9

Transportation

This chapter considers the potential for the proposed project to result in significant adverse impacts on traffic operations and mobility, public transportation facilities and services, pedestrian elements and flow, safety of all roadway users (pedestrians, cyclists, transit users and motorists), and on- and off-street parking.

9.1 Introduction

The proposed project is located in the Lower East Side neighborhood of Manhattan on the block bounded by Broome Street, Norfolk Street, Grand Street, and Suffolk Street.

On Projected Development Site 1, the Suffolk Building would contain up to 373 residential dwelling units, approximately 40,222 square feet (sf) of community facility space facing Suffolk Street for the Chinese-American Planning Council (CPC), and approximately 18,788 sf of retail space facing Broome Street. The Norfolk Building would contain approximately 115 affordable units and approximately 3,788 sf of community facility space for BHH, a Jewish Heritage and Cultural Center, facing Norfolk Street. On Projected Development Site 2, a commercial addition of approximately 4,759 sf would be developed. No parking would be provided. **Figure 9-1** shows the location of the projected development sites, and **Table 9-1** summarizes the With-Action development program.

Figure 9-1 Site Locations

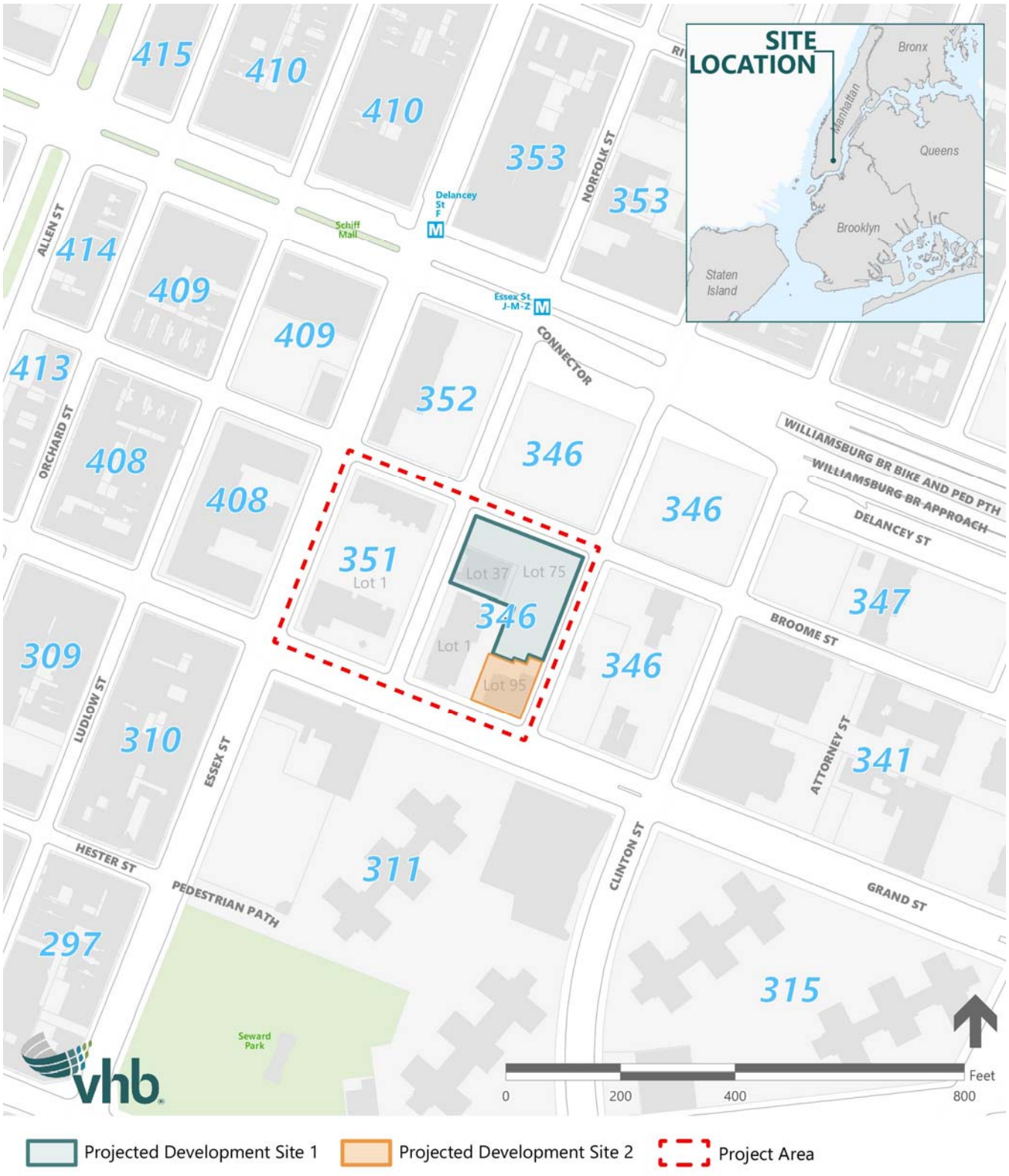


Table 9-1 Development Program for Analysis

Use	Suffolk Building	Norfolk Building	Projected Development Site 2	Total Development Program
Residential	373 DU	115 DU	-	488 DU
Community Facility	40,222 SF	3,788 SF	-	44,010 SF
Local Retail	18,788 SF	-	4,759 SF	23,547 SF

Principal Conclusions

Traffic Street Network

Overall, the proposed project would generate a total of 51 vehicles per hour (vph) (15 "ins" and 36 "outs") during the weekday AM peak hour, 39 vph (20 "ins" and 19 "outs") in the weekday midday peak hour, 62 vph (35 "ins" and 27 "outs") in the weekday PM peak hour, and 50 vph (25 "ins" and 25 "outs") in the Saturday midday peak hour. Although the proposed project would generate a modest number of vehicle trips which would typically not necessitate traffic levels of service analyses, the *Seward Park Mixed Use Development FEIS Technical Memorandum 3 (2015)* had identified a number of unmitigated traffic impacts within the immediate proximity of the project block and as such, per consultation with New York City Department of City Planning (NYCDCP), six intersections were identified for analysis. Of the six intersections analyzed, the proposed project would result in significant adverse traffic impacts at two intersections during the weekday AM and Saturday midday peak hours, one intersection during the weekday midday peak hour, and three intersections during the weekday PM peak hour. The identification and evaluation of traffic capacity improvements needed to mitigate these impacts are presented in **Chapter 18**, "**Mitigation**."

Parking

The peak weekday and Saturday project-generated parking demand of approximately 108 spaces would be expected to occur during nighttime or overnight hours with project residents parking overnight. Since the proposed project would not provide parking on-site, a survey of existing off-street parking facilities within ¼-mile of the project sites was performed. The survey indicated that the project-generated parking demand could be accommodated by parking spaces available in the three nearby off-street parking facilities.

Transit

Four~~Two~~ subway station elements, the surface stairway (S4 stairway) and escalator (E328) located along the east side of Essex Street south of Delancey Street, and two fare arrays (N526 and N26A), were analyzed based on the results of the Level 2 screening assessment. The subway station analysis concluded~~concluding~~ that significant transit impacts would not be expected to occur as a result of the proposed project. The screening level analyses determined that detailed subway and bus line-haul analyses would not be needed.

Pedestrians

Pedestrian analyses were performed for three sidewalk elements, eight crosswalk elements, and six corner elements for the weekday AM, midday, PM, and Saturday midday peak hours. Of the 17 pedestrian elements analyzed, the proposed project would result in significant adverse impacts at one pedestrian element during the weekday PM peak hour; no significant impacts would result during the weekday AM, midday, and Saturday midday peak hours. Mitigation measures that could be implemented to mitigate the potential significant adverse pedestrian impact are discussed in **Chapter 17**, "**Mitigation**."

Vehicular and Pedestrian Safety

Crash data were obtained for the study area intersections from the New York City Department of Transportation (NYCDOT) for the most recent three-year period (2014 through 2016). This information is based on data provided by the New York State Department of Transportation (NYSDOT), New York State Department of Motor Vehicles (NYSDMV), and New York City Police Department (NYPD). One of the nine intersections analyzed in the study area, Delancey Street at Essex Street, is considered a high-crash location by the NYCDOT criteria. A safety initiative, the Delancey Street Protect Bike Lanes and Safety Improvements project, was implemented within the study area in fall 2018. This project aimed to improve pedestrian and bicycle safety along the corridor by filling in the gap in the bike network along Delancey Street through the removal of one eastbound Delancey Street travel lane to create protect bike lanes and extend the median areas (via paint) to increase the pedestrian areas along Delancey Street. These changes are expected to decrease the amount of total crashes and pedestrian injuries along Delancey Street, including at the high-crash location with Essex Street.

9.2 Methodology

According to the 2014 *CEQR Technical Manual* procedures for transportation analysis, a two-tiered screening process is undertaken to determine whether a quantified analysis is necessary. The first step, the Level 1 Trip Generation screening, determines whether the volume of peak hour person and vehicle trips generated by the proposed project would remain below the minimum thresholds for further study. These thresholds are:

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

If the proposed project results in increments that would exceed any of these thresholds, a Level 2 Trip Assignment screening assessment is performed. Under this assessment, project-generated trips that exceed Level 1 thresholds are assigned to and from the site through their respective networks (streets, bus and subway routes, sidewalks, etc.) based on expected origin-destination patterns and travel routes. See Section 9.3 for details about the Level 1 trip generation screening.

9.3 Level 1 Screening Assessment

The travel demand factors used to calculate the projected number of trips were obtained primarily from the 2014 *CEQR Technical Manual*, American Community Survey (ACS) journey to work data, and previously certified New York City environmental impact studies and assessments, including the *Seward Park Mixed-Use Development Project FEIS (2012)*. **Table 9-2** provides the travel demand assumptions used for the weekday AM, midday, PM, and Saturday midday peak hours.

Residential

For the residential use, trip generation rates of 8.075 daily person trips per DU for weekday and 9.6 daily person trips per DU for Saturday, and weekday and Saturday temporal distributions (10 percent, 5 percent, 11 percent, and 8 percent for the weekday AM, midday, PM, and Saturday midday peak hours, respectively) were obtained from the *2014 CEQR Technical Manual*. The weekday AM, midday, PM, and Saturday midday peak hour modal splits of 8.5 percent by auto, 2.3 percent by taxi, 6.0 percent by bus, 56.4 percent by subway, and 26.8 percent by walk, and vehicle occupancies of 1.16 persons per auto and 1.40 persons per taxi during the peak hours, were obtained from the 2012 - 2016 ACS journey to work data for Manhattan census tracts 14.01, 14.02, and 18. Directional distributions (15 percent "in" for the weekday AM peak hour, 50 percent "in" for the weekday midday peak hour, 70 percent "in" for the weekday PM peak hour, and 50 percent "in" for the Saturday midday peak hour) were obtained from the *Seward Park Mixed-Use Development Project FEIS (2012)*.

For residential delivery trips, trip generation rates of 0.06 and 0.02 daily trucks per DU for the weekday and Saturday midday peak hours, respectively, and temporal distributions of 12 percent, 9 percent, 2 percent, and 9 percent for the weekday AM, midday, PM, and Saturday midday peak hours, respectively, were obtained from the *2014 CEQR Technical Manual*.

Community Facility

The community facility use trip generation rates and temporal distributions were obtained from information provided by the New York City Department of Transportation, and the other travel demand assumptions were obtained from the *Seward Park Mixed-Use Development Project FEIS (2012)*. The trip generation rates used are 53.4 daily person trips per 1,000 sf for weekday and 16.9 daily person trips per 1,000 sf for Saturday. The weekday and Saturday temporal distributions used were 6 percent, 8 percent, 8 percent, and 12 percent for the weekday AM, midday, PM, and Saturday midday peak hours, respectively. The modal split for weekday and Saturday were 5 percent by auto, 1 percent by taxi, 6 percent by bus, 3 percent by subway, and 85 percent by walk with vehicle occupancies of 1.65 persons per auto and 1.40 persons per taxi during the peak hours. The directional distributions of 61 percent "in", 55 percent "in", 29 percent "in", and 49 percent "in" were used for the weekday AM, midday, PM, and Saturday midday peak hours, respectively.

Table 9-2 Travel Demand Characteristics

Rates	Residential	Community Facility	Local Retail
Person Trip Gen Rate (Weekday/Saturday)	8.075/9.6[1] *per DU*	53.4/16.9[4] *Per 1,000 SF*	205/240[1] *Per 1,000 SF*
Linked Trip Credit	0%	0%	25%
Temporal Distribution			
Weekday AM Peak Hour	10%[1]	6%[4]	3%[1]
Weekday Midday Peak Hour	5%[1]	8%[4]	19%[1]
Weekday PM Peak Hour	11%[1]	8%[4]	10%[1]
Saturday Midday Peak Hour	8%[1]	12%[4]	10%[1]
Modal Split			
	All Peak Hours	All Peak Hours	AM/MD/PM/SAT
Auto	8.5%[2]	5%[3]	2%/2%/4%/5%[5]
Taxi	2.3%[2]	1%[3]	1%/1%/1%/1%[5]
Bus	6.0%[2]	6%[3]	6%/2%/2%/6%[5]
Subway	56.4%[2]	3%[3]	25%/8%/17%/41%[5]
Walk	26.8%[2]	85%[3]	68%/88%/77%/48%[5]
Vehicle Occupancy			
Auto	1.16[2]	1.65[3]	1.65[3]
Taxi	1.40[3]	1.40[3]	1.40[3]
Directional Split (In/Out)			
Weekday AM Peak Hour	15%/ 85%[3]	61%/ 39%[3]	50%/50%[3]
Weekday Midday Peak Hour	50%/ 50%[3]	55%/ 45%[3]	50%/50%[3]
Weekday PM Peak Hour	70%/ 30%[3]	29%/ 71%[3]	50%/50%[3]
Saturday Midday Peak Hour	50%/ 50%[3]	49%/ 51%[3]	50%/50%[3]
Truck Trip Gen (Weekday/Saturday)	0.06/ 0.02[1] *per DU*	0.29/0.04[3] *per 1,000 SF*	0.35/0.04[3] *per 1,000 SF*
Truck Temporal Distribution			
Weekday AM Peak Hour	12%[1]	10%[3]	8%[1]
Weekday Midday Peak Hour	9%[1]	11%[3]	11%[1]
Weekday PM Peak Hour	2%[1]	1%[3]	2%[1]
Saturday Midday Peak Hour	9%[1]	0%[3]	11%[1]

Source:
1. 2014 CEQR Technical Manual
2. 2012-2016 American Community Survey's journey to work data for Manhattan census tracts 14.01, 14.02, and 18
3. Seward Park Mixed-Use Development Project FEIS (2012)
4. Based on data provided by New York City Department of Transportation
5. Based on New York City Department of Transportation surveys of local retail spaces in Manhattan

For community facility delivery trips, a trip generation rate of 0.29 daily trucks per 1,000 sf for the weekday and 0.04 daily trucks per 1,000 sf for the Saturday, and a temporal distribution of 10 percent, 11 percent, and 1 percent for the weekday AM, midday, and PM peak hours, respectively, were obtained from *Seward Park Mixed-Use Development Project*

FEIS (2012). It is assumed that no truck trips would be generated for the Saturday midday peak hour.

Local Retail

For the local retail use, trip generation rates of 205 daily person trips per 1,000 sf for weekday and 240 daily person trips per 1,000 sf for Saturday, and the temporal distribution were obtained from the *2014 CEQR Technical Manual*. A 25 percent credit was applied to account for linked trips between local retail and other (namely residential and commercial) uses on the development site and the development site vicinity. Vehicle occupancy and directional distribution were obtained from the *Seward Park Mixed-Use Development Project FEIS (2012)* while the modal splits were based on New York City Department of Transportation surveys of Manhattan local retail spaces. Modal splits of 2 percent by auto, 1 percent by taxi, 6 percent by bus, 25 percent by subway, and 68 percent by walk during the weekday AM peak hour, 2 percent by auto, 1 percent by taxi, 2 percent by bus, 8 percent by subway, and 88 percent by walk during the weekday midday peak hour, 4 percent by auto, 1 percent by taxi, 2 percent by bus, 17 percent by subway, and 77 percent by walk during the weekday PM peak hour, and 5 percent by auto, 1 percent by taxi, 6 percent by bus, 41 percent by subway, and 48 percent by walk during the Saturday midday peak hour were used. Vehicle occupancies of 1.65 persons per auto and 1.40 persons per taxi, were used for all peak hours analyzed. The temporal distributions used were 3 percent, 19 percent, 10 percent, and 10 percent for the weekday AM, midday, PM, and the Saturday midday peak hours, respectively, and the directional distributions used were 50 percent "in" for all peak hours.

For local retail delivery trips, trip generation rates of 0.35 and 0.04 daily trucks per 1,000 sf for the weekday and Saturday midday peak hours, respectively, and a temporal distribution of 8 percent, 11 percent, 2 percent, and 11 percent for the weekday AM, midday, PM, and Saturday midday peak hours, respectively, were obtained from the *2014 CEQR Technical Manual*.

Level 1 Screening Assessment

Transit and Pedestrians

The project-generated transit and pedestrian trips are shown in **Table 9-3** and would exceed the *2014 CEQR Technical Manua*l Level 1 screening threshold for subway transit and pedestrians but would not exceed the thresholds for bus transit. The increase in transit trips would be 254 subway trips and 38 bus trips during the weekday AM peak hour and 311 subway trips and 43 bus trips in the weekday PM peak hour. The increase in pedestrian trips (auto walk and walk-only plus bus and subway) is expected to be 633 person trips during the weekday AM peak hour, 1,058 person trips during the weekday midday peak hour, 968 person trips during the weekday PM peak hour, and 872 person trips during the Saturday midday peak hour. Since the number of peak hour pedestrian trips expected to be generated by the proposed project would exceed the CEQR thresholds of 200 subway transit trips per hour and 200 pedestrian trips per hour, a Level 2 screening assessment (trip assignment) was conducted.

Table 9-3 Project-Generated Person Trips

Mode	Weekday AM			Weekday Midday			Weekday PM			Saturday Midday		
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
Auto	10	33	43	19	18	37	35	25	60	28	28	56
Taxi	2	9	11	5	5	10	8	5	13	5	5	12
Bus	12	26	38	19	17	36	24	19	43	25	25	50
Subway	49	205	254	86	85	171	203	108	311	194	194	388
Walk	125	173	298	415	399	814	266	288	554	188	190	378
Total	**198**	**446**	**644**	**544**	**524**	**1,068**	**536**	**445**	**981**	**440**	**442**	**882**

Traffic

Table 9-4 summarizes the increase of vehicle trips ("ins" plus "outs") for the development site. The hourly vehicle trips generated by the proposed project would be 51 vehicles per hour (vph) during the weekday AM peak hour, 39 vph in the weekday midday peak hour, 62 vph in weekday PM peak hour, and 50 vph in the Saturday midday peak hour. Since the increase in vehicle trips generated by the proposed project would exceed the 50-vehicle trip threshold, a Level 2 screening assessment (trip assignment) was conducted.

Level 2 Screening Assessment

As shown above, the number of trips generated by the proposed project would exceed the *2014 CEQR Technical Manual* Level 1 screening thresholds for vehicle and pedestrian trips during the peak hours analyzed. Project-generated trips were assigned through the surrounding street network based on expected routes to and from the projected development sites.

Transit and Pedestrians

Transit and pedestrian trips were assigned through the pedestrian network based on logical and direct travel routes between the projected development sites and neighborhood attractions, subway stations, and/or bus stops. For the Suffolk Building, pedestrian trips were assigned to the Suffolk Street entrances for the residential and community facility uses and to the Broome Street entrance for the local retail use. For the Norfolk Building, pedestrian trips were assigned to Norfolk Street entrances. Pedestrian trips to Projected Development Site 2 were assigned to potential entrances along Suffolk Street.

Table 9-4 Project-Generated Vehicle Trips

	Weekday AM			Weekday Midday			Weekday PM			Saturday Midday		
Mode	**In**	**Out**	**Total**	**In**	**Out**	**Total**	**In**	**Out**	**Total**	**In**	**Out**	**Total**
Auto	7	28	35	14	13	27	28	20	48	20	20	40
Taxi	6	6	12	4	4	8	7	7	14	5	5	10
Truck	2	2	4	2	2	4	0	0	0	0	0	0
Total	**15**	**36**	**51**	**20**	**19**	**39**	**35**	**27**	**62**	**25**	**25**	**50**

Bus-generated pedestrian trips were assigned to nearby bus routes traveling along Essex Street and Grand Street (M14A and M9), Houston Street (M21), Allen Street (M15 and M15SBS), and Madison Street (M22). Approximately 60 percent of the bus trips were assigned to bus routes along Grand Street and Essex Street which provides local stop service, 30 percent was assigned to bus routes along Allen Street, which provides local and limited stop service, and the remaining 10 percent was assigned between bus routes along Houston Street and Madison Street, which provides local stop service.

The closest subway station, the Delancey Street-Essex Street Station (served by the F, M, J, and Z subway routes), is located approximately two blocks away from the projected development sites. The Grand Street Station (served by the B and D subway routes) is approximately one-quarter mile away from the projected development sites. Approximately 90 percent of the subway trips were assigned to the Delancey Street-Essex Street Station and 10 percent of the subway trips were assigned to the Grand Street Station based on information provided by New York City Transit (NYCT).

Walk-only pedestrian trips were assigned to the surrounding uses in the area (i.e., 20 percent from the east, 30 percent from the west, 25 percent from the north, and 25 percent from the south). Additional pedestrian trips were assumed for motorists assigned to the nearby garage located at Clinton Street and East Broadway (i.e., motorists would need to walk to and from the projected development sites to this parking garage).

The project-generated pedestrian volume maps for these weekday AM, midday, PM, and Saturday midday peak hours are provided in **Figures 9-2 through 9-5**.

Traffic

Project-generated vehicle trips shown in **Table 9-4** were assigned through the surrounding street network based on expected routes to the projected development sites, the configuration of the street network, and the anticipated entrances to the projected development sites. Since parking would not be provided on-site, a survey of off-street parking facilities within a ¼-mile from the project block was conducted for the weekday AM, midday, PM, and Saturday midday periods. Two of the three facilities surveyed operate at capacity or close to capacity during one of the survey periods; the Clinton Grand Parking LLC facility (located at Clinton Street and East Broadway) is expected to have available parking to accommodate the proposed project during all periods analyzed. As such, project-generated auto trips were assigned to park in this facility. The results of this survey are shown in **Table 9-5** below.

Table 9-5 Off-Street Parking Inventory

Location	Capacity	Weekday AM Peak Period Occupancy	Weekday Midday Peak Period Occupancy	Weekday PM Peak Period Occupancy	Saturday Midday Peak Period Occupancy
Clinton Grand Parking LLC Clinton Street and East Broadway	505	379 75%	253 50%	379 75%	328 65%
59 Allen Street Garage Corp. Allen Street between Grand Street/Hester Street	200	50 25%	150 75%	200 100%	100 50%
Municipal Parking: Delancey-Essex Essex Street between Delancey Street/Broome Street	356	324 91%	343 96%	316 89%	313 88%
Total	**1,061**	**753** **71%**	**746** **70%**	**895** **84%**	**741** **70%**

Trips assignments for each land use are discussed below.

Figure 9-2 Project Generated Pedestrian Trips – Weekday AM Peak Hour

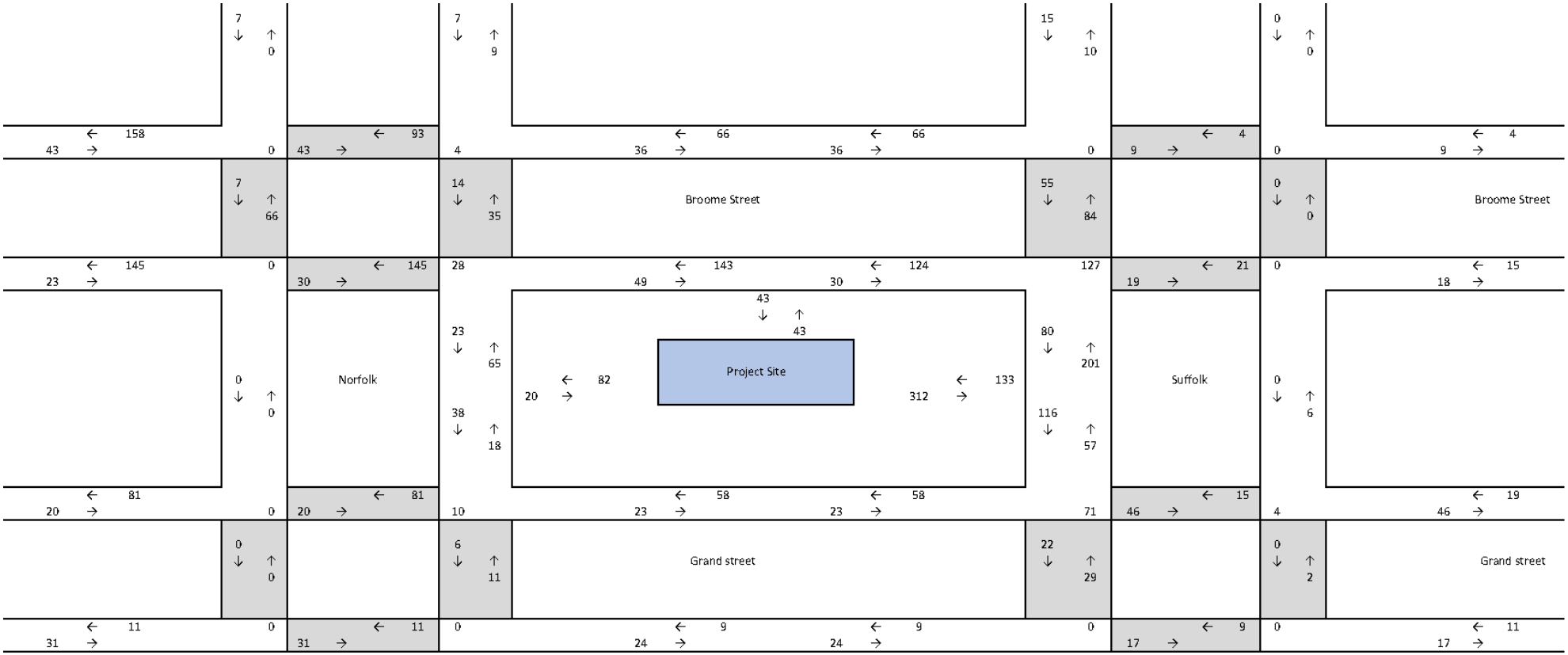


Figure 9-3 Project Generated Pedestrian Trips – Weekday Midday Peak Hour

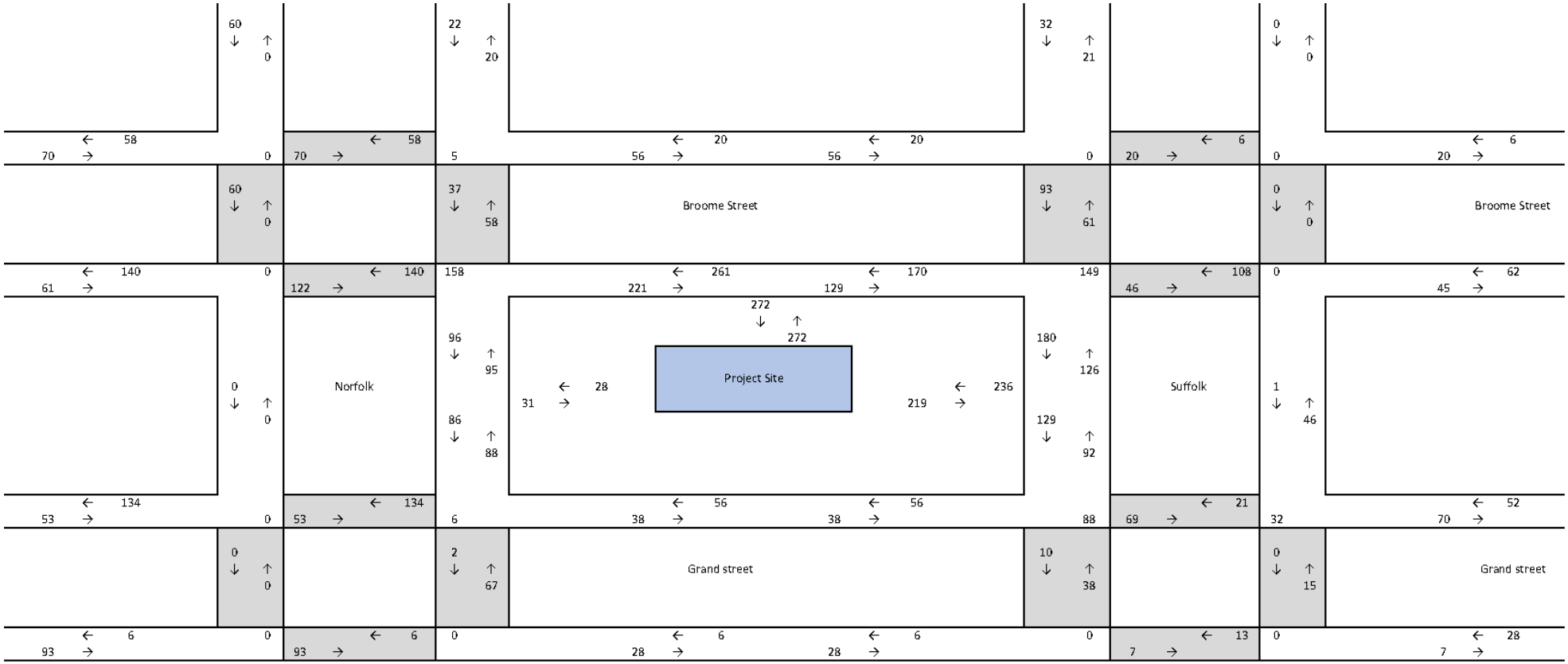


Figure 9-4 Project Generated Pedestrian Trips – Weekday PM Peak Hour

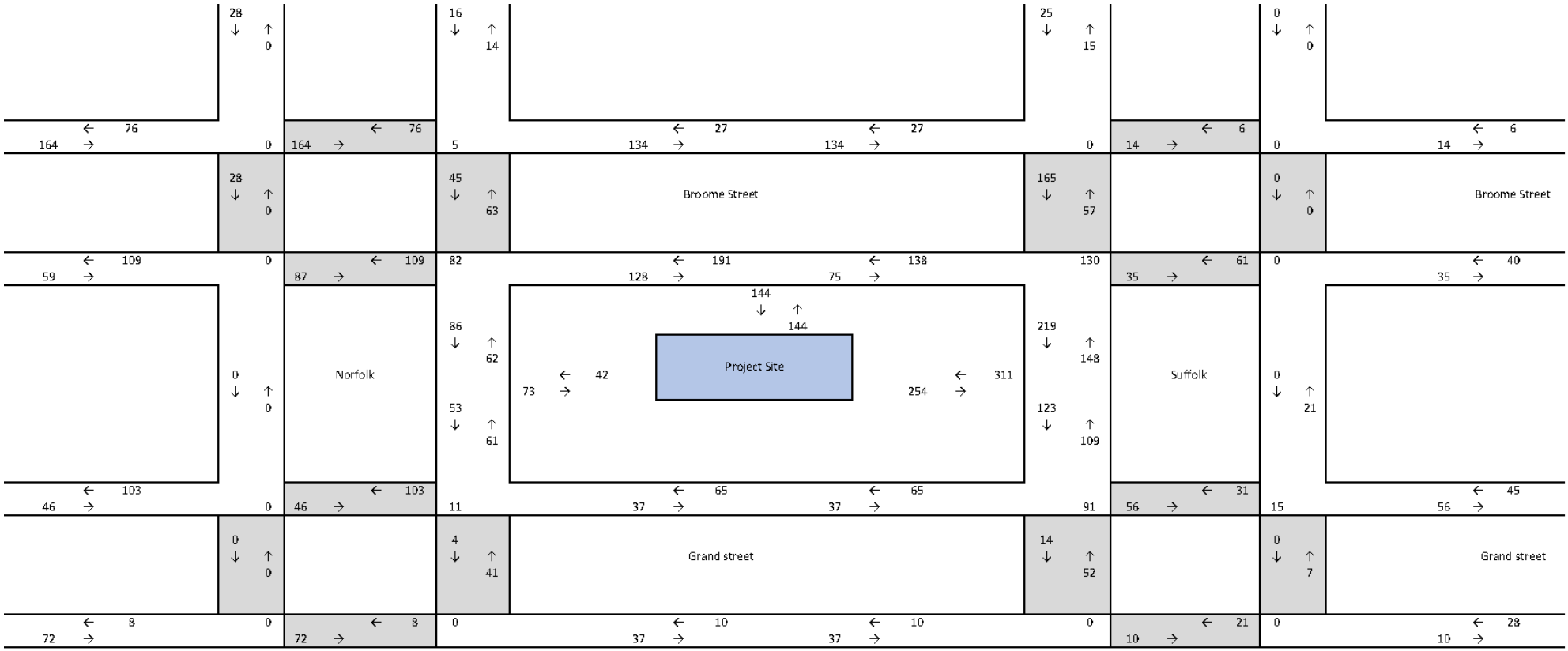
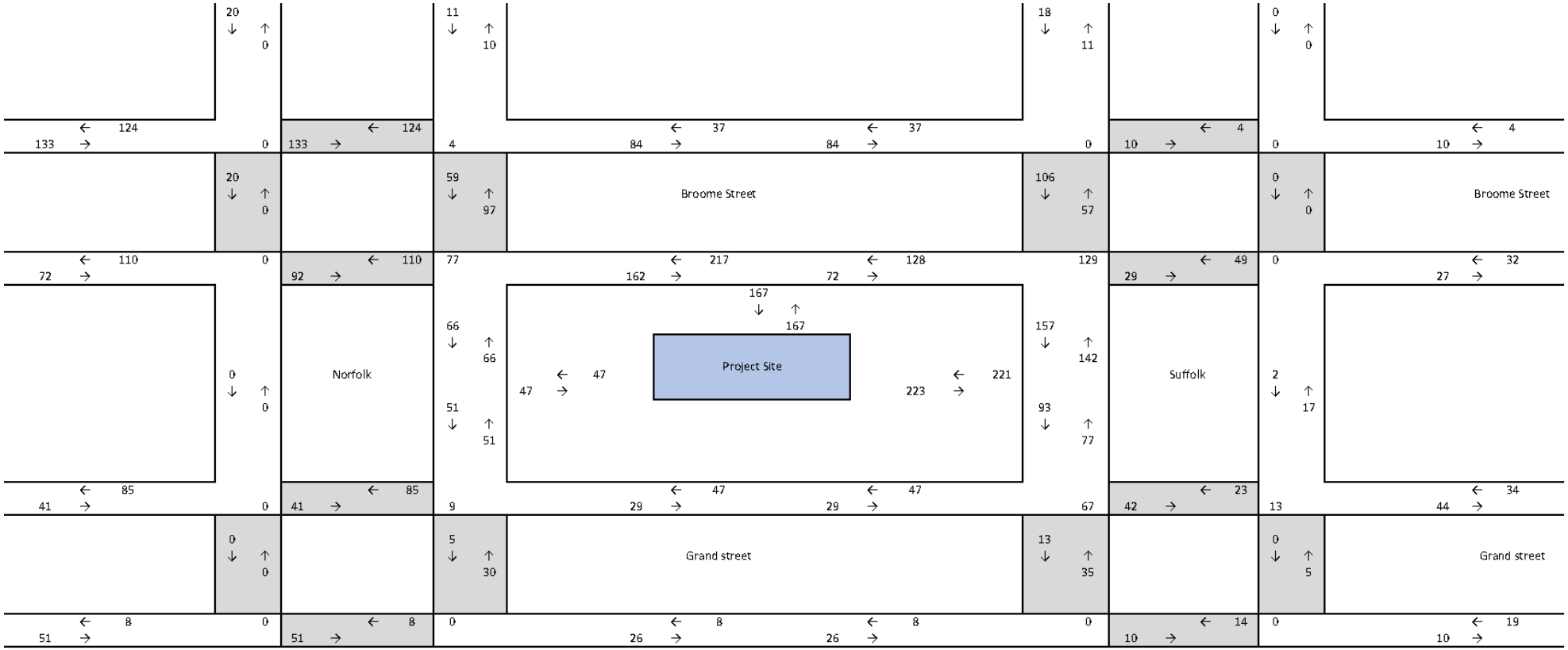


Figure 9-5 Project Generated Pedestrian Trips – Saturday Midday Peak Hour



Residential

Residential auto assignments were based on the NYC DCP's 2006-2010 ACS Special Tabulation: Census Transportation Planning journey to work data (CTPP Part 3 Table A302103) for surrounding census tracts. Approximately 20 percent of vehicle trips were assigned to Manhattan, 17 percent to Queens, 14 percent to New Jersey, 14 percent to Brooklyn, 11 percent to Long Island, 11 percent to Westchester, 11 percent to the Bronx, and 2 percent to Pennsylvania.

Approximately 35 percent were assigned to the east via the Williamsburg Bridge. Approximately 25 percent of trips were assigned to the north via Allen Street, approximately 30 percent of trips were assigned to the west using Grand Street and Canal Street, and approximately 10 percent of trips were assigned to the east using Grand Street.

Reverse trips are expected to return along the same general routes on which they departed. Approximately half of these trips were assigned to drop-off a passenger in front of the projected development sites before proceeding to find parking while the remaining auto trips were assigned directly to the parking garage.

Local Retail and Community Facility

The local retail and community facility uses would serve the immediately surrounding area. Therefore, auto trips were assigned based on 2012 – 2016 ACS Total Population data for surrounding census tracts (approximately one mile from the projected development sites. Approximately 30 percent of auto trips were assumed to arrive to the projected development sites from the west via Grand Street and Delancey Street, approximately 40 percent were assumed to arrive from the north via Allen Street and Essex Street, approximately 20 percent were assumed to arrive from the south via Allen Street, Essex Street, and Clinton Street, and approximately 10 percent were assumed to arrive from the east via Grand Street.

Reverse trips are expected to return along the same general routes on which they departed. Approximately half of these trips were assigned to pick-up a passenger in front of the projected development sites before proceeding to find parking while the remaining auto trips were assigned directly to the parking garage.

The project-generated traffic volume maps for these weekday AM, midday, PM, and Saturday midday peak hours are provided in **Figures 9-6 through 9-9**.

Figure 9-6 Project Generated Vehicle Trips – Weekday AM Peak Hour

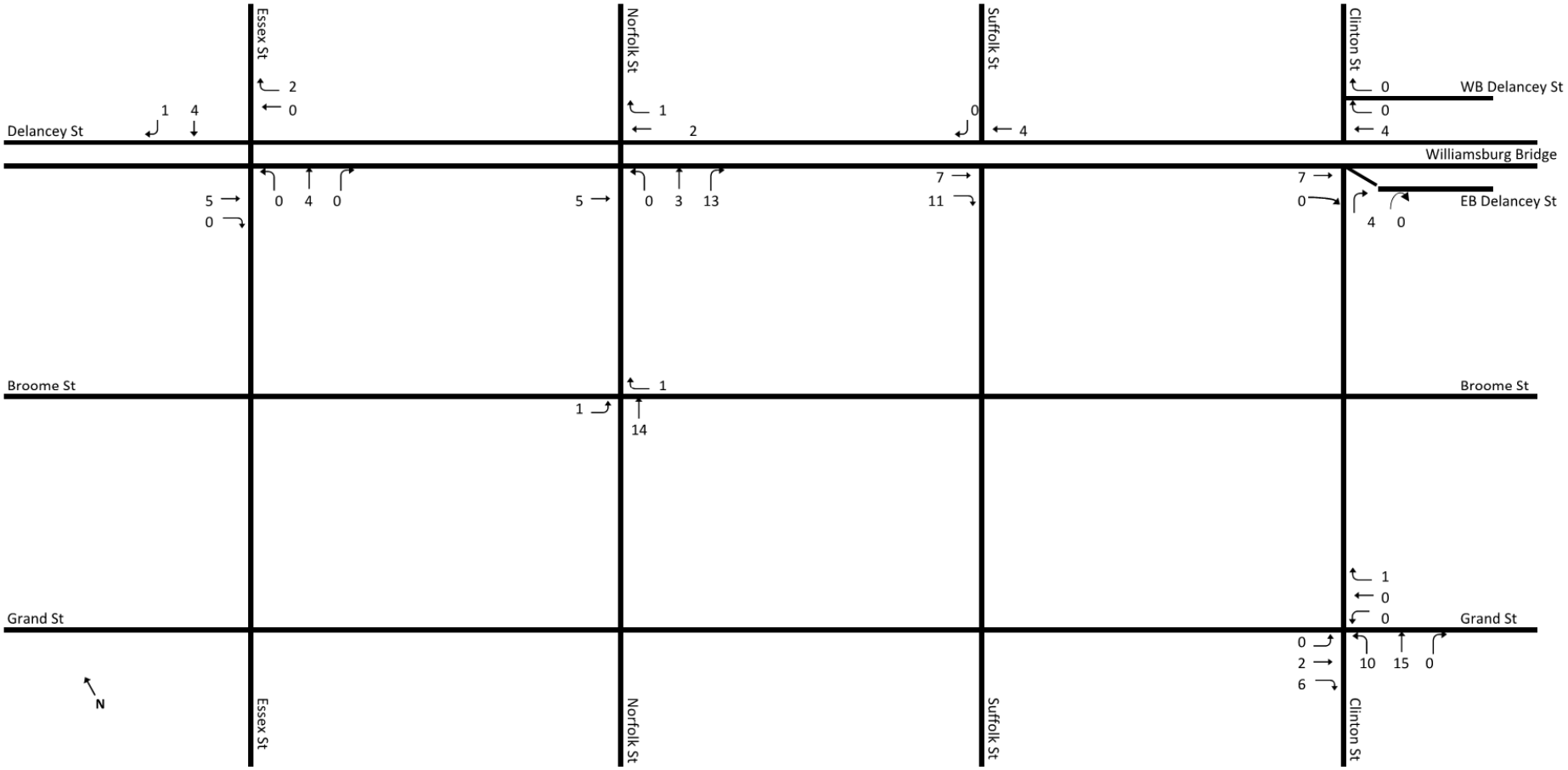


Figure 9-7 Project Generated Vehicle Trips – Weekday Midday Peak Hour

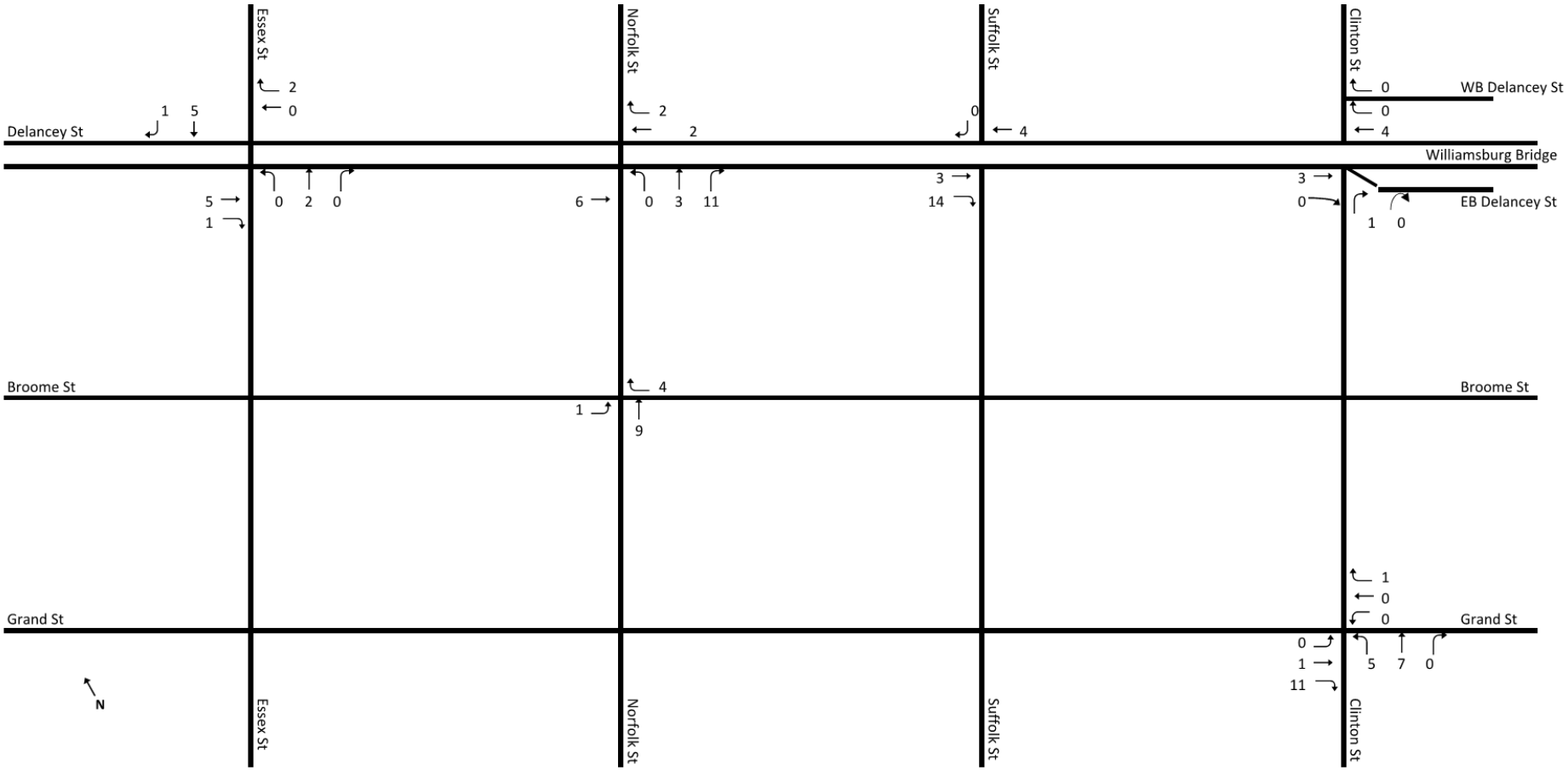


Figure 9-8 Project Generated Vehicle Trips – Weekday PM Peak Hour

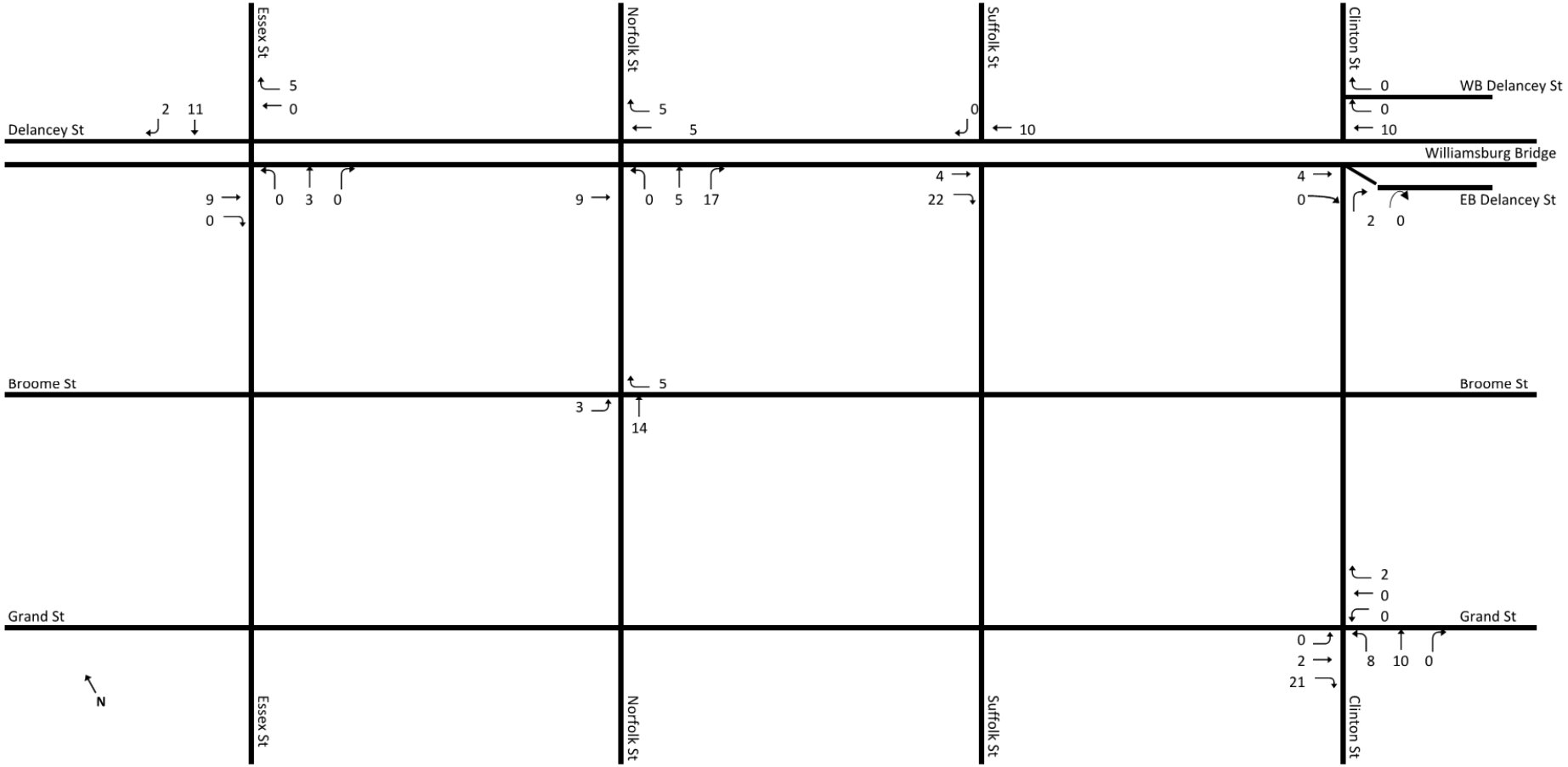
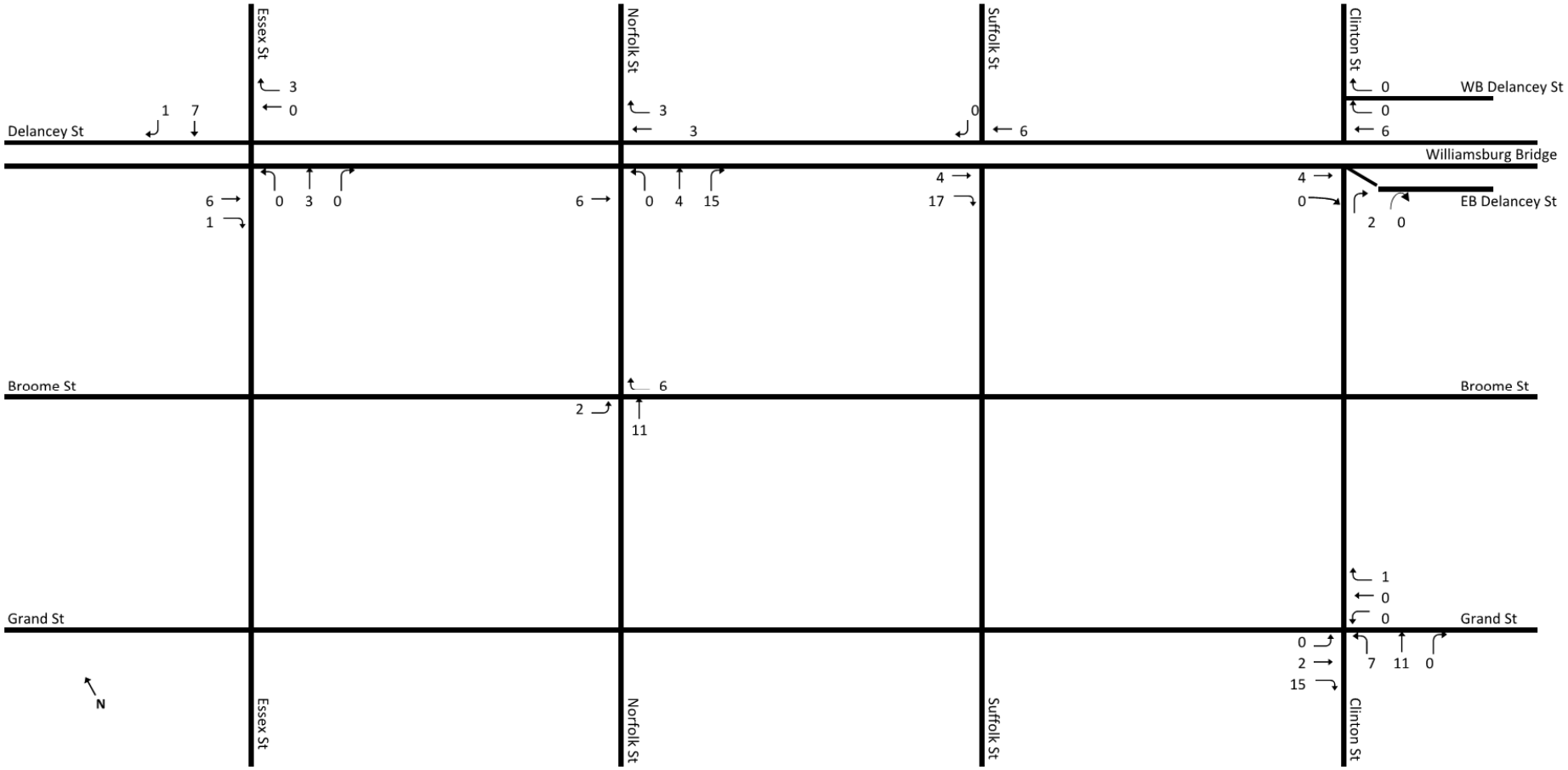


Figure 9-9 Project Generated Vehicle Trips – Saturday Midday Peak Hour



Level 2 Screening Results

Traffic Street Network

Based on the vehicular traffic assignments detailed above, no locations would exceed the *CEQR Technical Manual* Level 2 screening threshold for detailed analysis. However, according to the *CEQR Technical Manual*, proposed projects affecting congested intersections have at times been found to create significant adverse impacts when the assigned trips are fewer than 50 vehicles in the peak hour. Therefore, DCP, as lead agency in consultation with DOT, ~~has~~ identified six congested intersections to be analyzed.

The six intersections are listed below and shown in **Figure 9-10**:

- Delancey Street and Essex Street
- Delancey Street and Norfolk Street
- Delancey Street and Suffolk Street
- Delancey Street and Clinton Street
- Broome Street and Norfolk Street
- Grand Street and Clinton Street

Transit

Project-generated subway transit trips were assigned to the Delancey Street-Essex Street Station (serviced by the F, M, J, and Z subway routes) and the Grand Street Station (serviced by the B and D subway routes). Four~~Two~~ subway station elements at the Delancey Street-Essex Street subway station were identified for detailed analysis based on the trip assignments.

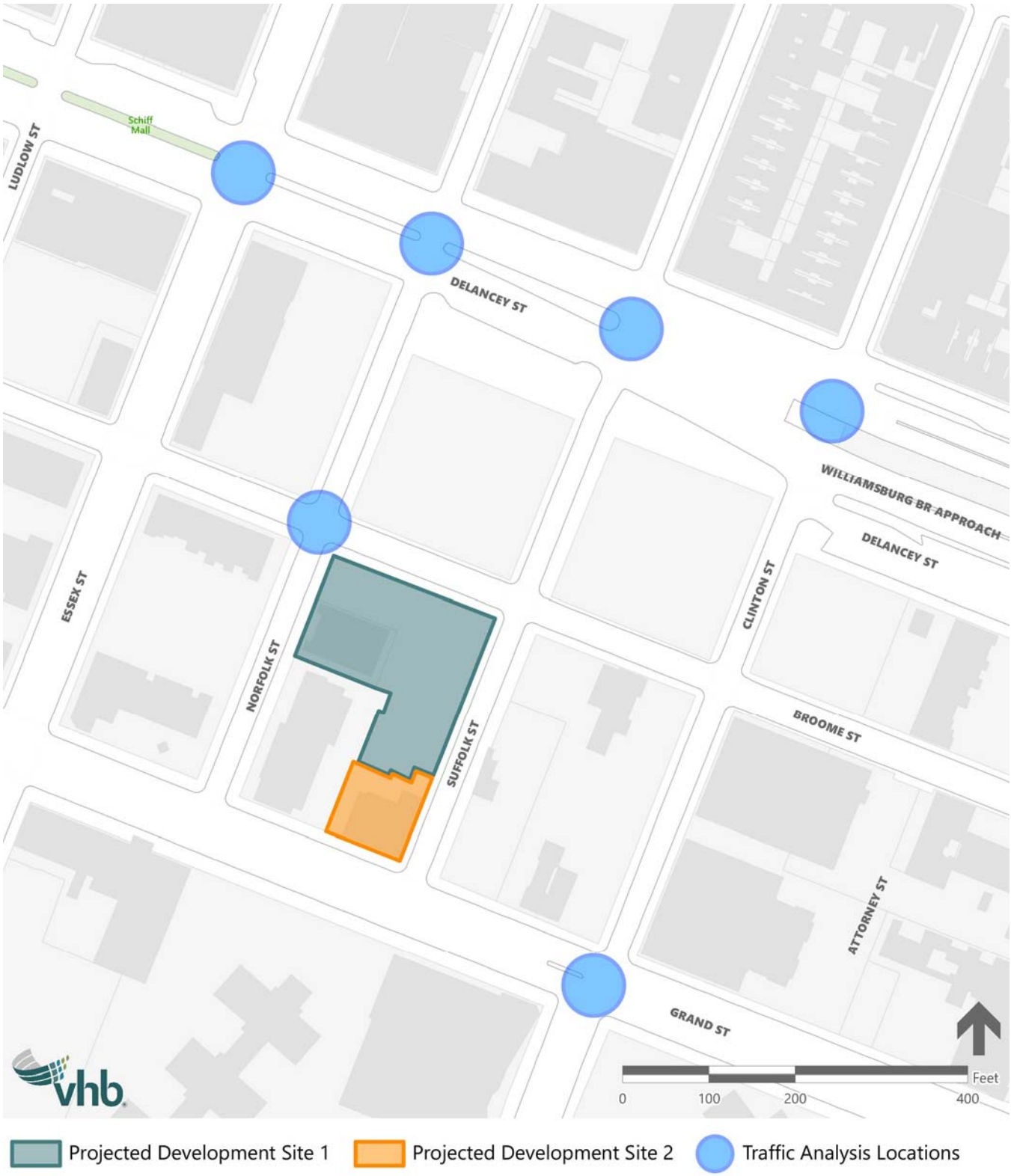
› The S4 surface stairway located at the southeast corner of the intersection of Delancey Street and Essex Street connecting to the station fare control area (N526 fare array).~~.~~

› The N526 fare array which is connected to the S3 (located at the southwest corner of the intersection of Delancey Street and Essex Street) and S4 surface stairways.

› The E328 escalator located at the southeast corner of the intersection of Delancey Street and Essex Street connecting to the uptown F train platform.

› The N526A fare array which is connected to the E328 escalator.

Figure 9-10 Traffic Analysis Locations

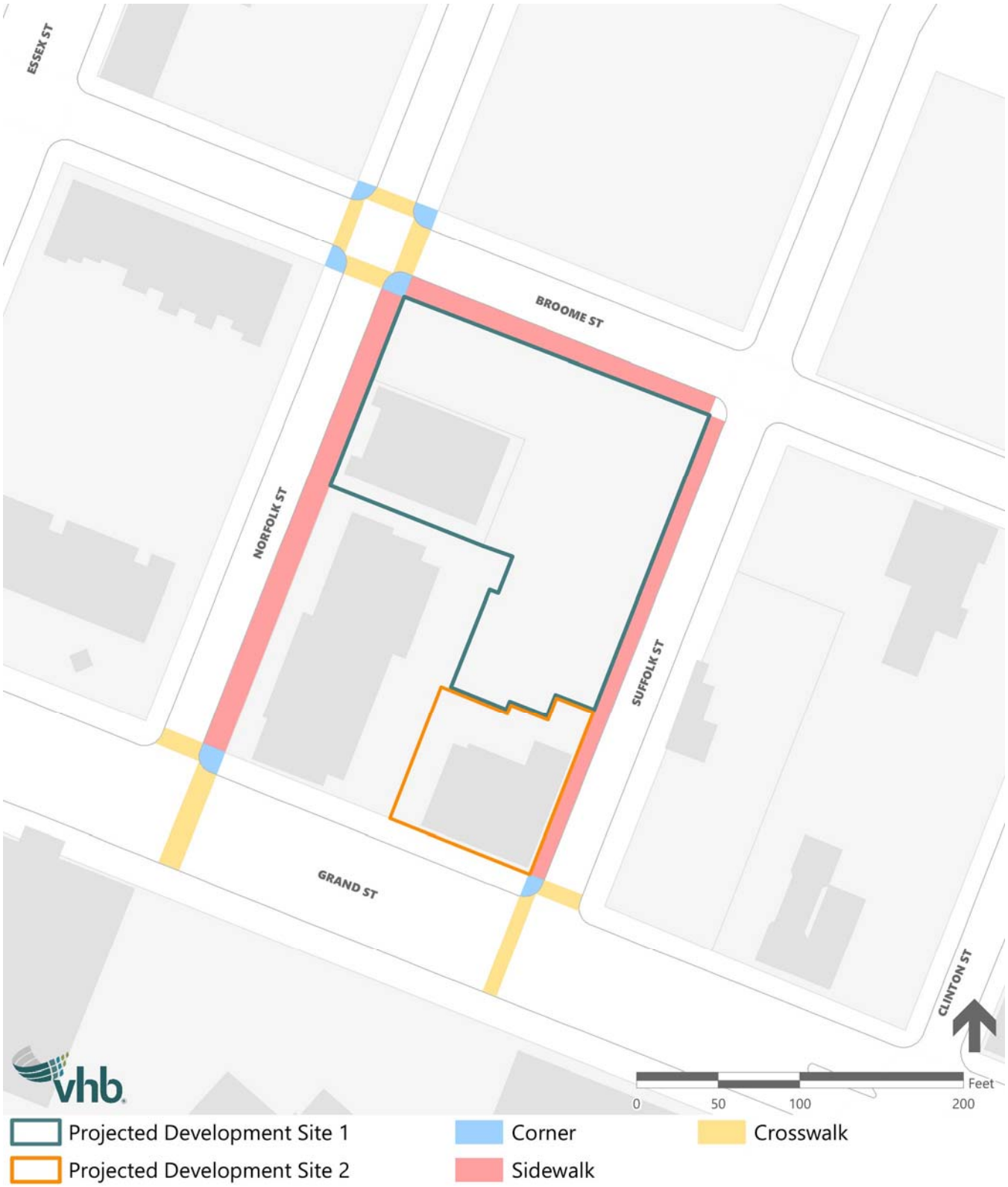


Pedestrian

Based on the pedestrian assignments detailed above, three sidewalk elements, eight crosswalk elements, and six corner elements were identified for detailed analysis. The pedestrian analysis locations are listed below and shown in **Figure 9-11**.

- Broome Street and Norfolk Street
  - Northeast, northwest, southwest, and southeast corners
  - North, east, south, west crosswalks
- Grand Street and Norfolk Street
  - Northeast corners
  - North and east crosswalks
- Grand Street and Suffolk Street
  - Northwest corner
  - North and west crosswalks
- Sidewalks
  - Broome Street between Norfolk Street and Suffolk Street (south sidewalk)
  - Norfolk Street between Broome Street and Grand Street (east sidewalk)
  - Suffolk Street between Broome Street and Grand Street (west sidewalk)

Figure 9-11 Pedestrian Analysis Locations



9.4 Transportation Analysis Methodologies

This section provides more detailed traffic, subway transit, and pedestrian analyses. Further analyses were conducted using methodologies detailed in the *CEQR Technical Manual* and are described below.

Traffic

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 procedures evaluate the levels of service (LOS) for signalized and unsignalized intersections using average stop control delay, in seconds per vehicle, as described below.

- LOS A describes operations with very 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 the *CEQR Technical Manual* guidelines, LOS A, B, and C are considered acceptable, LOS D is generally 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.

For unsignalized intersections, delay is defined as the total elapsed time from when a vehicle stops at the end of the queue until the vehicle departs from the stop line: LOS A describes operations with very low delay, i.e., 10.0 seconds or less per vehicle; LOS B describes operations with delays in excess of 10.0 seconds up to 15.0 seconds; LOS C has delays in excess of 15.0 seconds up to 25.0 seconds; LOS D, excess of 25.0 seconds up to 35.0 seconds per vehicle; and LOS E, excess of 35.0 seconds up to 50.0 seconds per vehicle, which is considered to be the limit of acceptable delay. LOS F describes operation with delays in excess of 50.0 seconds per vehicle, which is considered unacceptable to most drivers. This condition exists 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 project 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 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.

Parking

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 additional demand generated by the proposed project. This analysis typically encompasses a study area within a quarter-mile of the project site. If the analysis concludes that there would be a shortfall in parking within the quarter-mile study area, the study area may be extended to a half-mile to identify additional parking supply.

For proposed projects located in Manhattan or other CBD areas[1], the inability of the proposed project or the surrounding area (on-street and off-street) 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.

[1] Parking shortfalls in Zone 1 and Zone 2, as identified in the CEQR Technical Manual, are generally not considered to be significant. The project site is located within Zone 1.

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 and the patterns of automobile usage by area residents, could be considered to determine the significance of the identified parking shortfall. If there is an adequate parking supply within a half-mile of the project site, the projected parking shortfall may not be considered significant.

Transit

The *CEQR Technical Manual* provides methodologies to assess several components of transit operations including the line-haul capacities of bus and subways routes, and the capacity of subway station circulation elements including stairways, escalators, passageway, and fare controls (turnstiles, high entry/exit turnstiles [HEETs], and high exit turnstiles [HXTs]).

Subway Station Elements

Subway station elements are assessed based on the ratio of passenger volume and the capacity of the element (the v/c ratio). The v/c ratio criteria are used to determine the levels of service which are shown in **Table 9-6**. LOS A and LOS B depict free flow and fluid flow conditions, respectively, at a subway station element. Station elements operating at LOS C still exhibit fluid flow but pedestrian activities begin to become somewhat restricted. When conditions become crowded and there is restriction to walking speeds, the station element is considered to be operating at LOS D. At LOS E the station element is considered to be congested. There is shuffling and frequent interactions between pedestrians which result in some queueing. Severe congestion with constant queuing signifies that a station element is operating at LOS F.

Table 9-6 Level of Service 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: *CEQR Technical Manual*

Stairways and passageways are analyzed based on the width of the station element and the 15-minute pedestrian flow passing through. These analyses also take into account pedestrian surging resulting from an arriving train or platooning volumes from a major attraction such as a stadium or school (the effect of surging can reduce capacity by up to 25 percent) and friction from pedestrian interactions (the effect of friction can reduce capacity by up to 10 percent). Other station elements including escalators and turnstiles are measured against the operational capacities designated by NYCT.

Significant Impact Criteria

Significant impacts to stairs and passageways are determined by the width increment threshold (WIT) between the No-Action and With-Action conditions for elements operating at v/c ratios greater than 1.0 in the With-Action condition. The WIT for significant impacts is detailed in **Table 9-7** below. If a stairway or passageway is significantly impacted, mitigation measures identified would need to restore the levels of service back to the No-Action levels of service or to a v/c ratio of 1.0. For escalators and turnstile elements, a With-Action v/c ratio of 1.0 or greater when the No-Action v/c ratio was less than 1.0 is considered a significant impact. For these elements where the No-Action v/c ratio is already in excess of 1.0, an incremental change in the v/c ratio of 0.01 would be considered a significant impact.

Table 9-7 Significant Impact Guidance for Stairs and Passageways

No-Action v/c Ratio	Width Increment Threshold (WIT) for Significant Impacts (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

Source: *CEQR Technical Manual*

Pedestrians

Pedestrian level of service standards are determined on the basis of walking speed, pedestrian spacing, and probabilities of pedestrian and vehicular conflict, and are assessed based on the methodologies presented in the *2010 Highway Capacity Manual* and the *CEQR Technical Manual*. These standards are primarily based on the space needs of people involved in various activities and are widely used for planning and design of facilities for pedestrians. Analysis of crosswalks, street corners, and sidewalks along key walking paths to and from the project site will be performed to assess the adequacy of these pedestrian elements.

To evaluate sidewalks, the pedestrian flow per unit width (p/ft/min) is calculated based on the pedestrian flow and the effective walkway width[2]. The analysis of sidewalk conditions should also consider if pedestrian flow is a "non-platoon" flow (pedestrian flow within the peak 15-minute period is relatively uniform) or "platoon" flow. Platooning occurs when

[2] The effective walkway width is the space along the walkway that pedestrians could use that is free of obstruction. This width also takes account of the "shy distance" (the space between pedestrians and the obstacle such as a wall or building façade).

pedestrians move in groups or "platoons" as a result of pedestrian metering from a traffic signal, or from attractions such as subway stations or bus stops. The ratio of the walking speed[3] over the pedestrian flow per unit width determines the average pedestrian space (sf/p).

Crosswalk conditions are expressed as a measurement of the area available (the area consists of the crosswalk width multiplied by the crossing distance) and available pedestrian crossing time. The pedestrian flow is compared to the "time-space" available to determine the crosswalk level of service which is expressed as square feet per pedestrian (sf/p). This analysis also takes account of pedestrian conflicts in the crosswalk with turning vehicles.

Similar to crosswalks, street corners must provide sufficient space for a mix of standing pedestrians (queued to cross a street) and circulating pedestrians (crossing the other street or passing around the corner). The analysis applies a measure of time and space availability based on the area of the corner reservoir, pedestrian crossing time available, and the estimated time used by circulating pedestrians.

The level of service standards for pedestrian elements are based on the time and space available per pedestrian during the analysis period. Level of service grades from A to F are assigned, with LOS A representative of free flow conditions without pedestrian conflicts and LOS F depicting significant capacity limitations and inconvenience. **Table 9-8** defines the level of service criteria for crosswalks, corner area, and sidewalk conditions, as per the *2010 HCM*. The *CEQR Technical Manual* identifies acceptable levels of service in non-Central Business District (CBD) areas (such as the area in this study) as LOS C or better, and mid-LOS D or better for CBD areas.

The proposed project is located in a CBD area, and the pedestrian analysis were analyzed assuming non-platoon pedestrian flow.

Table 9-8 Level of Service Criteria for Pedestrian Elements

	Sidewalks		Corner Reservoirs and Crosswalks
LOS	Non-Platoon Flow	Platoon Flow	
A	> 60 sf/p	> 530 sf/p	> 60 sf/p
B	> 40 and ≤ 60 sf/p	> 90 and ≤ 530 sf/p	> 40 and ≤ 60 sf/p
C	> 24 and ≤ 40 sf/p	> 40 and ≤ 90 sf/p	> 24 and ≤ 40 sf/p
D	> 15 and ≤ 24 sf/p	> 23 and ≤ 40 sf/p	> 15 and ≤ 24 sf/p
E	> 8 and ≤ 15 sf/p	> 11 and ≤ 23 sf/p	> 8 and ≤ 15 sf/p
F	≤ 8 sf/p	≤ 11 sf/p	≤ 8 sf/p

Source: *CEQR Technical Manual*

[3] The typical average pedestrian walking speed specified in the *CEQR Technical Manual* is 3.5 feet per second (ft/s). For intersections with school crosswalks or that are located within the Senior Pedestrian Focus Areas, an average pedestrian walking speed of 3.0 ft/s is used.

Significant Impact Criteria

The identification of significant pedestrian impacts is dependent on the area type (CBD or non-CBD) and is determined by the decrease of time and space available for pedestrians between the No-Action and With-Action conditions. The Project Area and surrounding analysis locations are located in a CBD area. The *CEQR Technical Manual* identifies significant impacts for the pedestrian sidewalk, crosswalk, and corner elements on a sliding scale detailed below. With-Action pedestrian level of service that is considered acceptable (LOS C or better in non-CBD areas, and mid-LOS D or better in CBD areas) would not have a potential for significant impacts.

For sidewalks, the assessment of potential significant impacts is based on a sliding-scale formula provided in the *CEQR Technical Manual*. Consideration as to whether pedestrian flow along the sidewalk is platooning or non-platooning, and whether the sidewalk being analyzed is in a CBD or non-CBD condition is necessary.

For sidewalks with non-platoon pedestrian flow, the formula used to determine the decrease in pedestrian space from the No-Action to With-Action condition that would trigger a significant impact is $Y \geq (X / 9.0) - 0.31$, where Y is the decrease in pedestrian space (sf/p) to be considered a potential significant impact and X is the No-Action pedestrian space (sf/p). If the decrease in pedestrian space is greater than Y and the With-Action level of service is considered to be unacceptable, the sidewalk is considered to be significantly impacted. For sidewalks with platoon pedestrian flow, the formula to determine if the decrease in pedestrian space would trigger a significant impact is $Y \geq X / (9.5 - 0.321)$. **Table 9-9** provides a summary of the sliding-scale guidelines provided in the *CEQR Technical Manual*.

For corners and crosswalks, the assessment of potential significant impacts is also based on a sliding-scale formula provided in the *CEQR Technical Manual*. The formula used to determine the decrease in pedestrian space from the No-Action to With-Action condition that would trigger a significant impact is $Y \geq (X / 9.0) - 0.31$, where Y is the decrease in pedestrian space (sf/p) to be considered a potential significant impact and X is the No-Action pedestrian space (sf/p). If the decrease in pedestrian space is greater than Y and the With-Action level of service is considered to be unacceptable, the corner or crosswalk is considered to be significantly impacted. **Table 9-10** provides a summary of the sliding-scale guidelines provided in the *CEQR Technical Manual*.

Table 9-9 Significant Impact Criteria for Sidewalks

Non-Platoon Flow (CBD Areas)

No-Action Ped Space (sf/p)	With-Action Ped Space Reduction (sf/p)
>21.5	With-Action Condition <19.5
21.3 to 21.5	≥ 2.1
20.4 to 21.2	≥ 2.0
19.5 to 20.3	≥ 1.9
18.6 to 19.4	≥ 1.8
17.7 to 18.5	≥ 1.7
16.8 to 17.6	≥ 1.6
15.9 to 16.7	≥ 1.5
15.0 to 15.8	≥ 1.4
14.1 to 14.9	≥ 1.3
13.2 to 14.0	≥ 1.2
12.3 to 13.1	≥ 1.1
11.4 to 12.2	≥ 1.0
10.5 to 11.3	≥ 0.9
9.6 to 10.4	≥ 0.8
8.7 to 9.5	≥ 0.7
7.8 to 8.6	≥ 0.6
6.9 to 7.7	≥ 0.5
6.0 to 6.8	≥ 0.4
5.1 to 5.9	≥ 0.3
< 5.1	≥ 0.2

Source: *2014 CEQR Technical Manual*

Table 9-10 Significant Impact Criteria for Corners and Crosswalks

CBD Areas	
No-Action Ped Space (sf/p)	**With-Action Ped Space Reduction (sf/p)**
>21.5	With-Action Condition <19.5
21.3 to 21.5	≥ 2.1
20.4 to 21.2	≥ 2.0
19.5 to 20.3	≥ 1.9
18.6 to 19.4	≥ 1.8
17.7 to 18.5	≥ 1.7
16.8 to 17.6	≥ 1.6
15.9 to 16.7	≥ 1.5
15.0 to 15.8	≥ 1.4
14.1 to 14.9	≥ 1.3
13.2 to 14.0	≥ 1.2
12.3 to 13.1	≥ 1.1
11.4 to 12.2	≥ 1.0
10.5 to 11.3	≥ 0.9
9.6 to 10.4	≥ 0.8
8.7 to 9.5	≥ 0.7
7.8 to 8.6	≥ 0.6
6.9 to 7.7	≥ 0.5
6.0 to 6.8	≥ 0.4
5.1 to 5.9	≥ 0.3
< 5.1	≥ 0.2

Source: *2014 CEQR Technical Manual*

Vehicle and Pedestrian Safety

An evaluation of vehicular and pedestrian safety is necessary for locations within the traffic and pedestrian study areas that have been identified as high-crash 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, crash 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 proposed project is located, traffic volumes, crash types and severity, and other contributing factors. Where appropriate, measures to improve traffic and pedestrian safety are identified and coordinated with NYCDOT.

9.5 Existing Conditions

Traffic

Roadway Network

The roadway network within the study area consists of a grid of primarily local streets serving a range of uses including residential, commercial, and retail. Delancey Street, which runs east-west through the study area, is a key roadway connecting on the eastern end to the Williamsburg Bridge which provides access between Brooklyn and Manhattan for vehicle, subway, bus, pedestrian, and bike modes. Delancey Street transitions to Kenmare Street at the Bowery to the west. This roadway, with four lanes in each direction, is a major commuting route between Manhattan and Brooklyn and carries high volumes of through traffic through this area. Left turn prohibitions are in effect at all times at the traffic study area locations to facilitate traffic flows along Delancey Street.

The other key east-west roadways in the study area are Broome Street and Grand Street. Broome Street is a one-way, one travel-lane roadway, with parking on both sides, and is a primarily eastbound roadway—except for the section between Norfolk Street and Clinton Street. Grand Street has one travel lane with a bike lane and parking in each direction.

The key north-south roadways in the study area are Essex Street, Norfolk Street, Suffolk Street, and Clinton Street. Norfolk and Suffolk Streets are one-way roadways with one travel lane between Houston Street and Grand Street. Clinton Street is a one-way northbound roadway with one travel lane and a two-way protected bike lane along the western side of the street south of Delancey Street (except for the section between Grand Street and East Broadway where it is a two-way roadway). North of Delancey Street, Clinton Street is a one-way northbound roadway with one travel lane with a bike lane and curbside parking.

Essex Street is a two-way roadway with two lanes with parking in each direction south of Delancey Street, primarily serving commercial and retail uses. North of Delancey Street, Essex Street consists of one northbound travel lane and two southbound travel lanes with parking. Local bus service is provided along Essex Street, and left turns onto Delancey Street are prohibited at all times in the southbound direction and during the weekday PM commuter period in the northbound direction.

Due to existing turn prohibitions along the north-south streets intersecting the Delancey Street corridor, there are limited options for motorists to access the Williamsburg Bridge. As a result, during the weekday PM commuter period when there are heavy volumes of motorists leaving Manhattan, there are queues extending at least one block in length along Ludlow Street and Essex Street north of Delancey Street and along Norfolk Street and Clinton Street south of Delancey Street

Traffic Volumes

Traffic counts were conducted in October 2018 and supplemented with information from NYCDOT's counts conducted in October 2017 and May 2018 (in consultation with NYCDCP and NYCDOT), for the weekday AM, midday, and PM and Saturday midday peak periods

using manual intersection counts and 24-hour Automatic Traffic Recorder (ATR) machine counts. The peak hours of 8:00 AM to 9:00 AM, 12:00 PM to 1:00 PM, and 5:00 PM to 6:00 PM for weekdays, and 3:00 PM to 4:00 PM for Saturdays were selected for analysis based on traffic volume data, observations of traffic conditions, and guidance from the *CEQR Technical Manual*. **Figures 9-12 through 9-15** show the existing traffic volumes at the analyzed intersections during each of the peak hours.

Traffic volumes along Delancey Street are generally high throughout the day due to its connection to the Williamsburg Bridge and since is a major commuter corridor. During the weekday AM peak hour, volumes on Delancey Street range from approximately 1,250 to 1,500 vehicles per hour (vph) in the eastbound direction and 1,800 to 2,500 vph in the westbound direction. During the weekday midday peak hour, traffic volumes range from approximately 1,400 to 1,700 vph in the eastbound direction and 1,550 to 2,150 vph in westbound direction. During the weekday PM peak hour, traffic volumes range from approximately 1,600 to 2,300 vph in each direction. During the Saturday midday peak hour, traffic volumes range from approximately 1,700 to 2,400 vph in both the eastbound and westbound directions. Traffic volumes are highest approaching the bridge, as most of the traffic is either getting onto or off of the bridge to travel between Manhattan and Brooklyn.

Traffic volumes along Essex Street between Rivington Street and Broome Street range from 315 to 470 vph in the northbound direction during the weekday AM, PM, and Saturday midday peak hours, and approximately 240 to 325 vph during the weekday midday peak hour. In the southbound direction, Essex Street volumes range from 310 to 430 vph in the southbound direction during the weekday AM and midday peak hours, and 510 vph to 555 vph during the weekday PM and Saturday midday peak hours.

Norfolk Street between Delancey Street and Grand Street carries approximately 205 to 260 vph during the weekday AM and midday peak hours, and 430 to 485 vph during the weekday PM and Saturday midday peak hours. North of Delancey Street, Norfolk Street traffic volumes are lower, ranging from 195 to 245 vph during the peak hours analyzed.

Clinton Street between Delancey Street and Grand Street carries approximately 565 to 585 vph during the weekday AM and midday peak hours, and 630 to 655 vph during the weekday PM and Saturday midday peak hours. North of Delancey Street, Clinton Street traffic volumes are lower, ranging from 520 to 605 vph during the peak hours analyzed.

Suffolk Street is lightly traveled with up to 60 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 capacity analyses. In addition, official signal timings obtained from NYCDOT were used in the analyses for all the signalized intersections.

Figure 9-12 Existing Traffic Volumes – Weekday AM Peak Hour

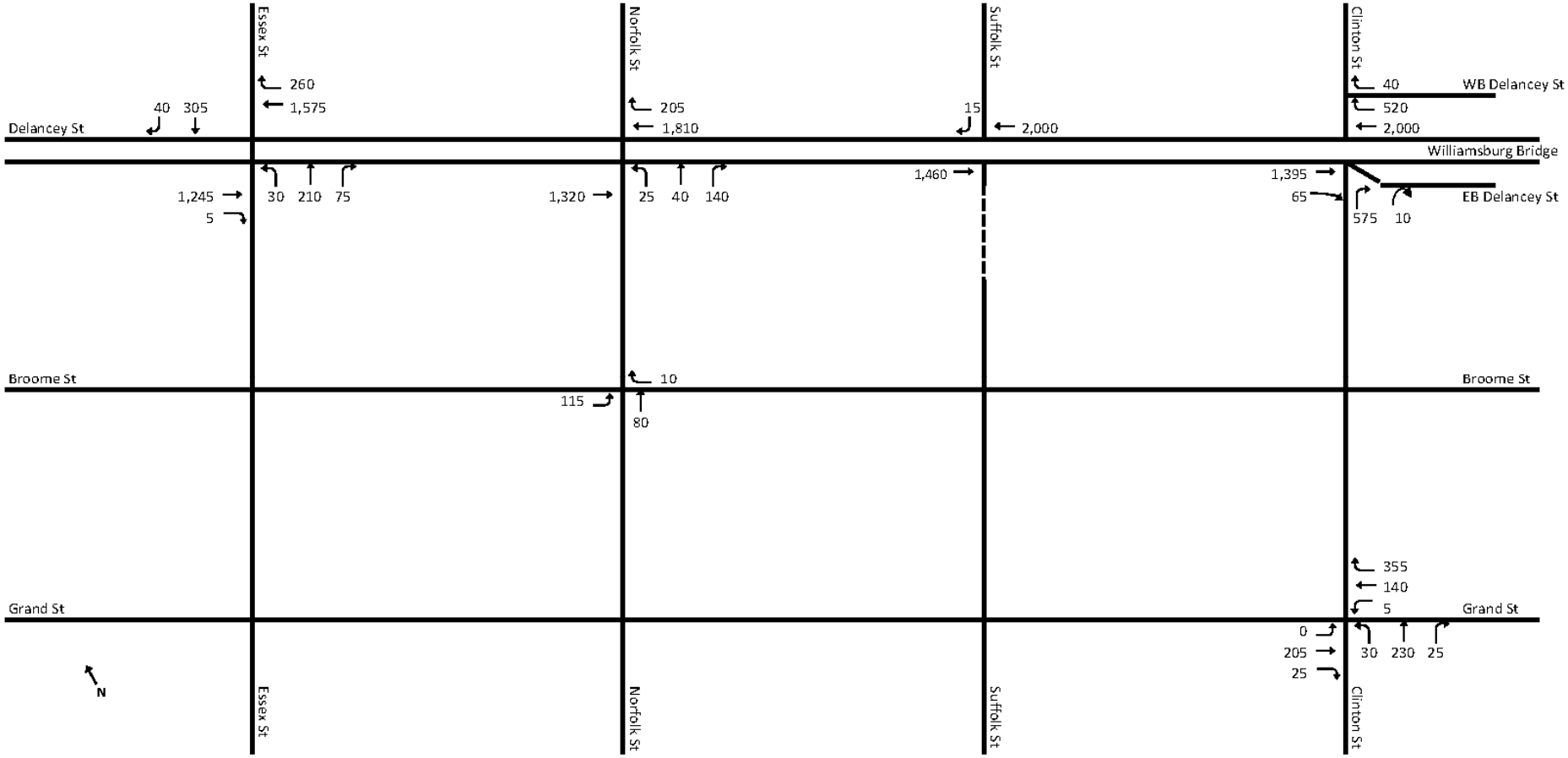


Figure 9-13 Existing Traffic Volumes – Weekday Midday Peak Hour

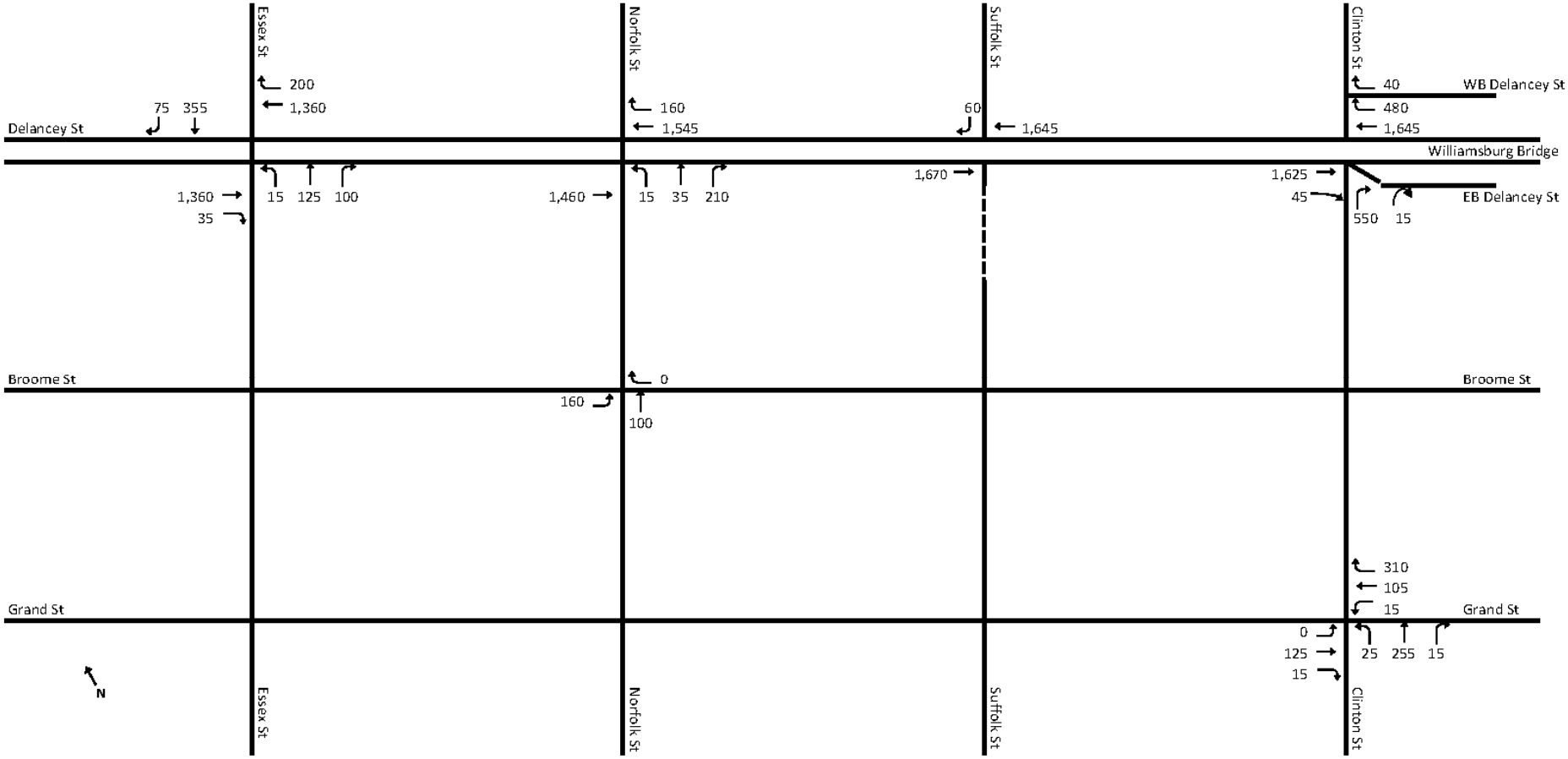


Figure 9-14 Existing Traffic Volumes – Weekday PM Peak Hour

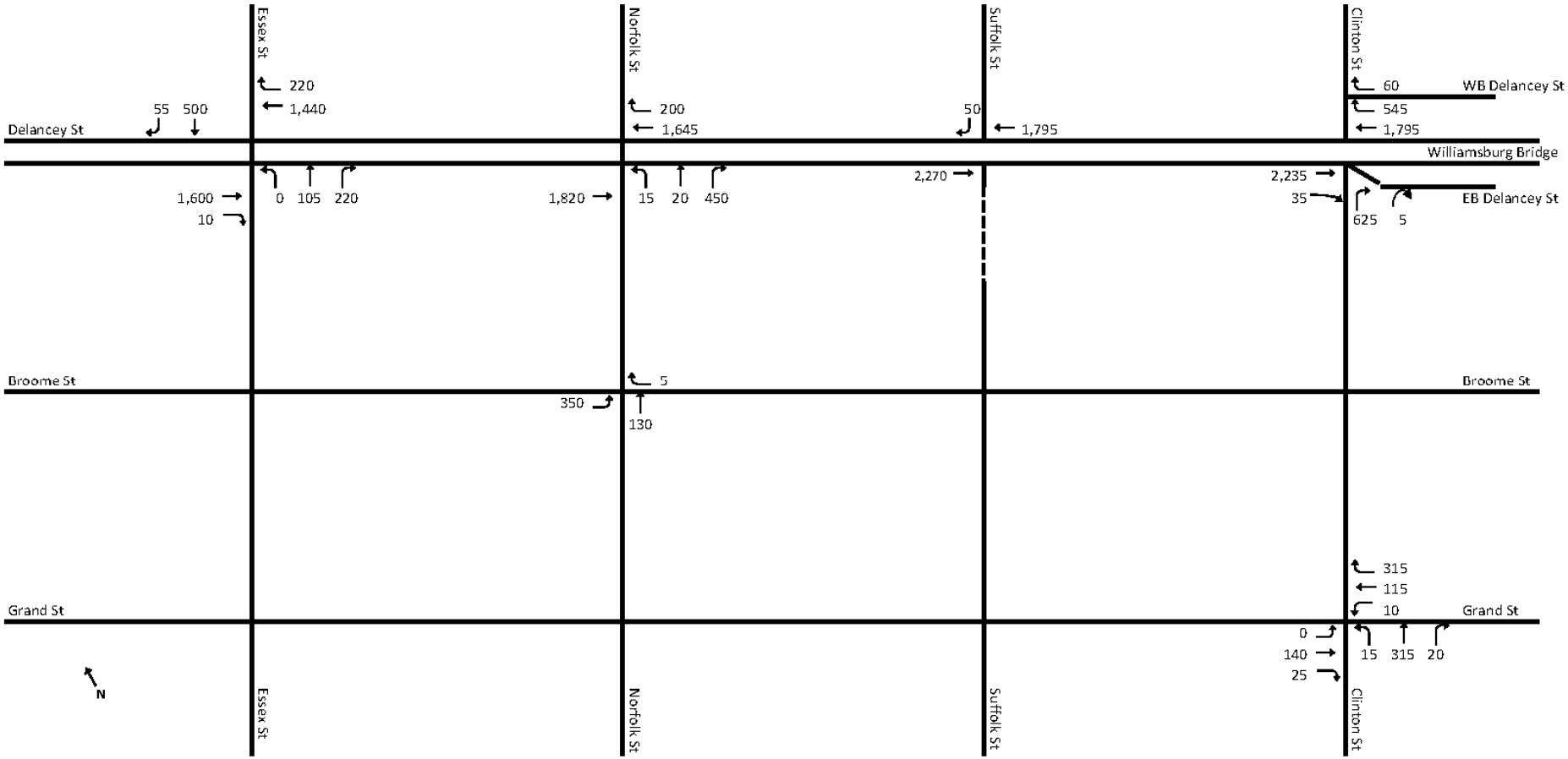
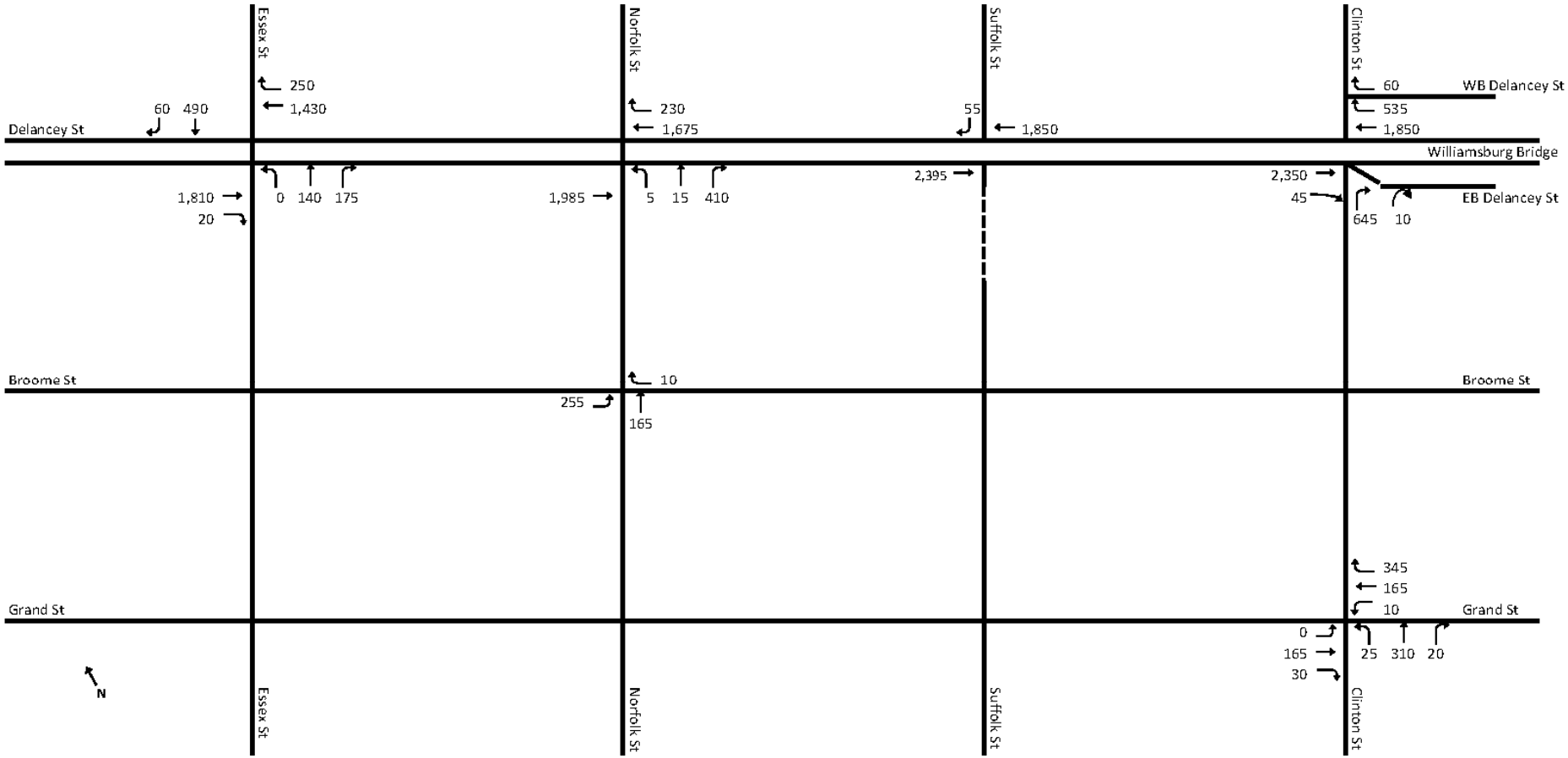


Figure 9-15 Existing Traffic Volumes – Saturday Midday Peak Hour



Levels of Service

Tables 9-11 and 9-12 provide an overview of the levels of service that characterize existing "overall" intersection conditions and individual traffic movements, respectively, during the weekday AM, midday, PM, and Saturday midday peak hours. Detailed descriptions of the existing traffic levels of service are provide in **Table 9-13**.

Table 9-11 Existing Traffic Level of Service Summary – Overall Intersections

	Weekday			Saturday
	AM Peak Hour	Midday Peak Hour	PM Peak Hour	Midday peak Hour
Intersections at Overall LOS A/B/C	4	4	4	4
Intersections at Overall LOS D	1	2	1	1
Intersections at Overall LOS E	1	0	1	1
Intersections at Overall LOS F	0	0	0	0

Table 9-12 Existing Traffic Level of Service Summary – Traffic Movements

	Weekday			Saturday
	AM Peak Hour	Midday Peak Hour	PM Peak Hour	Midday peak Hour
Traffic Movements at LOS A/B/C and Acceptable LOS D	20	20	18	19
Traffic Movements at Unacceptable LOS D	1	1	1	1
Traffic Movements at LOS E	1	1	3	2
Traffic Movements at LOS F	2	2	2	2
Number of individual traffic movements	24	24	24	24

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

Table 9-13 - EXISTING TRAFFIC LEVELS OF SERVICE
GO Broome - 50 Norfolk EIS
2018 EXISTING CONDITION

INTERSECTION & APPROACH		Weekday AM Peak Hour Control Mvt.	V/C	Delay	LOS	Weekday Midday Peak Hour Control Mvt.	V/C	Delay	LOS	Weekday PM Peak Hour Control Mvt.	V/C	Delay	LOS	Saturday Peak Hour Control Mvt.	V/C	Delay	LOS
SIGNALIZED INTERSECTIONS																	
Delancey St and Essex St																	
Delancey St	EB	TR	0.67	19.9	B	TR	0.77	22.6	C	TR	0.83	24.5	C	TR	0.92	30.2	C
	WB	T	0.87	22.7	C	T	0.71	19.9	B	T	0.72	19.9	B	T	0.72	19.6	B
		R	1.00	51.1	D	R	0.89	45.0	D	R	0.85	36.6	D	R	0.94	44.3	D
Essex St	NB	LT	0.68	34.9	C	LT	0.34	24.7	C	LT	0.27	23.5	C	LT	0.34	24.5	C
		R	0.30	24.6	C	R	0.37	26.0	C	R	0.81	47.4	D	R	0.63	34.6	C
	SB	TR	0.48	26.0	C	TR	0.64	29.7	C	TR	0.74	32.5	C	TR	0.74	32.4	C
Overall Intersection		-	**0.88**	**25.0**	**C**	-	**0.79**	**23.9**	**C**	-	**1.32**	**30.8**	**C**	-	**0.86**	**32.8**	**C**
Delancey St and Norfolk St																	
Delancey Street	EB	T	0.74	20.8	C	T	0.86	24.4	C	T	0.98	32.2	C	T	0.97	28.9	C
	WB	TR	0.93	26.9	C	TR	0.76	21.1	C	TR	0.78	21.3	C	TR	0.84	23.1	C
Norfolk Street	NB	LTR	0.43	21.2	C	LTR	0.57	24.5	C	LTR	0.99	59.5	E	LTR	0.76	31.1	C
Overall Intersection		-	**0.70**	**24.3**	**C**	-	**0.73**	**22.8**	**C**	-	**0.98**	**31.1**	**C**	-	**0.87**	**26.5**	**C**
Delancey St and Suffolk St																	
Delancey St	EB	T	0.63	18.3	B	T	0.71	19.4	B	T	0.89	22.0	C	T	0.91	23.3	C
	WB	T	0.81	20.2	C	T	0.67	18.2	B	T	0.68	18.3	B	T	0.70	18.6	B
Suffolk St	SB	R	0.05	16.2	B	R	0.19	18.0	B	R	0.12	17.0	B	R	0.13	17.1	B
Overall Intersection		-	**0.46**	**19.4**	**B**	-	**0.47**	**18.8**	**B**	-	**0.53**	**20.3**	**C**	-	**0.55**	**21.1**	**C**
Delancey St and Clinton St																	
Delancey St	EB	TR	0.73	24.5	C	TR	0.85	27.3	C	TR	1.02	43.7	D	TR	1.01	40.5	D
	WB	T	1.05	83.5	F	T	1.04	83.3	F	T	1.05	80.7	F	T	1.03	81.1	F
		R	0.99	83.7	F	R	0.99	81.4	F	R	1.00	84.6	F	R	1.01	84.3	F
Clinton St	NB	R	0.93	40.8	D	R	0.85	31.5	C	R	0.87	30.9	C	R	0.98	50.3	D
Delancey St Service Road	WB	R	0.39	42.0	D	R	0.37	40.8	D	R	0.45	42.7	D	R	0.45	42.3	D
Overall Intersection		-	**1.06**	**58.4**	**E**	-	**0.96**	**54.8**	**D**	-	**1.00**	**58.9**	**E**	-	**1.05**	**59.8**	**E**
Broome St and Norfolk St																	
Broome St	EB	L	0.18	10.8	B	L	0.25	11.6	B	L	0.51	15.1	B	L	0.34	12.5	B
	WB	R	0.02	9.5	A	R	0.00	9.3	A	R	0.01	9.4	A	R	0.02	9.5	A
Norfolk St	NB	T	0.15	20.9	C	T	0.19	21.4	C	T	0.25	22.2	C	T	0.31	22.9	C
Overall Intersection		-	**0.17**	**14.7**	**B**	-	**0.23**	**15.4**	**B**	-	**0.41**	**17.0**	**B**	-	**0.33**	**16.6**	**B**
Grand St and Clinton St																	
Grand St	EB	TR	0.44	16.9	B	TR	0.30	14.6	B	TR	0.34	15.1	B	TR	0.38	15.6	B
	WB	LT	0.27	13.9	B	LT	0.22	13.5	B	LT	0.23	13.5	B	LT	0.30	14.3	B
		R	0.99	68.0	E	R	0.98	65.5	E	R	0.97	64.0	E	R	1.01	72.5	E
Clinton St	NB	LTR	0.80	43.2	D	LTR	0.84	46.5	D	LTR	0.92	57.4	E	LTR	0.95	62.9	E
Overall Intersection		-	**0.92**	**40.5**	**D**	-	**0.92**	**42.9**	**D**	-	**0.96**	**45.3**	**D**	-	**1.04**	**48.0**	**D**

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

The summary overview of existing conditions indicates that:

- In the weekday AM peak hour, one of the six intersections analyzed is operating at overall LOS E or F. "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 level of service is a weighted average of all the individual traffic movements). Four individual traffic movements out of approximately 24 such movements analyzed are at unacceptable LOS D, LOS E or F (e.g., left turns from one street to another, through traffic on one street passing through the intersection, etc.).
- In the weekday midday peak hour, no intersection operates at overall LOS E or F, and four individual traffic movements operates at unacceptable LOS D, LOS E or F.
- In the weekday PM peak hour, one intersection operates at overall LOS E or F, and six individual traffic movements operate at unacceptable LOS D, LOS E or F.
- In the Saturday midday peak hour, one intersection operates at overall LOS E or F, and five individual traffic movements operate at unacceptable LOS D, LOS E or F.
- The intersection of Delancey Street and Clinton Street operates at overall unacceptable LOS D or worse during all of the peak hours analyzed.

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

Delancey Street and Essex Street

- Westbound Delancey Street right turn movement (weekday AM and midday)
- Northbound Essex Street right turn movement (weekday PM)

Delancey Street and Norfolk Street

- Northbound Norfolk Street approach (weekday PM)

Delancey Street and Clinton Street

- Westbound Williamsburg Bridge through movement (weekday AM, midday, PM, and Saturday midday)
- Westbound Williamsburg Bridge right turn movement (weekday AM, midday, PM, and Saturday midday)
- Northbound Clinton Street right turn movement (Saturday midday)

Grand Street and Clinton Street

- Westbound Grand Street right turn movement (weekday AM, midday, PM, and Saturday midday)
- Northbound Clinton Street approach (weekday midday, PM, and Saturday midday)

Parking

A detailed inventory of off-street public parking facilities within approximately a quarter-mile of the project block was conducted on a typical weekday and Saturday in May 2018. This

quarter-mile distance is considered an acceptable walking distance to and from parking, per the *CEQR Technical Manual*. There are three public parking garages within or close to this quarter-mile area. **Table 9-5** above presents the capacity and occupancy of the off-street parking facilities during the weekday AM (7 AM to 9:30 AM), midday (11 AM to 2 PM), PM (4 PM to 6:30 PM), and Saturday midday (noon to 4 PM) peak periods. The total capacity of the three parking garages is 1,061 parking spaces and are approximately 71 percent occupied during the weekday AM peak period, 70 percent occupied during the weekday midday and Saturday midday periods, and 84 percent occupied during the weekday PM peak period.

Transit

There are four subway routes serving the immediate project area, all using the Delancey Street-Essex Station at the intersection of Delancey Street and Essex Street, at the western edge of the study area. This station is served by the F, M, J, and Z routes. The F route operates between Coney Island-Stillwell Avenue in Brooklyn and Jamaica-179 St in Queens. The M route operates between Middle Village Metropolitan Avenue in Queens and Forest Hills-71 Avenue in Queens. The J and Z routes operate between Broad Street in Manhattan and Jamaica Center-Parsons/Archer in Queens. Access to the B and D subway routes is provided at the Grand Street subway station located over ¼-mile from the project site. The B route operates between Bedford Park Boulevard in the Bronx and Brighton Beach in Brooklyn. The D route operates between Norwood-205 Street in the Bronx and Coney Island-Stillwell Avenue in Brooklyn.

There are three bus routes that make stops in the vicinity of the project area, the B39 bus route which provides service to Brooklyn via Delancey Street and the Williamsburg Bridge, the M14A bus route which provides service along Essex Street and Grand Street between the Lower East Side and Chelsea, and the M9 bus route which provides service along Essex Street between East Midtown and Downtown Manhattan.

Subway Station

Four~~Two~~ subway station elements were identified for analysis—the S4 surface stairway located at the southeast corner of the intersection of Delancey Street and Essex Street, connecting to the station fare control area, ~~and~~ the E328 escalator which is used by riders to exit from the uptown F train platform to the street surface at the southeast corner of the intersection of Delancey Street and Essex Street, and the two connecting fare arrays (N526 fare array for the S4 stairway and N526A fare array for the E328 escalators).~~.~~

Existing subway station element counts were conducted in January 2019 for the weekday AM (7 AM to 9:30 AM) and PM (4 PM to 6:30 PM) peak periods to develop existing volumes for the subway station analysis; supplemental counts were conducted in November 2019. All four~~. Both~~ station elements operate at acceptable levels of service during both the weekday AM and PM peak hours under existing conditions. Detailed descriptions of the subway station element levels of service are provided in **Tables 9-14 through~~and~~ 9-16~~15~~** below.

Table 9-14 2018 Existing Subway Station Levels of Service – Stairways

Peak Hour	Effective Width	Pedestrian Volume Up (15-minutes)	Pedestrian Volume Down (15-minutes)	Friction Factors	Surging Factor (Up/Down)	v/c ratio	LOS
S4 surface stairway							
Weekday AM	46 inches	42	90	0.90	0.80/1.00	0.28	A
Weekday PM	46 inches	9791	5159	0.90	0.80/1.00	0.34	A

Table 9-15 2018 Existing Subway Station Levels of Service – Escalators

Peak Hour (direction)	Thread Width	Capacity	Pedestrian Volume (15-minutes)	Surging Factor	v/c ratio	LOS
E328 surface escalator						
Weekday AM (up)	24 inches	32 persons/minute	98	0.75	0.27	A
Weekday PM (up)	24 inches	32 persons/minute	4746	0.75	0.13	A

Table 9-16 2018 Existing Subway Station Levels of Service – Fare Control Area

Peak Hour	Control Elements	Pedestrian Volume (15-minutes)		Surging Factor	Friction Factor	v/c ratio	LOS
		In	Out				
N526 Fare Array							
Weekday AM	5 turnstiles, 2 HEETs	206	153	0.90	0.90	0.13	A
Weekday PM		211	212	0.90	0.90	0.15	A
N526A Fare Array							
Weekday AM	1 HXT	0	98	0.75	1.00	0.24	A
Weekday PM		0	47	0.75	1.00	0.11	A

Note: HEET = High entry/exit turnstile, HXT = high exit turnstile

Pedestrians

Pedestrian counts were conducted at key locations near the projected development sitessite for the weekday AM, midday, PM, and Saturday midday peak periods for two typical weekdays and two Saturdays in June 2018 (when NYC public schools were in session). The weekday peak hours of 8:00 AM to 9:00 AM, 12:00 PM to 1:00 PM, and 5:00 PM to 6:00 PM and Saturday midday peak hour of 1:45 PM to 2:45 PM were selected for analysis. The existing peak hour weekday AM, midday, PM and Saturday midday pedestrian volumes are presented in **Figures 9-15 through 9-18**.

As shown in **Table 9-1716**, all pedestrian elements analyzed operate at acceptable LOS D or better during all peak hours. Due to existing construction closures, two pedestrian elements, the northeast and northwest corners at the intersection of Broome Street and Norfolk Street, are closed to pedestrian traffic but would be reconstructed and reopened in the 2023 No-Action condition. Detailed descriptions of the levels of service for all pedestrian elements are provided in **Tables 9-1817 through 9-2019**.

Figure 9-16 2018 Existing Pedestrian Volumes – Weekday AM Peak Hour

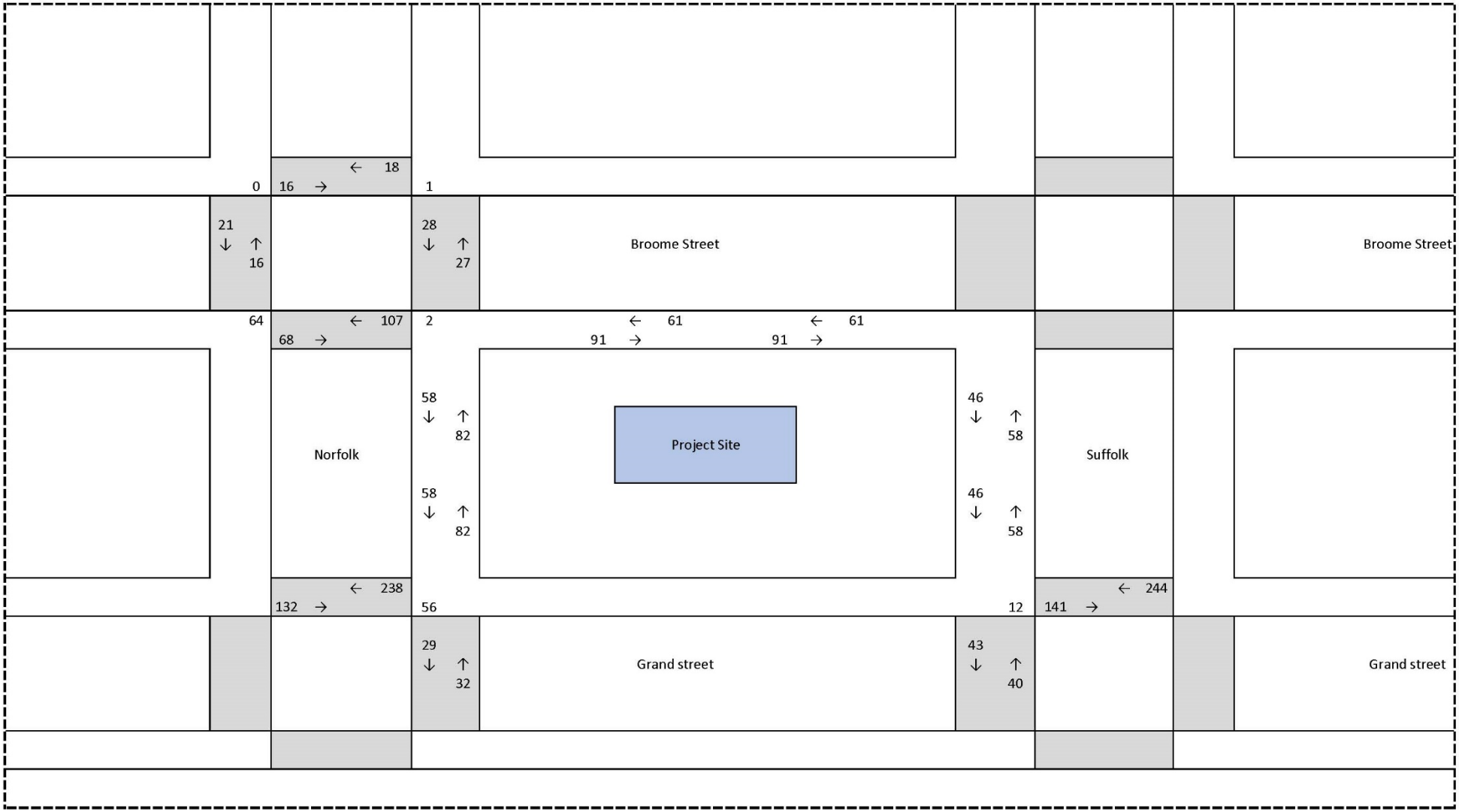


Figure 9-17 2018 Existing Pedestrian Volumes – Weekday Midday Peak Hour

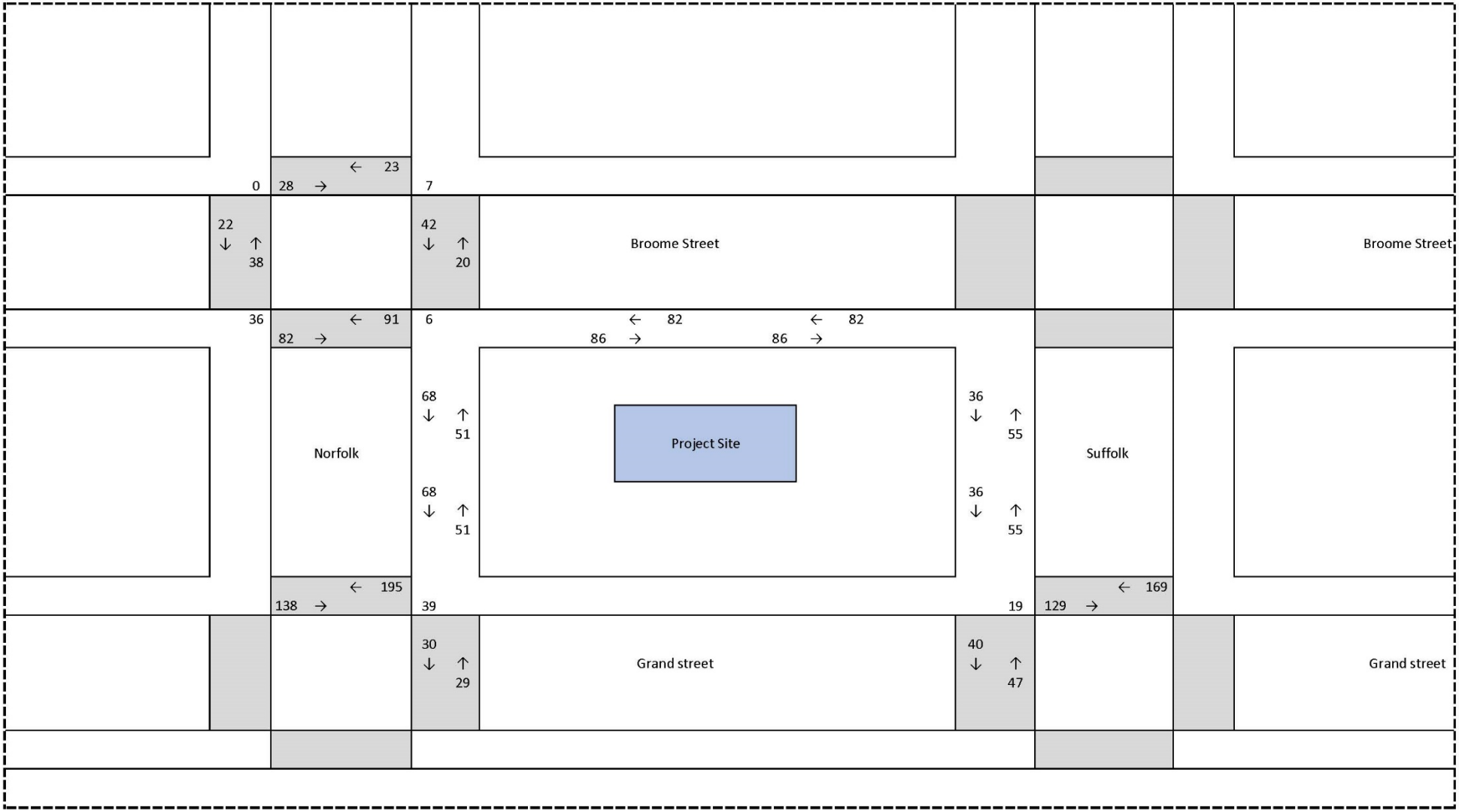


Figure 9-18 2018 Existing Pedestrian Volumes – Weekday PM Peak Hour

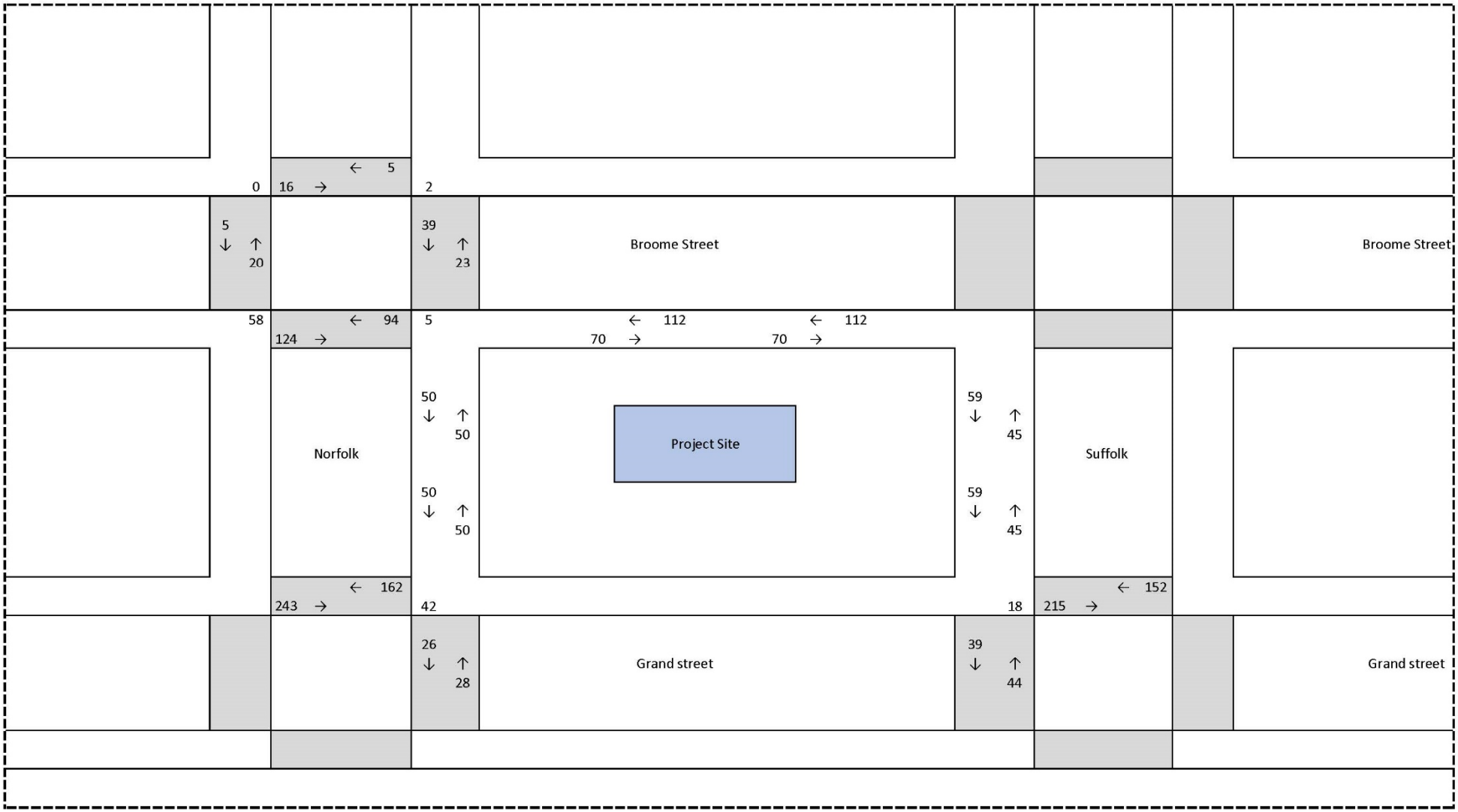


Figure 9-19 2018 Existing Pedestrian Volumes – Saturday Midday Peak Hour

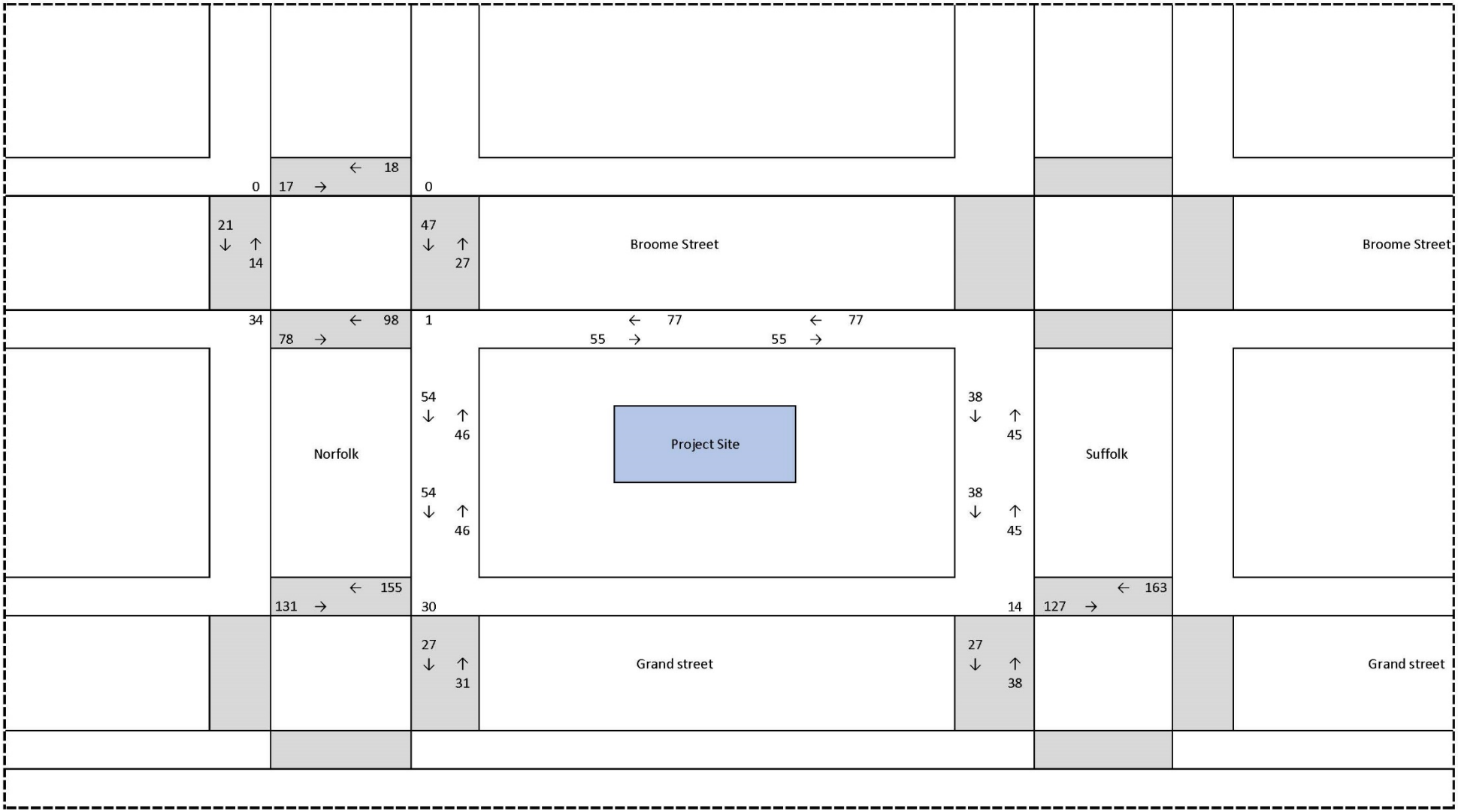


Table 9-1716 2018 Existing Pedestrian Levels of Service Summary

	Weekday AM Peak Hour	Weekday Midday Peak Hour	Weekday PM Peak Hour	Saturday Midday Peak Hour
Sidewalk Elements				
Sidewalks at LOS A/B/C	3	3	3	3
Sidewalks at LOS D	0	0	0	0
Sidewalks at LOS E	0	0	0	0
Sidewalks at LOS F	0	0	0	0
Crosswalk Elements				
Crosswalks at LOS A/B/C	8	8	7	8
Crosswalks at LOS D	0	0	1	0
Crosswalks at LOS E	0	0	0	0
Crosswalks at LOS F	0	0	0	0
Corner Elements				
Corners at LOS A/B/C	4	4	4	4
Corners at LOS D	0	0	0	0
Corners at LOS E	0	0	0	0
Corners at LOS F	0	0	0	0
Corners closed due to existing construction	2	2	2	2

Notes: Includes three sidewalk, eight crosswalks, and six corner (of which two are closed) analysis locations

Table 9-1817 2018 Existing Pedestrian Levels of Service – Sidewalks

Sidewalk	Effective Width, ft	Weekday AM Peak Hour			Weekday Midday Peak Hour			Weekday PM Peak Hour			Saturday Peak Hour		
		Volume, ped/hr	Avg Ped Space, SF/P	LOS	Volume, ped/hr	Avg Ped Space, SF/P	LOS	Volume, ped/hr	Avg Ped Space, SF/P	LOS	Volume, ped/hr	Avg Ped Space, SF/P	LOS
Broome Street between Norfolk Street and Suffolk Street (south side)	6.3	152	362.5	A	168	376.6	A	182	347.6	A	132	427.8	A
Norfolk Street between Grand Street and Broom Street (east side)	6.3	140	447.1	A	119	503.1	A	100	585.1	A	100	564.7	A
Suffolk Street between Grand Street and Broome Street (west side)	5.8	104	483.6	A	91	532.2	A	104	406.0	A	83	538.7	A

Table 9-1918 2018 Existing Pedestrian Levels of Service – Crosswalks

Intersection	Crosswalk	Weekday AM Peak Hour			Weekday Midday Peak Hour			Weekday PM Peak Hour			Saturday Midday Peak Hour		
		Volume, ped/hr	Avg Ped Space, sf/p	LOS	Volume, ped/hr	Avg Ped Space, sf/p	LOS	Volume, ped/hr	Avg Ped Space, sf/p	LOS	Volume, ped/hr	Avg Ped Space, sf/p	LOS
Broome Street and Norfolk Street	North	34	704.4	A	51	539.3	A	21	823.1	A	35	538.2	A
	East	55	314.7	A	62	271.8	A	62	284.3	A	74	222.5	A
	South	175	173.4	A	173	204.2	A	218	141.6	A	176	164.3	A
	West	37	374.6	A	60	333.1	A	25	533.3	A	35	374.9	A
Grand Street and Norfolk Street	North	370	38.3	C	333	48.0	B	405	34.0	C	286	56.2	B
	East	61	351.8	A	59	370.2	A	54	318.8	A	58	390.4	A
Grand Street and Suffolk Street	North	385	93.0	A	298	116.4	A	367	99.4	A	290	114.5	A
	West	83	228.8	A	87	252.6	A	83	276.1	A	65	339.1	A

Table 9-2019 2018 Existing Pedestrian Levels of Service – Corners

Intersection	Corner	Weekday AM Peak Hour			Weekday Midday Peak Hour			Weekday PM Peak Hour			Saturday Midday Peak Hour		
		Volume, ped/hr	Avg Ped Space, sf/p	LOS	Volume, ped/hr	Avg Ped Space, sf/p	LOS	Volume, ped/hr	Avg Ped Space, sf/p	LOS	Volume, ped/hr	Avg Ped Space, sf/p	LOS
Broome Street and Norfolk Street	Northeast	Closed due to construction											
	Northwest	Closed due to construction											
	Southeast	2	192.7	A	6	203.0	A	5	161.8	A	1	168.1	A
	Southwest	64	356.7	A	36	437.8	A	58	347.1	A	34	398.6	A
Grand Street and Norfolk Street	Northeast	56	370.2	A	39	452.3	A	42	380.2	A	30	500.6	A
Grand Street and Suffolk Street	Northwest	12	216.9	A	19	251.4	A	18	227.8	A	14	269.2	A

Vehicular and Pedestrian Safety

Crash data werewas obtained for the study area intersections from NYCDOT for the most recent three-year period (2014 through 2016). This information is based on data provided by the New York State Department of Transportation (NYSDOT), New York State Department of Motor Vehicles (NYSDMV), and New York City Police Department (NYPD).

The crash data detail reported crashes (crashes resulting in death, injury, or property damage in excess of $1,000), fatalities, injuries, and pedestrian and bicycle injuries annually. According to the *CEQR Technical Manual*, a location is considered a high-crash location when there are 48 or more total reportable and non-reportable crashes, or five or more pedestrian/bicyclist injury crashes in any consecutive 12 months during the most recent three-year period for which data are available.

Table 9-2120 presents a summary of total crashes at the study area intersections during the three-year period of 2014 through 2016, and also shows total fatalities, injuries, and pedestrian and bicycle crashes. Delancey Street at Essex Street is considered a high-crash location by the NYCDOT criteria; the intersection has at least five pedestrian/bicyclist injury crashes within a consecutive 12-month period. A modest increase in project generated pedestrian trips are expected to utilize this high-crash location – the highest number of pedestrian trips at one crosswalk would occur along the east crosswalk during the weekday midday peak hour (an increase in 41 pedestrian trips). The increase in project generated turning vehicles at this intersection, where conflicts with pedestrians are likely, is also modest – the highest number of turning vehicles at one crosswalk occurs during the weekday PM peak hour at the north crosswalk (five vehicle trips). Pedestrian crosswalks and signals are

presented at intersection, and there is a median along Delancey Street. Left turns are prohibited at all time along all approaches except for the northbound Essex Street approach where left turns are prohibited between 4 PM and 7 PM Monday through Friday.

Table 9-21~~20~~ Vehicle and Pedestrian Crash Summary

Intersection		Total Crashes					Pedestrian Crashes			Bicycle Crashes		
North-South Roadway	East-West Roadway	2014	2015	2016	Total Fatalities	Total Injuries	2014	2015	2016	2014	2015	2016
Essex Street	Delancey Street	17	12	12	0	37	6	1	4	1	0	3
Norfolk Street	Delancey Street	4	3	5	1	9	0	0	1	0	1	0
Suffolk Street	Delancey Street	7	9	6	0	22	0	1	1	2	1	2
Clinton Street	Delancey Street	31	20	17	0	79	1	0	1	3	3	2
Norfolk Street	Broome Street	1	1	0	0	2	0	1	0	1	0	0
Suffolk Street	Broome Street	0	1	0	0	1	0	0	0	0	1	0
Clinton Street	Grand Street	1	5	8	1	13	0	0	2	0	0	2
Norfolk Street	Grand Street	1	1	0	0	0	0	0	0	0	0	0
Suffolk Street	Grand Street	1	0	2	0	3	1	0	0	0	0	1
	Denotes a high-crash location											

Source: NYSDOT/NYSDMV (2014-2016)

A safety initiative, the Delancey Street Protect Bike Lanes and Safety Improvements project, was implemented within the study area in fall 2018. This project aimed to improve pedestrian and bicycle safety along the corridor by filling in the gap in the bike network along Delancey Street through the removal of one eastbound Delancey Street travel lane to create protect bike lanes and extend the median areas (via paint) to increase the pedestrian areas along Delancey Street. These changes are expected to decrease the amount of total crashes and pedestrian injuries along Delancey Street, including at the high-crash location with Essex Street.

9.6 No-Action Conditions

Traffic

This section establishes the baseline (No-Action) condition against which potential impacts of the project can be identified. Future year conditions were analyzed for the year 2023. No-Action traffic, pedestrian, and transit volumes were established by applying a background growth of 0.25 percent per year for the five years (years 2019 to 2023) in accordance with *CEQR Technical Manual* guidelines for Manhattan projects. As detailed in **Chapter 2**, "**Land Use, Zoning, and Public Policy**," several developments are being planned and will be expected to be developed by the year 2023 within the study area. Nine projects were identified in consultation with NYCDCP to be incorporated in the 2023 No-Action condition analyses, totaling to approximately 1,450 residential units and 806,000 sf of commercial and community facility development; these projects are detailed in **Table 9-22~~21~~** and are shown in **Figure 9-20.**

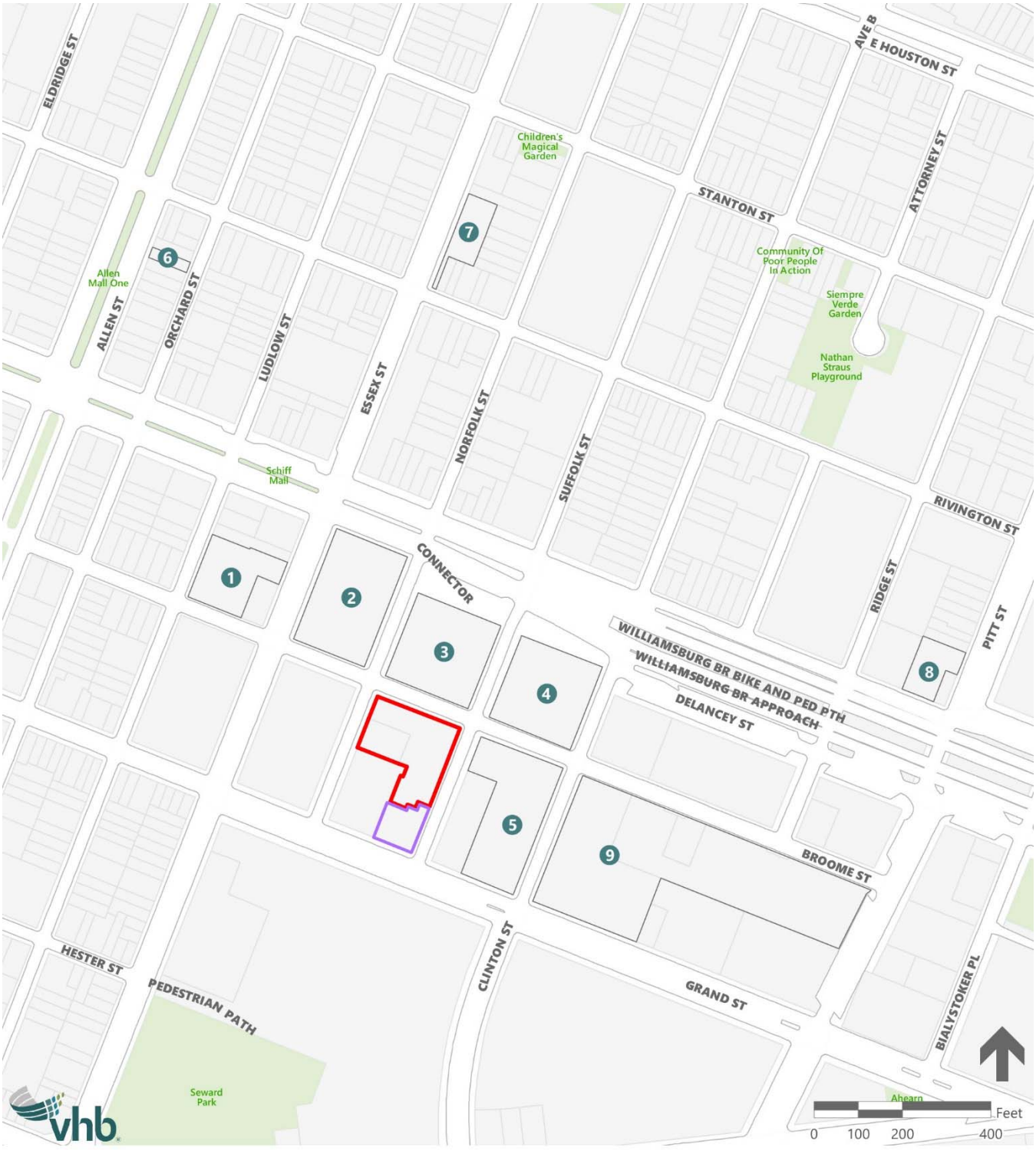
Table 9-2221 No-Action Development Projects

Map No.	Project	Project Program	Completion Date
1	242 Broome Street (Essex Crossing Site 1)	55 residential DUs 17,000 SF bowling alley 9,600 SF local retail 40,000 SF museum	2018
2	115 Delancey Street (Essex Crossing Site 2)	195 residential DUs 65,000 SF movie theater 17,510 SF local retail 37,000 SF Essex Street Market 52,035 SF public market	2018
3	202 Broome Street (Essex Crossing Site 3)	83 residential DUs 16,000 SF local retail 175,000 SF office 18,000 SF public market	2021
4	180 Broome Street (Essex Crossing Site 4)	263 residential DUs 175,000 SF office 10,000 SF local retail 39,734 SF public market	2020
5	145 Clinton Street (Essex Crossing Site 5)	211 residential DUs 22,500 SF destination retail 30,000 SF food store 14,000 SF local retail	2018
6	139 Orchard Street	98 hotel rooms	2018
7	140 Essex Street (Essex Crossing Site 8)	93 residential DUs 9,645 SF local retail	2019
8	208 Delancey Street	69 residential DUs 8,352 SF community facility	Under construction
9	Grand Street Guild	480 residential DUs 5,580 SF community facility	2023

Note: The residential component of 145 Clinton Street (Essex Crossing Site 5) was completed and occupied before the June 2018 pedestrian counts and October 2018 traffic counts were conducted. The destination retail component was completed and occupied during the summer of 2018 after the pedestrian counts were conducted.

There is one traffic improvement project identified within the study area – the Delancey Street Protect Bike Lanes and Safety Improvements project. Traffic improvements as a result of this project include the removal of one eastbound Delancey Street travel lane between Allen Street and Suffolk Street to provide protected two-way bike lanes along Delancey Street, and to extend the median areas (via paint) to increase the amount of pedestrian areas along Delancey Street. Signal timing modifications along intersections along Delancey Streets were also identified and incorporated into the No-Action condition analyses. This project was implemented in October 2018, shortly after the existing conditions traffic counts were conducted.

Figure 9-20 No-Action Development Projects



In addition, it is expected that roadways closured during construction of the Essex Crossing development would be reopened. The following roadway changes from the existing conditions would be expected as a result:

- Suffolk Street between Delancey Street and Broome Street would reopen to vehicle and pedestrian traffic;
- Norfolk Street between Delancey Street and Broome Street would operate as two travel lanes, as it did before construction commenced;
- Full and partial parking lane closures along Essex Street between Delancey Street and Broome Street, along Broome Street between Essex Street and Clinton Street, and along Norfolk Street between Broome Street and Grand Street, would end and the parking lanes would be available; and
- Sidewalks surrounding Essex Crossing sites 1, 2, 3, 4, and 5 would be reconstructed and/or reopened.

Traffic Volumes

The 2023 No-Action pedestrian volumes were developed by increasing existing traffic volumes to reflect expected growth in overall travel through and within the study area and by incorporating traffic volumes from projects expected to be completed before the 2023 analysis year. Additional traffic generated by the background development projects, in particular the Essex Crossing projects, would be substantial. Vehicle trips generated by the Essex Crossing project range from 250 to 400 vph during the peak hours analyzed, which is approximately five to eight times higher than those generated by the proposed project.

Traffic volumes from the Essex Crossing development sites were assigned to nearby off-street parking facilities as discussed in the *Seward Park Mixed Use Development FEIS Technical Memorandum 3 (2015),* while the vehicle trips generated from other No-Action development projects were assigned to park on-site, if on-site parking is available, or on-street within the vicinity of the site. No-Action traffic volume maps for the weekday AM, midday, PM, and Saturday midday peak hours are provided in **Figures 9-21 through 9-24**.

Levels of Service

Based on the traffic increases mentioned above, the 2023 No-Action traffic levels of service were determined for the six analysis locations. **Tables 9-2322 and 9-2423** provide an overview of the levels of service that characterize No-Action "overall" intersection conditions and individual traffic movements, respectively, during the weekday AM, midday, PM, and Saturday midday peak hours. Detailed traffic levels of service are provided in **Table 9-2524**.

Figure 9-21 2023 No-Action Traffic Volumes – Weekday AM Peak Hour

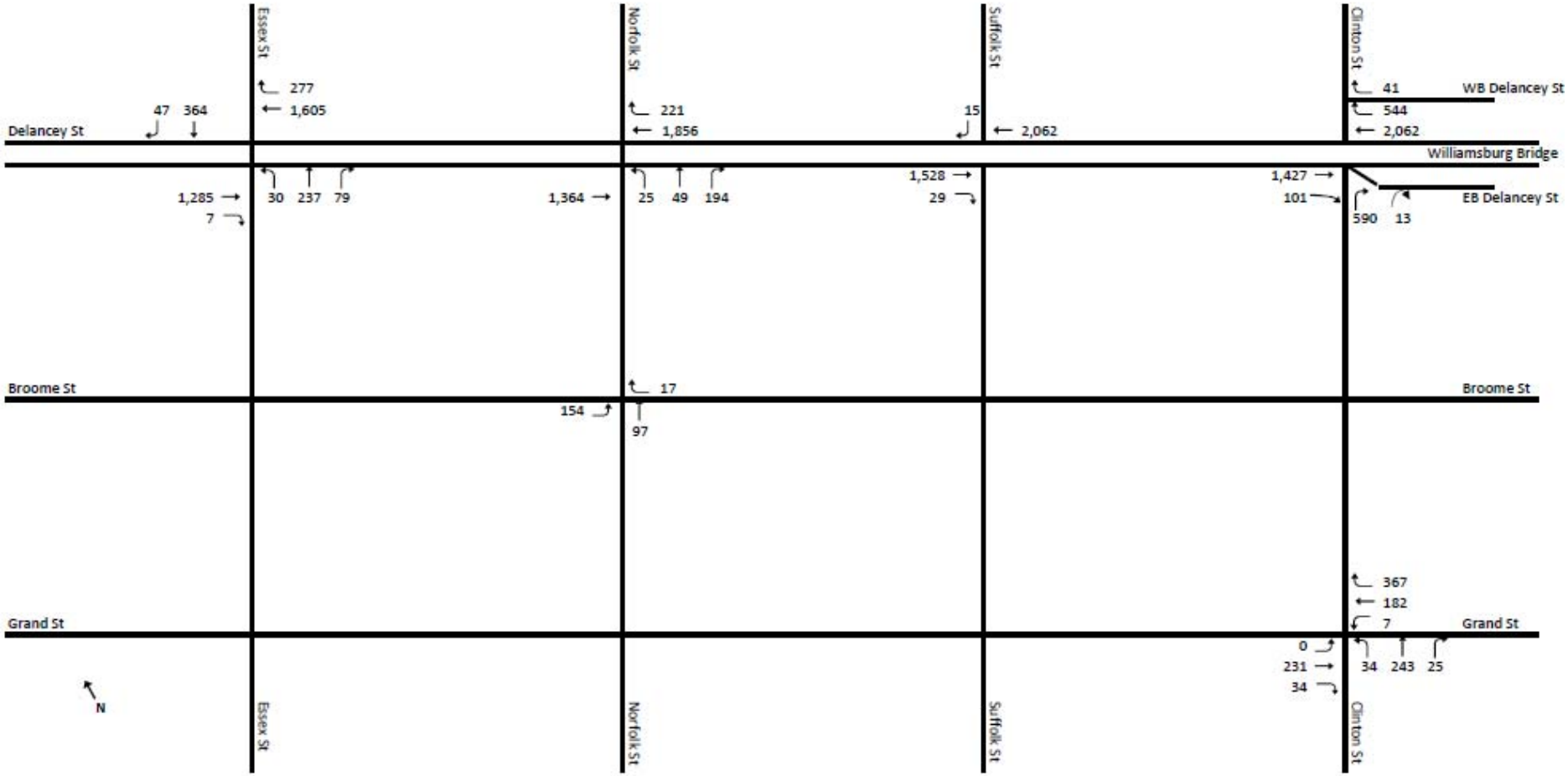


Figure 9-22 2023 No-Action Traffic Volumes – Weekday Midday Peak Hour

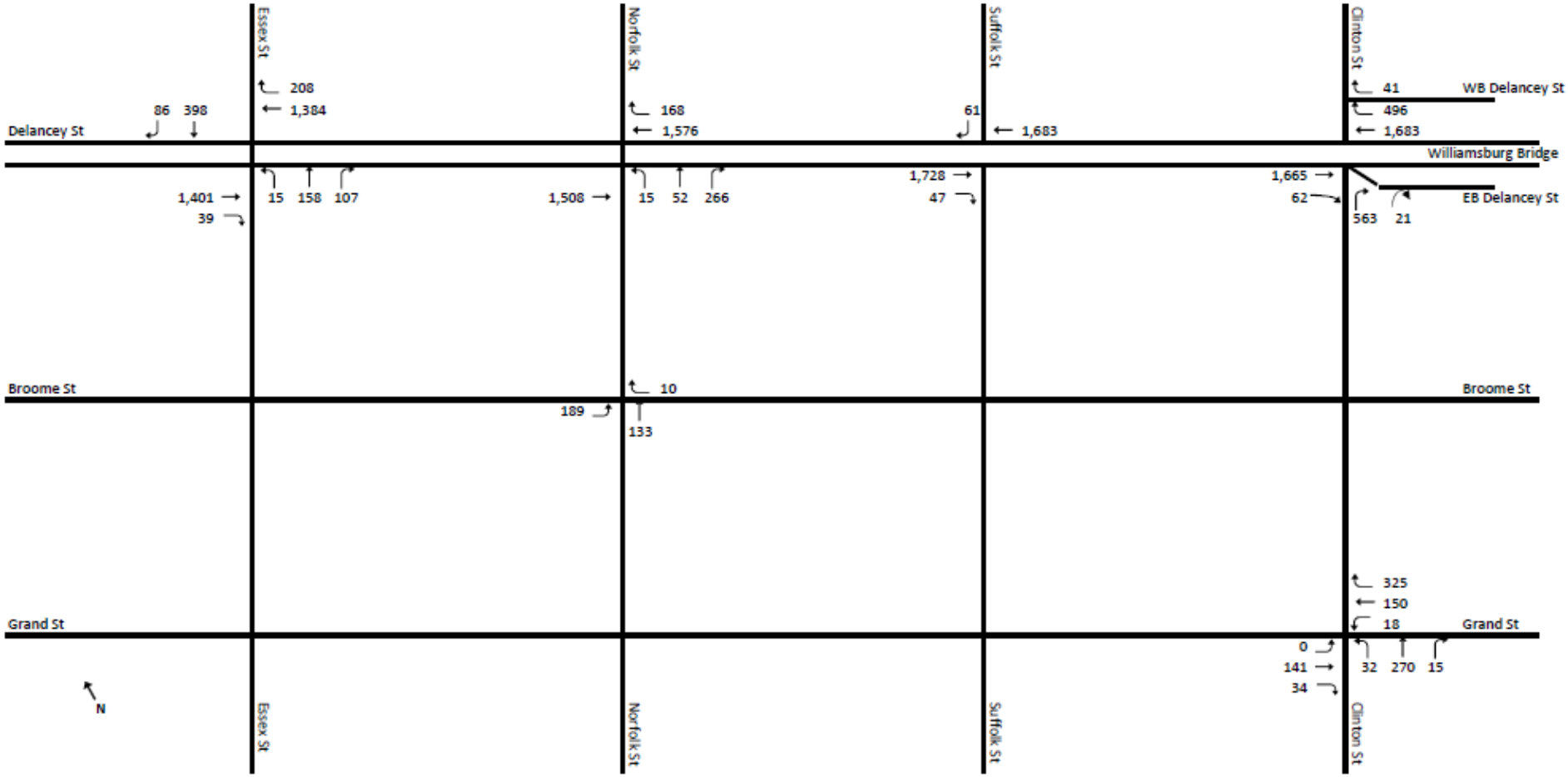


Figure 9-23 2023 No-Action Traffic Volumes – Weekday PM Peak Hour

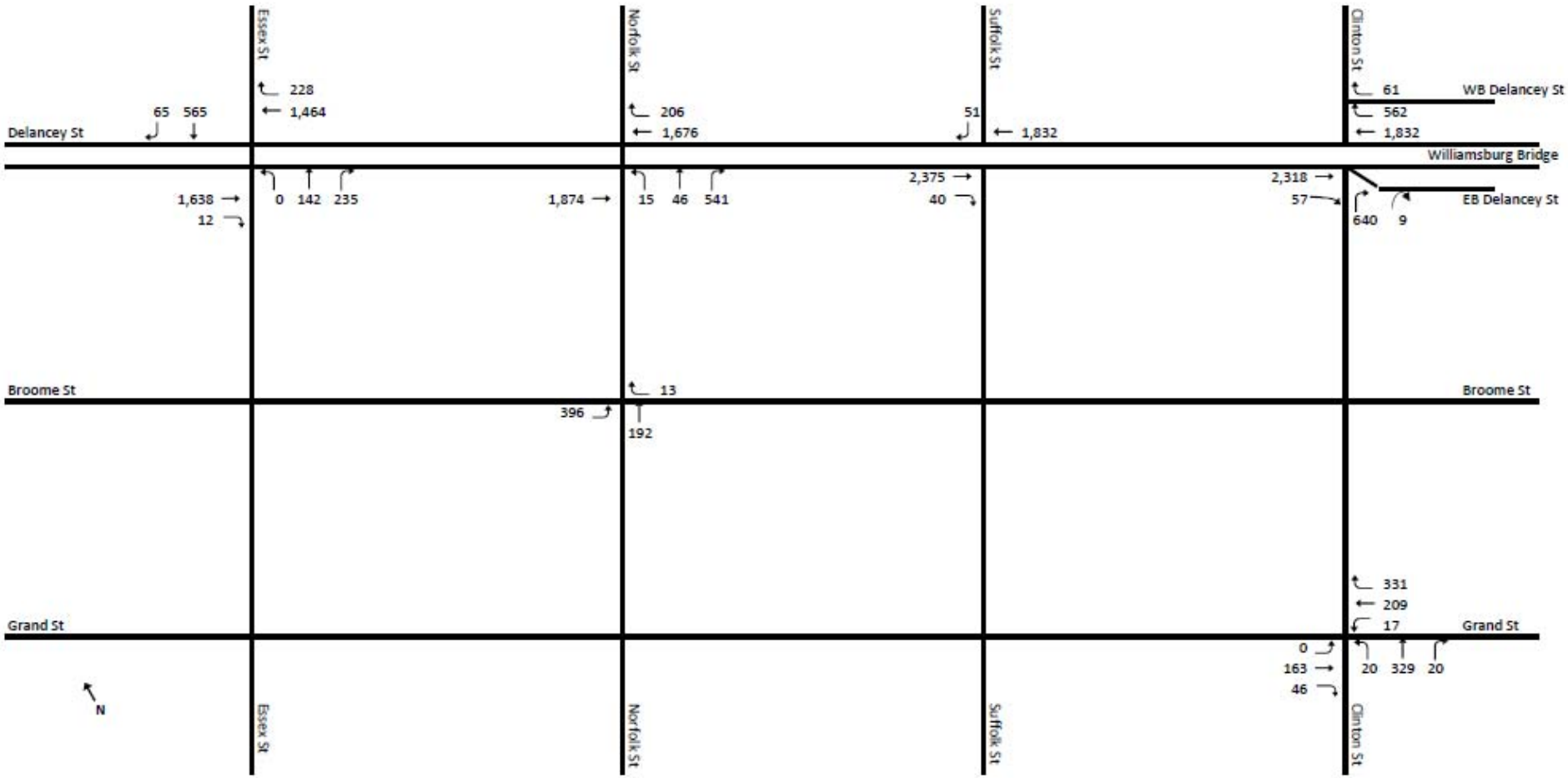


Figure 9-24 2023 No-Action Traffic Volumes – Saturday Midday Peak Hour

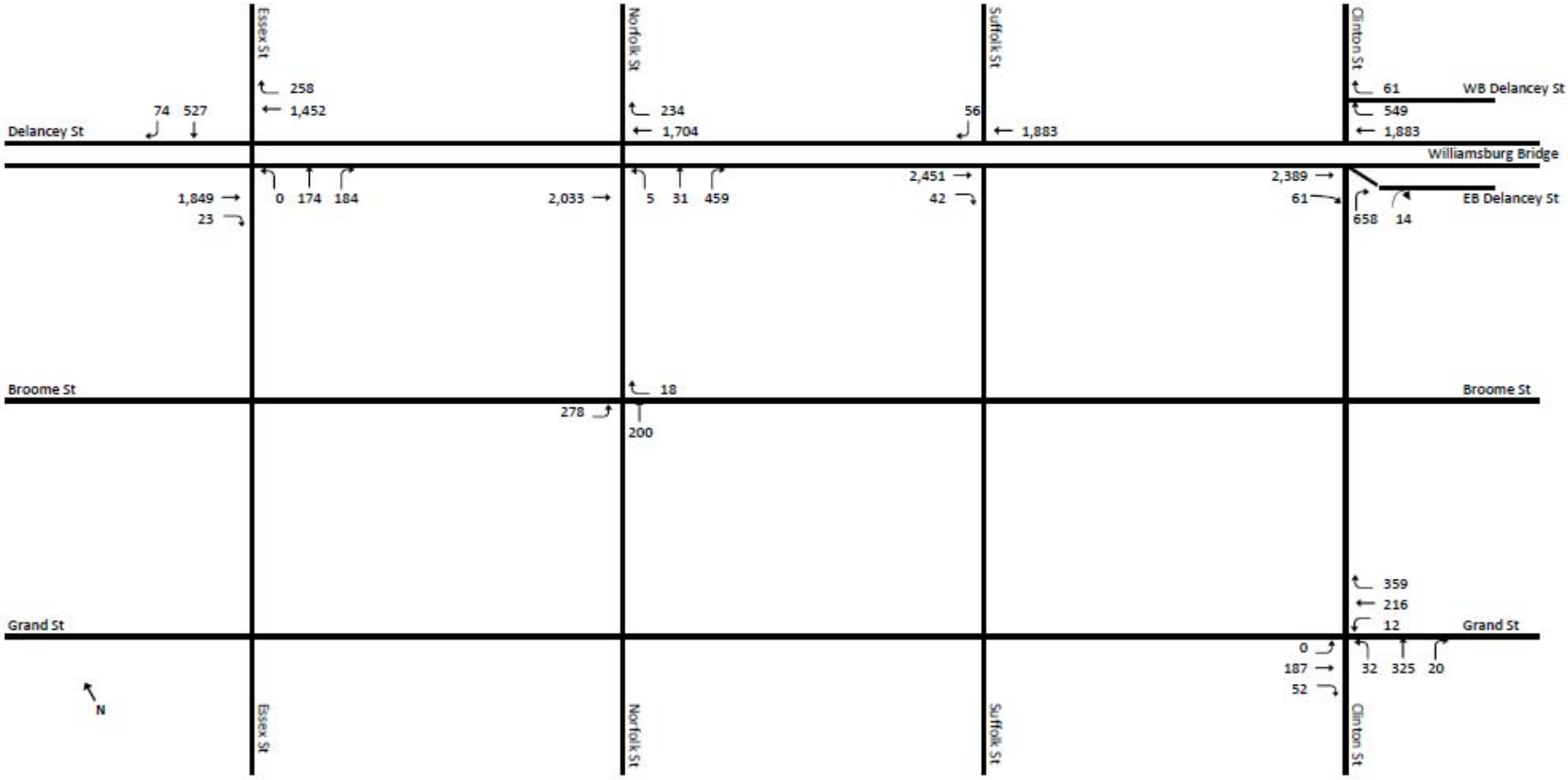


Table 9-2322 2018 Existing vs. 2023 No-Action Traffic Levels of Service - Overall Intersections

	2016 Existing				2023 No-Action			
	Weekday AM Peak Hour	Weekday Midday Peak Hour	Weekday PM Peak Hour	Saturday Midday Peak Hour	Weekday AM Peak Hour	Weekday Midday Peak Hour	Weekday PM Peak Hour	Saturday Midday Peak Hour
Intersections at Overall LOS A/B/C	4	4	4	4	4	4	3	4
Intersections at Overall LOS D	1	2	1	1	1	0	0	0
Intersections at Overall LOS E	1	0	1	1	1	2	2	2
Intersections at Overall LOS F	0	0	0	0	0	0	1	0

Table 9-2423 2018 Existing vs. 2023 No-Action Traffic Levels of Service – Traffic Movements

	2016 Existing				2023 No-Action			
	Weekday AM Peak Hour	Weekday Midday Peak Hour	Weekday PM Peak Hour	Saturday Midday Peak Hour	Weekday AM Peak Hour	Weekday Midday Peak Hour	Weekday PM Peak Hour	Saturday Midday Peak Hour
Traffic Movements at LOS A/B/C and Acceptable LOS D	20	20	18	19	19	20	17	18
Traffic Movements at Unacceptable LOS D	1	1	1	1	3	1	0	1
Traffic Movements at LOS E	1	1	3	2	0	2	5	4
Traffic Movements at LOS F	2	2	2	2	4	3	4	3
Number of individual traffic movements	24	24	24	24	26	26	26	26

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 9-24 - NO ACTION TRAFFIC LEVELS OF SERVICE
GO Broome - 50 Norfolk EIS
2023 NO ACTION CONDITION

INTERSECTION & APPROACH		Weekday AM Peak Hour Control Mvt.	V/C	Delay	LOS	Weekday Midday Peak Hour Control Mvt.	V/C	Delay	LOS	Weekday PM Peak Hour Control Mvt.	V/C	Delay	LOS	Saturday Peak Hour Control Mvt.	V/C	Delay	LOS
SIGNALIZED INTERSECTIONS																	
Delancey St and Essex St																	
Delancey St	EB	TR	0.69	20.4	C	TR	0.80	23.6	C	TR	0.85	25.6	C	TR	0.94	32.9	C
	WB	T	0.89	23.3	C	T	0.72	20.1	C	T	0.73	20.1	C	T	0.73	19.8	B
		R	1.21	128.5	F	R	1.04	79.5	E	R	0.98	59.2	E	R	1.06	76.3	E
Essex St	NB	LT	0.75	39.0	D	LT	0.42	26.1	C	LT	0.37	25.1	C	LT	0.43	26.0	C
		R	0.33	25.3	C	R	0.43	27.7	C	R	0.94	69.2	E	R	0.72	40.2	D
	SB	TR	0.57	27.9	C	TR	0.73	32.8	C	TR	0.85	38.5	D	TR	0.82	36.5	D
	Overall Intersection	-	**1.02**	**29.8**	**C**	-	**0.90**	**27.0**	**C**	-	**0.96**	**30.0**	**C**	-	**0.96**	**32.0**	**C**
Delancey St and Norfolk St																	
Delancey Street	EB	T	0.73	20.7	C	T	0.86	24.2	C	T	1.00	38.4	D	T	0.99	33.0	C
	WB	TR	0.97	30.8	C	TR	0.79	21.7	C	TR	0.80	21.8	C	TR	0.86	23.9	C
Norfolk Street	NB	LTR	0.35	19.9	B	LTR	0.41	20.8	C	LTR	0.67	26.8	C	LTR	0.46	21.6	C
		R	0.19	17.7	B	R	0.32	19.6	B	R	0.56	23.8	C	R	0.41	20.8	C
	Overall Intersection	-	**0.68**	**26.0**	**C**	-	**0.65**	**22.6**	**C**	-	**0.85**	**29.4**	**C**	-	**0.75**	**27.7**	**C**
Delancey St and Suffolk St																	
Delancey St	EB	TR	0.67	19.0	B	TR	0.77	20.5	C	TR	0.95	24.3	C	TR	0.96	25.7	C
	WB	T	0.83	20.7	C	T	0.69	18.4	B	T	0.69	18.5	B	T	0.71	18.7	B
Suffolk St	SB	R	0.06	16.4	B	R	0.27	19.8	B	R	0.17	17.9	B	R	0.19	18.0	B
	Overall Intersection	-	**0.48**	**19.9**	**B**	-	**0.54**	**19.5**	**B**	-	**0.59**	**21.7**	**C**	-	**0.60**	**22.6**	**C**
Delancey St and Clinton St																	
Delancey St	EB	T	0.73	24.5	C	T	0.87	28.2	C	T	1.07	62.8	E	T	1.04	49.3	D
		R	0.47	24.2	C	R	0.25	19.2	B	R	0.33	22.0	C	R	0.22	18.2	B
	WB	T	1.08	95.5	F	T	1.07	91.5	F	T	1.07	88.3	F	T	1.05	87.0	F
		R	1.04	98.9	F	R	1.02	94.1	F	R	1.03	92.8	F	R	1.03	91.3	F
Clinton St	NB	R	0.96	46.0	D	R	0.87	34.1	C	R	0.90	33.8	C	R	1.01	56.9	E
Delancey St Service Road	WB	R	0.54	54.4	D	R	0.52	52.0	D	R	0.73	71.7	E	R	0.68	64.4	E
	Overall Intersection	-	**1.11**	**65.8**	**E**	-	**0.99**	**59.7**	**E**	-	**1.02**	**70.6**	**E**	-	**1.06**	**66.9**	**E**
Broome St and Norfolk St																	
Broome St	EB	L	0.51	18.0	B	L	0.67	24.5	C	L	1.41	222.6	F	L	0.83	35.5	D
	WB	R	0.06	10.1	B	R	0.04	9.7	A	R	0.06	10.1	B	R	0.06	10.0	A
Norfolk St	NB	T	0.21	21.6	C	T	0.29	22.8	C	T	0.42	25.0	C	T	0.42	24.8	C
	Overall Intersection	-	**0.40**	**18.8**	**B**	-	**0.52**	**23.4**	**C**	-	**1.03**	**155.4**	**F**	-	**0.67**	**30.0**	**C**
Grand St and Clinton St																	
Grand St	EB	TR	0.52	18.4	B	TR	0.39	16.0	B	TR	0.45	17.1	B	TR	0.48	17.6	B
	WB	LT	0.35	15.0	B	LT	0.31	14.5	B	LT	0.41	16.0	B	LT	0.39	15.6	B
		R	1.12	108.6	F	R	1.26	163.5	F	R	1.19	138.2	F	R	1.17	123.9	F
Clinton St	NB	LTR	0.85	47.7	D	LTR	0.90	55.2	E	LTR	0.97	68.1	E	LTR	1.01	77.5	E
	Overall Intersection	-	**1.01**	**44.1**	**D**	-	**1.12**	**75.3**	**E**	-	**1.11**	**65.4**	**E**	-	**1.16**	**64.9**	**E**

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

The summary overview of 2023 No-Action conditions indicates that:

- In the weekday AM peak hour, one of the six intersections analyzed would operate at overall LOS E or F similar to the existing conditions. Seven individual traffic movements out of approximately 26 such movements analyzed would operate at unacceptable LOS D, LOS E or F, as compared to four movements under the existing conditions.
- In the weekday midday peak hour, two of the six intersections analyzed would operate at overall LOS E or F , compared to none in the existing conditions. Six individual traffic movements out of approximately 26 such movements analyzed would operate at unacceptable LOS D, LOS E or F, as compared to four movements under the existing conditions.
- In the weekday PM peak hour, three of the six intersections analyzed would operate at overall LOS E or F compared to one in the existing conditions. Nine individual traffic movements out of approximately 26 such movements analyzed would operate at unacceptable LOS D, LOS E or F, as compared to six movements under the existing conditions.
- In the Saturday midday peak hour, two of the six intersections analyzed would operate at overall LOS E or F as compared to one in the existing conditions. Eight individual traffic movements out of approximately 26 such movements analyzed would operate at unacceptable LOS D, LOS E or F, as compared to five movements under the existing conditions.
- The intersection of Delancey Street and Clinton Street would operate at overall LOS E during all peak hours analyzed. The intersection of Grand Street and Clinton Street would operate at unacceptable LOS E during the weekday midday, PM, and Saturday midday peak hour. The intersection of Broome Street and Norfolk Street would operate at LOS F during the weekday PM peak hour.

Based on the analysis results, the majority of traffic movements would continue to operate at acceptable levels of service. The following intersections would have at least one movement operating at unacceptable levels of service during at least one peak hour. Traffic movements expected to operate at unacceptable levels of service (unacceptable LOS D, LOS E, or LOS F) are listed below:

Delancey Street and Essex Street

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

Delancey Street and Clinton Street

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

Broome Street and Norfolk Street

- Eastbound Broome Street approach (weekday PM)

Grand Street and Clinton Street

- Westbound Grand Street right turn movement (weekday AM, midday, PM, and Saturday midday)
- Northbound Clinton Street approach (weekday AM, midday, PM, and Saturday midday)

Parking

Between 2018 and 2023, demand for off-street parking is expected to increase due to background growth and the No-Action condition development projects listed in **Table 9-21**. The Essex Crossing sites would not provide parking on-site, and the projected parking demand for that project would be adequately accommodated by off-street parking facilities as discussed in the *Seward Park Mixed-Use Development FEIS Technical Memorandum 3 (2015)*.

Subway Transit

Existing transit volumes were increased based on the background growth rates recommended in the *CEQR Technical Manual*. These background volumes incorporated transit trips associated with the No-Action projects to develop the No-Action transit volumes. As shown in **Tables 9-2625 and 9-2726**, the four~~two~~ subway station elements analyzed would continue to operate at acceptable levels of service.

Table 9-2625 2023 No-Action Subway Station Levels of Service – Stairways

Peak Hour	Effective Width	Pedestrian Volume Up (15-minutes)	Pedestrian Volume Down (15-minutes)	Friction Factors	Surging Factor (Up/Down)	v/c ratio	LOS
S4 surface stairway							
Weekday AM	46 inches	167	191	0.90	0.80/1.00	0.78	C
Weekday PM	46 inches	214208	247255	0.90	0.80/1.00	1.00	C

Table 9-27267 2023 No-Action Subway Station Levels of Service – Escalators

Peak Hour (direction)	Thread Width	Capacity	Pedestrian Volume (15-minutes)	Surging Factor	v/c ratio	LOS
E328 surface escalator						
Weekday AM (up)	24 inches	32 persons/minute	117	0.75	0.33	A
Weekday PM (up)	24 inches	32 persons/minute	6463	0.75	0.18	A

Table 9-28 2023 No-Action Subway Station Levels of Service – Fare Control Area

Peak Hour	Control Elements	Pedestrian Volume (15-minutes)		Surging Factor	Friction Factor	v/c ratio	LOS
		In	Out				
N526 Fare Array							
Weekday AM	5 turnstiles, 2 HEETs	317	285	0.90	0.90	0.22	A
Weekday PM		416	347	0.90	0.90	0.28	A
N526A Fare Array							
Weekday AM	1 HXT	0	117	0.75	1.00	0.28	A
Weekday PM		0	64	0.75	1.00	0.15	A

Pedestrians

The 2023 No-Action pedestrian volumes were developed by increasing existing pedestrian volumes to reflect expected growth in overall travel through and within the study area, and incorporating pedestrian volumes from projects expected to be completed. No-Action pedestrian volume maps for the weekday AM, midday, PM, and Saturday peak hours are provided in **Figures 9-25 through 9-28**.

Figure 9-25 2023 No-Action Pedestrian Volumes – Weekday AM Peak Hour

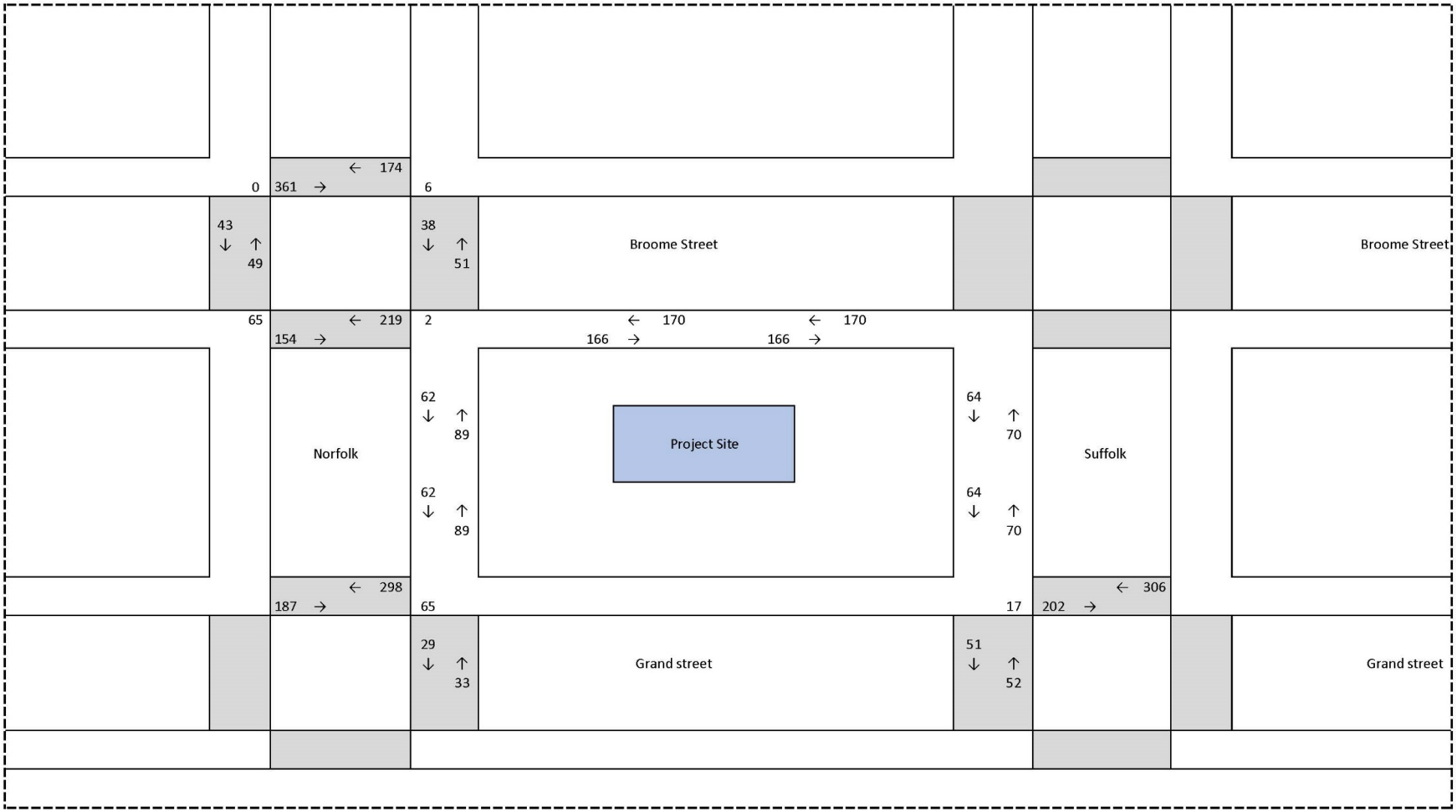


Figure 9-26 2023 No-Action Pedestrian Volumes – Weekday Midday Peak Hour

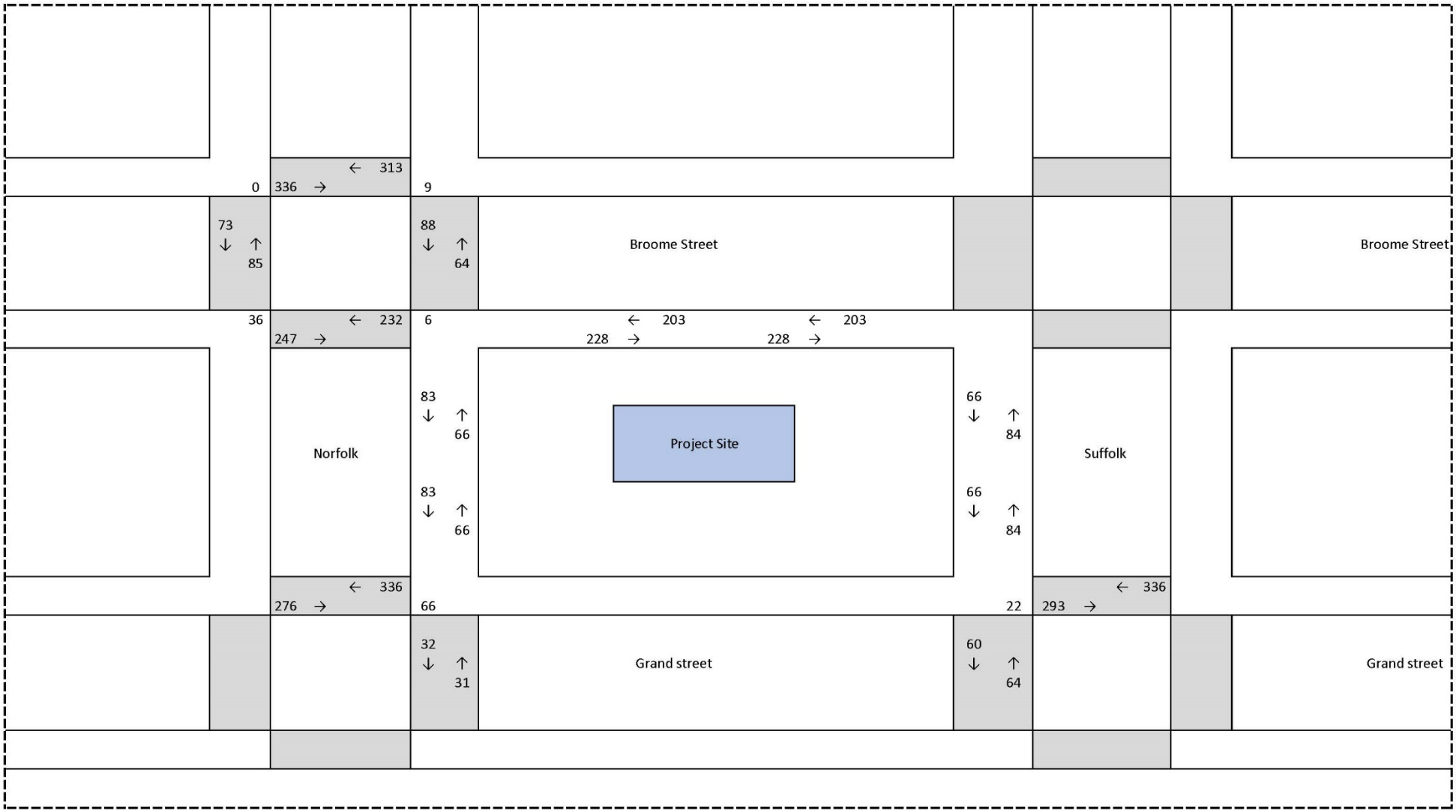


Figure 9-27 2023 No-Action Pedestrian Volumes – Weekday PM Peak Hour

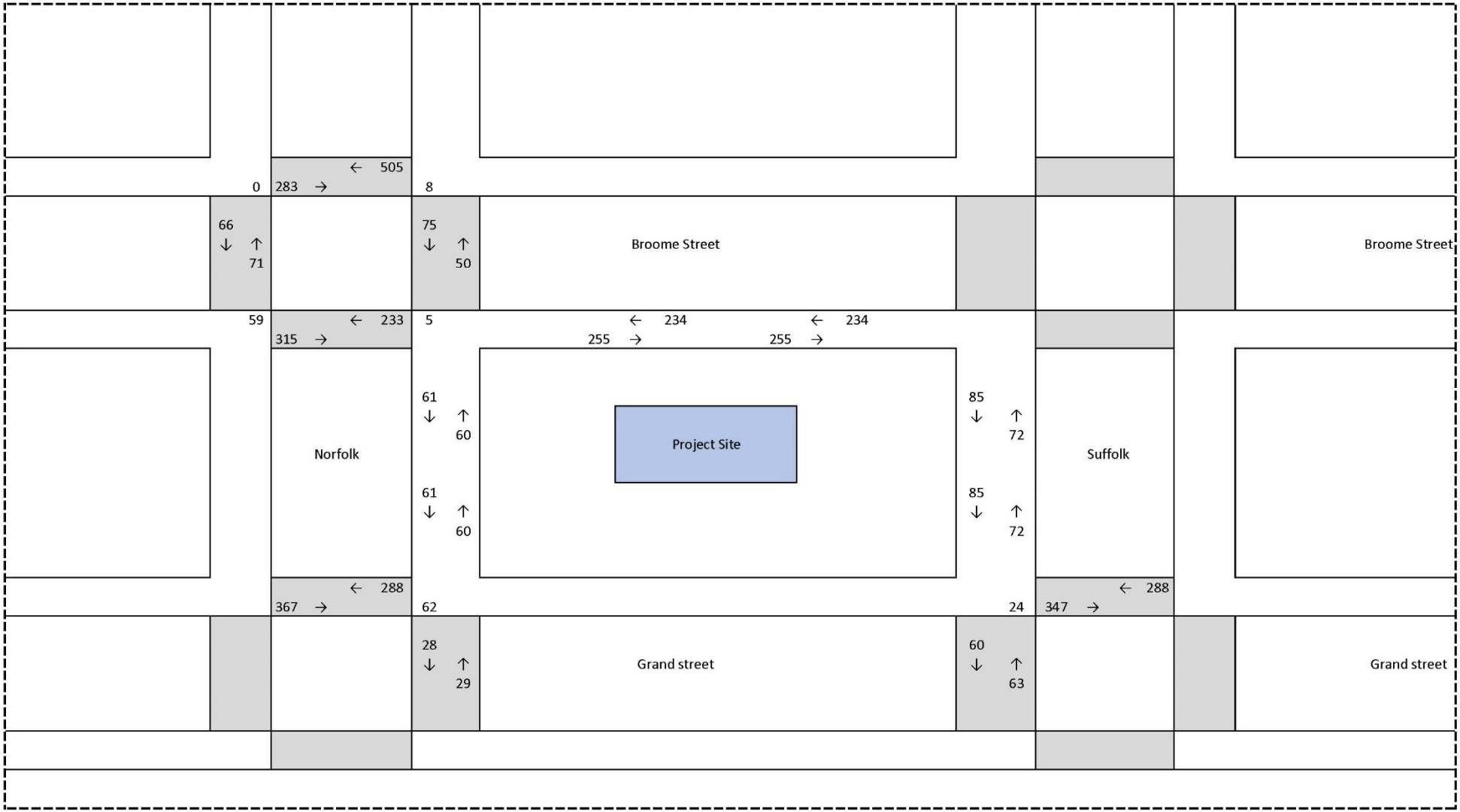
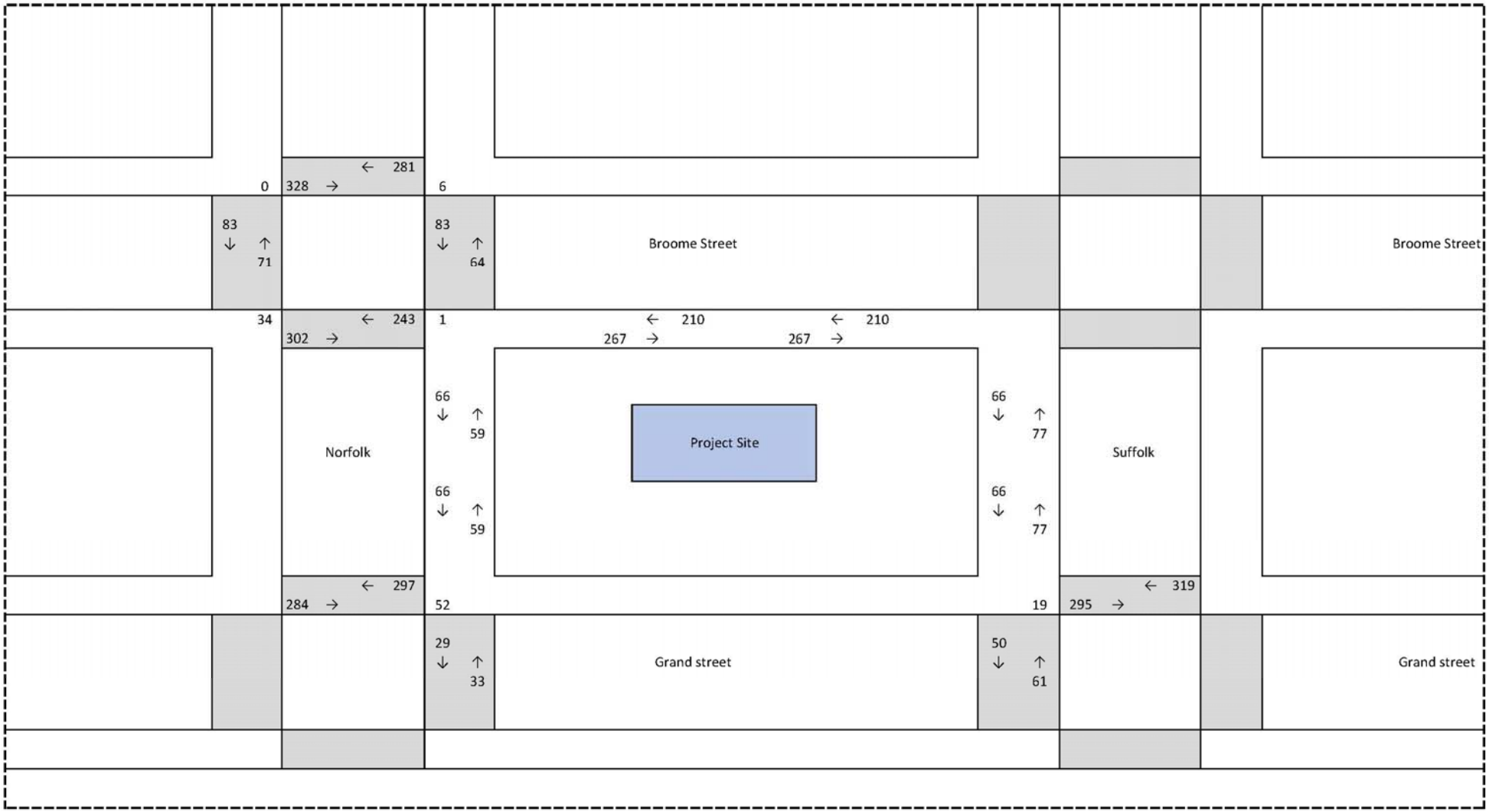


Figure 9-28 2023 No-Action Pedestrian Volumes – Saturday Midday Peak Hour



The No-Action pedestrian levels of service were determined for the locations analyzed in the existing conditions; the northeast and northwest corners of the intersection of Broome Street and Norfolk Street are expected to be reconstructed and reopened in the No-Action conditions. **Table 9-2927** provides an overview of the pedestrian levels of service for the peak hours analyzed. Detailed pedestrian levels of service are provided in **Tables 9-3028 through 9-3230**. The summary of the No-Action condition indicates that:

- During the weekday AM, midday, and Saturday midday peak hours, none of the 17 pedestrian elements analyzed would operate at unacceptable levels of service (mid-LOS D or worse).
- During the weekday PM peak hour, one crosswalk element would operate at an unacceptable LOS D—the north crosswalk at the intersection of Broome Street and Norfolk Street—compared to none in existing conditions.

Table 9-2927 2023 No-Action Pedestrian Levels of Service Summary

	Weekday AM Peak Hour	Weekday Midday Peak Hour	Weekday PM Peak Hour	Saturday Midday Peak Hour
Sidewalk Elements				
Sidewalks at LOS A/B/C	3	3	3	3
Sidewalks at LOS D	0	0	0	0
Sidewalks at LOS E	0	0	0	0
Sidewalks at LOS F	0	0	0	0
Crosswalk Elements				
Crosswalks at LOS A/B/C	8	8	7	8
Crosswalks at LOS D	0	0	1	0
Crosswalks at LOS E	0	0	0	0
Crosswalks at LOS F	0	0	0	0
Corner Elements				
Corners at LOS A/B/C	6	6	6	6
Corners at LOS D	0	0	0	0
Corners at LOS E	0	0	0	0
Corners at LOS F	0	0	0	0

Notes: Includes three sidewalk, eight crosswalks, and six corner analysis locations

Table 9-3028 2023 No-Action Pedestrian Levels of Service – Sidewalks

Sidewalk	Effective Width, ft	Weekday AM Peak Hour			Weekday Midday Peak Hour			Weekday PM Peak Hour			Saturday Peak Hour		
		Volume, ped/hr	Avg Ped Space, SF/P	LOS	Volume, ped/hr	Avg Ped Space, SF/P	LOS	Volume, ped/hr	Avg Ped Space, SF/P	LOS	Volume, ped/hr	Avg Ped Space, SF/P	LOS
Broome Street between Norfolk Street and Suffolk Street (south side)	6.3	336	163.9	A	431	127.7	A	489	112.5	A	477	115.3	A
Norfolk Street between Grand Street and Broom Street (east side)	6.3	151	414.5	A	149	401.8	A	121	483.5	A	125	451.7	A
Suffolk Street between Grand Street and Broome Street (west side)	5.8	134	375.3	A	150	322.8	A	157	268.9	A	143	312.6	A

Table 9-3129 2023 No-Action Pedestrian Levels of Service – Crosswalks

Intersection	Crosswalk	Weekday AM Peak Hour			Weekday Midday Peak Hour			Weekday PM Peak Hour			Saturday Midday Peak Hour		
		Volume, ped/hr	Avg Ped Space, sf/p	LOS	Volume, ped/hr	Avg Ped Space, sf/p	LOS	Volume, ped/hr	Avg Ped Space, sf/p	LOS	Volume, ped/hr	Avg Ped Space, sf/p	LOS
Broome Street and Norfolk Street	North	535	42.6	B	649	35.5	C	788	23.2	D	609	33.9	C
	East	89	195.4	A	152	109.7	A	125	133.8	A	147	113.9	A
	South	373	94.6	A	479	70.3	A	548	59.5	B	545	60.4	A
	West	92	153.3	A	158	87.7	A	137	101.1	A	154	87.6	A
Grand Street and Norfolk Street	North	485	41.2	B	612	35.1	C	655	27.8	C	581	36.7	C
	East	62	346.4	A	63	346.5	A	57	300.6	A	62	365.1	A
Grand Street and Suffolk Street	North	508	83.0	A	629	62.3	A	635	66.2	A	614	61.6	A
	West	103	182.9	A	124	174.9	A	123	183.2	A	111	192.4	A

Table 9-3230 2023 No-Action Pedestrian Levels of Service – Corners

Intersection	Corner	Weekday AM Peak Hour			Weekday Midday Peak Hour			Weekday PM Peak Hour			Saturday Midday Peak Hour		
		Volume, ped/hr	Avg Ped Space, sf/p	LOS	Volume, ped/hr	Avg Ped Space, sf/p	LOS	Volume, ped/hr	Avg Ped Space, sf/p	LOS	Volume, ped/hr	Avg Ped Space, sf/p	LOS
Broome Street and Norfolk Street	Northeast	6	126.4	A	9	97.0	A	8	86.6	A	6	105.2	A
	Northwest	0	117.4	A	0	93.6	A	0	85.5	A	0	97.9	A
	Southeast	2	92.8	A	6	64.5	A	5	60.8	A	1	59.1	B
	Southwest	65	181.6	A	36	135.2	A	59	121.8	A	34	123.0	A
Grand Street and Norfolk Street	Northeast	65	292.1	A	66	259.2	A	62	243.0	A	52	262.1	A
Grand Street and Suffolk Street	Northwest	17	164.7	A	22	128.0	A	24	133.7	A	19	129.4	A

9.7 With-Action Conditions

Traffic

Overall, the proposed project would generate a total of 51 vehicles per hour (vph) (15 "ins" and 36 "outs") during the weekday AM peak hour, 39 vph (20 "ins" and 19 "outs") in the weekday midday peak hour, 62 vph (35 "ins" and 27 "outs") in weekday PM peak hour, and 50 vph (25 "ins" and 25 "outs") in the Saturday midday peak hour. These vehicle trips were distributed as described in the Level 2 screening assessment and would result in modest traffic volume increases to the traffic study area, in particular when compared to the background developments to be developed by 2023 as detailed in **Section 9.6, "No-Action Conditions"**. The volume increases and impacts on levels of service are presented below. The With-Action traffic volumes for the weekday AM, midday, and PM, and Saturday midday peak hours are shown in **Figures 9-29** through **9-32**.

Traffic Volumes

Traffic volumes increases attributable to the proposed project within the project vicinity would be modest. Along eastbound Delancey Street, traffic volumes would increase by up to 30 vph during the peak hours analyzed, and would increase by up to 10 vph in the westbound direction. Traffic volumes along the Williamsburg Bridge would increase by up to 10 vph during each of the four peak hours. Travel volumes along the east-west roadways of Broome Street and Grand Street would be no more than 25 vph in each direction.

Traffic volume increases along the north-south roadways of Norfolk Street, Suffolk Street, and Clinton Street would each increase by no more than 25 vph during the peak hours

analyzed. Essex Street traffic volumes would increase by no more than 15 vph during the peak hours analyzed. Traffic volumes increases along Norfolk Street, Suffolk, and Clinton Street would be higher than Essex Street due to vehicle circulation around the projected development sites and auto traffic between the projected development sites and the nearby parking facilities.

Figure 9-29 2023 With-Action Traffic Volumes – Weekday AM Peak Hour

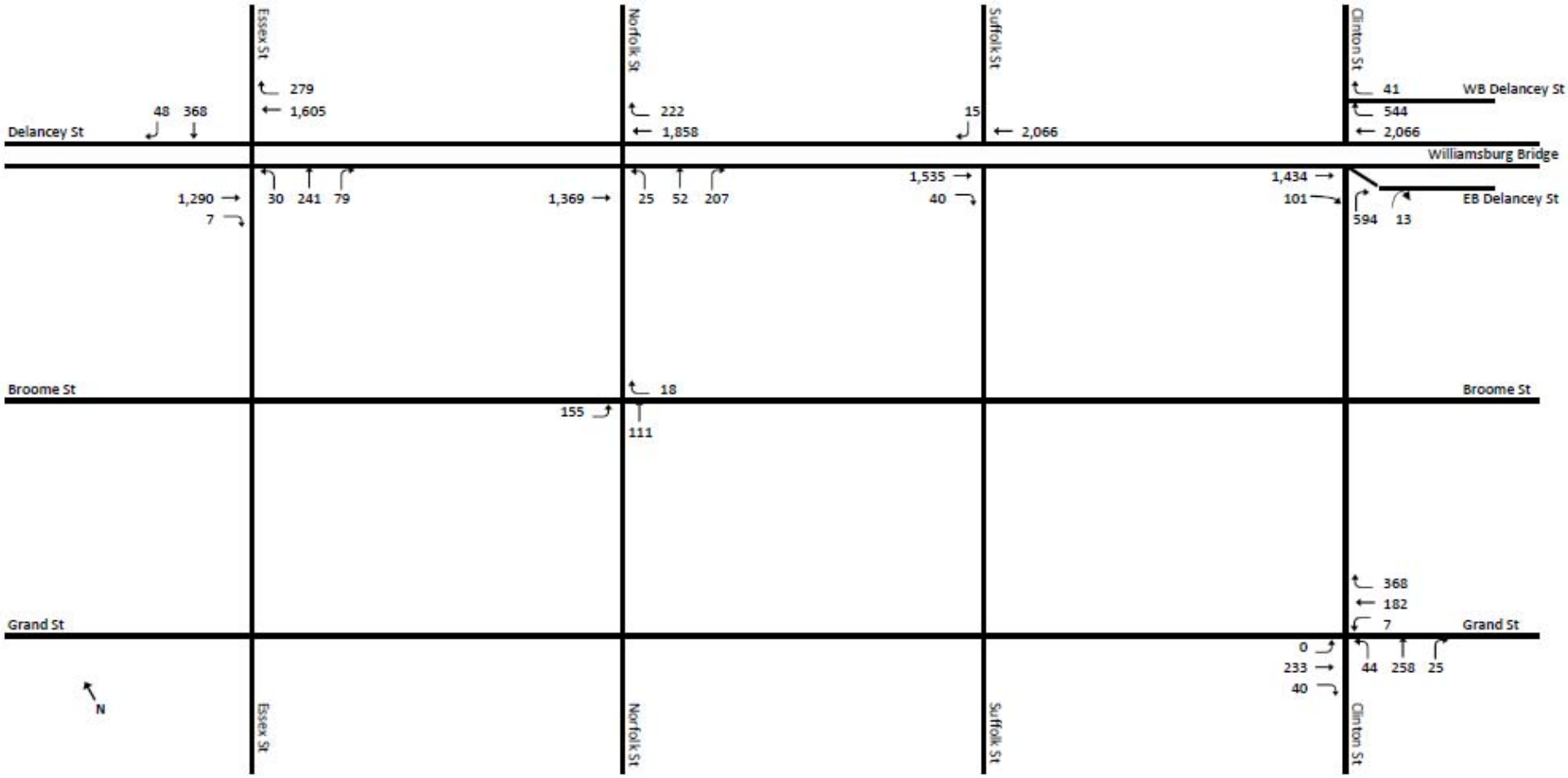


Figure 9-30 2023 With-Action Traffic Volumes – Weekday Midday Peak Hour

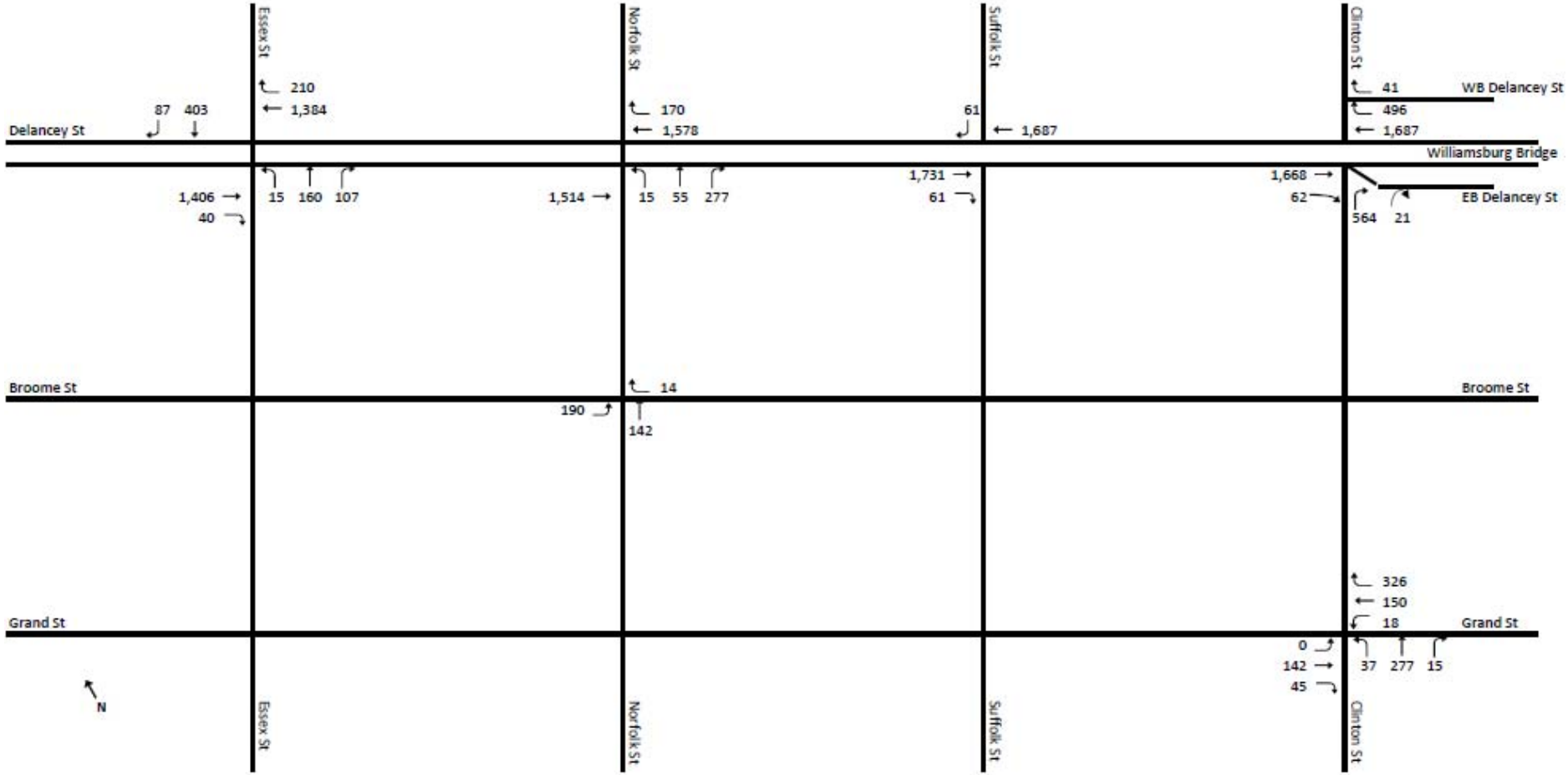


Figure 9-31 2023 With-Action Traffic Volumes – Weekday PM Peak Hour

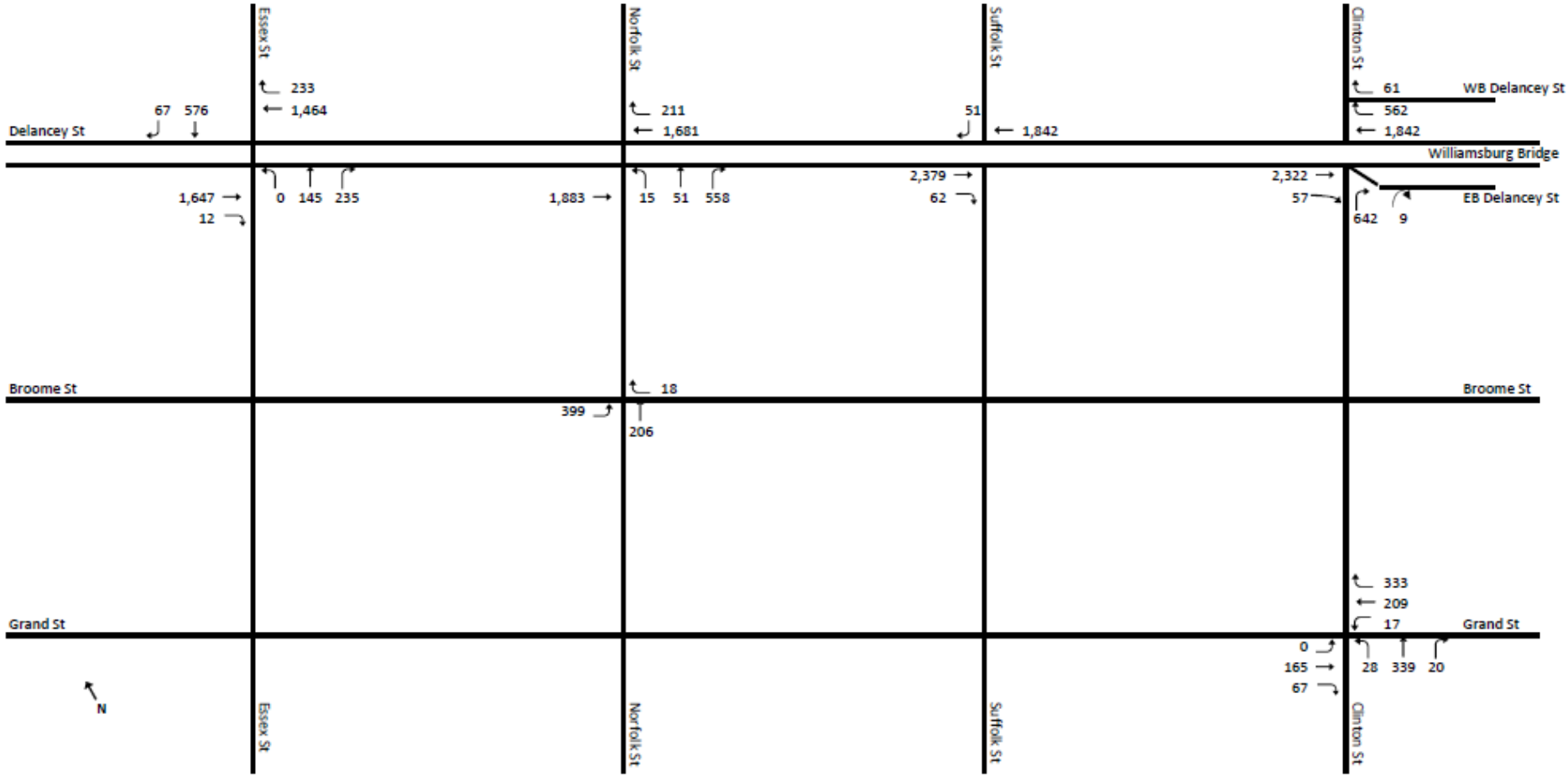
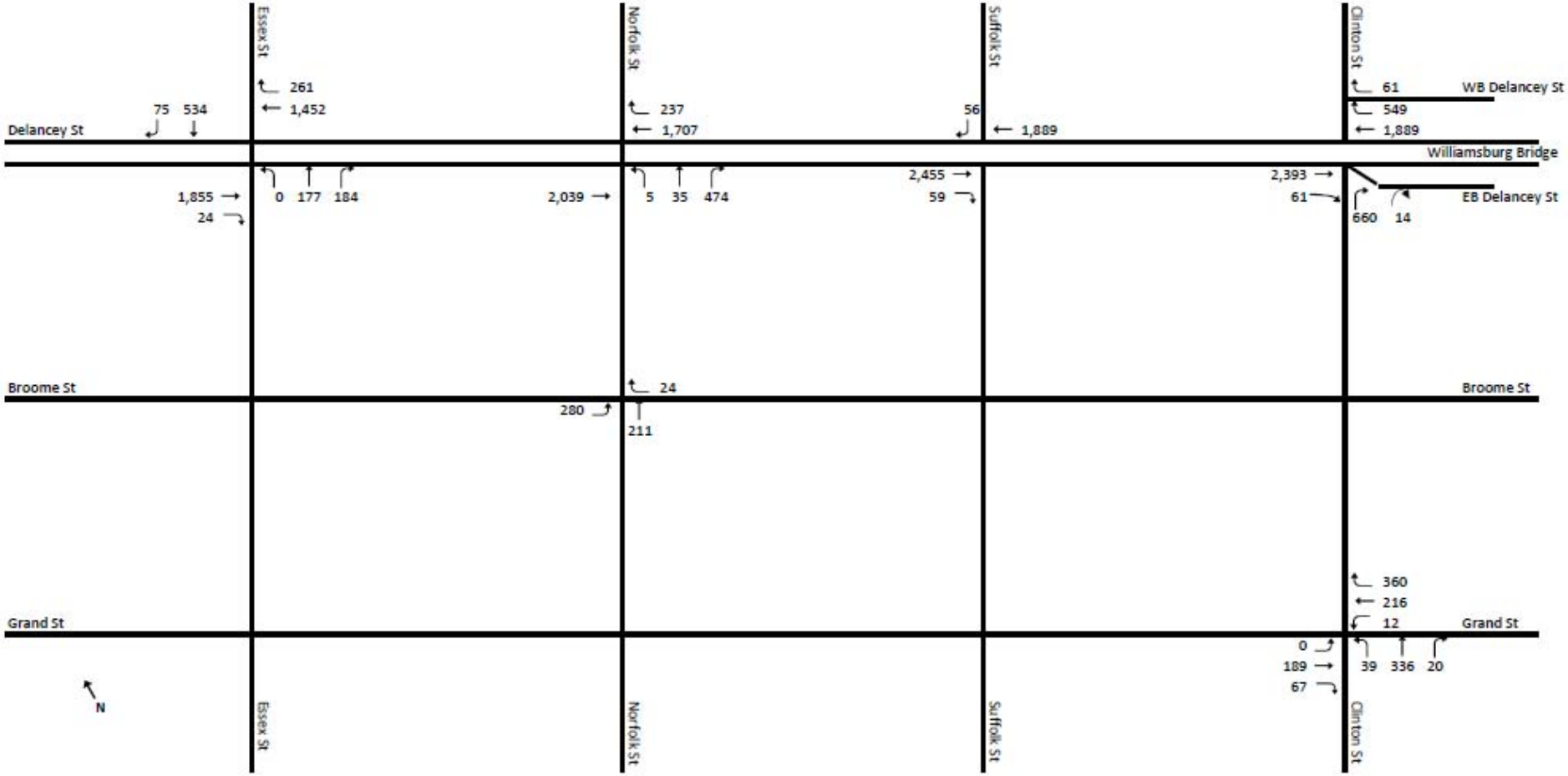


Figure 9-32 2023 With-Action Traffic Volumes – Saturday Midday Peak Hour



Levels of Service

Based on the traffic increments described above, the 2023 With-Action traffic levels of service were determined for the six analysis locations. **Tables 9-3331 and 9-3432** provide an overview of the levels of service that characterize 2023 With-Action "overall" intersection conditions and individual traffic movements during the weekday AM, midday, PM, and Saturday midday peak hours, respectively. Detailed traffic levels of service are provided in **Table 9-3533**.

Table 9-3331 2023 No-Action vs. With-Action Traffic Levels of Service - Overall Intersections

	2023 No-Action				2023 With-Action			
	Weekday AM Peak Hour	**Weekday Midday Peak Hour**	**Weekday PM Peak Hour**	**Saturday Midday Peak Hour**	**Weekday AM Peak Hour**	**Weekday Midday Peak Hour**	**Weekday PM Peak Hour**	**Saturday Midday Peak Hour**
Intersections at Overall LOS A/B/C	4	4	3	4	4	4	3	3
Intersections at Overall LOS D	1	0	0	0	0	0	0	1
Intersections at Overall LOS E	1	2	2	2	2	1	2	2
Intersections at Overall LOS F	0	0	1	0	0	1	1	0
Number of significantly impacted intersections	-	-	-	-	2	1	3	2

Table 9-3432 2023 No-Action vs. With-Action Traffic Levels of Service – Traffic Movements

	2023 No-Action				2023 With-Action			
	Weekday AM Peak Hour	**Weekday Midday Peak Hour**	**Weekday PM Peak Hour**	**Saturday Midday Peak Hour**	**Weekday AM Peak Hour**	**Weekday Midday Peak Hour**	**Weekday PM Peak Hour**	**Saturday Midday Peak Hour**
Traffic Movements at LOS A/B/C and Acceptable LOS D	19	20	17	18	19	20	17	17
Traffic Movements at Unacceptable LOS D	3	1	0	1	2	1	0	2
Traffic Movements at LOS E	0	2	5	4	1	1	4	3
Traffic Movements at LOS F	4	3	4	3	4	4	5	4
Number of significantly impacted movements	-	-	-	-	3	2	4	3
Number of individual traffic movements	26	26	26	26	26	26	26	26

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 9-33
GO Broome Street Development EIS
NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON - WEEKDAY AM PEAK HOUR

INTERSECTION & APPROACH		2023 No Action Mvt.	V/C	Control Delay	LOS	2023 With Action Mvt.	V/C	Control Delay	LOS
SIGNALIZED INTERSECTIONS									
Delancey St and Essex St									
Delancey St	EB	TR	0.69	20.4	C	TR	0.70	20.5	C
	WB	T	0.89	23.3	C	T	0.89	23.3	C
		R	1.21	128.5	F	R	1.22	133.5	F
Essex St	NB	LT	0.75	39.0	D	LT	0.76	39.8	D
		R	0.33	25.3	C	R	0.33	25.4	C
	SB	TR	0.57	27.9	C	TR	0.58	28.1	C
	Overall Intersection	**-**	**1.02**	**29.8**	**C**	**-**	**1.02**	**32.2**	**C**
Delancey St and Norfolk St									
Delancey Street	EB	T	0.73	20.7	C	T	0.74	20.8	C
	WB	TR	0.97	30.8	C	TR	0.97	31.0	C
Norfolk Street	NB	LTR	0.35	19.9	B	LTR	0.37	20.2	C
		R	0.19	17.7	B	R	0.21	17.9	B
	Overall Intersection	**-**	**0.68**	**26.0**	**C**	**-**	**0.69**	**26.3**	**C**
Delancey St and Suffolk St									
Delancey St	EB	TR	0.67	19.0	B	TR	0.68	19.2	B
	WB	T	0.83	20.7	C	T	0.83	20.7	C
Suffolk St	SB	R	0.06	16.4	B	R	0.06	16.4	B
	Overall Intersection	**-**	**0.48**	**19.9**	**B**	**-**	**0.48**	**20.0**	**B**
Delancey St and Clinton St									
Delancey St	EB	T	0.73	24.5	C	T	0.73	24.6	C
		R	0.47	24.2	C	R	0.47	24.2	C
	WB	T	1.08	95.5	F	T	1.09	96.3	F
		R	1.04	98.9	F	R	1.04	98.9	F
Clinton St	NB	R	0.96	46.0	D	R	0.96	47.1	D
Delancey St Service Road	WB	R	0.54	54.4	D	R	0.54	54.4	D
	Overall Intersection	**-**	**1.11**	**65.8**	**E**	**-**	**1.11**	**66.3**	**E**
Broome St and Norfolk St									
Broome St	EB	L	0.51	18.0	B	L	0.55	19.6	B
	WB	R	0.06	10.1	B	R	0.07	10.2	B
Norfolk St	NB	T	0.21	21.6	C	T	0.24	22.0	C
	Overall Intersection	**-**	**0.40**	**18.8**	**B**	**-**	**0.43**	**19.9**	**B**
Grand St and Clinton St									
Grand St	EB	TR	0.52	18.4	B	TR	0.54	19.0	B
	WB	LT	0.35	15.0	B	LT	0.35	15.1	B
		R	1.12	108.6	F	R	1.16	124.1	F
Clinton St	NB	LTR	0.85	47.7	D	LTR	0.92	57.5	E
	Overall Intersection	**-**	**1.01**	**44.1**	**D**	**-**	**1.07**	**60.1**	**E**

(1) Control delay is measured in seconds per vehicle.
(2) Overall intersection V/C ratio is the critical lane groups' V/C ratio.
(3) Movement delay and overall delay cannot be calculated; exceeds the HCS software threshold.
Denotes a significantly impacted movement.

Table 9-33
GO Broome Street Development EIS
NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON - WEEKDAY MIDDAY PEAK HOUR

INTERSECTION & APPROACH		2023 No Action Mvt.	V/C	Control Delay	LOS	2023 With Action Mvt.	V/C	Control Delay	LOS
SIGNALIZED INTERSECTIONS									
Delancey St and Essex St									
Delancey St	EB	TR	0.80	23.6	C	TR	0.81	23.7	C
	WB	T	0.72	20.1	C	T	0.72	20.1	C
		R	1.04	79.5	E	R	1.05	82.2	F
Essex St	NB	LT	0.42	26.1	C	LT	0.42	26.2	C
		R	0.43	27.7	C	R	0.44	28.1	C
	SB	TR	0.73	32.8	C	TR	0.74	33.2	C
	Overall Intersection	**-**	**0.90**	**27.0**	**C**	**-**	**0.92**	**27.3**	**C**
Delancey St and Norfolk St									
Delancey Street	EB	T	0.86	24.2	C	T	0.86	24.3	C
	WB	TR	0.79	21.7	C	TR	0.79	21.8	C
Norfolk Street	NB	LTR	0.41	20.8	C	LTR	0.42	21.2	C
		R	0.32	19.6	B	R	0.34	19.8	B
	Overall Intersection	**-**	**0.65**	**22.6**	**C**	**-**	**0.66**	**22.7**	**C**
Delancey St and Suffolk St									
Delancey St	EB	TR	0.77	20.5	C	TR	0.78	20.7	C
	WB	T	0.69	18.4	B	T	0.69	18.4	B
Suffolk St	SB	R	0.27	19.8	B	R	0.27	19.9	B
	Overall Intersection	**-**	**0.54**	**19.5**	**B**	**-**	**0.54**	**19.6**	**B**
Delancey St and Clinton St									
Delancey St	EB	T	0.87	28.2	C	T	0.87	28.2	C
		R	0.25	19.2	B	R	0.25	19.2	B
	WB	T	1.07	91.5	F	T	1.07	92.6	F
		R	1.02	94.1	F	R	1.02	94.1	F
Clinton St	NB	R	0.87	34.1	C	R	0.88	34.2	C
Delancey St Service Road	WB	R	0.52	52.0	D	R	0.52	52.0	D
	Overall Intersection	**-**	**0.99**	**59.7**	**E**	**-**	**0.99**	**60.2**	**E**
Broome St and Norfolk St									
Broome St	EB	L	0.67	24.5	C	L	0.71	27.2	C
	WB	R	0.04	9.7	A	R	0.05	9.9	A
Norfolk St	NB	T	0.29	22.8	C	T	0.31	23.1	C
	Overall Intersection	**-**	**0.52**	**23.4**	**C**	**-**	**0.55**	**24.8**	**C**
Grand St and Clinton St									
Grand St	EB	TR	0.39	16.0	B	TR	0.43	16.7	B
	WB	LT	0.31	14.5	B	LT	0.31	14.5	B
		R	1.26	163.5	F	R	1.37	212.1	F
Clinton St	NB	LTR	0.90	55.2	E	LTR	0.94	61.4	E
	Overall Intersection	**-**	**1.12**	**75.3**	**E**	**-**	**1.21**	**91.6**	**F**

(1) Control delay is measured in seconds per vehicle.
(2) Overall intersection V/C ratio is the critical lane groups' V/C ratio.
(3) Movement delay and overall delay cannot be calculated; exceeds the HCS software threshold.
Denotes a significantly impacted movement.

Table 9-33
GO Broome Street Development EIS
NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON - WEEKDAY PM PEAK HOUR

INTERSECTION & APPROACH		2023 No Action Mvt.	V/C	Control Delay	LOS	2023 With Action Mvt.	V/C	Control Delay	LOS
SIGNALIZED INTERSECTIONS									
Delancey St and Essex St									
Delancey St	EB	TR	0.85	25.6	C	TR	0.86	25.8	C
	WB	T	0.73	20.1	C	T	0.73	20.1	C
		R	0.98	59.2	E	R	1.00	64.3	E
Essex St	NB	LT	0.37	25.1	C	LT	0.38	25.3	C
		R	0.94	69.2	E	R	0.95	72.4	E
	SB	TR	0.85	38.5	D	TR	0.86	39.9	D
	Overall Intersection	**-**	**0.96**	**30.0**	**C**	**-**	**0.99**	**30.9**	**C**
Delancey St and Norfolk St									
Delancey Street	EB	T	1.00	38.4	D	T	1.01	39.6	D
	WB	TR	0.80	21.8	C	TR	0.80	22.0	C
Norfolk Street	NB	LTR	0.67	26.8	C	LTR	0.70	27.8	C
		R	0.56	23.8	C	R	0.58	24.3	C
	Overall Intersection	**-**	**0.85**	**29.4**	**C**	**-**	**0.86**	**30.1**	**C**
Delancey St and Suffolk St									
Delancey St	EB	TR	0.95	24.3	C	TR	0.97	25.5	C
	WB	T	0.69	18.5	B	T	0.70	18.5	B
Suffolk St	SB	R	0.17	17.9	B	R	0.18	17.9	B
	Overall Intersection	**-**	**0.59**	**21.7**	**C**	**-**	**0.60**	**22.4**	**C**
Delancey St and Clinton St									
Delancey St	EB	T	1.07	62.8	E	T	1.07	63.6	E
		R	0.33	22.0	C	R	0.33	22.0	C
	WB	T	1.07	88.3	F	T	1.08	90.5	F
		R	1.03	92.8	F	R	1.03	92.8	F
Clinton St	NB	R	0.90	33.8	C	R	0.90	34.1	C
Delancey St Service Road	WB	R	0.73	71.7	E	R	0.73	71.7	E
	Overall Intersection	**-**	**1.02**	**70.6**	**E**	**-**	**1.02**	**71.7**	**E**
Broome St and Norfolk St									
Broome St	EB	L	1.41	222.6	F	L	1.58	294.8	F
	WB	R	0.06	10.1	B	R	0.09	10.6	B
Norfolk St	NB	T	0.42	25.0	C	T	0.45	25.6	C
	Overall Intersection	**-**	**1.03**	**155.4**	**F**	**-**	**1.14**	**198.3**	**F**
Grand St and Clinton St									
Grand St	EB	TR	0.45	17.1	B	TR	0.53	19.2	B
	WB	LT	0.41	16.0	B	LT	0.41	16.0	B
		R	1.19	138.2	F	R	1.24	156.7	F
Clinton St	NB	LTR	0.97	68.1	E	LTR	1.03	81.1	F
	Overall Intersection	**-**	**1.11**	**65.4**	**E**	**-**	**1.16**	**73.9**	**E**

(1) Control delay is measured in seconds per vehicle.
(2) Overall intersection V/C ratio is the critical lane groups' V/C ratio.
(3) Movement delay and overall delay cannot be calculated; exceeds the HCS software threshold.
Denotes a significantly impacted movement.

Table 9-33
GO Broome Street Development EIS
NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON - SATURDAY PEAK HOUR

INTERSECTION & APPROACH		2023 No Action Mvt.	V/C	Control Delay	LOS	2023 With Action Mvt.	V/C	Control Delay	LOS
SIGNALIZED INTERSECTIONS									
Delancey St and Essex St									
Delancey St	EB	TR	0.94	32.9	C	TR	0.95	33.5	C
	WB	T	0.73	19.8	B	T	0.73	19.8	B
		R	1.06	76.3	E	R	1.07	79.8	E
Essex St	NB	LT	0.43	26.0	C	LT	0.44	26.2	C
		R	0.72	40.2	D	R	0.73	41.0	D
	SB	TR	0.82	36.5	D	TR	0.83	37.3	D
	Overall Intersection	**-**	**0.96**	**32.0**	**C**	**-**	**0.97**	**32.6**	**C**
Delancey St and Norfolk St									
Delancey Street	EB	T	0.99	33.0	C	T	1.00	33.6	C
	WB	TR	0.86	23.9	C	TR	0.87	24.0	C
Norfolk Street	NB	LTR	0.46	21.6	C	LTR	0.48	22.0	C
		R	0.41	20.8	C	R	0.43	21.0	C
	Overall Intersection	**-**	**0.75**	**27.7**	**C**	**-**	**0.76**	**28.0**	**C**
Delancey St and Suffolk St									
Delancey St	EB	TR	0.96	25.7	C	TR	0.97	26.7	C
	WB	T	0.71	18.7	B	T	0.71	18.8	B
Suffolk St	SB	R	0.19	18.0	B	R	0.19	18.1	B
	Overall Intersection	**-**	**0.60**	**22.6**	**C**	**-**	**0.61**	**23.2**	**C**
Delancey St and Clinton St									
Delancey St	EB	T	1.04	49.3	D	T	1.04	50.0	D
		R	0.22	18.2	B	R	0.22	18.2	B
	WB	T	1.05	87.0	F	T	1.05	88.3	F
		R	1.03	91.3	F	R	1.03	91.3	F
Clinton St	NB	R	1.01	56.9	E	R	1.01	57.6	E
Delancey St Service Road	WB	R	0.68	64.4	E	R	0.68	64.4	E
	Overall Intersection	**-**	**1.06**	**66.9**	**E**	**-**	**1.07**	**67.8**	**E**
Broome St and Norfolk St									
Broome St	EB	L	0.83	35.5	D	L	0.92	51.5	D
	WB	R	0.06	10.0	A	R	0.10	10.5	B
Norfolk St	NB	T	0.42	24.8	C	T	0.44	25.2	C
	Overall Intersection	**-**	**0.67**	**30.0**	**C**	**-**	**0.74**	**38.2**	**D**
Grand St and Clinton St									
Grand St	EB	TR	0.48	17.6	B	TR	0.54	18.9	B
	WB	LT	0.39	15.6	B	LT	0.39	15.6	B
		R	1.17	123.9	F	R	1.20	136.9	F
Clinton St	NB	LTR	1.01	77.5	E	LTR	1.07	92.9	F
	Overall Intersection	**-**	**1.16**	**64.9**	**E**	**-**	**1.20**	**73.1**	**E**

(1) Control delay is measured in seconds per vehicle.
(2) Overall intersection V/C ratio is the critical lane groups' V/C ratio.
(3) Movement delay and overall delay cannot be calculated; exceeds the HCS software threshold.
Denotes a significantly impacted movement.

The summary overview of 2023 With-Action conditions indicates that:

- In the weekday AM peak hour, two of the six intersections analyzed would operate at overall LOS E or F compared to one intersection in the No-Action conditions. Seven individual traffic movements out of approximately 26 such movements analyzed would operate at unacceptable LOS D, LOS E or F, similar to the No-Action conditions. Overall, ~~three~~ two of the six intersections would have significant impacts.
- In the weekday midday peak hour, two of the six intersections analyzed would operate at overall LOS E or F similar to the No-Action conditions. Six individual traffic movements out of approximately 26 such movements analyzed would operate at unacceptable LOS D, LOS E or F, similar to the No-Action conditions. Overall, one of the six intersections would have significant impacts.
- In the weekday PM peak hour, three of the six intersections analyzed would operate at overall LOS E or F similar to the No-Action conditions. Nine individual traffic movements out of approximately 26 such movements analyzed would operate at unacceptable LOS D, LOS E or F, similar to the No-Action conditions. Overall, three of the six intersections would have significant impacts.
- In the Saturday midday peak hour, two of the six intersections analyzed would operate at overall LOS E or F similar to the No-Action conditions. Nine individual traffic movements out of approximately 26 such movements analyzed would operate at unacceptable LOS D, LOS E or F, compared to eight movements under the No-Action conditions. Overall, two of the six intersections would have significant impacts.
- The intersection of Delancey Street and Clinton Street would operate at overall LOS E during the weekday AM, midday, PM, and Saturday midday peak hours.
- The intersection of Broome Street at Norfolk Street would operate at overall LOS F during the weekday PM peak hour.
- The intersection of Grand Street and Clinton Street would operate at overall LOS E during the weekday AM, PM, and Saturday midday peak hours, and LOS F during the weekday midday peak hour.

Based on the analysis results, a majority of the traffic movements would continue to operate at acceptable levels of service; four intersections would have at least one movement operating at an unacceptable level of service during at least one peak hour. Traffic movements that operate at unacceptable levels of service under the No-Action conditions would continue to do so under the With-Action conditions; only one additional movement would be expected to operate at unacceptable levels of service as a result of the proposed project – the eastbound Broome Street approach at Norfolk Street during the Saturday midday peak hour.

Of the six intersections analyzed, the proposed project would result in significant adverse traffic impacts at two intersections (at three movements) during the weekday AM and Saturday midday peak hours, one intersection (at two movements) during the weekday midday peak hour, and three intersections (at four movements) during the weekday PM peak hour. The significantly impacted traffic movements are identified below:

- Delancey Street and Essex Street
  - Westbound Delancey Street right turn movement (weekday AM and PM)
- Broome Street and Norfolk Street
  - Eastbound Broome Street approach (weekday PM, and Saturday midday)
- Grand Street and Clinton Street
  - Westbound Grand Street right turn (weekday AM, midday, PM, and Saturday midday)
  - Northbound Clinton Street approach (weekday AM, midday, PM, and Saturday midday)

The identification and evaluation of traffic capacity improvements needed to mitigate potential significant adverse traffic impacts created by the proposed project are presented in **Chapter 17**, "**Mitigation**."

Parking

The peak weekday and Saturday project-generated parking demand was determined to be approximately 108 spaces, based primarily on residential needs as shown in **Tables 9-3629 and 9-3730**. This peak demand would be expected to occur during nighttime or overnight hours with project residents parking overnight. Since the proposed project would not provide parking on-site, a survey of existing off-street parking facilities within ¼-mile of the project sites was conducted. The survey indicated that the project-generated parking demand could be accommodated by parking spaces available in the three nearby off-street parking facilities, including the parking garage located at the northeast corner of Clinton Street and East Broadway. **Tables 9-3634 and 9-3735** provide the projected hourly parking accumulation for weekday and Saturday conditions.

Table 9-3634 Projected Weekday Parking Demand

Hour	Residential			Local Retail			Community Facility			Weekday Total		
	In	Out	Parking Demand	In	Out	Parking Demand	In	Out	Parking Demand	In	Out	Parking Demand
12 AM - 01 AM	3	3	108	0	0	0	0	0	0	3	3	108
01 AM - 02 AM	1	1	108	0	0	0	0	0	0	1	1	108
02 AM - 03 AM	1	1	108	0	0	0	0	0	0	1	1	108
03 AM - 04 AM	0	0	108	0	0	0	0	0	0	0	0	108
04 AM - 05 AM	0	0	108	0	0	0	0	0	0	0	0	108
05 AM - 06 AM	0	0	108	0	0	0	0	0	0	0	0	108
06 AM - 07 AM	1	1	108	0	0	0	2	2	0	3	3	108
07 AM - 08 AM	3	10	101	0	0	0	4	0	4	7	10	105
08 AM - 09 AM	4	26	79	1	1	0	3	2	5	8	29	84
09 AM - 10 AM	4	15	68	0	0	0	4	1	8	8	16	76
10 AM - 11 AM	4	11	61	0	0	0	3	2	9	7	13	70
11 AM - 12 PM	5	8	58	1	1	0	2	2	9	8	11	67
12 PM - 01 PM	7	7	58	3	3	0	2	3	8	12	13	66
01 PM - 02 PM	8	8	58	3	3	0	4	3	9	15	14	67
02 PM - 03 PM	6	6	58	1	1	0	1	2	8	8	9	66
03 PM - 04 PM	8	8	58	3	3	0	2	3	7	13	14	65
04 PM - 05 PM	13	9	62	3	3	0	4	2	9	20	14	71
05 PM - 06 PM	23	11	74	4	4	0	1	5	5	28	20	79
06 PM - 07 PM	19	10	83	3	3	0	3	4	4	25	17	87
07 PM - 08 PM	18	8	93	3	3	0	4	4	4	25	15	97
08 PM - 09 PM	8	3	98	2	2	0	1	3	2	11	8	100
09 PM - 10 PM	6	3	101	1	1	0	0	2	0	7	6	101
10 PM - 11 PM	7	3	105	0	0	0	0	0	0	7	3	105
11 PM - 12 AM	5	2	108	0	0	0	0	0	0	5	2	108

Table 9-3735 Projected Saturday Parking Demand

Hour	Residential			Local Retail			Community Facility			Saturday Total		
	In	Out	Parking Demand	In	Out	Parking Demand	In	Out	Parking Demand	In	Out	Parking Demand
12 AM - 01 AM	1	1	108	0	0	0	0	0	0	1	1	108
01 AM - 02 AM	1	1	108	0	0	0	0	0	0	1	1	108
02 AM - 03 AM	0	0	108	0	0	0	0	0	0	0	0	108
03 AM - 04 AM	0	0	108	0	0	0	0	0	0	0	0	108
04 AM - 05 AM	0	0	108	0	0	0	0	0	0	0	0	108
05 AM - 06 AM	2	2	108	0	0	0	0	0	0	2	2	108
06 AM - 07 AM	1	3	106	0	0	0	0	0	0	1	3	106
07 AM - 08 AM	3	9	100	0	0	0	1	0	1	4	9	101
08 AM - 09 AM	4	11	93	0	0	0	1	1	1	5	12	94
09 AM - 10 AM	5	14	84	1	0	1	1	0	2	7	14	87
10 AM - 11 AM	5	15	74	4	1	4	1	1	2	10	17	80
11 AM - 12 PM	7	19	62	6	5	5	1	1	2	14	25	69
12 PM - 01 PM	12	14	60	5	4	6	1	1	2	18	19	68
01 PM - 02 PM	13	13	60	5	6	5	1	1	2	19	20	67
02 PM - 03 PM	15	11	64	6	5	6	0	1	1	21	17	71
03 PM - 04 PM	14	14	64	5	5	6	1	1	1	20	20	71
04 PM - 05 PM	15	10	69	6	5	7	1	1	1	22	16	77
05 PM - 06 PM	15	10	74	4	4	7	1	1	1	20	15	82
06 PM - 07 PM	16	9	81	4	5	6	1	1	1	21	15	88
07 PM - 08 PM	18	8	91	4	4	6	1	1	1	23	13	98
08 PM - 09 PM	15	6	100	3	5	4	0	1	0	18	12	104
09 PM - 10 PM	13	5	108	1	5	0	0	0	0	14	10	108
10 PM - 11 PM	5	5	108	0	0	0	0	0	0	5	5	108
11 PM - 12 AM	2	2	108	0	0	0	0	0	0	2	2	108

Subway Transit

The proposed project would generate a total of 254 subway trips (49 "ins" and 205 "out") during the weekday AM peak hour and 311 subway trips (203 "ins" and 108 "outs") during the weekday PM peak hour. These trips were assigned mostly to the closest subway station, the Delancey Street-Essex Street station (90 percent), usingprimarily to the stairway entrancessubway station entrance at the cornerssoutheast corner of the intersection of Delancey Street and Essex Street, withsince it is along the majority of themost direct route for project-generated subway trips assigned to the subway station entrance at the southeast corner.

As shown in **Table 9-3836**, the S4 surface stairway would operate at acceptable levelslevel of service during the weekday AM peak hour and would not be significantly impacted. During the weekday PM peak hour, the S4 stairway would be operating at a v/c ratio of 1.1108, with a WIT of 4.9629, which is below the CEQR thresholds for subway station element impacts. As

shown in **Table 9-3937**, the E328 surface escalator would operate at acceptable levels of service during the weekday AM and PM peak hours and therefore would not be significantly impacted as a result of the proposed project. The two fare arrays analyzed would continue to operate at acceptable levels of service, as shown in **Table 9-40**, and would not be significantly impacted.

Table 9-3836 2023 With-Action Subway Station Levels of Service – Stairways

Peak Hour	Effective Width	Pedestrian Volume Up (15-minutes)	Pedestrian Volume Down (15-minutes)	Friction Factors	Surging Factor (Up/Down)	v/c ratio	LOS
S4 surface stairway							
Weekday AM	46 inches	173	234220	0.90	0.80/1.00	0.8885	C
Weekday PM	46 inches	239233	270	0.90	0.80/1.00	1.1109	D

Table 9-3937 2023 With-Action Subway Station Levels of Service – Escalators

Peak Hour (direction)	Thread Width	Capacity	Pedestrian Volume (15-minutes)	Surging Factor	v/c ratio	LOS
E328 surface escalator						
Weekday AM (up)	24 inches	32 persons/minute	118	0.75	0.33	A
Weekday PM (up)	24 inches	32 persons/minute	6867	0.75	0.19	A

Table 9-40 2023 With-Action Subway Station Levels of Service – Fare Control Area

Peak Hour	Control Elements	Pedestrian Volume (15-minutes)		Surging Factor	Friction Factor	v/c ratio	LOS
		In	Out				
N526 Fare Array							
Weekday AM	5 turnstiles, 2 HEETs	360	294	0.90	0.90	0.24	A
Weekday PM		439	386	0.90	0.90	0.30	A
N526A Fare Array							
Weekday AM	1 HXT	0	118	0.75	1.00	0.28	A
Weekday PM		0	68	0.75	1.00	0.16	A

PedestriansPedestrian

The project-generated pedestrian volumes were distributed through the pedestrian network and added to the 2023 No-Action volumes to develop the 2023 With-Action pedestrian volumes. The With-Action pedestrian volumes are provided in **Figures 9-33 through 9-36**.

Figure 9-33 2023 With-Action Pedestrian Volumes – Weekday AM Peak Hour

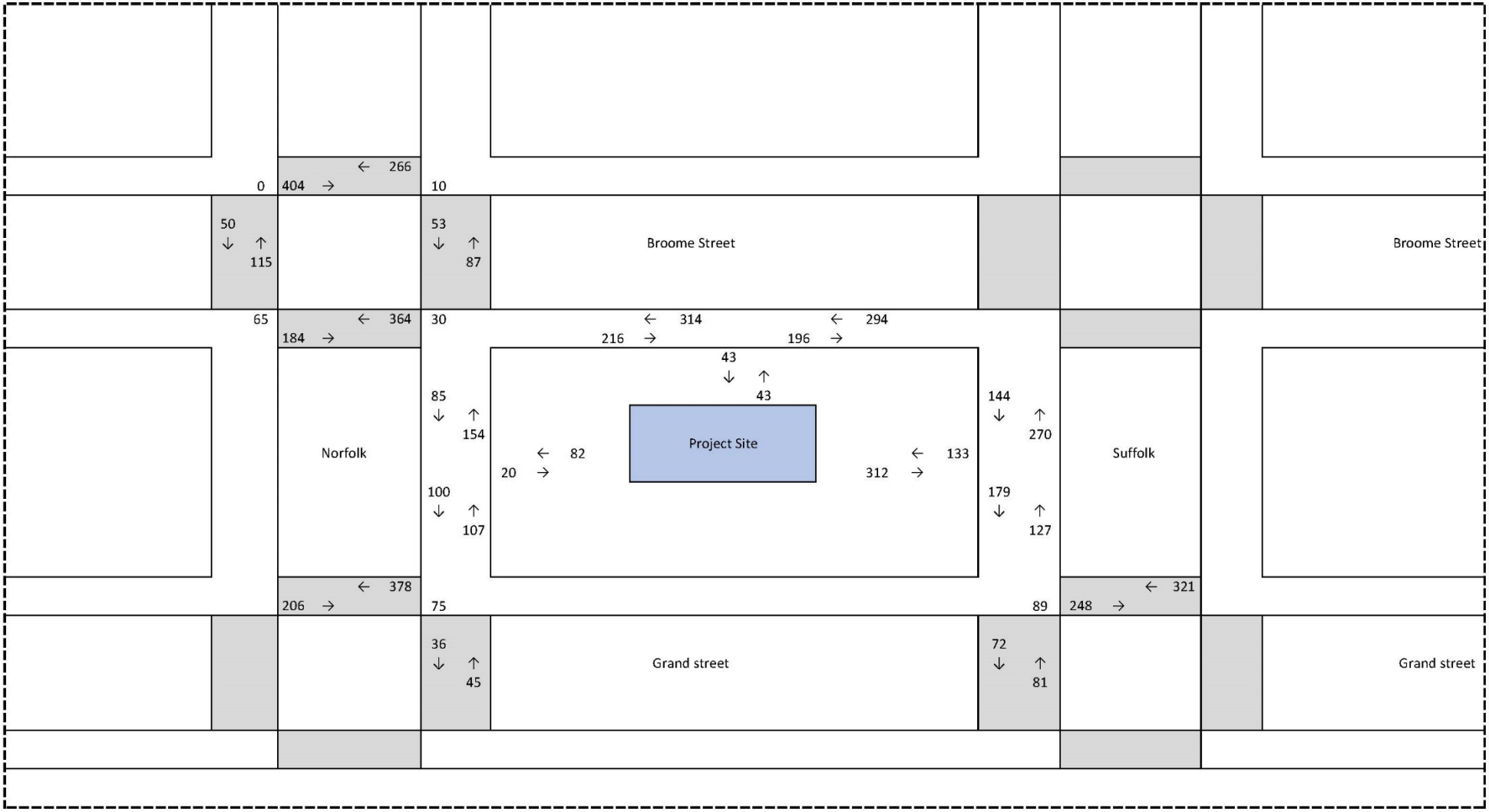


Figure 9-34 2023 With-Action Pedestrian Volumes – Weekday Midday Peak Hour

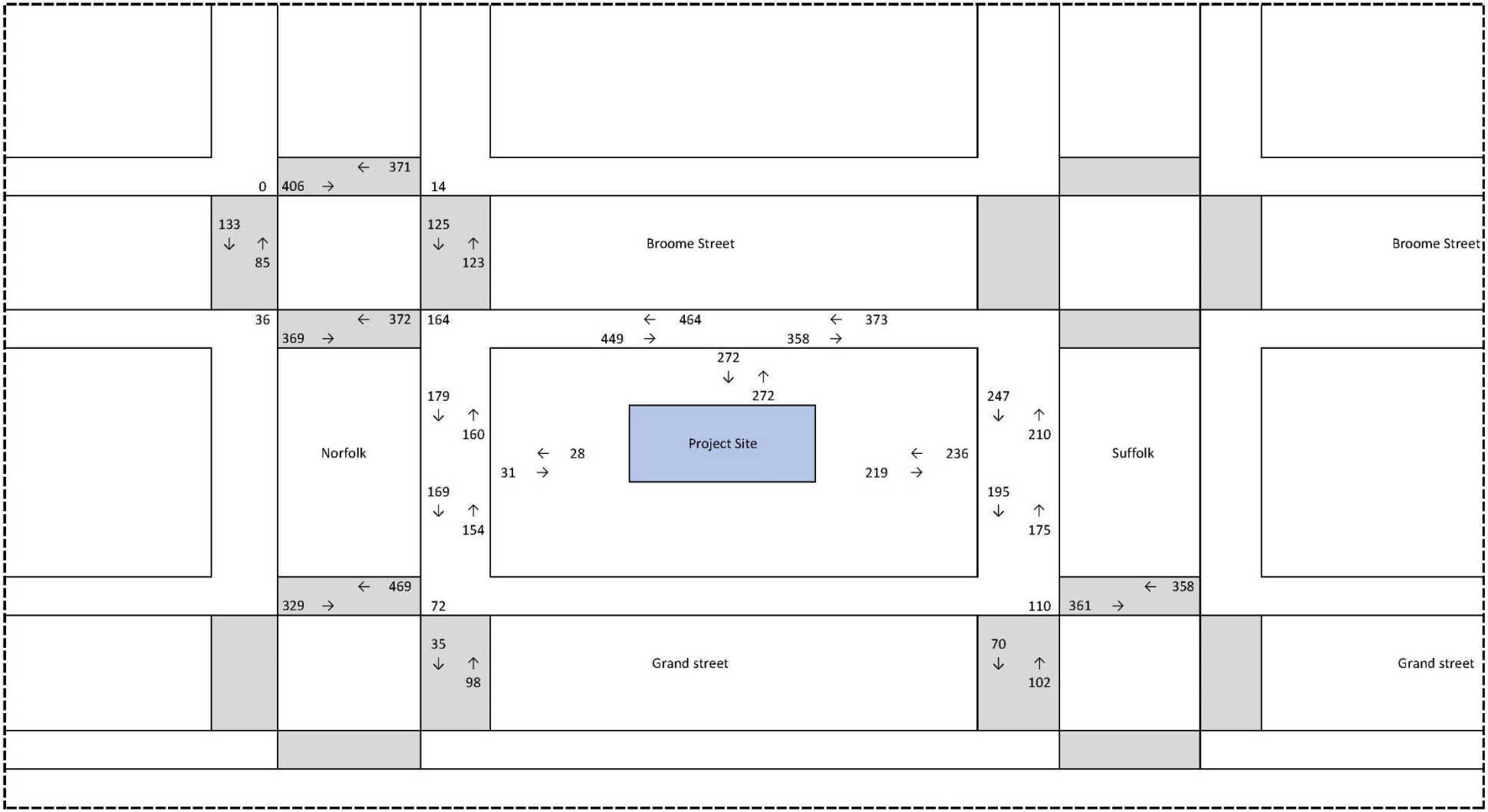


Figure 9-35 2023 With-Action Pedestrian Volumes – Weekday PM Peak Hour

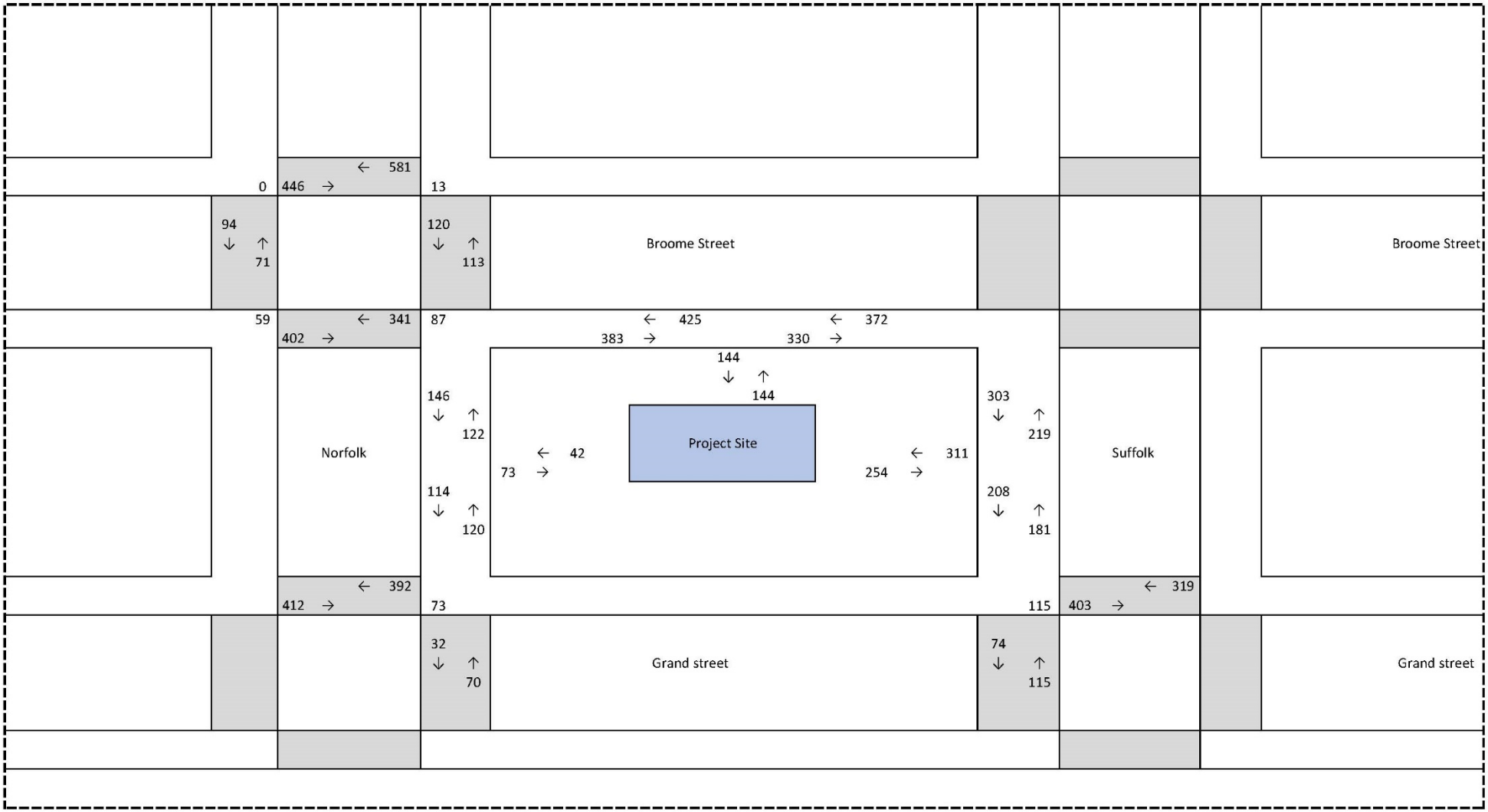
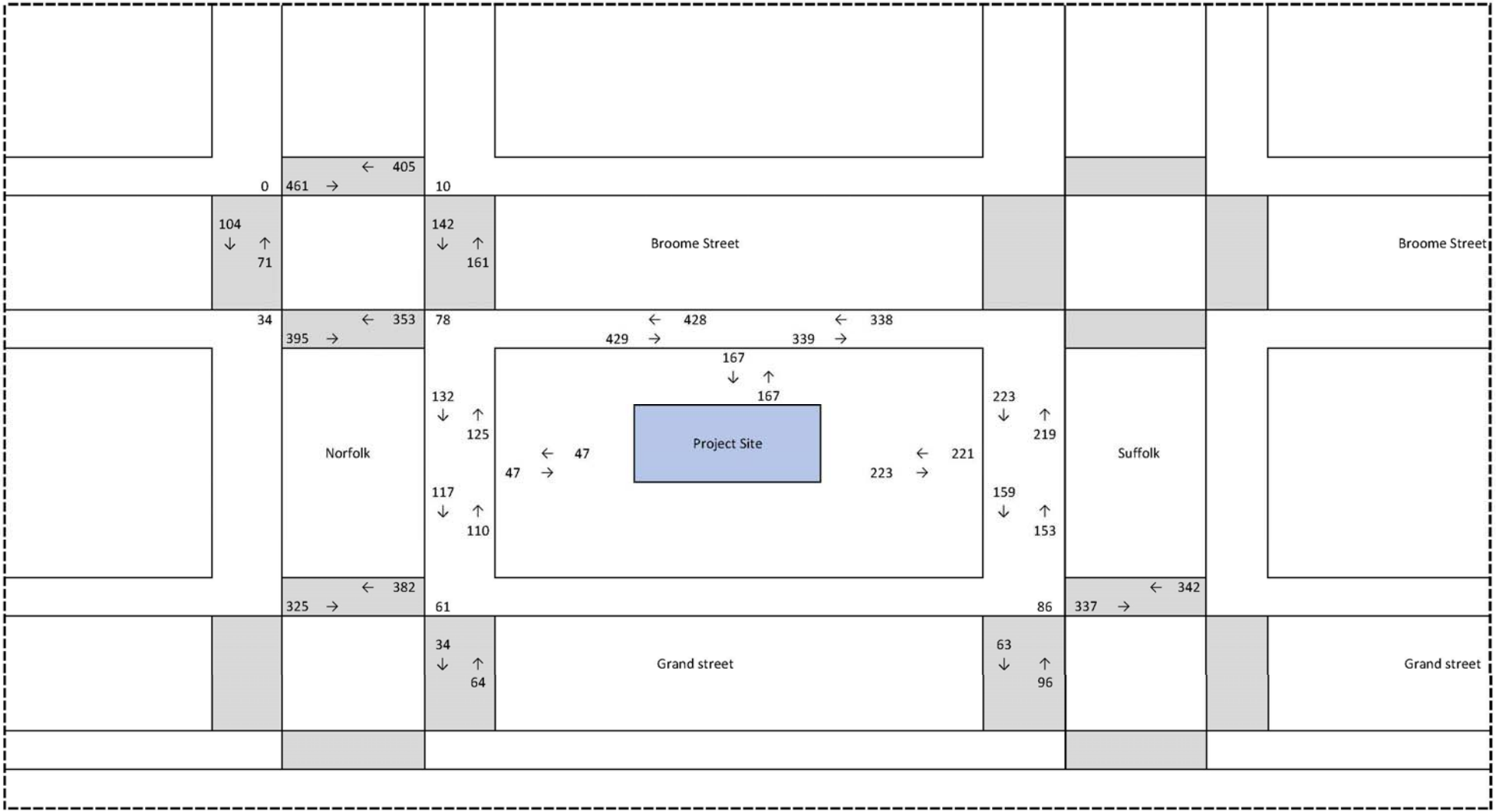


Figure 9-36 2023 With-Action Pedestrian Volumes – Saturday Midday Peak Hour



Pedestrian analyses were performed based on these volumes and the With-Action pedestrian levels of services were determined for the analysis locations. **Table 9-4138** provides an overview of the levels of service, while detailed pedestrian levels of service are provided in **Tables 9-4239 through 9-4441**. The summary of the With-Action conditions indicates that:

- During the weekday AM, midday, and Saturday midday peak hours, none of the 17 pedestrian elements analyzed would operate at unacceptable levels of service (mid-LOS D or worse).
- During the weekday PM peak hour, one pedestrian element (the north crosswalk of Broome Street and Norfolk Street) would operate at unacceptable levels of service.

Of the 17 pedestrian elements analyzed, the proposed project would result in significant adverse impacts at one pedestrian element during the weekday PM peak hour (the north crosswalk at the intersection of Broome Street and Norfolk Street); no significant impacts are expected to occur during the weekday AM, midday, and Saturday midday peak hours. Mitigation measures that could be implemented to mitigate these significant adverse pedestrian impacts are discussed in **Chapter 17**, "**Mitigation**."

Table 9-4138 2023 With-Action Pedestrian Levels of Service Summary

	Weekday AM Peak Hour	Weekday Midday Peak Hour	Weekday PM Peak Hour	Saturday Midday Peak Hour
Sidewalk Elements				
Sidewalks at LOS A/B/C	3	3	3	3
Sidewalks at LOS D	0	0	0	0
Sidewalks at LOS E	0	0	0	0
Sidewalks at LOS F	0	0	0	0
Number of significantly Impacted sidewalk elements	0	0	0	0
Crosswalk Elements				
Crosswalks at LOS A/B/C	8	8	6	7
Crosswalks at LOS D	0	0	2	1
Crosswalks at LOS E	0	0	0	0
Crosswalks at LOS F	0	0	0	0
Number of significantly Impacted crosswalk elements	0	0	1	0
Corner Elements				
Corners at LOS A/B/C	6	6	6	6
Corners at LOS D	0	0	0	0
Corners at LOS E	0	0	0	0
Corners at LOS F	0	0	0	0
Number of significantly Impacted corner elements	0	0	0	0

Notes: Includes three sidewalk, eight crosswalks, and six corner analysis locations

Table 9-~~42~~39 2023 With-Action Pedestrian Levels of Service – Sidewalks

Sidewalk	Effective Width, ft	Weekday AM Peak Hour			Weekday Midday Peak Hour			Weekday PM Peak Hour			Saturday Peak Hour		
		Volume, ped/hr	Avg Ped Space, SF/P	LOS	Volume, ped/hr	Avg Ped Space, SF/P	LOS	Volume, ped/hr	Avg Ped Space, SF/P	LOS	Volume, ped/hr	Avg Ped Space, SF/P	LOS
Broome Street between Norfolk Street and Suffolk Street (south side)	6.3	530	103.7	A	913	59.9	B	808	67.8	A	857	63.9	A
Norfolk Street between Grand Street and Broom Street (east side)	6.3	239	261.8	A	339	176.5	A	268	218.2	A	257	219.6	A
Suffolk Street between Grand Street and Broome Street (west side)	5.8	414	121.3	A	457	105.8	A	522	80.6	A	442	100.9	A

Note: Highlighted denotes significantly impacted pedestrian element

Table 9-~~43~~40 2023 With-Action Pedestrian Levels of Service – Crosswalks

Intersection	Crosswalk	Weekday AM Peak Hour			Weekday Midday Peak Hour			Weekday PM Peak Hour			Saturday Midday Peak Hour		
		Volume, ped/hr	Avg Ped Space, sf/p	LOS	Volume, ped/hr	Avg Ped Space, sf/p	LOS	Volume, ped/hr	Avg Ped Space, sf/p	LOS	Volume, ped/hr	Avg Ped Space, sf/p	LOS
Broome Street and Norfolk Street	North	666	34.2	C	777	28.8	C	1,027	16.7	D	866	22.7	D
	East	140	123.6	A	248	66.6	A	233	71.0	A	303	54.1	B
	South	548	64.1	A	741	44.0	B	743	43.2	B	748	43.1	B
	West	165	88.6	A	218	58.9	B	165	80.5	A	175	74.9	A
Grand Street and Norfolk Street	North	584	32.4	C	798	25.5	C	804	21.1	D	707	29.0	C
	East	81	265.1	A	133	165.6	A	102	181.2	A	98	227.8	A
Grand Street and Suffolk Street	North	569	73.9	A	719	53.3	B	722	57.6	B	679	55.2	B
	West	153	121.1	A	172	123.2	A	189	118.7	A	159	136.0	A

Note: Highlighted denotes significantly impacted pedestrian element

Table 9-~~44~~41 2023 With-Action Pedestrian Levels of Service – Corners

Intersection	Corner	Weekday AM Peak Hour			Weekday Midday Peak Hour			Weekday PM Peak Hour			Saturday Midday Peak Hour		
		Volume, ped/hr	Avg Ped Space, sf/p	LOS	Volume, ped/hr	Avg Ped Space, sf/p	LOS	Volume, ped/hr	Avg Ped Space, sf/p	LOS	Volume, ped/hr	Avg Ped Space, sf/p	LOS
Broome Street and Norfolk Street	Northeast	10	98.1	A	14	74.7	A	13	60.7	A	10	66.6	A
	Northwest	0	89.9	A	0	72.2	A	0	62.2	A	0	69.1	A
	Southeast	30	56.0	B	164	31.0	C	87	35.0	C	78	31.9	C
	Southwest	65	123.1	A	36	89.4	A	59	93.0	A	34	93.9	A
Grand Street and Norfolk Street	Northeast	75	237.6	A	72	186.1	A	73	187.1	A	61	207.4	A
Grand Street and Suffolk Street	Northwest	89	123.0	A	110	93.6	A	115	96.0	A	86	100.5	A

Note: Highlighted denotes significantly impacted pedestrian element