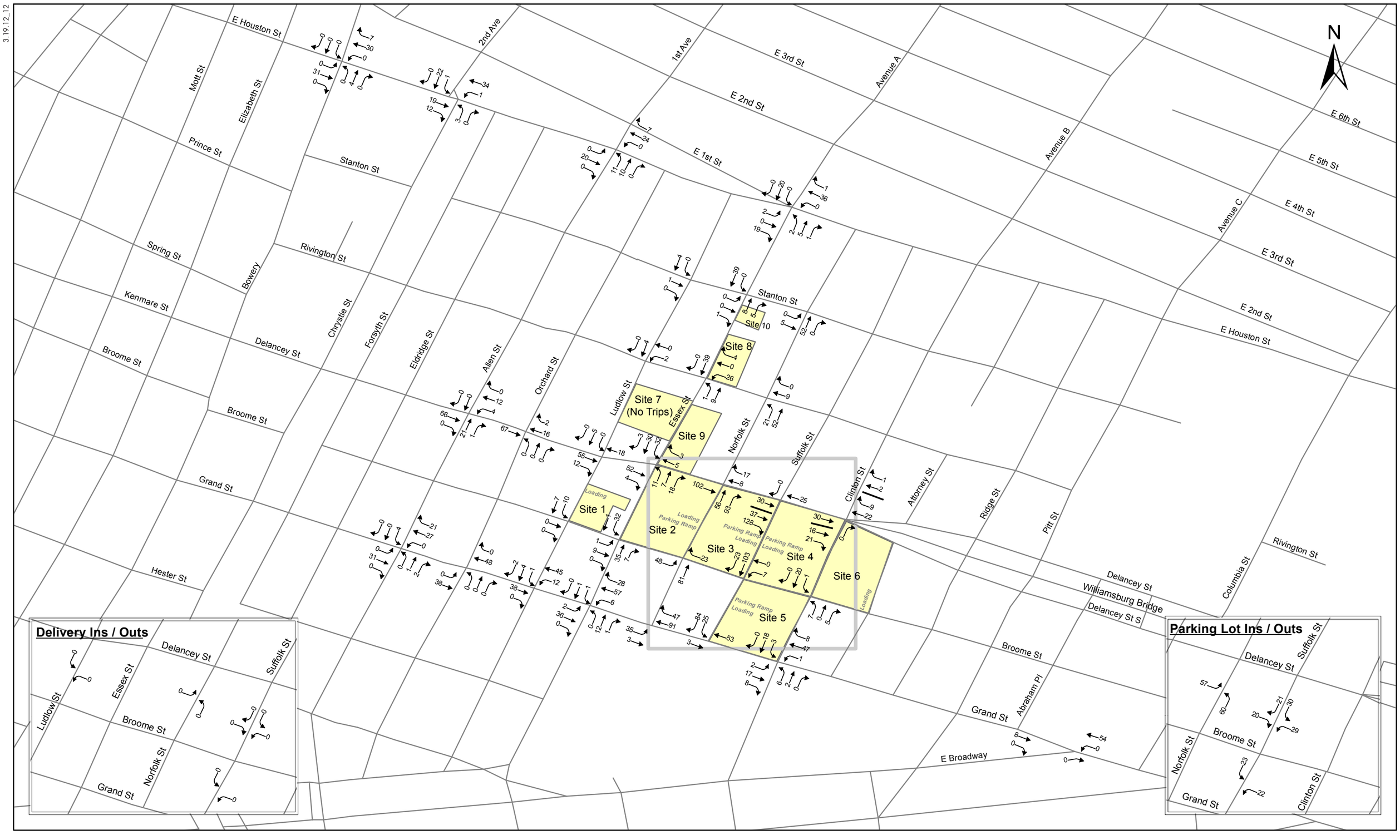
3.19.12_11



SEWARD PARK MIXED-USE DEVELOPMENT PROJECT

2022 With Action Traffic Volume Increments
Weekday PM Peak Hour

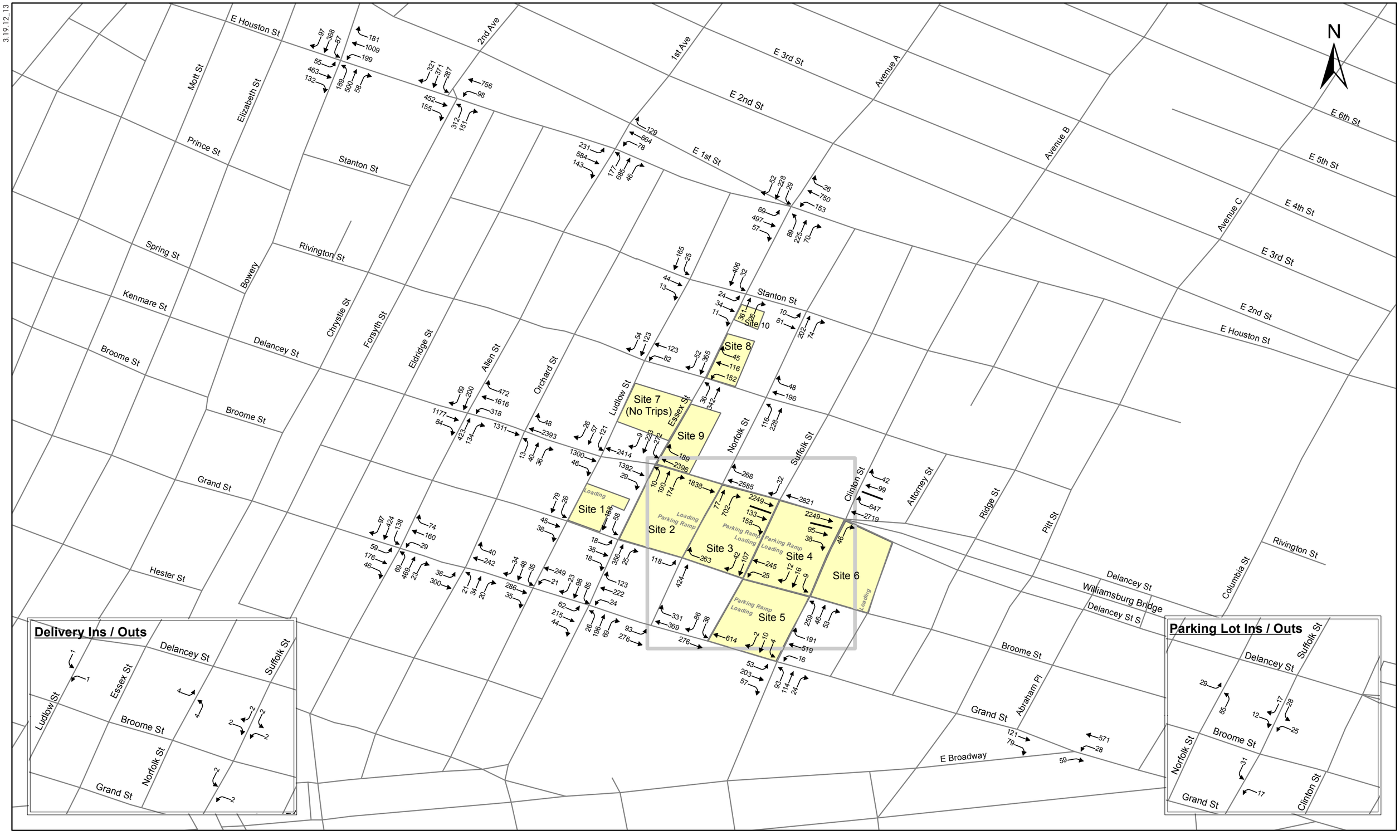
3.19.12_12



SEWARD PARK MIXED-USE DEVELOPMENT PROJECT

2022 With Action Traffic Volume Increments
Saturday Peak Hour

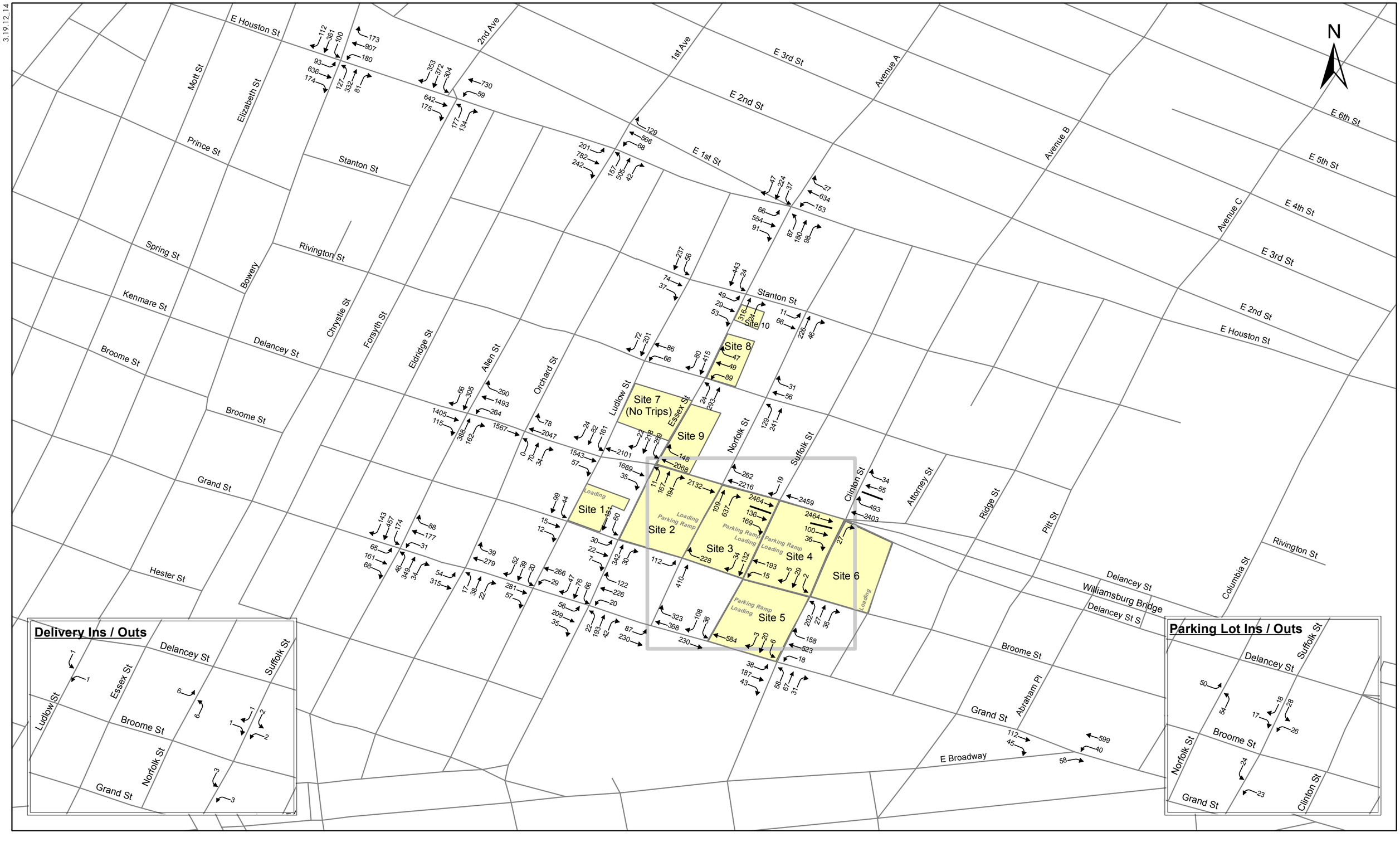
3.19.12_13



SEWARD PARK MIXED-USE DEVELOPMENT PROJECT

2022 With Action Traffic Volumes
Weekday AM Peak Hour

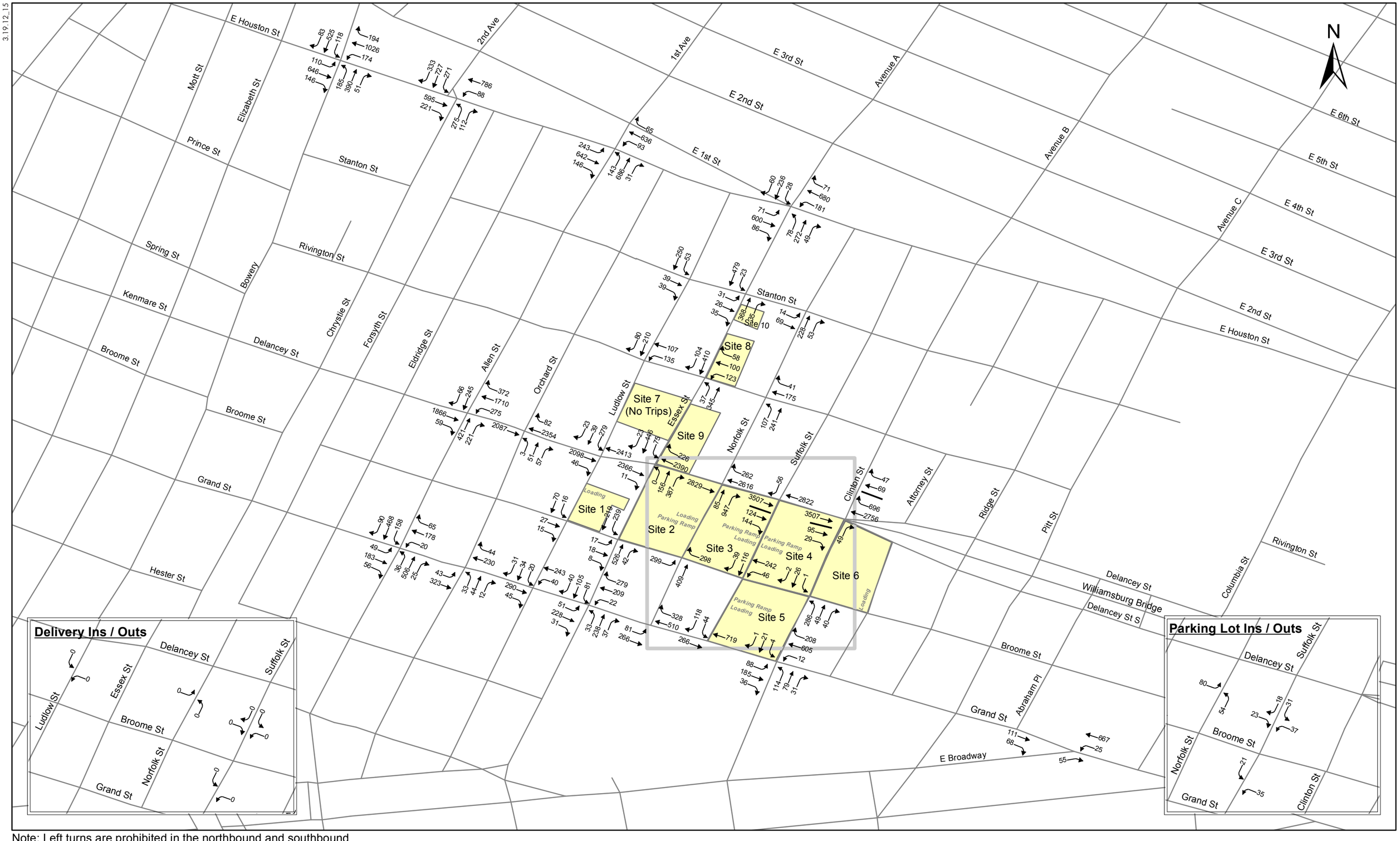
3.19.12_14



SEWARD PARK MIXED-USE DEVELOPMENT PROJECT

2022 With Action Traffic Volumes
Weekday Midday Peak Hour

3.19.12_15

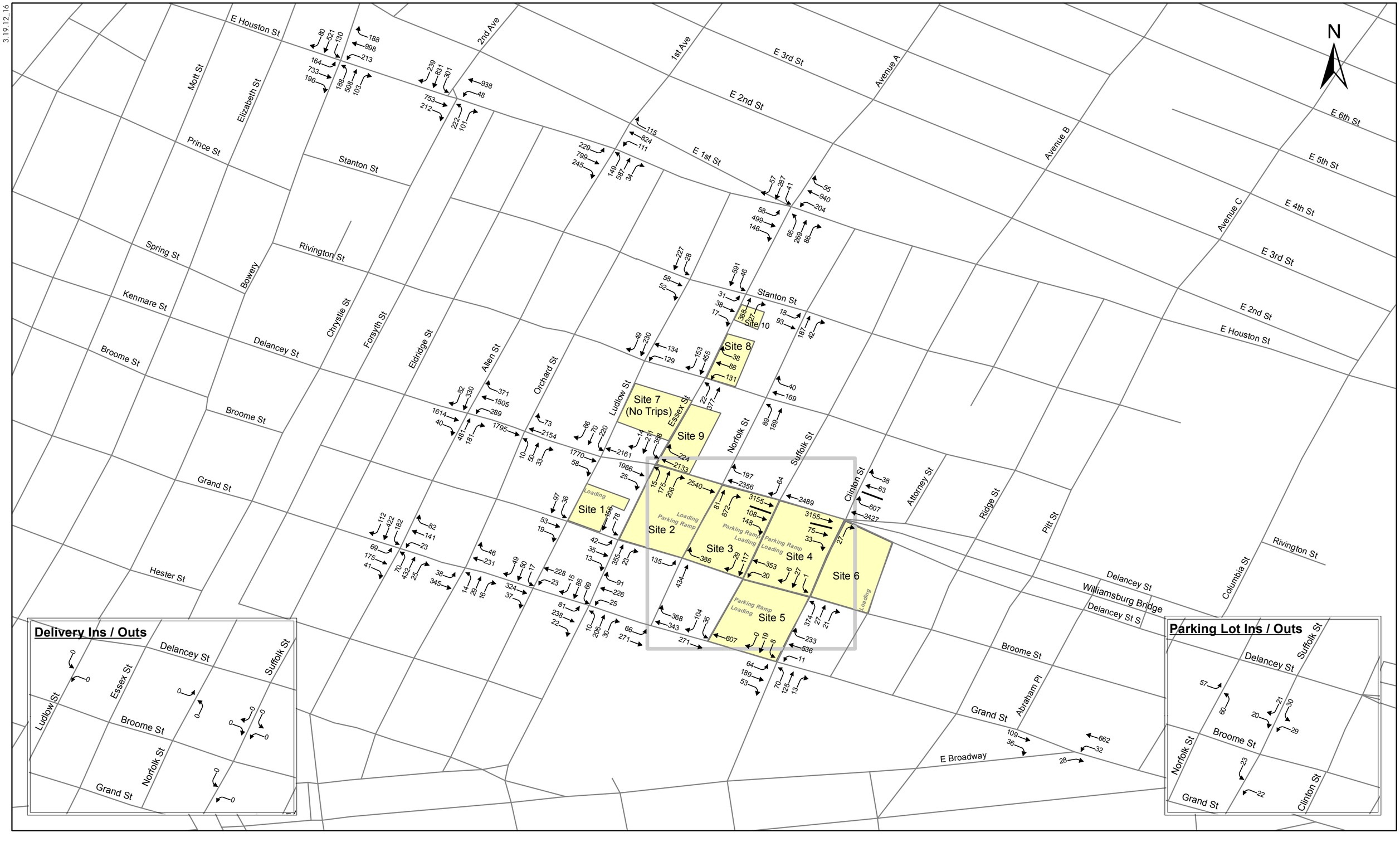


Note: Left turns are prohibited in the northbound and southbound directions at the intersection of Delancey Street and Essex Street during the weekday PM peak hour. Traffic volumes shown are illegal left turns.

SEWARD PARK MIXED-USE DEVELOPMENT PROJECT

2022 With Action Traffic Volumes
Weekday PM Peak Hour

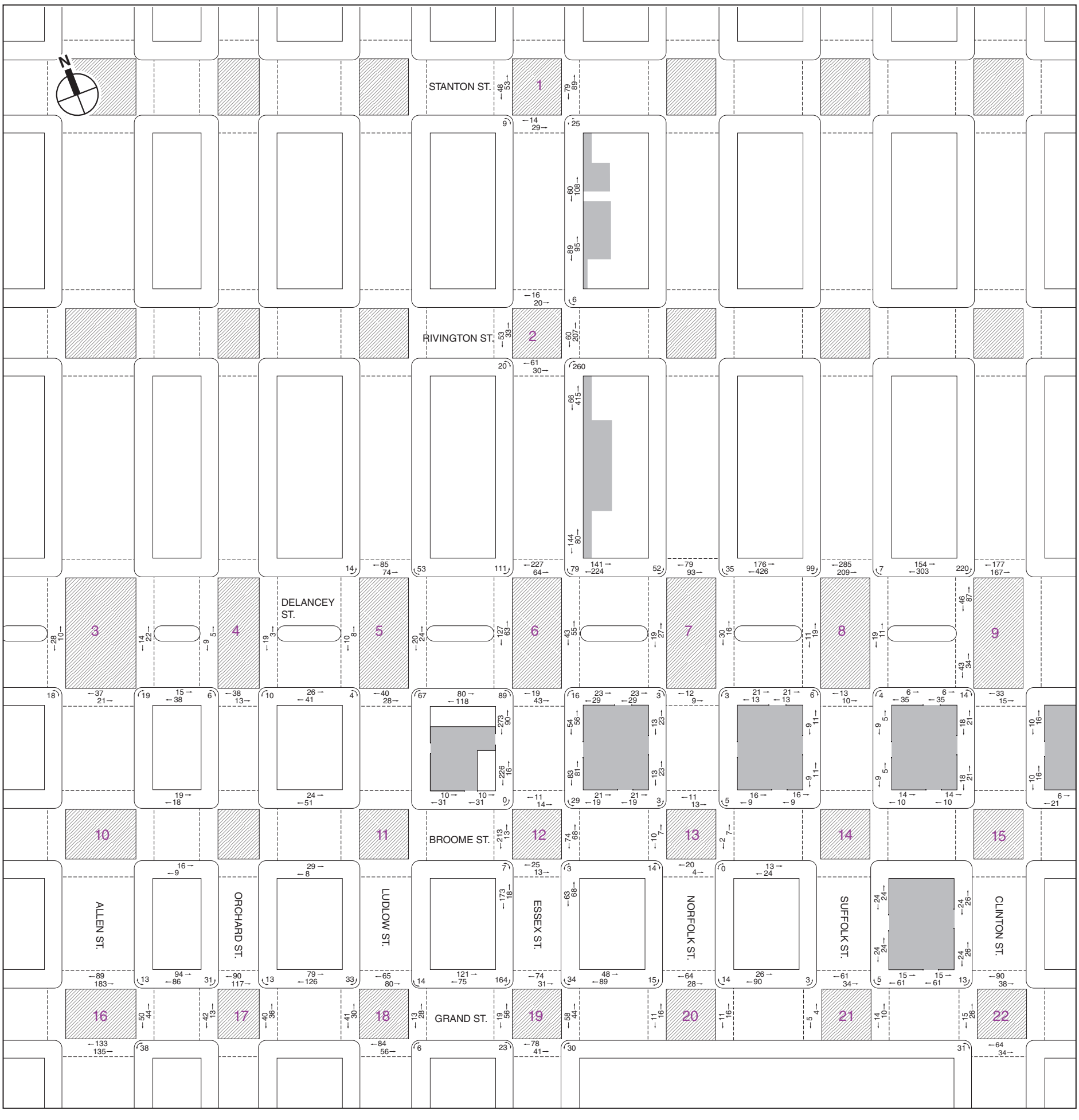
3.19.12_16



SEWARD PARK MIXED-USE DEVELOPMENT PROJECT

2022 With Action Traffic Volumes
Saturday Peak Hour

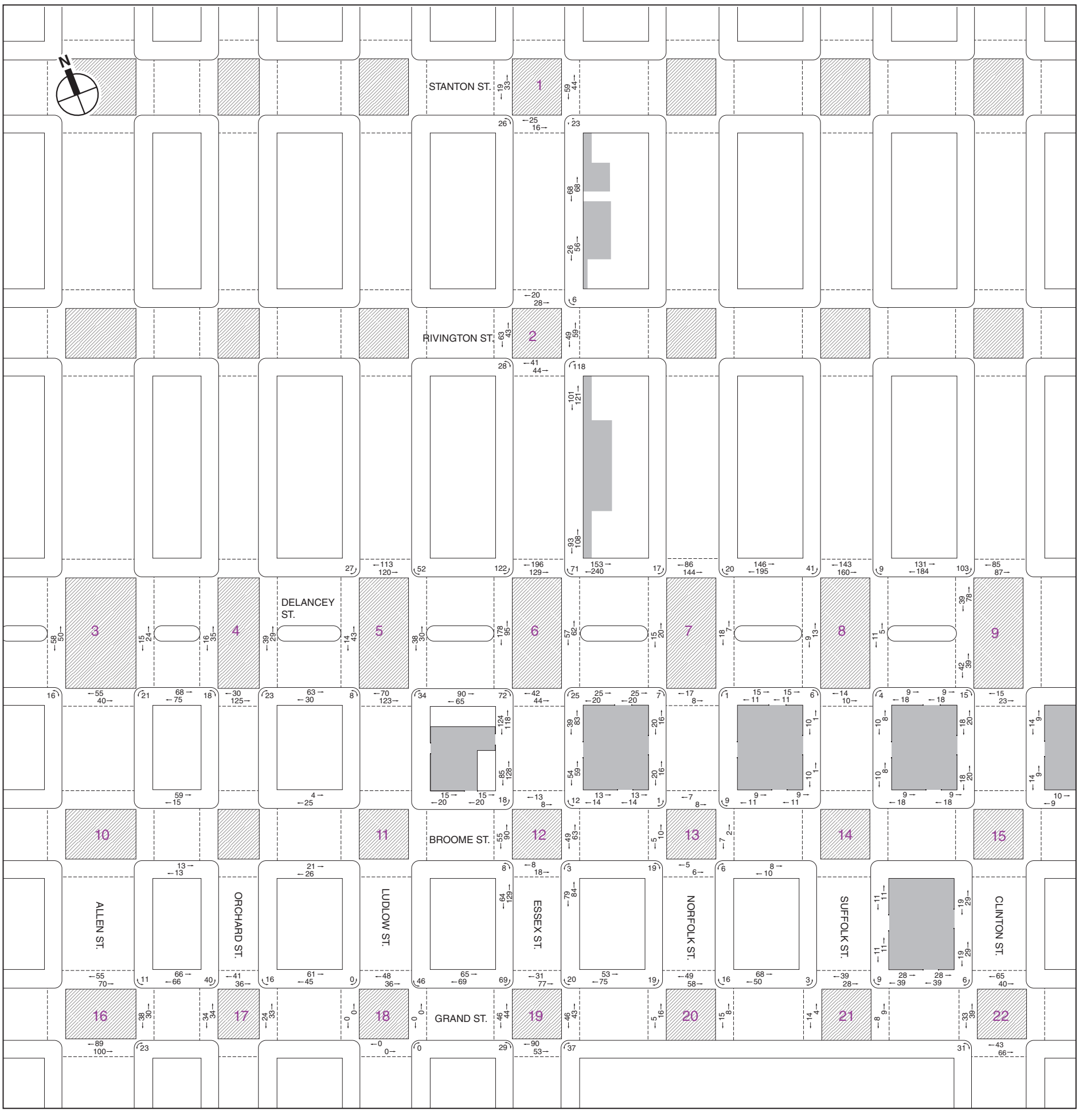
3.19.12_17



Proposed Development Parcels

2011 Existing Pedestrian Volumes
Weekday AM Peak 15 Minutes

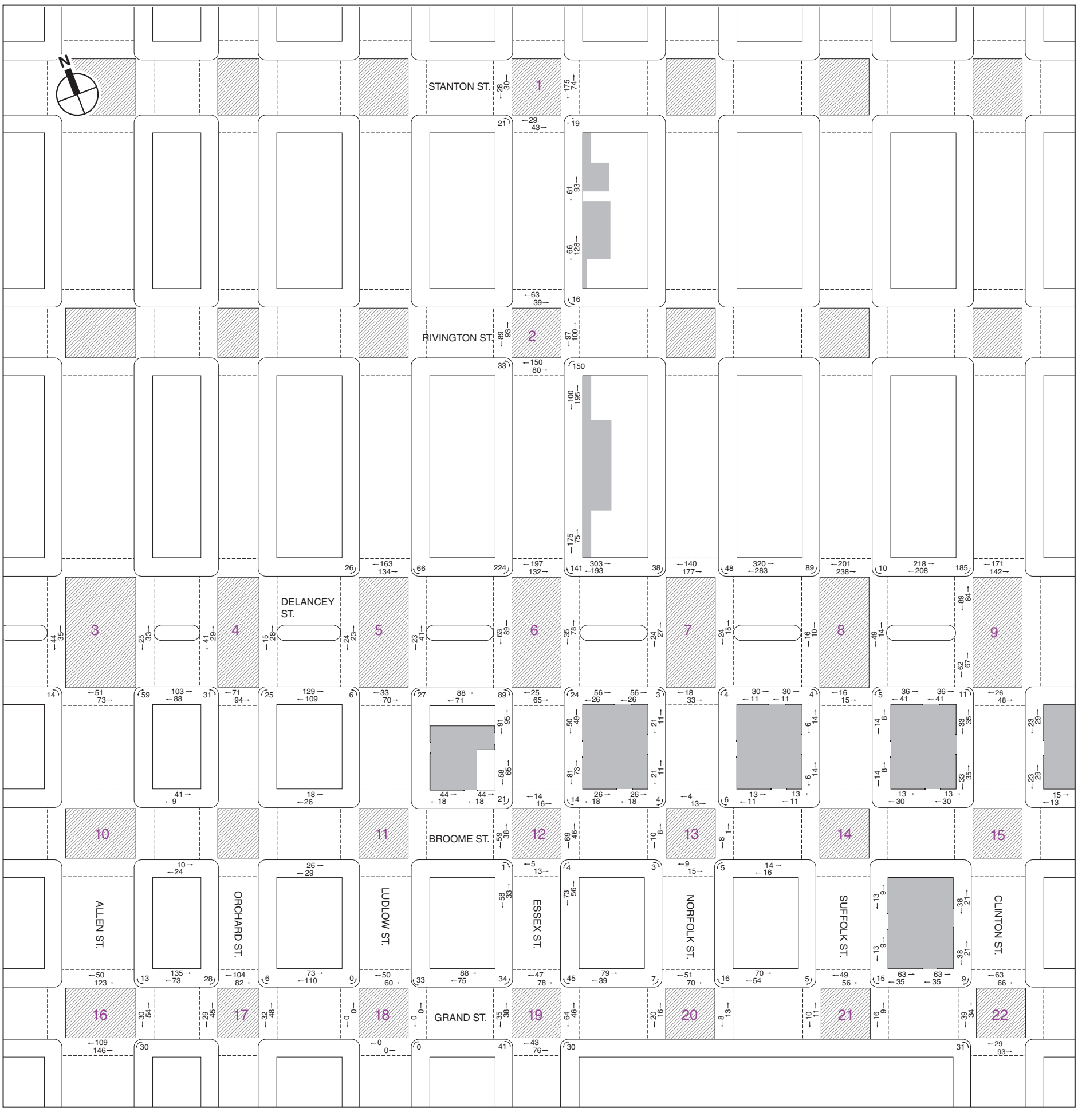
3.19.12_18



Proposed Development Parcels

2011 Existing Pedestrian Volumes
Weekday Midday Peak 15 Minutes

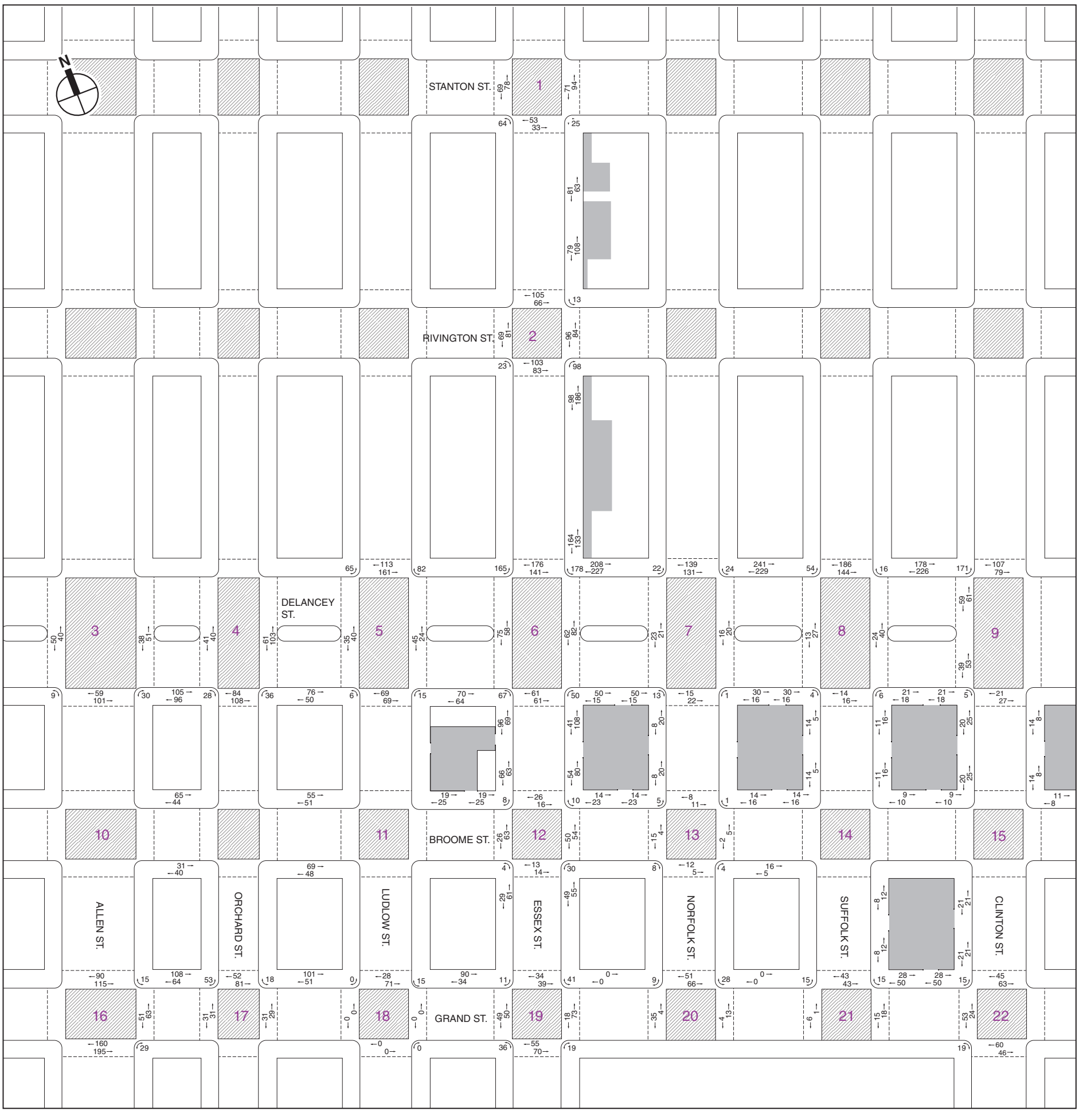
3.19.12_19



Proposed Development Parcels

2011 Existing Pedestrian Volumes
Weekday PM Peak 15 Minutes

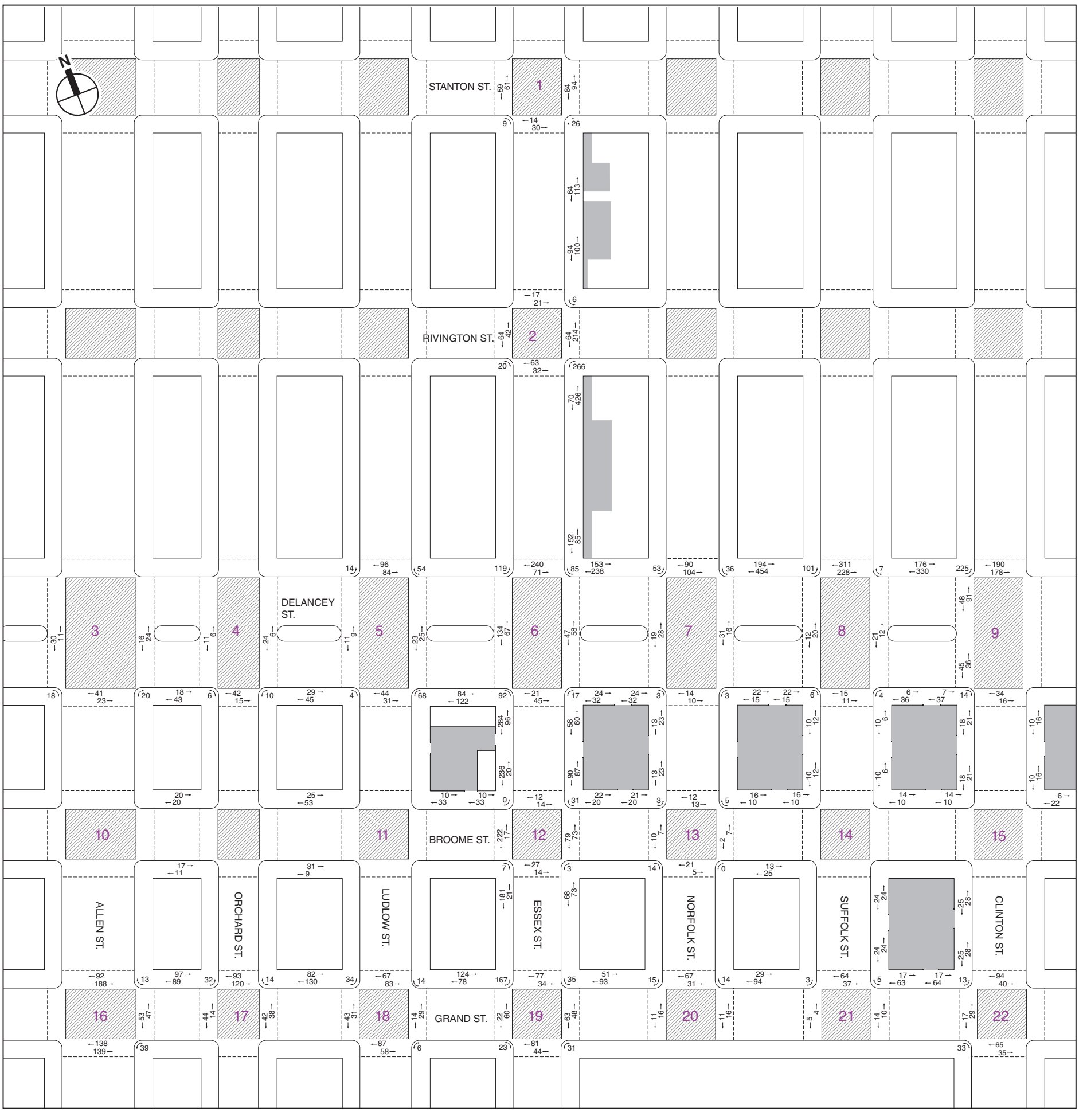
3.19.12_20



Proposed Development Parcels

2011 Existing Pedestrian Volumes
Saturday Peak 15 Minutes

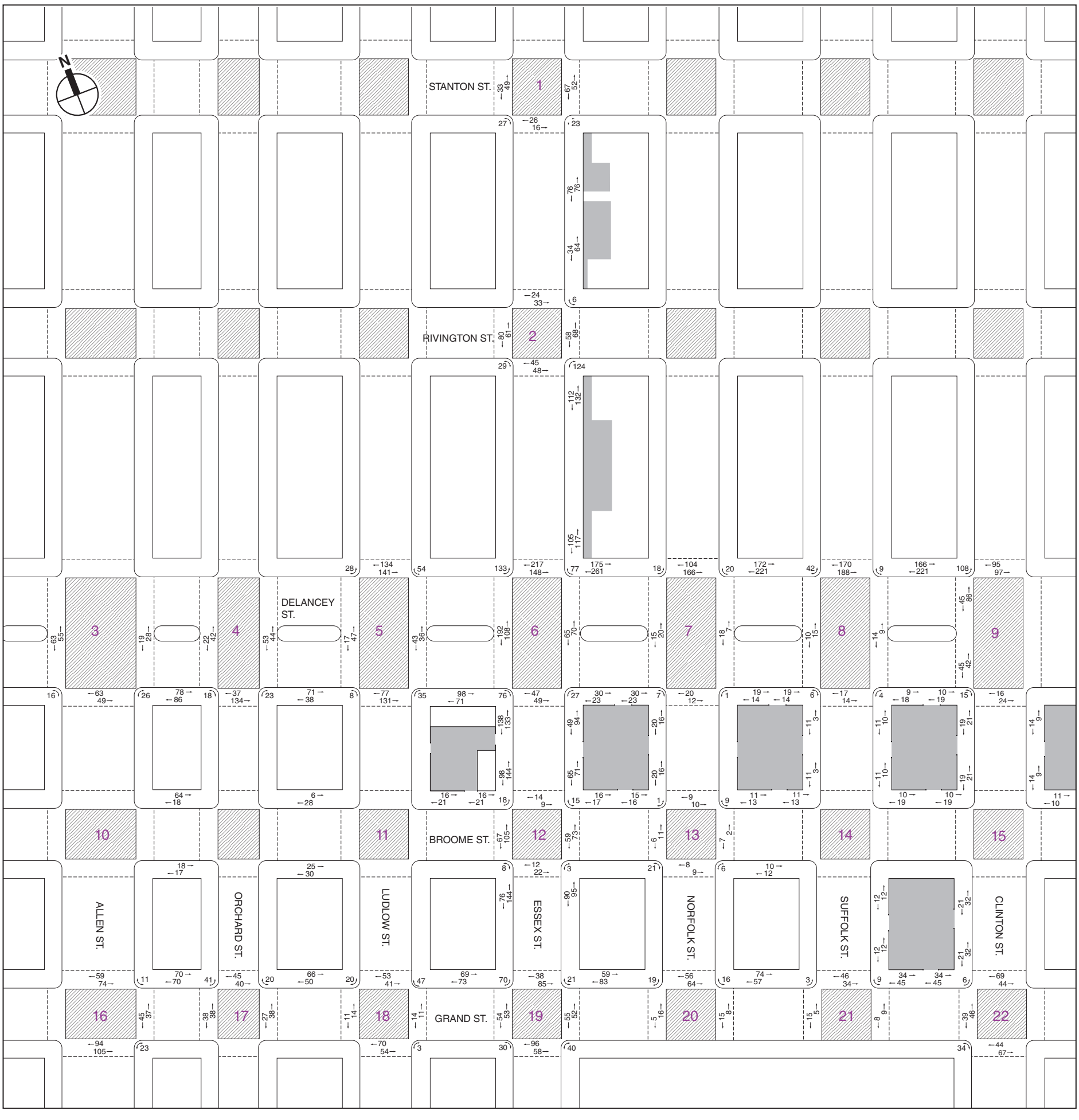
3.19.12_21



Proposed Development Parcels

2022 No Action Pedestrian Volumes
Weekday AM Peak 15 Minutes

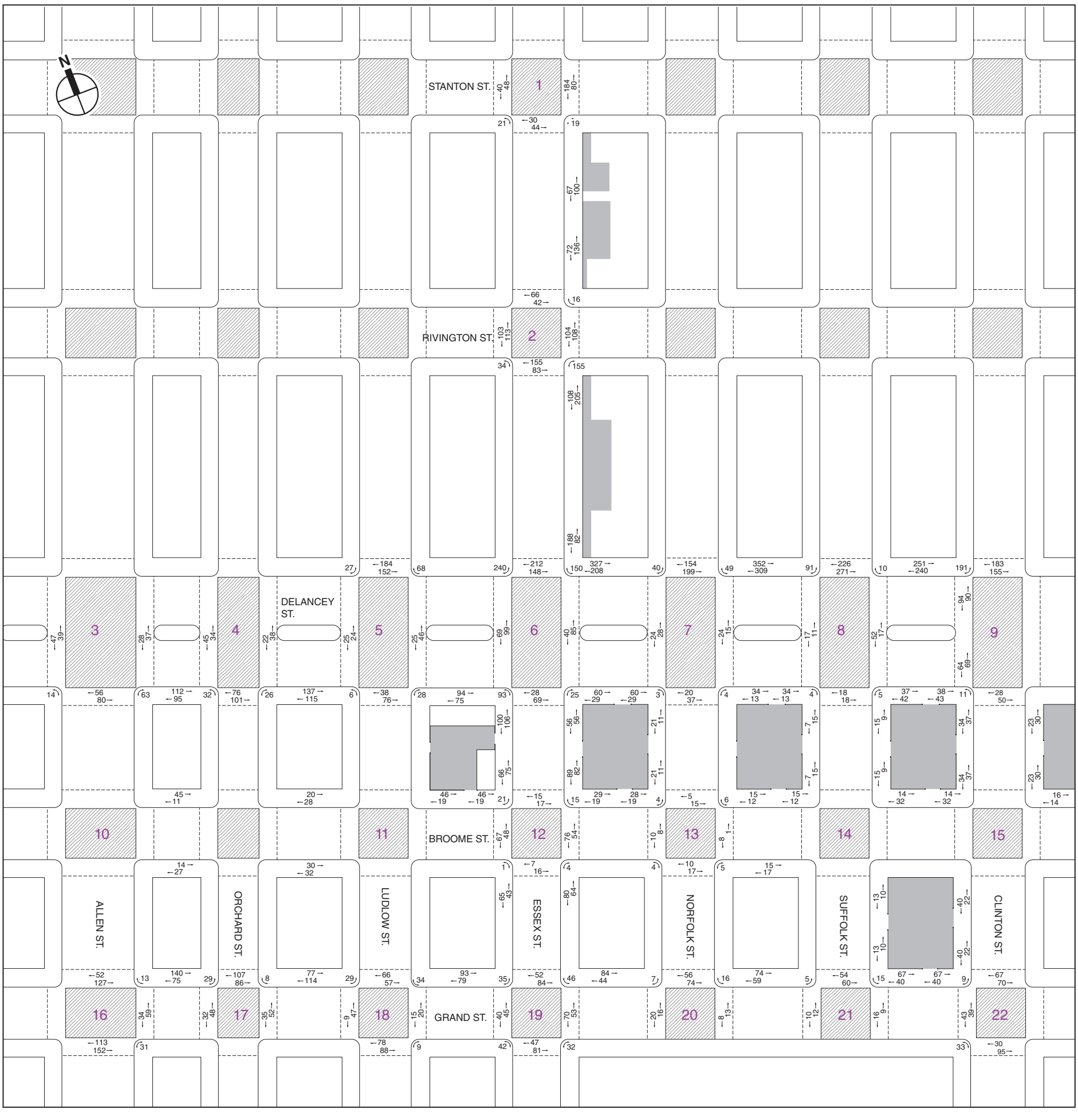
3.19.12_22



Proposed Development Parcels

2022 No Action Pedestrian Volumes
Weekday Midday Peak 15 Minutes

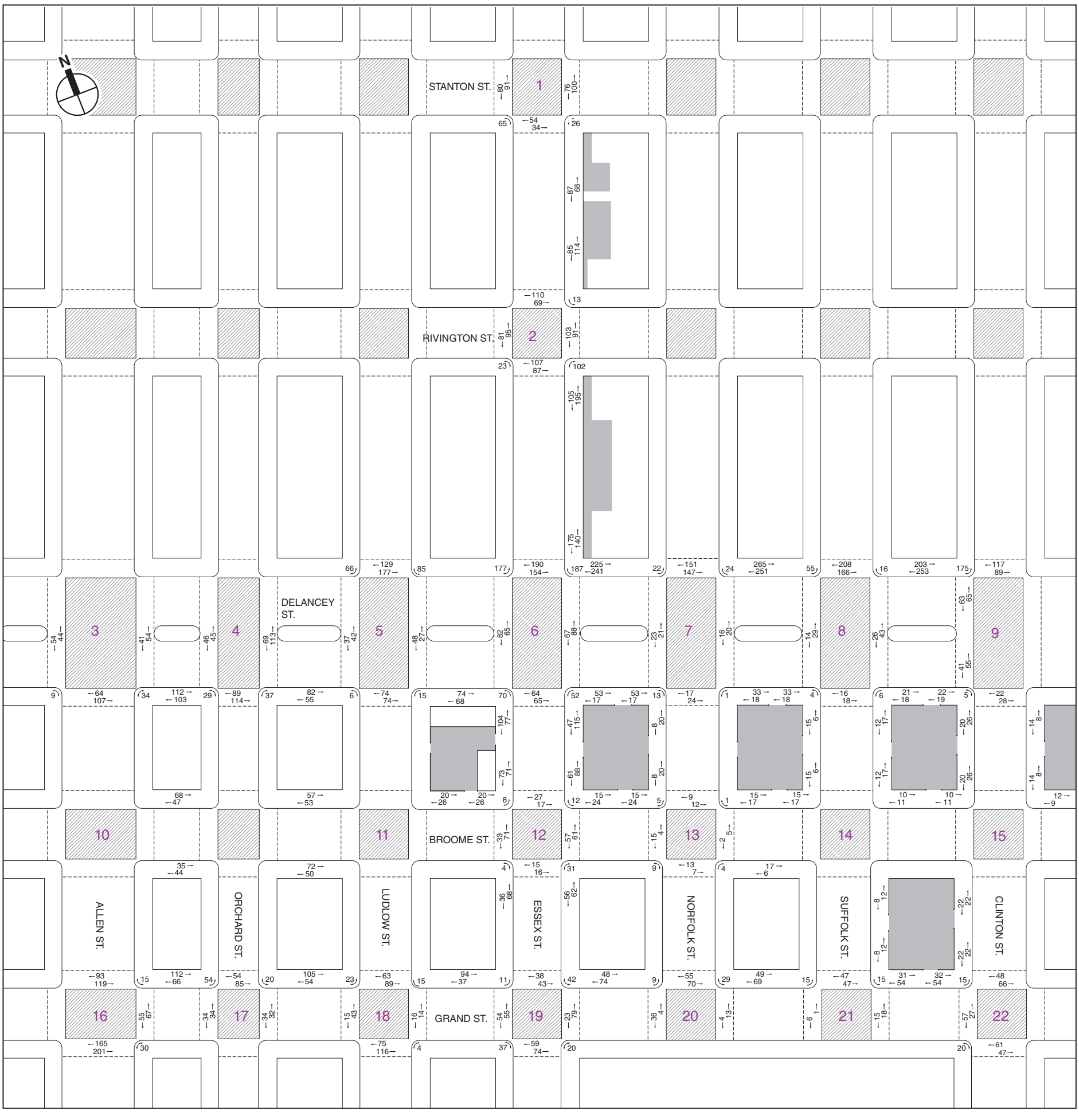
3.19.12_23



Proposed Development Parcels

2022 No Action Pedestrian Volumes
Weekday PM Peak 15 Minutes

3.19.12_24



Proposed Development Parcels

2022 No Action Pedestrian Volumes
Saturday Peak 15 Minutes

Proposed Development Parcels

Project Generated Pedestrian Volumes
Weekday AM Peak Hour

Proposed Development Parcels

Project Generated Pedestrian Volumes
Weekday AM Peak Hour

Proposed Development Parcels

Project Generated Pedestrian Volumes
Weekday Midday Peak Hour

Proposed Development Parcels

Project Generated Pedestrian Volumes
Weekday Midday Peak Hour

3.19.12_27a

Proposed Development Parcels

SEWARD PARK MIXED-USE DEVELOPMENT PROJECT

Project Generated Pedestrian Volumes
Weekday PM Peak Hour

3.19.12_27b

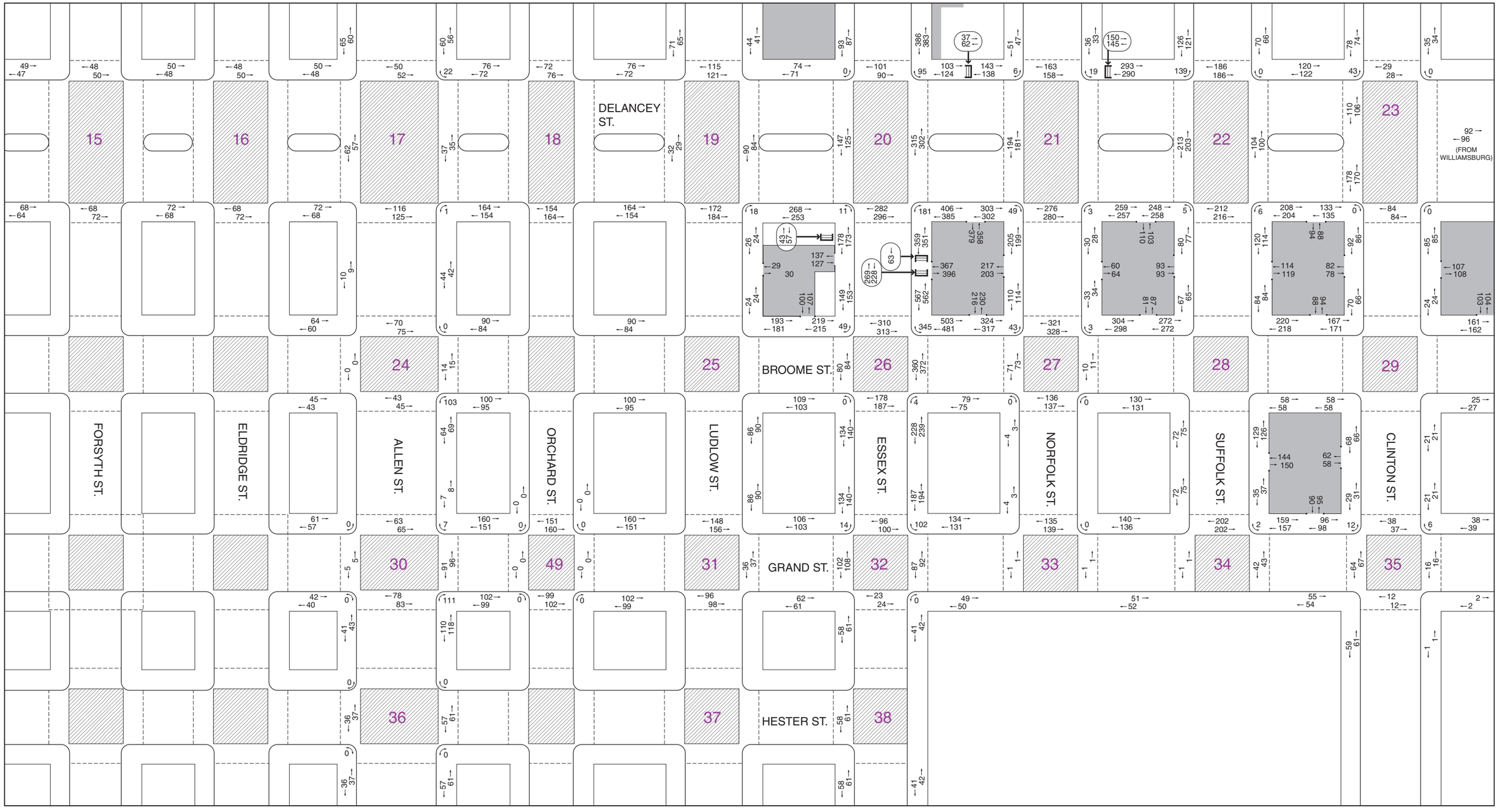
Proposed Development Parcels

Project Generated Pedestrian Volumes
Weekday PM Peak Hour

3.19.12_28a

Proposed Development Parcels

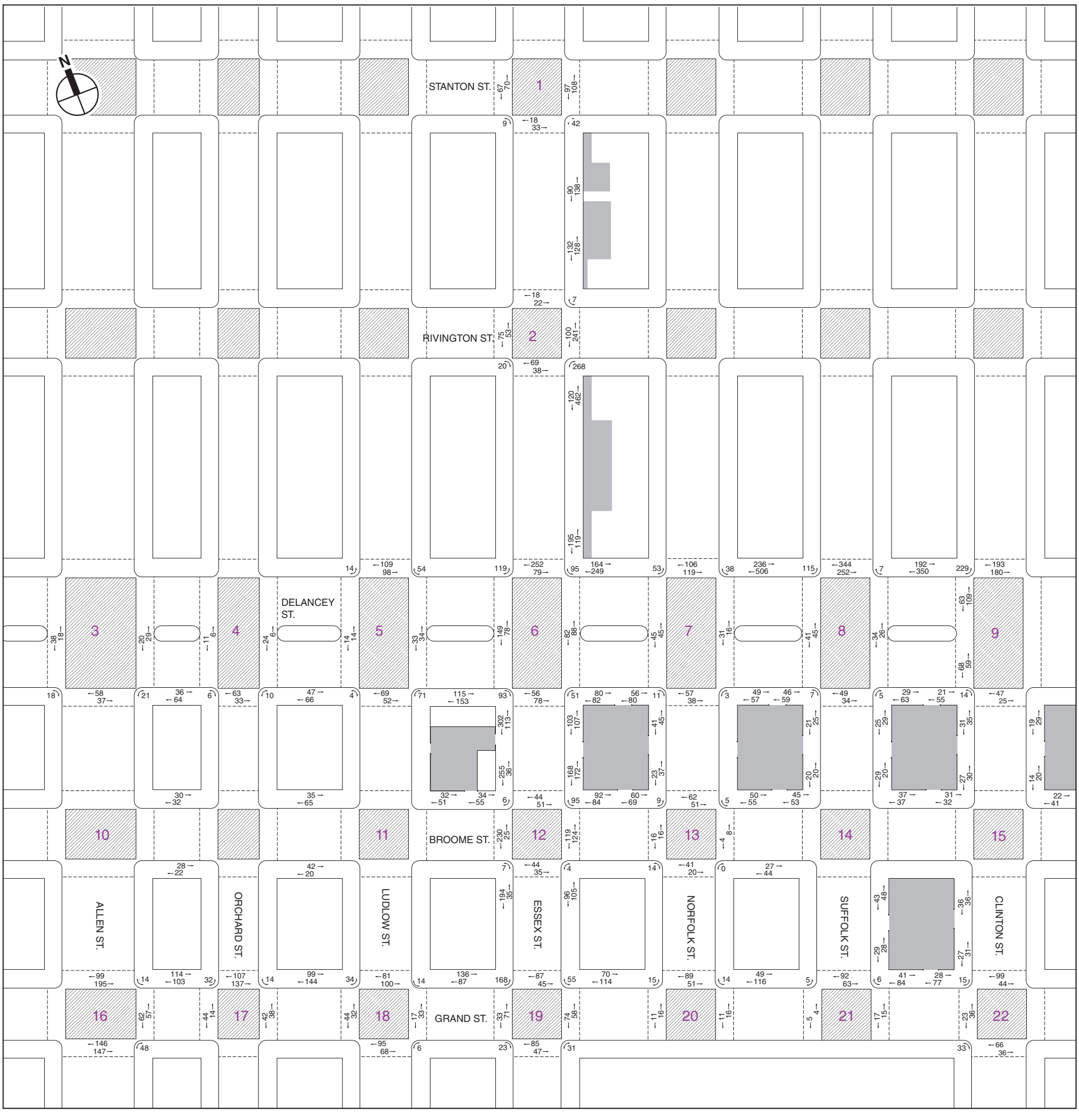
Project Generated Pedestrian Volumes
Saturday Peak Hour



Proposed Development Parcels

Project Generated Pedestrian Volumes
Saturday Peak Hour

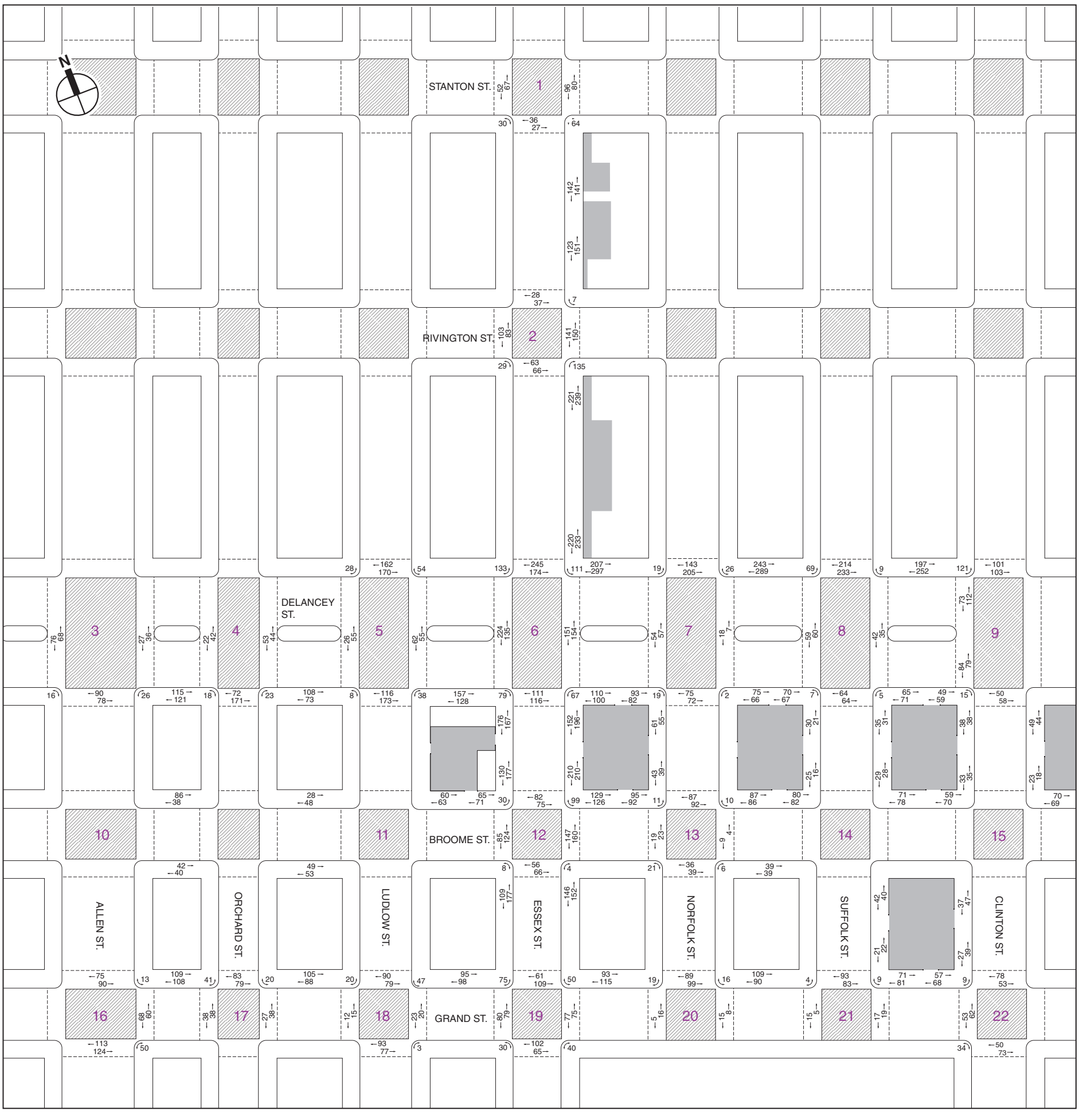
3.19.12_29



Proposed Development Parcels

2022 With Action Pedestrian Volumes - Peak 15 Minutes
Weekday AM Peak Hour

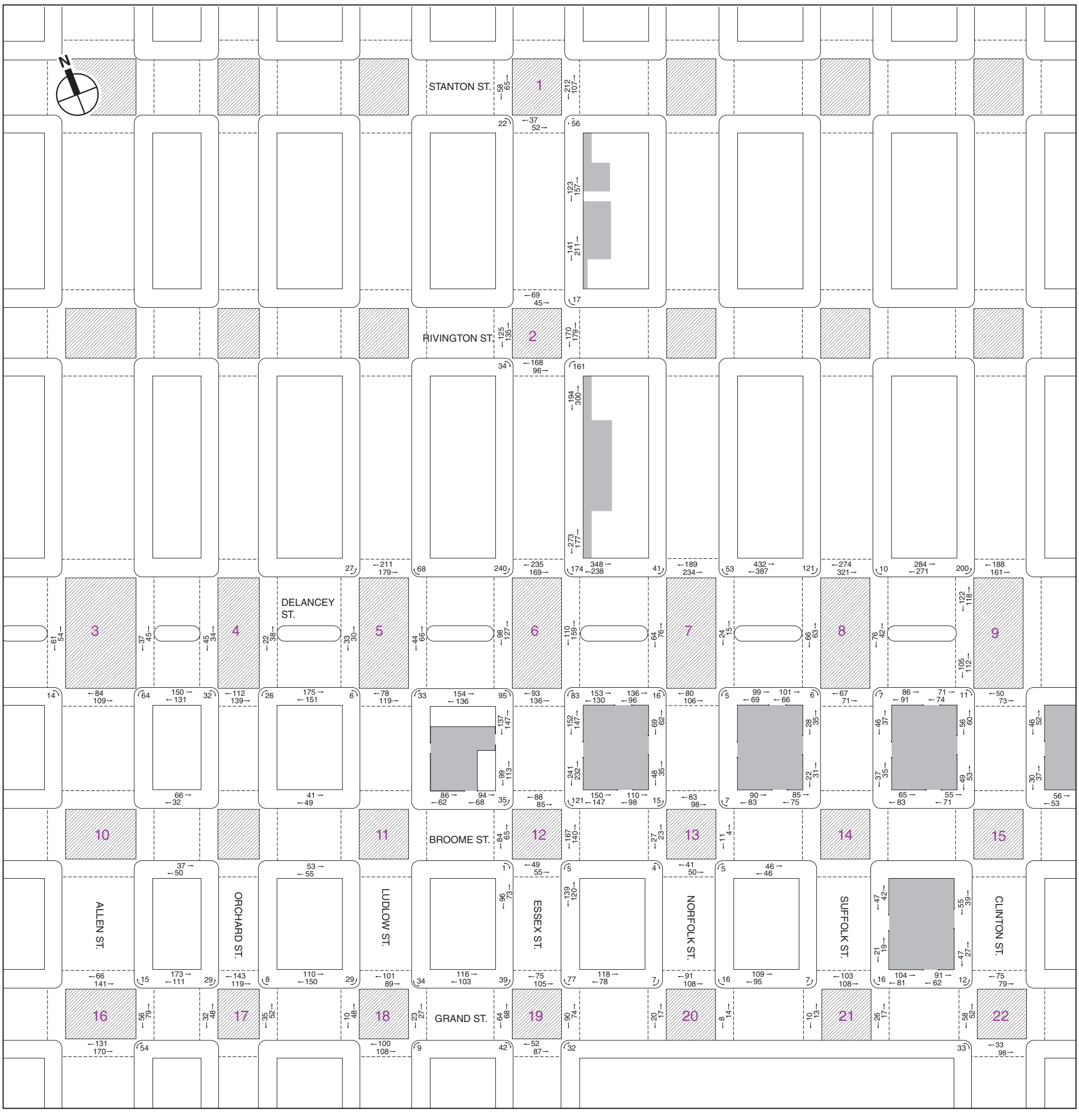
3.19.12_30



Proposed Development Parcels

2022 With Action Pedestrian Volumes - Peak 15 Minutes
Weekday Midday Peak Hour

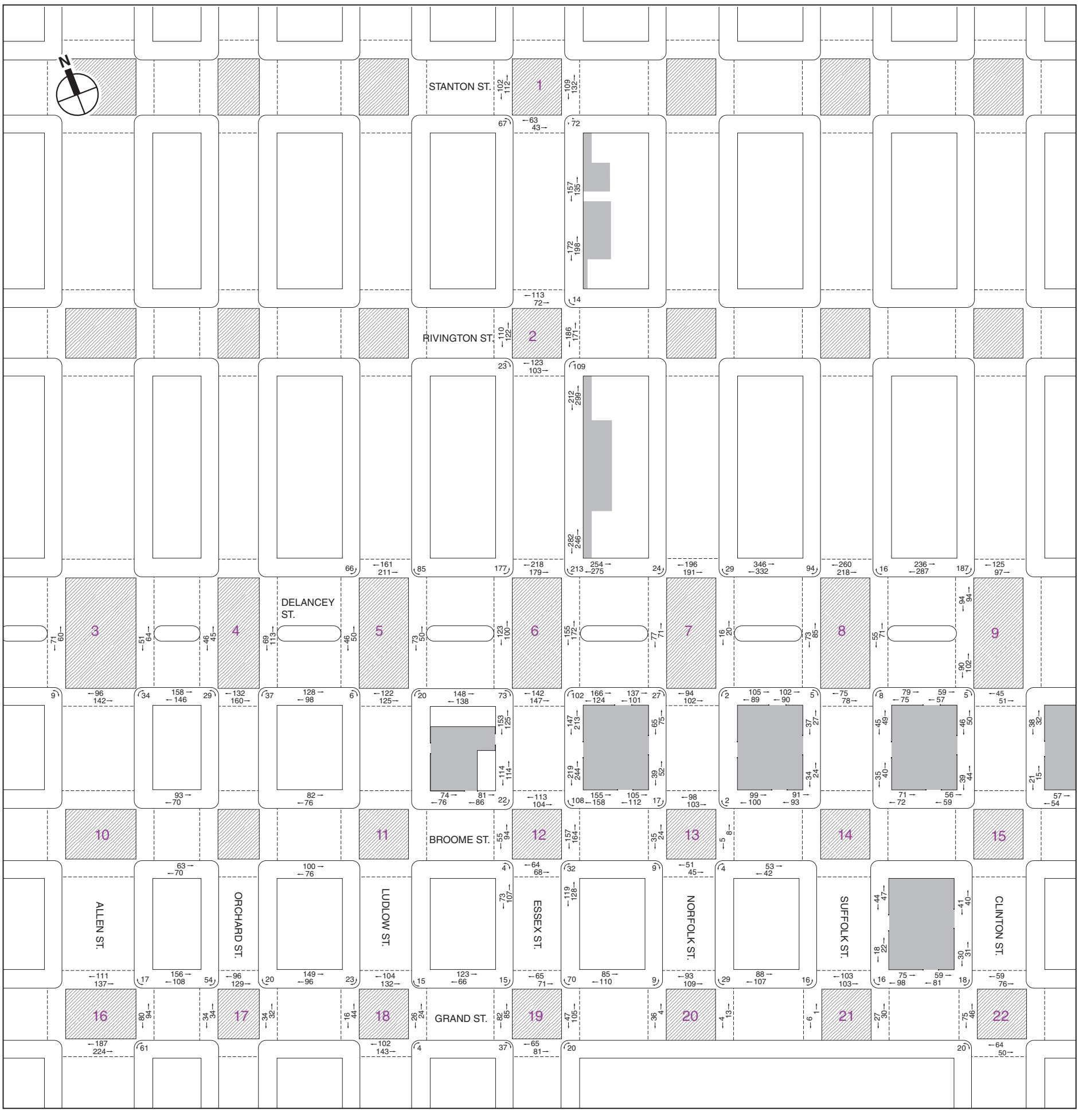
3.19.12_31



Proposed Development Parcels

2022 With Action Pedestrian Volumes - Peak 15 Minutes
Weekday PM Peak Hour

3.19.12_32



Proposed Development Parcels

2022 With Action Pedestrian Volumes - Peak 15 Minutes
Saturday Peak Hour