Chapter 21: Mitigation Measures

A. INTRODUCTION

The preceding chapters of this Draft Generic Environmental Impact Statement (DGEIS) discuss the potential for significant adverse environmental impacts resulting from the proposed Seward Park Mixed-Use Development Project. Such potential impacts were identified in the areas of historic and cultural resources, transportation, and construction. Measures have been examined to minimize or eliminate these anticipated impacts. These mitigation measures are discussed below.

B. HISTORIC AND CULTURAL RESOURCES

As described in Chapter 7, "Historic and Cultural Resources," the proposed actions, through redevelopment, would have significant adverse direct impacts on two architectural resources that have been determined eligible for listing on the State and National Registers of Historic Places (S/NR)—the Essex Street Market and the former fire station at 185 Broome Street. In addition, new development on Site 1 could have significant adverse visual and contextual impacts on the S/NR-listed Lower East Side Historic District and the S/NR-eligible Eastern Dispensary, which also appears to be eligible for New York City Landmark (NYCL) designation.

In accordance with CEQR guidelines, the New York City Economic Development Corporation (NYCEDC) and the City of New York Department of Housing Preservation & Development (HPD) are undertaking ongoing consultation with the New York City Landmarks Preservation Commission (LPC) regarding the development of mitigation measures for these significant adverse impacts. In addition, because construction financing may come from New York State and/or the United States Department of Housing and Urban Development, NYCEDC and HPD are undertaking ongoing consultation with the New York State Office of Parks, Recreation and Historic Preservation (OPRHP) in accordance with the New York State Historic Preservation Act of 1980 (Section 14.09 of the New York Parks, Recreation and Historic Preservation Law) and, acting in its capacity as the State Historic Preservation Office, Section 106 of the National Historic Preservation Act of 1966.

Should there be any State or Federal permitting or funding for development on Sites 1, 2, 5, 8, 9 and 10, HPD and NYCEDC shall continue to consult with OPRHP regarding impacts from development on Site 1 (indirect impacts to the NYCL- and S/NR-eligible Eastern Dispensary and the S/NR-listed Lower East Side Historic District), Site 2 (the proposed demolition of an S/NR-eligible Essex Street Market building), Site 5 (the proposed demolition of a S/NR-eligible fire station), and Sites 8, 9, and 10 (the proposed demolition of the S/NR-eligible Essex Street Market buildings and indirect impacts to the adjacent NYCL- and S/NR-eligible Clinton, Rivington, Stanton Street Historic District). Furthermore, consultation shall include an evaluation of any prudent and feasible alternatives specific to the affected historic properties and project goals and objectives. If no prudent and feasible alternatives specific to the historic properties and project goals and objectives are identified, HPD and/or NYCEDC will enter into a formal agreement with OPRHP to identify proper mitigation measures. LPC shall be a signatory

to the formal agreement with regard to any potential effects to NYCL designated and eligible properties and districts.

Potential mitigation measures that could partially mitigate the impact of the demolition of the Essex Street Market and former fire station may include, to the extent practicable and feasible:

- Historic American Buildings Survey (HABS) documentation. HABS Level I documentation of all four buildings of the Essex Street Market and the former fire station could be conducted by a recognized professional credentialed for preparing such reports, to be submitted to LPC, OPRHP, the New York Historical Society, the Museum of the City of New York, and/or other repositories.
- A site commemoration plan. A permanent interpretive exhibit or exhibits about the Essex Street Market and the former fire station could be developed and installed in the new Essex Street Market facility on Site 2 or in another appropriate location near the project site. This exhibit could document the history of the Essex Street Market and former fire station and could encompass the larger history of the project site neighborhood.
- Architectural salvage. Surveys of the Essex Street Market and former fire station could be conducted to determine if any significant exterior or interior architectural elements could be removed and incorporated into the proposed development.
- Design of the new buildings on Sites 2, 8, 9, and/or 10 to reference the design of the Essex Street Market. This could include incorporating references to such architectural elements of the market buildings as the strip windows and the incised lettering above the entrances.

As described above, NYCEDC and HPD will continue to consult with LPC and/or OPRHP regarding the compatibility of the proposed development on Site 1 with the S/NR-listed Lower East Side District, in which it is located, and with the S/NR-eligible and NYCL-eligible Eastern Dispensary. Submission of the preliminary design of the proposed building on Site 1 to LPC and/or OPRHP for review and comment following a developer's Request for Proposals (RFP) process (described below) is proposed as a means to eliminate or partially mitigate the potential contextual and visual impact on the historic district and Eastern Dispensary from the proposed development on Site 1. If LPC and/or OPRHP determine that the preliminary design of the proposed building on Site 1 would result in a significant adverse impact on the Lower East Side Historic District and/or the Eastern Dispensary and no design changes, which are feasible and practicable given NYCEDC and HPD's goals and objectives, are identified to eliminate or fully mitigate this impact, it would constitute an unmitigable significant adverse impact on the Lower East Side Historic District and/or the Eastern Dispensary. Although the historic and cultural resources analysis (See Chapter 7, "Historic and Cultural Resources") concluded that the proposed developments on Sites 8, 9, and 10 would not have significant adverse visual and contextual impacts on the adjacent potential Clinton, Rivington, Stanton Street Historic District (NYCL-eligible, S/NR-eligible), should there be any State or Federal permitting or funding for development on those sites, HPD and NYCEDC shall consult with OPRHP regarding the compatibility of the proposed developments on Sites 8, 9, and 10 with the historic district.

At this time, there are no specific development proposals for Sites 1 through 6 and 8 through 10, and future developers will be selected pursuant to an RFP process. For sites that may be under the jurisdiction of HPD, mitigation, which could include design review of Site 1 with LPC and/or OPRHP, would, to the extent practicable and feasible, either be undertaken by HPD or required to be undertaken by the developer(s) through provisions in the Land Disposition Agreement (LDA) between HPD and the developer(s). For City properties that may be managed by NYCEDC, mitigation, which could include design review of Site 1 with LPC and/or OPRHP,

would, to the extent practicable and feasible, either be undertaken by NYCEDC or required to be undertaken by the developer(s) through the provisions of a contract or other legally binding agreement between NYCEDC and the developer(s).

As noted above, construction financing for some portions of the proposed development may come from HUD and, under the Code of Federal Regulations Title 24-Housing and Urban Development, Part 58, HPD assumes the responsibilities for environmental review, decision-making, and action that would otherwise apply to HUD. Accordingly, HPD is required to conduct environmental reviews under the laws and reviews that apply to HUD programs and policies, including the National Environmental Policy Act and related Federal Laws, Executive Orders, and Rules, including the National Historic Preservation Act. Since it is not known at this time which sites will be disposed of by which project sponsors, it is expected that, if warranted, HPD would enter into a formal agreement with OPRHP, LPC, and potentially the Advisory Council on Historic Preservation regarding the assessment of effects on historic and cultural resources related to the HUD construction financing and the development and implementation of mitigation for any identified adverse effects.

C. TRANSPORTATION

TRAFFIC

As discussed in Chapter 13, "Transportation," the proposed actions would result in significant adverse traffic impacts at a number of locations in the traffic study area. This section describes the mitigation measures that could reduce or eliminate significant impacts or indicates whether impacts would remain unmitigated (**Figures 21-1 through 21-4** provide a graphic overview of these findings). **Table 21-1** summarizes the significant adverse traffic impacts and whether they could be fully or partially mitigated with the implementation of traffic improvement measures. Details of the intersection capacity analyses and all traffic mitigation measures (e.g., signal timing changes, parking regulation changes, lane reconfigurations, etc.) are summarized in levels of service (LOS) tables presented at the end of the chapter. NYCDOT is currently developing an area-wide plan to improve traffic and pedestrian safety along the Delancey Street corridor. In addition, signal timing modifications are being proposed by NYCDOT along Allen Street to improve service along the M15 bus line. Changes to the study area's transportation network resulting from these changes will be incorporated between the DGEIS and FGEIS, should the plan be adopted prior to the release of the FGEIS. As a result, mitigation measures presented in the FGEIS may be different than those identified in the DGEIS.

Table 21-1
Traffic Impact Mitigation Summary

Intersections	Weekday Peak Hours			Saturday Peak Hour
	AM	Midday	PM	
No significant impact	21	23	12	20
Impact could be fully mitigated	6	6	12	8
Impact could be partially mitigated	0	0	1	1
Unmitigated impact	3	1	5	1

The major overall finding of the traffic mitigation analysis is that the majority of the 30 intersections analyzed would either not be significantly impacted or could be mitigated with readily implementable traffic improvement measures, including signal timing and phasing changes, parking regulation changes to gain or widen a travel lane at key intersections, and lane

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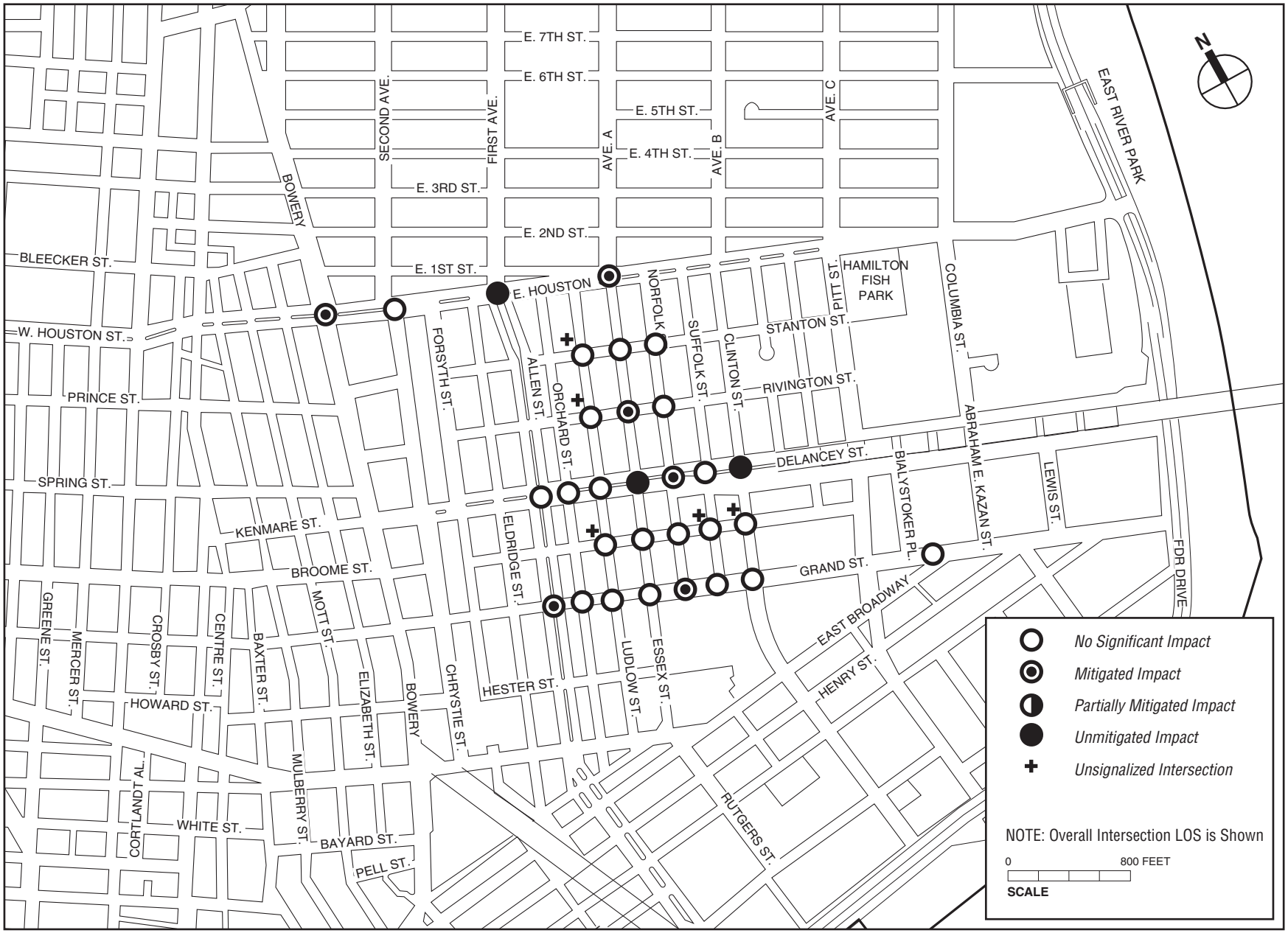

Traffic Mitigation Overview
Weekday AM Peak Hour
Figure 21-1

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Traffic Mitigation Overview
Weekday Midday Peak Hour
Figure 21-2

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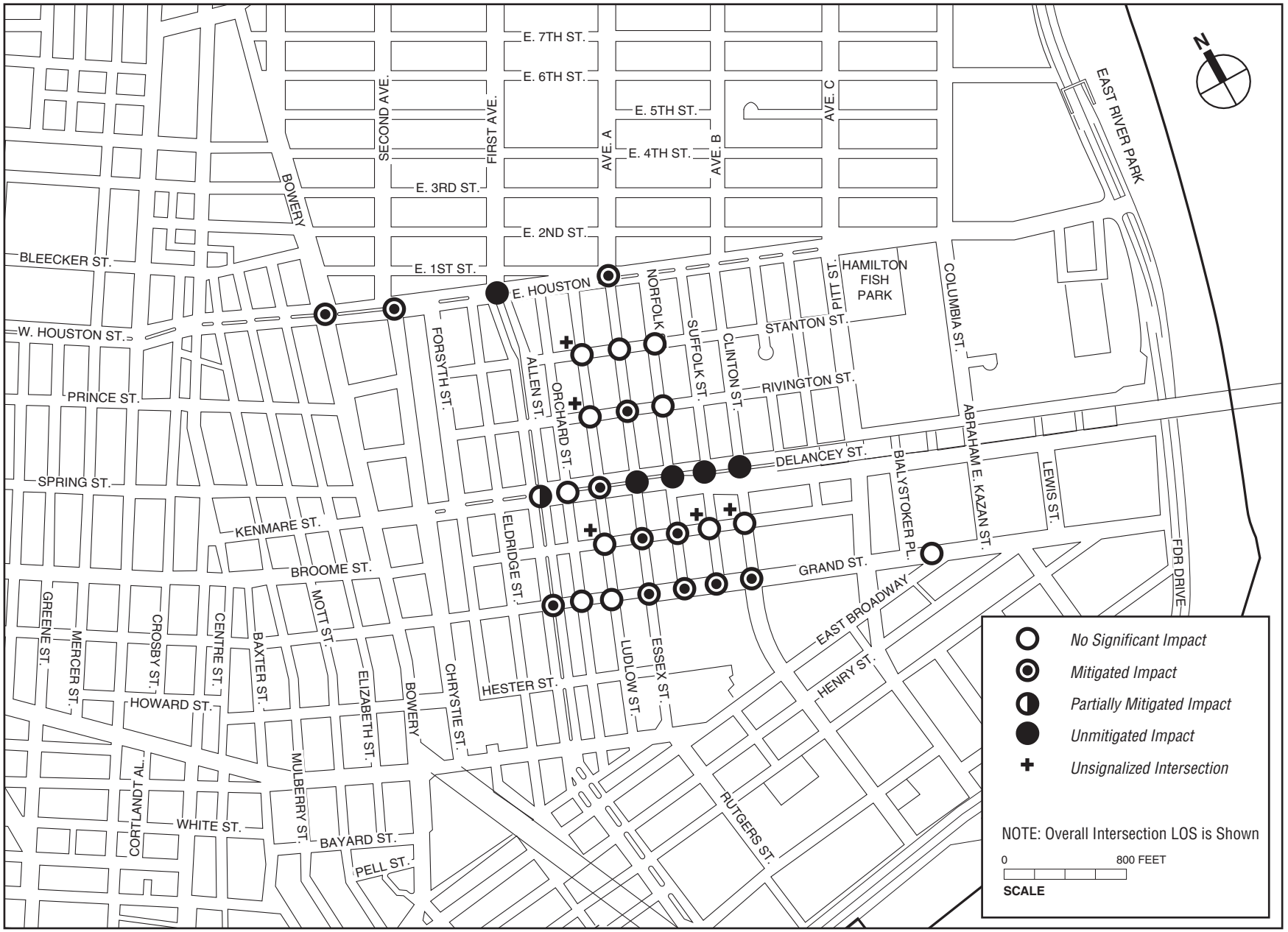
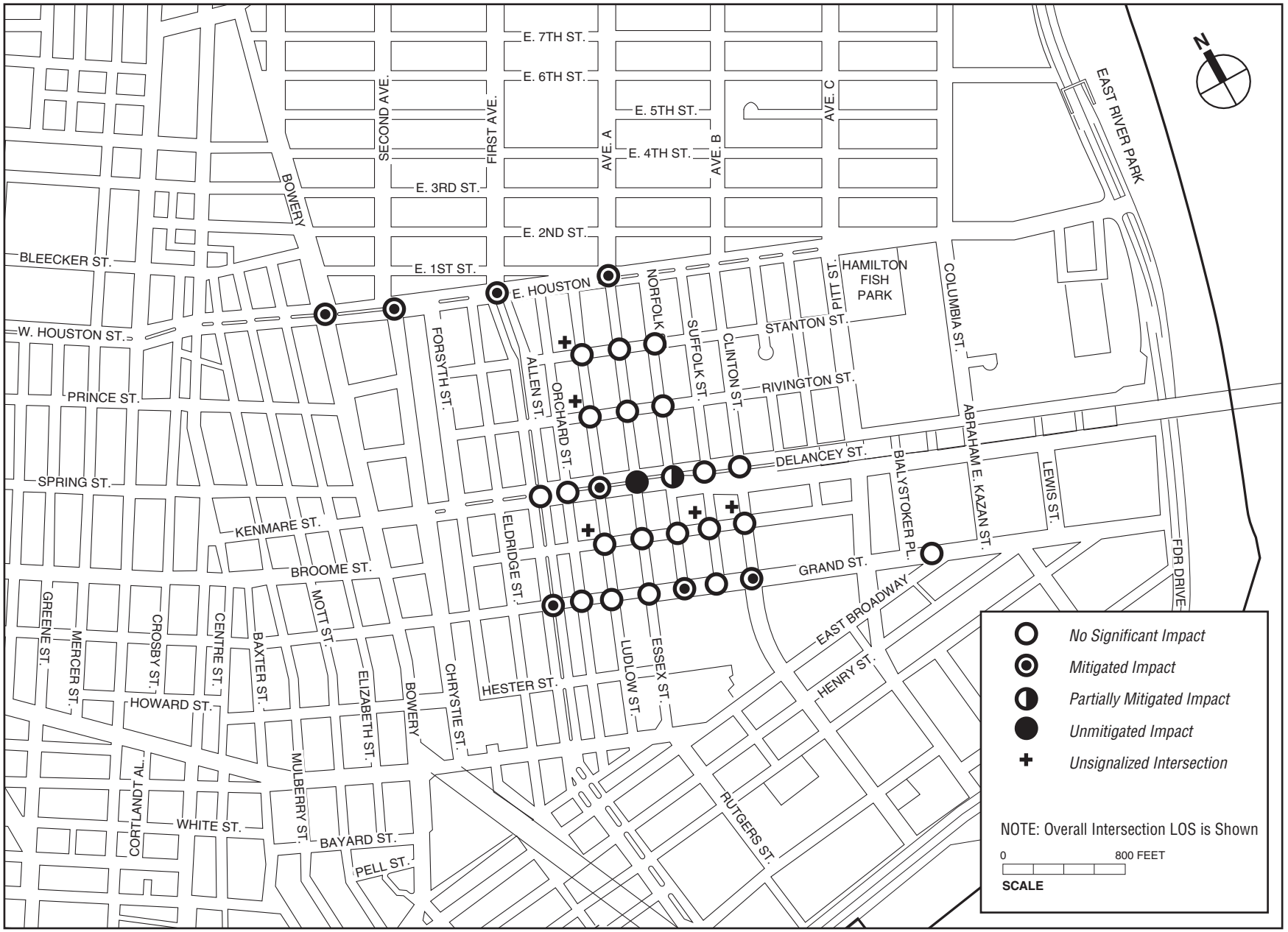


Traffic Mitigation Overview
Weekday PM Peak Hour
Figure 21-3



Traffic Mitigation Overview
Saturday Peak Hour
Figure 21-4

restriping. These measures represent some of the standard traffic capacity improvements that are typically implemented by the New York City Department of Transportation (NYCDOT).

As shown in **Table 21-1**, in the weekday AM peak hour, three of the 30 intersections would remain unmitigated; in the weekday midday peak hour, one intersection would remain unmitigated; in the weekday PM peak hour, five intersections would remain unmitigated, and one intersection could only be partially mitigated; and in the Saturday peak hour, one intersection would remain unmitigated, and one intersection could be partially mitigated.

Six of the thirty intersections have significant adverse traffic impacts that would result from the proposed actions and could not be fully mitigated in at least one peak hour, including:

- East Houston Street and Allen Street/First Avenue (unmitigated during the weekday AM and PM peak hours).
- Delancey Street and Allen Street (could be partially mitigated during the weekday PM peak hour).
- Delancey Street and Essex Street (unmitigated during all four peak hours).
- Delancey Street and Norfolk Street (could be partially mitigated during the Saturday peak hour; unmitigated during the weekday PM peak hour).
- Delancey Street and Suffolk Street (unmitigated during the weekday PM peak hour).
- Delancey Street and Clinton Street (unmitigated during the weekday AM and PM peak hours).

Five of these intersections are along Delancey Street, which is characterized by heavy volumes approaching and leaving the Williamsburg Bridge.

Traffic mitigation measures needed for each intersection are described below; details of signal timing modifications are summarized in the LOS tables presented at the end of the chapter.

DELANCEY STREET CORRIDOR

Three of the seven intersections analyzed along Delancey Street would be significantly impacted during the weekday AM and Saturday peak hours, four would be significantly impacted during the weekday midday peak hour, and six would be significantly impacted during the weekday PM peak hour. Of the six impacted intersections along Delancey Street, only the intersection of Delancey Street and Ludlow Street could be fully mitigated in each peak hour with traffic capacity improvements. The other impacted intersections that could not be mitigated during all peak hours are as follows: Delancey Street and Allen Street could only be partially mitigated during the weekday PM peak hour; Delancey Street and Essex Street could not be mitigated during all peak hours; Delancey Street and Norfolk Street could only be partially mitigated in the Saturday peak hour, and could not be mitigated during the weekday PM peak hour; Delancey Street and Suffolk Street could not be mitigated during the weekday PM peak hour; and Delancey Street and Clinton Street could not be mitigated during the weekday AM and PM peak hours.

Delancey Street and Allen Street

Significant impacts would occur at this location during the weekday midday and PM peak hours. The impacts could be fully mitigated during the weekday midday peak hour, and only partially mitigated during the weekday PM peak hour by modifying the signal phasing to allow the northbound right turn movement during the westbound lead phase. This measure would be in place at all times and the signal timing would remain the same.

Delancey Street and Ludlow Street

Significant impacts would occur at this intersection during the weekday midday and PM, and Saturday peak hours, and could be fully mitigated by modifying the signal timing.

Delancey Street and Essex Street

This intersection would have significant impacts during all four peak hours, and could not be mitigated.

Delancey Street and Norfolk Street

This intersection would have significant impacts during all peak hours, and could be fully mitigated during the weekday AM and midday peak hours by installing "No Standing 11 AM to 2 PM Monday to Friday" regulations along the north curb of the westbound approach for 100 feet (entailing a loss of approximately three parking spaces during the weekday midday peak period) to provide daylighting to widen the westbound lane, and by modifying the signal timing. These mitigation measures could only partially mitigate impacts at this intersection during the Saturday peak hour. Significant impacts during the weekday PM peak hour could not be mitigated.

Delancey Street and Suffolk Street

Significant impacts during the weekday PM peak hour could not be mitigated.

Delancey Street and Clinton Street

Significant impacts during the weekday AM and PM peak hours could not be mitigated.

BROOME STREET CORRIDOR

Significant impacts would occur at two of the five intersections analyzed along Broome Street during all peak hours. Impacts at both of these intersections would occur during the weekday PM peak hour and could be fully mitigated with signal timing and phasing modifications.

Broome Street and Essex Street

Significant impacts that would occur during the weekday PM peak hour at this intersection could be fully mitigated by modifying the signal phasing to include a southbound lead phase. (The existing traffic signal operates in two phases—an eastbound phase followed by a northbound/southbound phase).

Broome Street and Norfolk Street

Significant impacts would occur at this intersection during the weekday PM peak hour and could be fully mitigated by modifying the signal timing.

GRAND STREET CORRIDOR

Significant impacts would occur at two of the eight intersections analyzed along Grand Street during the weekday AM and midday peak hours, at five intersections during the weekday PM peak hour, and at three intersections during the Saturday peak hour. Impacts at these intersections could be fully mitigated with traffic capacity improvements.

Grand Street and Allen Street

Significant impacts would occur at this intersection during all four peak hours and could be mitigated by installing "No Standing 11 AM to 2 PM Monday to Friday" regulations along the north curb of the westbound approach for the entire block (entailing a loss of approximately two parking spaces over a distance of approximately 85 feet during the weekday midday peak period) to provide daylighting to widen the westbound lane, and by modifying the signal timing. A second option to mitigate the intersection during all peak hours would involve the modification of signal phasing as follows: an eastbound/westbound phase; a northbound/southbound exclusive left turn phase (pedestrians would not be allowed to cross during this phase); and a northbound/southbound phase (left turns would not be permitted). The existing traffic signal operates as follows: an eastbound/westbound phase; a southbound phase (pedestrians are not allowed to cross the east crosswalk during this phase); a northbound/southbound phase (left turns are not permitted); and a northbound phase (pedestrians are not allowed to cross the west crosswalk during this phase). Either of these two options could fully mitigate projected impacts.

Grand Street and Essex Street

This intersection would be significantly impacted during the weekday PM peak hour and could be fully mitigated by installing "No Standing Anytime" regulations along the north curb of the westbound approach for 100 feet from the intersection (entailing a loss of approximately five parking spaces) to allow for two moving lanes. The westbound approach curb lane could be restriped from a 10-foot wide parking lane to a 10-foot wide right turn lane.

Grand Street and Norfolk Street

This intersection would be significantly impacted during all four peak analysis hours and could be fully mitigated by installing "No Standing Anytime" regulations along the north curb of the westbound approach for 100-feet from the intersection (entailing a loss of approximately three parking spaces) to allow for two moving lanes. The westbound approach curb lane could be restriped from a 10-foot wide parking lane to a 10-foot wide right turn lane.

Grand Street and Suffolk Street

Significant impacts at this intersection during the weekday PM peak hour could be fully mitigated by modifying the signal timing.

Grand Street and Clinton Street

Significant impacts at this intersection would occur during the weekday PM and Saturday peak hours. Impacts at this intersection could be fully mitigated installing "No Standing 4 PM to 7 PM Monday to Friday" regulations along the south curb of the eastbound approach for the entire block (approximately 165 feet), entailing a loss of approximately five parking spaces during the weekday PM peak hour to reduce the effects of parking friction along the approach, and by modifying the signal timing.

RIVINGTON STREET CORRIDOR

Of the three intersections analyzed along Rivington Street, the intersection of Rivington Street and Essex Street would be significantly impacted during the weekday AM and PM peak hours. Significant impacts could be fully mitigated during both peak hours by signal timing modifications.

EAST HOUSTON STREET CORRIDOR

Three of the four intersections along East Houston Street would be significantly impacted during the weekday AM peak hour, and only one intersection would be significantly impacted during the weekday midday peak hour. All four intersections analyzed along East Houston Street would be significantly impacted during the weekday PM and Saturday peak hours. Significant impacts could be fully mitigated with signal timing modifications at three of the four intersections; the intersection of East Houston Street and Allen Street/First Avenue could not be fully mitigated during the weekday AM and PM peak hours.

East Houston Street and Bowery

Significant impacts would occur at this location during the weekday AM and PM, and Saturday peak hours, and could be fully mitigated by modifying the signal timing.

East Houston Street and Chrystie Street/Second Avenue

Significant impacts would occur at this location during the weekday PM and Saturday peak hours, and could be fully mitigated by modifying the signal timing.

East Houston Street and Allen Street/First Avenue

This intersection would be significantly impacted during the weekday AM and PM, and Saturday peak hours, and could be fully mitigated during the Saturday peak hour by modifying the signal timing. Significant impacts at this intersection during the weekday AM and PM peak hours could not be fully mitigated.

East Houston Street and Essex Street/Avenue A

Significant impacts would occur at this location during all peak hours and could be fully mitigated by modifying the signal timing.

IMPLEMENTATION

Each of the traffic capacity improvements described above fall within the jurisdiction of NYCDOT for implementation. The implementation of these measures would result in the loss of approximately eight metered parking or "standing" spaces during the weekday AM peak period, 13 spaces during the weekday midday peak period, 13 spaces during the weekday PM peak period, and eight spaces during the Saturday peak period. Delancey Street would lose three parking spaces between Norfolk Street and Suffolk Street, and Grand Street would lose up to 10 parking spaces between Allen Street and Clinton Street. No designated truck loading/unloading zones or bus layover space would be affected by the proposed parking modifications for mitigation. If it is determined that on-street parking should be retained at locations where such mitigation was assumed, additional unmitigated traffic impacts could result.

TRANSIT

As discussed in Chapter 13, "Transportation," the proposed actions would result in significant adverse bus line haul impacts on the M9 bus route during both the AM and PM peak periods and the M14A bus route during the AM peak period. Potential measures to mitigate these impacts are described below.

BUS LINE HAUL

The proposed actions would result in significant adverse bus line haul impacts on the M9 and M14A routes as the projected passenger volumes in the future with the proposed actions condition would exceed the NYCT guideline capacity during the following peak periods:

- Southbound M9 bus route during the AM and PM peak periods;
- Northbound M9 bus route during the PM peak period; and
- Westbound M14A bus route during the AM peak period.

Table 21-2 provides a comparison of existing service and the number of buses required to fully mitigate the identified significant adverse line haul impacts along the M9 and M14A bus routes. While NYCT routinely monitors changes in bus ridership and would make the necessary service adjustments where warranted, these service adjustments are subject to the agencies' fiscal and operational constraints and, if implemented, are expected to take place over time.

Table 21-2
2022 Mitigated Future With The Proposed Actions Condition (Capacity Improvement): Bus Line Haul Levels

Route	Peak Period	Northbound/Eastbound Buses per Hour		Southbound/Westbound Buses per Hour	
		Existing	Mitigation	Existing	Mitigation
M9	AM	8	n/a	6	8
	PM	5	7	4	5
M14A	AM	7	n/a	8	9

Notes: The M9 bus route operates standard buses with a guideline capacity of 54 passengers per bus.
The M14A bus route operates articulated buses with a guideline capacity of 85 passengers per bus.

SUBWAYS

Although no potential significant adverse subway station impacts have so far been determined, at the direction of the Metropolitan Transportation Authority-New York City Transit, analyses of the following interior transfer and platform stairways will be undertaken for the FGEIS:

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

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

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

PEDESTRIANS

As discussed in Chapter 13, "Transportation," the proposed actions would result in significant adverse pedestrian impacts at four pedestrian analysis locations at Delancey Street and Essex Street including the west crosswalk during the midday peak period, the east crosswalk during the Saturday peak period, the west sidewalk of Essex Street between Delancey Street and Broome Street during the AM and midday peak periods, and the east sidewalk of Essex Street between Delancey Street and Rivington Street during the Saturday peak period. Potential measures to mitigate these impacts are described below, and the mitigated conditions are summarized in **Table 21-3**.

Delancey Street and Essex Street

The west crosswalk at this intersection would deteriorate from below mid-LOS D (22.4 SFP) to beyond mid-LOS D (18.4 SFP) during the midday peak period. This significant adverse pedestrian impact could be fully mitigated by restriping the width of this crosswalk from its existing width of 14 feet to 15 feet.

Table 21-3
2022 No Action, With Action, and Mitigated With Action Conditions
Pedestrian Level of Service Analysis

Location	Mitigation Measures	No Action		With Action		Mitigated With Action	
		SFP/PMF	LOS	SFP/PMF	LOS	SFP/PMF	LOS
Weekday AM Peak 15-Minutes							
Delancey Street and Essex Street – SW sidewalk	Widening sidewalk by 2 feet 3 inches to 15 feet 3 inches	6.3	D	11.1	E	8.4	D
Weekday Midday Peak 15-Minutes							
Delancey Street and Essex Street – SW sidewalk	Widening sidewalk by 2 feet 3 inches to 15 feet 3 inches	4.5	C	9.2	D	6.9	D
Delancey Street and Essex Street – West Crosswalk	Widening crosswalk by 1 foot to 15 feet	22.4	D	18.4	D	19.9	D
Saturday Peak 15-Minutes							
Delancey Street and Essex Street – NE sidewalk	Widening sidewalk by 2 inches to 13 feet 2 inches	5.3	C	8.8	D	8.4	D
Delancey Street and Essex Street – East Crosswalk	Widening crosswalk by 1 foot to 15 feet	40.5	B	18.5	D	19.9	D

Note: SFP = square feet per pedestrian; PMF = pedestrians per minute per foot.

The east crosswalk at this intersection would deteriorate from LOS B (40.5 SFP) to LOS D (18.5 SFP) during the Saturday peak period. This significant adverse pedestrian impact could be fully mitigated by restriping the width of this crosswalk from its existing width of 14 feet to 15 feet.

The west sidewalk of Essex Street between Delancey Street and Broome Street would deteriorate from LOS D (6.3 PMF) and LOS C (4.5 PMF) to LOS E (11.1 PMF) and LOS D (9.2 PMF) during the AM and midday peak periods, respectively. These significant adverse pedestrian impacts could be fully mitigated by widening the sidewalk from its existing width of 13 feet to 15 feet and 3 inches.

The east sidewalk of Essex Street between Delancey Street and Rivington Street would deteriorate from LOS C (5.3 PMF) to LOS D (8.8 PMF) during the Saturday peak period. This significant adverse pedestrian impact could be fully mitigated by widening the sidewalk from its existing width of 13 feet to 13 feet and 2 inches.

EFFECTS OF TRAFFIC MITIGATION MEASURES ON PEDESTRIAN OPERATIONS

As described above, intersection operations would alter with the implementation of the recommended traffic mitigation measures. These measures would include changes to existing signal timings and lane utilizations. A review of the effects of these changes on pedestrian circulation and service levels at intersection corners and crosswalks showed that they would not alter the conclusions made for the pedestrian impact analyses, nor would they result in the potential for any additional significant adverse pedestrian impacts.

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

EFFECTS OF TRAFFIC MITIGATION MEASURES ON AIR QUALITY

Chapter 14, "Air Quality," concluded that there would be no potential for any significant adverse air quality impacts and no air quality mitigation would be required. However, an analysis is warranted of the proposed actions' potential effects on air quality with the implementation of the traffic mitigation measures discussed above.

The tables below present the effect that proposed traffic mitigation measures would have on maximum predicted pollutant concentrations with the proposed actions. Since the proposed traffic mitigation measures include two options for one of the intersections within the receptor Site 2 study area, results for both options are presented. **Tables 21-4** and **21-5** summarize the maximum 8-hour average CO and 24-hour average PM_{10} concentrations, respectively, each with and without mitigation measures in place. **Tables 21-6** and **21-7** summarize the maximum predicted 24-hour and annual average $PM_{2.5}$ concentration increments, respectively, with and without mitigation measures in place.

The values shown are the highest predicted concentrations for the analyzed receptor locations. The results show that with the proposed traffic mitigation measures, as with the proposed actions, concentrations of PM_{10} with the proposed actions would be below the National Ambient Air Quality Standards (NAAQS) and would not exceed the *de minimis* threshold for CO or the $PM_{2.5}$ interim guidance criteria. Therefore, there would be no potential for a significant adverse impact on air quality with the implementation of the traffic mitigation measures. There would also be no potential for a cumulative adverse impact on air quality with the implementation of the traffic mitigation measure and other sources of emissions, discussed in the Chapter 14, "Air Quality."

Table 21-4
Future (2022) Maximum Predicted 8-Hour Average Carbon Monoxide With Action and With Action-Traffic Mitigation Concentrations (parts per million)

Receptor Site	Location	Time Period	8-Hour Concentration (ppm)	
			With Action	With Action-Mitigation
1	Delancey Street at Norfolk Street	PM	4.7	4.7
2	Grand Street at Norfolk Street (Mitigation Option 1)	PM	2.7	2.9
2	Grand Street at Norfolk Street (Mitigation Option 2)	PM		2.9

Note: National Ambient Air Quality Standards—8-hour, 9 ppm.

Table 21-5
Future (2022) Maximum Predicted 24-Hour Average
PM_{10} With Action and With Action-Traffic Mitigation Concentrations ($\mu g/m^3$)

Receptor Site	Location	24-Hour Concentration	
		With Action	With Action-Mitigation
1	Delancey Street at Norfolk Street	91.5	91.5
2	Grand Street at Norfolk Street (Mitigation Option 1)	58.3	59.2
2	Grand Street at Norfolk Street (Mitigation Option 2)		59.2

Note: National Ambient Air Quality Standards—24-hour, 150 $\mu g/m^3$.

Table 21-6
Future (2022) Maximum Predicted 24-Hour Average
$PM_{2.5}$ With Action and With Action-Traffic Mitigation Increments ($\mu g/m^3$)

Receptor Site	Location	24-Hour Concentration Increments	
		With Action	With Action-Mitigation
1	Delancey Street at Norfolk Street	0.4	0.4
2	Grand Street at Norfolk Street (Mitigation Option 1)	0.2	0.5
2	Grand Street at Norfolk Street (Mitigation Option 2)		0.5

Note: $PM_{2.5}$ interim guidance criteria—24-hour average, 2 $\mu g/m^3$ (5 $\mu g/m^3$ not-to-exceed value).

Table 21-7
Future (2022) Maximum Predicted Annual Average
$PM_{2.5}$ With Action and With Action-Traffic Mitigation Increments ($\mu g/m^3$)

Receptor Site	Location	Annual Concentration Increments	
		With Action	With Action-Mitigation
1	Delancey Street at Norfolk Street	0.005	0.005
2	Grand Street at Norfolk Street (Mitigation Option 1)	0.004	0.006
2	Grand Street at Norfolk Street (Mitigation Option 2)		0.006

Note: $PM_{2.5}$ interim guidance criteria—annual average (neighborhood scale), 0.1 $\mu g/m^3$.

D. CONSTRUCTION

TRAFFIC

The highest amount of construction traffic associated with construction pursuant to the proposed actions is anticipated in the third quarter of 2017. The total number of vehicle trips generated during construction would be approximately 68 percent and 86 percent lower than the total number of vehicle trips generated by the completed development during the weekday AM and PM peak hours, respectively. Nevertheless, because existing and No Action traffic conditions at some study area intersections through which construction-related traffic would travel would operate at unacceptable levels during commuter peak hours, it is possible that significant adverse traffic impacts could occur at some of these locations during construction at some times. A

detailed analysis of traffic conditions was completed for nine key intersections near the construction sites, and this analysis indicated that significant adverse traffic impacts could occur at four of these locations during construction, but at lesser magnitudes than impacts identified under the With Action condition. Where impacts during construction may occur, measures similar to the ones recommended to mitigate impacts of the proposed actions (described above) could be implemented early to alleviate congested traffic conditions.

NOISE

Construction of the proposed development would be required to include measures to reduce noise levels during construction as required by the New York City Noise Control Code. Even with these measures, an analysis based on a conceptual worst-case construction activity and equipment schedule determined that noise levels due to construction activities would result in significant adverse noise impacts at some sensitive receptors (i.e., residential/school buildings) immediately adjacent to some of the proposed development sites. Construction activities would be expected to result in substantially elevated noise levels for two or more continuous years at forty-five (45) locations within the study area. Most of those locations, however, have double-glazed windows and an alternate means of ventilation. For buildings with double-glazed windows and window air conditioners, interior noise levels would be approximately 20 to 25 dBA less than exterior noise levels, and for buildings with double-glazed windows and well-sealed through-the-wall/sleeve/PTAC air conditioners interior noise levels would be approximately 25 to 30 dBA less than exterior noise levels. The typical attenuation provided by double-glazed windows and the alternate ventilation outlined above would be expected to result in interior noise levels during most of the time that are below 45 dBA $L_{10(1)}$ (the CEQR acceptable interior noise level criteria). The projected development at 89 Ludlow Street (see No. 39c on Figure 2-3 in Chapter 2, "Land Use, Zoning and Public Policy) that would also be expected to experience substantially elevated noise levels for two or more continuous years would likely, as a newly constructed building, have double glazed windows and an alternate means of ventilation as well, providing at least 20 to 30 dBA of window/wall attenuation. Given the building attenuation provided by these existing and projected structures, additional receptor controls would be unlikely to fully mitigate the temporary construction noise impacts. Although these structures have double-glazed windows and alternate ventilation, during some limited time periods construction activities may result in interior noise levels that would be above the 45 dBA $L_{10(1)}$ noise level recommended by CEQR for these uses.

A visual survey was performed to identify which locations may not currently have double-glazed windows and/or a means of alternate ventilation, and which locations may have balconies, whose exterior space would have the potential to experience impact. At locations without double-glazed windows and/or a means of alternate ventilation, typical attenuation provided by single-paned windows would range from 5 dBA for an open window condition (i.e., no alternate means of ventilation) to 20 dBA (i.e., with an alternate means of ventilation/closed-window condition). This level of attenuation would not be expected to result in interior noise levels during most of the time that are below 45 dBA $L_{10(1)}$ (the CEQR acceptable interior noise level criteria). Construction activities would be expected to result at various times in significant adverse noise impacts at these 15 locations, which are shown in **Table 21-8**.

Table 21-8
Predicted Noise Impact Locations

Building/Location	Associated Land Use	Total Stories	Façade	Associated Receptor(s)	Impacted Floor(s)	Impact Duration (year)	Range of Increase(s) in dBA*	# of Impacted Single-Glazed Windows	Air-Conditioning
Balconies of Residential Building south of Grand Street between Essex and Clinton Streets	Residential	18	North	1A, 1B, 1E	2nd to top	2016-2018	5.0-8.8	n/a	
			East (northernmost section)	1C	7th to top	2016-2018	5.7-10.1		
			West (northernmost section)	1D	7th to top	2016-2018	5.4-7.3		
Residential Building at the southeast corner of Clinton and Grand Streets	Residential	19	North	3B	7th to top	2016-2017	4.7-8.4	n/a	
			West (northernmost section)	3C, 3D	5th to top	2016-2018	3.3-8.5		
			West (middle section)	3E, 3F	7th to top	2016-2018	5.3-9.5		
			West (southernmost section)	3G, 3H	11th to top	2016-2018	5.2-9.3		
			South	3I	top	2016-2018	5.6-6.9		
350 Grand Street	Institutional (Seward Park High School/ Urban Assembly Academy of Government and Law)	10	North	14	All	2016-2019	5.5-17.5	111	Existing Window A/C
			East (northernmost section)	14A	5th to top	2016-2018	3.3-6.9	110	
			East (middle section)	14B	9th to top	2016-2017	3.0-3.7	192	
			West (northernmost section)	14G	4th to top	2019-2020	4.1-11.1	156	
83 Essex Street	Residential/ Commercial	4	East	15	2nd to top	2016-2017	3.1-7.5	9	None visible
101 Delancey Street	Residential/ Commercial	6	East	16C	Top	2016-2017	3.2-4.2	Not Visible	Not Visible
			South	16B	All	2016-2017	5.1-10.0	Not Visible	Not Visible
87 Ludlow Street	Residential/ Commercial	6	East	17	3rd to top	2019-2020	3.4-10.6	5	Existing Window A/C
249-255 Broome Street (indoor and balconies)	Residential/ Commercial	7	North	21	3rd to top	2019-2020	5.4-14.8	43	Existing Window A/C
141 Essex Street	Residential/ Commercial	6	East	35	5th to top	2020-2021	3.1-4.9	6	Existing Window A/C
145 Essex Street	Residential/ Commercial	6	East	37	4th to top	2020-2021	3.2-6.0	2	Existing Window A/C
149 Essex Street (indoor and balconies)	Residential/ Commercial	7	East	39	4th to top	2020-2021	3.4-7.2	18	Existing PTAC
Balconies of 153 Essex Street	Residential/ Commercial	6	East	41	top	2020-2021	3.3-5.2	n/a	
Balconies of 113 Norfolk Street	Residential	8	West	46A	6th to top	2020-2021	5.0-17.9	n/a	
123 Rivington Street	Residential/ Commercial	7	South	51B	4th to top	2020-2021	5.1-20.2	5	Existing Window A/C
133 Norfolk Street	Residential/ Commercial	7	West	54A	6th to top	2020-2021	3.5-19.1	3	None visible
106 Norfolk Street	Residential/ Commercial	7	West	69	6th to top	2017-2018	3.1-3.7	30	Existing Window A/C

Note: * Range of increases values were taken from predicted noise levels compared to existing noise levels.

Some potential receptor controls that could be used to mitigate the impacts at the 10 residential/commercial locations where interior L_{10} values would be expected to exceed the value considered acceptable by CEQR criteria include the installation of interior storm windows at locations with single-glazed windows, replacement of single-glazed windows with acoustically

rated windows, improvements in the sealing of the existing windows, and/or the provision of air-conditioning so that the impacted structures can maintain a closed-window condition. These measures would have the potential to partially mitigate the impacts at these 10 locations. However, such measures would represent a substantial additional cost to the proposed development, and in balancing the goals of the proposed actions to provide substantial affordable residential units, additional receptor controls would not be practicable and feasible mitigation. Thus, should the developments sites be developed and constructed as conservatively presented in this conceptual schedule, up to 10 locations would be expected to experience an unmitigated significant adverse impact at various times.

At limited times during the construction period, Seward Park High School (350 Grand Street) would be expected to experience significant noise impacts that would be considered unmitigated. The west, north, and east facades of the school building may experience elevated noise as a result of the Proposed Project. The DGEIS discloses worst-case construction-related noise impacts at the school. However, it is possible that based on further assessment of conditions at the school, certain facades (or portions thereof) may be less affected (or not be affected at all) by project-related construction noise. Further assessment related to construction impacts at the school will be conducted between DGEIS and FGEIS to refine the area of potential impact. Some potential receptor controls that could be used to mitigate the impacts include the installation of interior storm windows, replacement of single-glazed windows with acoustically rated windows, improvements in the sealing of the existing windows, and/or the provision of air-conditioning so that the impacted structures can maintain a closed-window condition. The project sponsors will explore potential mitigation measures between DGEIS and FGEIS. In the event that mitigation measures are not determined feasible and practicable, the impact would be unmitigated.

Additionally, at the four (4) buildings that have the potential to experience noise impacts only at outdoor balconies at various floors, there would be no feasible or practicable mitigation to mitigate the construction noise impacts at the balconies. Therefore these balconies would be considered to experience unmitigated significant noise impacts as a result of construction.

Construction activities at the other receptor sites in the study area would at times produce noise levels which would be noisy and intrusive, but due to their limited duration, they would not produce significant noise impacts.

2022 No Action vs. 2022 With Action vs. 2022 Mitigation Weekday AM Peak Hour Traffic Levels of Service

Intersection & Approach		2022 No Action				2022 With Action				2022 With Action with Mitigation				Mitigation Measures
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
SIGNALIZED INTERSECTIONS														
EAST HOUSTON STREET														
1. EAST HOUSTON STREET AND BOWERY														
East Houston Street	EB	L	0.28	30.4	C	L	0.28	30.7	C	L	0.30	31.3	C	Modify signal timing: Shift 1 s of green time from EBL / WBL lag phase to the EB / WB phase [EB / WB green time shifts from 29 s to 30 s; EBL / WBL lag phase green time shifts from 8 s to 7 s; signal timing during all other phases remain the same].
		TR	0.68	29.2	C	TR	0.71	29.9	C	TR	0.69	28.6	C	
	WB	L	0.68	29.9	C	L	0.69	30.9	C	L	0.71	31.3	C	
		TR	1.04	54.6	D	TR	1.07	66.1	E	TR	1.03	51.9	D	
Bowery	NB	L	0.84	42.3	D	L	0.84	42.3	D	L	0.84	42.3	D	
		TR	0.91	40.3	D	TR	0.92	40.6	D	TR	0.92	40.6	D	
	SB	L	0.32	26.2	C	L	0.32	26.2	C	L	0.32	26.2	C	
		TR	0.92	42.5	D	TR	0.92	42.5	D	TR	0.92	42.5	D	
Overall Intersection		-	**0.97**	**42.5**	**D**	-	**0.97**	**46.7**	**D**	-	**0.98**	**41.6**	**D**	
2. EAST HOUSTON STREET AND CHRYSTIE STREET / SECOND AVENUE														
East Houston Street	EB	T	0.56	29.3	C	T	0.59	29.7	C					Mitigation not required.
		R	0.79	46.1	D	R	0.83	50.7	D					
	WB	L	0.68	42.9	D	L	0.71	45.5	D					
		T	0.74	31.6	C	T	0.77	32.4	C					
Chrystie Street / Second Avenue	NB	L	0.85	39.9	D	L	0.86	40.4	D					
		LR	0.87	42.5	D	LR	0.87	42.5	D					
	SB	L	0.78	38.8	D	L	0.78	38.8	D					
		LT	0.75	35.0	D	LT	0.79	35.8	D					
		R	1.01	64.0	E	R	1.01	64.0	E					
Overall Intersection		-	**0.87**	**38.5**	**D**	-	**0.89**	**39.2**	**D**					
3. EAST HOUSTON STREET AND ALLEN STREET / FIRST AVENUE														
East Houston Street	EB	L	1.12	102.6	F	L	1.12	101.6	F					**Unmitigatable Impact**
		T	0.79	29.7	C	T	0.82	30.4	C					
		R	0.82	37.6	D	R	0.82	37.6	D					
	WB	L	0.43	28.0	C	L	0.43	28.8	C					
		TR	1.04	67.8	E	TR	1.07	78.3	E					
Allen Street	NB	L	0.62	32.6	C	L	0.66	33.6	C					
		T	0.97	49.0	D	T	0.98	51.3	D					
		R	0.35	28.5	C	R	0.35	28.5	C					
Overall Intersection		-	**1.13**	**52.1**	**D**	-	**1.17**	**55.5**	**E**					

2022 No Action vs. 2022 With Action vs. 2022 Mitigation Weekday AM Peak Hour Traffic Levels of Service (cont'd)

Intersection & Approach		2022 No Action				2022 With Action				2022 With Action with Mitigation				Mitigation Measures
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
SIGNALIZED INTERSECTIONS														
EAST HOUSTON STREET														
4. EAST HOUSTON STREET AND ESSEX STREET / AVENUE A														
East Houston Street	EB	L	0.56	21.1	C	L	0.58	22.1	C	L	0.58	22.7	C	Modify signal timing: Shift 1 s of green time from EB / WB phase to the NB / SB phase [EB / WB green time shifts from 32 s to 31 s; NB / SB green time shifts from 27s to 28s; signal timing during all other phases remain the same].
		TR	0.68	27.1	C	TR	0.71	27.8	C	TR	0.73	29.1	C	
	WB	L	0.63	22.4	C	L	0.65	23.0	C	L	0.67	24.8	C	
		T	0.76	29.8	C	T	0.79	30.8	C	T	0.81	32.6	C	
		R	0.11	19.9	B	R	0.11	19.9	B	R	0.11	20.6	C	
Essex Street / Avenue A	NB	LTR	0.77	35.0	C	LTR	0.79	35.9	D	LTR	0.76	33.5	C	
	SB	LTR	0.96	48.4	D	LTR	1.01	59.2	E	LTR	0.95	45.5	D	
Overall Intersection		-	**0.81**	**31.4**	**C**	-	**0.84**	**33.6**	**C**	-	**0.83**	**32.4**	**C**	
STANTON STREET														
5. STANTON STREET AND ESSEX STREET														
Stanton Street	EB	LTR	0.23	22.4	C	LTR	0.23	22.4	C					Mitigation not required.
Essex Street	NB	TR	0.33	12.0	B	TR	0.33	12.0	B					
	SB	LT	0.39	12.4	B	LT	0.42	12.8	B					
Overall Intersection		-	**0.33**	**13.1**	**B**	-	**0.35**	**13.3**	**B**					
6. STANTON STREET AND NORFOLK STREET														
Stanton Street	EB	LT	0.23	16.4	B	LT	0.23	16.4	B					Mitigation not required.
Norfolk Street	NB	TR	0.45	19.6	B	TR	0.52	21.2	C					
Overall Intersection		-	**0.34**	**18.5**	**B**	-	**0.38**	**19.7**	**B**					
RIVINGTON STREET														
7. RIVINGTON STREET AND ESSEX STREET														
Rivington Street	WB	LTR	0.89	49.3	D	LTR	1.03	80.2	F	LTR	0.93	52.6	D	Modify signal timing: Shift 3 s of green time from NB / SB phase to the WB phase [WB green time shifts from 31 s to 34 s; NB / SB green time shifts from 49 s to 46 s].
Essex Street	NB	LT	0.35	11.9	B	LT	0.36	11.9	B	LT	0.38	13.8	B	
	SB	TR	0.33	12.0	B	TR	0.36	12.3	B	TR	0.38	14.2	B	
Overall Intersection		**-**	**0.56**	**23.0**	**C**	**-**	**0.62**	**33.3**	**C**	**-**	**0.61**	**26.0**	**C**	
8. RIVINGTON STREET AND NORFOLK STREET														
Rivington Street	WB	TR	0.54	21.8	C	TR	0.56	22.2	C					Mitigation not required.
Norfolk Street	NB	LT	0.47	18.3	B	LT	0.59	20.0	C					
Overall Intersection		-	**0.51**	**19.9**	**B**	-	**0.57**	**20.9**	**C**					

2022 No Action vs. 2022 With Action vs. 2022 Mitigation Weekday AM Peak Hour Traffic Levels of Service (cont'd)

Intersection & Approach		2022 No Action				2022 With Action				2022 With Action with Mitigation				Mitigation Measures
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
SIGNALIZED INTERSECTIONS														
DELANCEY STREET														
9. DELANCEY STREET AND ALLEN STREET														
Delancey Street	EB	TR	0.94	36.4	D	TR	0.98	41.3	D	TR	0.98	41.3	D	Mitigation not required.
	WB	L	0.88	55.3	E	L	0.90	58.1	E	L	0.90	58.1	E	Modify signal phasing: Allow the NB-right turn movement during the WB-lead phase. Signal timing remains the same during all peak hours. **[Measures reflect signal phasing improvements needed to mitigate the intersection during the weekday midday peak period.]**
		TR	1.02	41.4	D	TR	1.03	44.1	D	TR	1.03	44.1	D	
Allen Street	NB	T	0.70	35.1	D	T	0.73	36.1	D	TR	0.73	36.1	D	
		R	0.60	37.7	D	R	0.63	39.5	D	R	0.23	8.6	A	
	SB	TR	0.55	32.0	C	TR	0.56	32.2	C	TR	0.56	32.2	C	
Overall Intersection		-	**0.92**	**39.6**	**D**	-	**0.94**	**42.6**	**D**	-	**0.94**	**41.7**	**D**	
10. DELANCEY STREET AND ORCHARD STREET														
Delancey Street	EB	T	0.41	9.7	A	T	0.43	9.8	A					Mitigation not required.
	WB	TR	0.78	14.7	B	TR	0.79	14.8	B					
Orchard Street	NB	LTR	0.26	26.2	C	LTR	0.26	26.2	C					
Overall Intersection		-	**0.61**	**13.3**	**B**	-	**0.61**	**13.4**	**B**					
11. DELANCEY STREET AND LUDLOW STREET														
Delancey Street	EB	TR	0.43	10.1	B	TR	0.45	10.3	B					Mitigation not required.
	WB	T	0.75	13.4	B	T	0.75	13.5	B					
Ludlow Street	SB	LTR	0.72	41.5	D	LTR	0.77	45.8	D					
Overall Intersection		-	**0.74**	**13.9**	**B**	-	**0.76**	**14.2**	**B**					
12. DELANCEY STREET AND ESSEX STREET														
Delancey Street	EB	TR	0.51	14.1	B	TR	0.53	14.3	B					**Unmitigatable Impact**
	WB	TR	1.01	41.6	D	TR	1.02	42.8	D					
Essex Street	NB	LTR	0.82	46.9	D	LTR	0.92	60.4	E					
	SB	DefL	1.08	108.3	F	DefL	1.34	209.8	F					
		TR	0.76	44.7	D	TR	0.89	58.4	E					
Overall Intersection		-	**1.04**	**37.2**	**D**	-	**1.14**	**45.4**	**D**					
13. DELANCEY STREET AND NORFOLK STREET														
Delancey Street	EB	T	0.61	12.6	B	T	0.64	13.0	B	T	0.70	16.1	B	Modify signal timing: Shift 4 s of green time from EB / WB phase to the NB phase [EB / WB green time shifts from 53 s to 49 s; NB green time shifts from 27 s to 31 s].
	WB	TR	0.93	19.0	B	TR	0.95	20.3	C	TR	1.03	38.5	D	
Norfolk Street	NB	TR	0.95	61.9	E	TR	1.07	93.6	F	TR	0.93	53.8	D	
		R	0.93	58.7	E	R	1.08	97.2	F	R	0.94	56.0	E	
Overall Intersection		-	**0.94**	**22.4**	**C**	-	**0.99**	**29.1**	**C**	-	**0.99**	**33.0**	**C**	

2022 No Action vs. 2022 With Action vs. 2022 Mitigation Weekday AM Peak Hour Traffic Levels of Service Table 21-9 (cont'd)

Intersection & Approach		2022 No Action				2022 With Action				2022 With Action with Mitigation				Mitigation Measures
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
SIGNALIZED INTERSECTIONS														
14. DELANCEY STREET AND SUFFOLK STREET														
Delancey Street	EB	T	0.79	17.4	B	T	0.80	17.6	B					Mitigation not required.
	WB	T	0.94	20.0	B	T	0.96	20.6	C					
Delancey Street Service Road	EB	TR	0.19	10.3	B	TR	0.44	13.0	B					
Suffolk Street	SB	R	0.11	21.5	C	R	0.14	22.1	C					
Overall Intersection		-	**0.63**	**18.6**	**B**	-	**0.65**	**18.9**	**B**					
15. DELANCEY STREET AND CLINTON STREET														
Delancey Street	EB	T	0.64	10.1	B	T	0.64	10.2	B					**Unmitigatable Impact**
Williamsburg Bridge	WB	T	1.07	54.1	D	T	1.08	59.4	E					
		R	1.07	82.0	F	R	1.08	86.3	F					
Delancey Street Service Road	EB	TR	0.14	6.5	A	TR	0.16	6.7	A					
	WB	TR	1.01	88.5	F	TR	1.01	88.5	F					
Clinton Street	NB	R	0.17	28.0	C	R	0.17	28.0	C					
Overall Intersection		-	**0.82**	**39.8**	**D**	-	**0.83**	**42.7**	**D**					
BROOME STREET														
16. BROOME STREET AND ESSEX STREET														
Broome Street	EB	LTR	0.17	21.3	C	LTR	0.20	21.8	C	LTR	0.20	21.8	C	Mitigation not required.
Essex Street	NB	TR	0.30	11.6	B	TR	0.32	11.9	B	TR	0.48	23.5	C	Modify signal phasing: Add a new lead phase for the SB approach. The existing signal phasing [EB phase has 31 s of green time; NB / SB phase has 49 s of green time] would be modified to the following: EB phase will have 31 s of green time, SB-lead phase will have 11 s of green time, and NB / SB phase will have 33 s of green [each phase will have 3 s amber and 2 s all red]. [Measures reflect signal phasing improvements needed to mitigate the intersection during the weekday PM peak period.]
	SB	L	0.11	10.4	B	L	0.25	12.3	B	L	0.21	11.3	B	
		T	0.26	11.4	B	T	0.26	11.4	B	T	0.26	11.4	B	
Overall Intersection		-	**0.25**	**12.6**	**B**	-	**0.27**	**12.8**	**B**	-	**0.37**	**19.0**	**B**	
17. BROOME STREET AND NORFOLK STREET														
Broome Street	EB	L	0.12	10.3	B	L	0.18	10.8	B					Mitigation not required.
	WB	R	0.41	13.7	B	R	0.43	14.1	B					
Norfolk Street	NB	T	0.77	30.4	C	T	0.92	40.0	D					
Overall Intersection		-	**0.55**	**21.9**	**C**	-	**0.62**	**27.2**	**C**					

2022 No Action vs. 2022 With Action vs. 2022 Mitigation Weekday AM Peak Hour Traffic Levels of Service (cont'd)

Intersection & Approach		2022 No Action				2022 With Action				2022 With Action with Mitigation				Mitigation Measures
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
SIGNALIZED INTERSECTIONS														
GRAND STREET														
18. GRAND STREET AND ALLEN STREET														
Grand Street	EB	LTR	1.05	66.9	E	LTR	1.16	112.5	F	LTR	1.01	52.7	D	**Option 1** Modify signal timing: Shift 3 s of green time from NB / SB phase to the EB / WB phase; shift 1 s from the NB / SB phase to SB-lead phase [EB / WB green time shifts from 27 s to 30 s; SB-lead phase green time shifts from 10 s to 11 s, NB / SB green time shifts from 23 s to 19 s, NB-lead phase green time remains the same].
	WB	LTR	0.79	45.1	D	LTR	0.95	68.2	E	LTR	0.84	47.2	D	
Allen Street	NB	L	0.63	55.7	E	L	0.63	55.7	E	L	0.63	55.7	E	
		TR	0.53	21.0	C	TR	0.54	21.2	C	TR	0.60	25.1	C	
	SB	L	0.86	73.7	E	L	0.90	81.2	F	L	0.82	66.2	E	
		TR	0.58	21.8	C	TR	0.58	21.8	C	TR	0.63	24.9	C	
Overall Intersection		-	**0.76**	**37.0**	**D**	-	**0.81**	**49.5**	**D**	-	**0.80**	**37.2**	**D**	
										LTR	0.93	36.4	D	**Option 2** Modify signal phasing: The existing signal phasing [EB / WB phase has 27 s of green; SB-lead phase has 10 s of green; NBTR / SBTR phase has 23 s of green; NB-lag phase has 10 s of green] would be modified to the following: EB / WB phase will have 32 s of green time; NBL / SBL phase will have 11 s of green time; NBTR / SBTR phase will have 32 s of green time [each phase will have 3 s amber and 2 s all red]. Pedestrians are not allowed to cross during the NBL / SBL phase.
										LTR	0.79	40.2	D	
										L	0.57	50.5	D	
										TR	0.64	27.3	C	
										L	0.82	66.2	E	
										TR	0.69	28.5	C	
										-	**0.81**	**35.0**	**C**	
19. GRAND STREET AND ORCHARD STREET														
Grand Street	EB	LT	0.63	21.1	C	LT	0.69	22.6	C					Mitigation not required.
	WB	TR	0.50	20.9	C	TR	0.58	22.8	C					
Orchard Street	NB	LTR	0.15	15.4	B	LTR	0.15	15.4	B					
Overall Intersection		**-**	**0.39**	**20.3**	**C**	**-**	**0.42**	**21.9**	**C**					
20. GRAND STREET AND LUDLOW STREET														
Grand Street	EB	TR	0.59	22.5	C	TR	0.66	24.6	C					Mitigation not required.
	WB	LT	0.34	17.3	B	LT	0.41	18.3	B					
Ludlow Street	SB	LTR	0.28	17.4	B	LTR	0.29	17.5	B					
Overall Intersection		**-**	**0.44**	**19.7**	**B**	**-**	**0.48**	**21.1**	**C**					

2022 No Action vs. 2022 With Action vs. 2022 Mitigation Weekday AM Peak Hour Traffic Levels of Service (cont'd)

Intersection & Approach		2022 No Action				2022 With Action				2022 With Action with Mitigation				Mitigation Measures
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
SIGNALIZED INTERSECTIONS														
GRAND STREET														
21. GRAND STREET AND ESSEX STREET														
Grand Street	EB	LTR	0.76	30.1	C	LTR	0.86	38.1	D	LTR	0.87	40.1	D	Mitigation not required.
	WB	LTR	0.72	21.7	C	LTR	0.88	26.3	C	LT	0.44	17.6	B	Install "No Standing Anytime" regulation along the north curb of the WB approach for 100-feet from the intersection to allow for two moving lanes. Restripe the WB approach from one 11-foot travel lane, one 5-foot bike lane, and one 10-foot parking lane to one 11-foot left-through lane, one 5-foot bike lane, and one 10-foot right turn lane. **[Measures reflect geometric improvements needed to mitigate the intersection during the weekday PM peak period.]**
		-	-	-	-	-	-	-	-	R	0.43	17.8	B	
Essex Street	NB	LTR	0.38	17.9	B	LTR	0.40	18.2	B	LTR	0.40	18.2	B	
	SB	DefL	0.40	21.5	C	DefL	0.43	22.9	C	DefL	0.43	22.9	C	
		TR	0.29	17.5	B	TR	0.30	17.6	B	TR	0.30	17.6	B	
Overall Intersection		-	**0.58**	**22.5**	**C**	-	**0.66**	**26.5**	**C**	-	**0.65**	**24.4**	**C**	
22. GRAND STREET AND NORFOLK STREET														
Grand Street	EB	L	0.31	15.0	B	L	0.56	23.9	C	L	0.31	14.2	B	Install "No Standing Anytime" regulation along the north curb of the WB approach for 100-feet from the intersection to allow for two moving lanes. Restripe the WB approach from one 11-foot travel lane, one 5-foot bike lane, and one 10-foot parking lane to one 11-foot left-through lane, one 5-foot bike lane, and one 10-foot right turn lane.
		T	0.54	17.1	B	T	0.54	17.1	B	T	0.54	17.1	B	
	WB	TR	1.02	49.2	D	TR	1.19	115.9	F	T	0.53	15.3	B	
		-	-	-	-	-	-	-	-	R	0.63	17.6	B	
Overall Intersection		-	**1.01**	**37.0**	**D**	-	**1.19**	**80.9**	**F**	-	**0.63**	**16.4**	**B**	
23. GRAND STREET AND SUFFOLK STREET														
Grand Street	EB	T	0.49	15.9	B	T	0.49	15.9	B					Mitigation not required.
	WB	T	0.89	30.8	C	T	0.95	39.4	D					
Suffolk Street	SB	LR	0.10	19.2	B	LR	0.34	22.7	C					
Overall Intersection		-	**0.56**	**25.3**	**C**	-	**0.70**	**30.5**	**C**					
24. GRAND STREET AND CLINTON STREET														
Grand Street	EB	LTR	0.73	26.9	C	LTR	0.81	32.7	C					Mitigation not required.
	WB	L	0.05	11.8	B	L	0.06	11.8	B					
		T	0.70	21.0	C	T	0.75	22.7	C					
		R	0.68	25.7	C	R	0.75	30.2	C					
Clinton Street	NB	LTR	0.67	29.3	C	LTR	0.72	31.4	C					
	SB	LTR	0.02	17.0	B	LTR	0.04	17.2	B					
Overall Intersection		-	**0.70**	**24.5**	**C**	-	**0.77**	**27.6**	**C**					

2022 No Action vs. 2022 With Action vs. 2022 Mitigation Weekday AM Peak Hour Traffic Levels of Service (cont'd)

Intersection & Approach		2022 No Action				2022 With Action				2022 With Action with Mitigation				Mitigation Measures
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
SIGNALIZED INTERSECTIONS														
GRAND STREET														
25. GRAND STREET AND EAST BROADWAY														
Grand Street	EB	T	0.16	7.1	A	T	0.17	7.2	A					Mitigation not required.
	WB	LT	0.76	15.5	B	LT	0.81	17.7	B					
East Broadway	NB	R	0.00	6.1	A	R	0.00	6.1	A					
Overall Intersection		-	**0.76**	**13.9**	**B**	-	**0.81**	**15.7**	**B**					
UNSIGNALIZED INTERSECTIONS														
26. STANTON STREET AND LUDLOW STREET														
Stanton Street	EB	TR	-	8.0	A	TR	-	8.0	A					Mitigation not required.
Ludlow Street	SB	LT	-	9.2	A	LT	-	9.2	A					
Overall Intersection		-	**-**	**8.9**	**A**	-	**-**	**8.9**	**A**					
27. RIVINGTON STREET AND LUDLOW STREET														
Rivington Street	WB	LT	-	10.3	B	LT	-	10.3	B					Mitigation not required.
Ludlow Street	SB	TR	-	9.4	A	TR	-	9.5	A					
Overall Intersection		-	**-**	**9.9**	**A**	-	**-**	**10.0**	**A**					
28. BROOME STREET AND LUDLOW STREET														
Broome Street	EB	TR	-	10.5	B	TR	-	10.7	B					Mitigation not required.
Ludlow Street	SB	LT	-	7.5	A	LT	-	7.5	A					
Overall Intersection		-	**-**	**1.8**	**A**	-	**-**	**6.0**	**A**					
29. BROOME STREET AND SUFFOLK STREET														
Broome Street	WB	LT	-	7.3	A	LT	-	7.4	A					Mitigation not required.
Suffolk Street	SB	TR	-	10.9	B	TR	-	13.9	B					
Overall Intersection		-	**-**	**1.8**	**A**	-	**-**	**5.2**	**A**					
30. BROOME STREET AND CLINTON STREET														
Broome Street	NB	LTR	-	8.5	A	LTR	-	8.6	A					Mitigation not required.
	SB	LTR	-	8.8	A	LTR	-	8.8	A					
Overall Intersection		-	**-**	**6.0**	**A**	-	**-**	**5.9**	**A**					

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

2022 No Action vs. 2022 With Action vs. 2022 Mitigation Weekday Midday Peak Hour Traffic Levels of Service

Intersection & Approach		2022 No Action				2022 With Action				2022 With Action with Mitigation				Mitigation Measures
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
SIGNALIZED INTERSECTIONS														
EAST HOUSTON STREET														
1. EAST HOUSTON STREET AND BOWERY														
East Houston Street	EB	L	0.43	32.5	C	L	0.43	32.7	C					Mitigation not required.
		TR	0.77	31.2	C	TR	0.80	32.1	C					
	WB	L	0.79	42.1	D	L	0.80	43.5	D					
		TR	0.89	34.6	C	TR	0.92	36.7	D					
Bowery	NB	L	0.50	29.2	C	L	0.50	29.2	C					
		TR	0.74	35.0	C	TR	0.75	35.3	D					
	SB	L	0.41	25.4	C	L	0.41	25.6	C					
		TR	0.82	38.0	D	TR	0.82	38.0	D					
Overall Intersection		-	**0.90**	**34.2**	**C**	-	**0.90**	**35.2**	**D**					
2. EAST HOUSTON STREET AND CHRYSTIE STREET / SECOND AVENUE														
East Houston Street	EB	T	0.77	33.9	C	T	0.79	34.7	C					Mitigation not required.
		R	0.70	39.9	D	R	0.74	41.8	D					
	WB	L	0.58	45.4	D	L	0.63	50.4	D					
		T	0.66	30.5	C	T	0.69	31.2	C					
Chrystie Street / Second Avenue	NB	L	0.55	35.1	D	L	0.56	35.3	D					
		LR	0.60	38.2	D	LR	0.60	38.2	D					
	SB	L	0.84	36.6	D	L	0.85	36.7	D					
		LT	0.86	35.3	D	LT	0.90	36.4	D					
		R	1.14	100.0	F	R	1.14	100.0	F					
Overall Intersection		-	**0.82**	**42.2**	**D**	-	**0.83**	**42.7**	**D**					
3. EAST HOUSTON STREET AND ALLEN STREET / FIRST AVENUE														
East Houston Street	EB	L	0.81	33.5	C	L	0.83	34.8	C					Mitigation not required.
		T	0.88	30.9	C	T	0.91	31.7	C					
		R	1.29	165.2	F	R	1.29	165.2	F					
	WB	L	0.27	26.2	C	L	0.27	26.9	C					
		TR	0.87	38.9	D	TR	0.91	43.3	D					
Allen Street	NB	L	0.46	29.4	C	L	0.48	29.9	C					
		T	0.77	34.9	C	T	0.78	35.5	D					
		R	0.29	28.0	C	R	0.29	28.0	C					
Overall Intersection		-	**0.97**	**47.0**	**D**	-	**0.99**	**48.3**	**D**					

2022 No Action vs. 2022 With Action vs. 2022 Mitigation Weekday Midday Peak Hour Traffic Levels of Service (cont'd)

Intersection & Approach		2022 No Action				2022 With Action				2022 With Action with Mitigation				Mitigation Measures
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
SIGNALIZED INTERSECTIONS														
EAST HOUSTON STREET														
4. EAST HOUSTON STREET AND ESSEX STREET / AVENUE A														
East Houston Street	EB	L	0.42	14.3	B	L	0.45	14.8	B	L	0.47	15.6	B	Modify signal timing: Shift 1 s of green time from EB / WB phase to the NB / SB phase [EB / WB green time shifts from 32 s to 31 s; NB / SB green time shifts from 27 s to 28 s; signal timing during all other phases remain the same].
		TR	0.80	27.8	C	TR	0.83	28.7	C	TR	0.86	30.2	C	
	WB	L	0.74	31.0	C	L	0.76	32.6	C	L	0.78	35.6	D	
		T	0.62	26.2	C	T	0.65	27.0	C	T	0.67	28.2	C	
		R	0.10	19.8	B	R	0.11	19.9	B	R	0.11	20.6	C	
Essex Street / Avenue A	NB	LTR	0.77	35.3	D	LTR	0.81	37.2	D	LTR	0.77	34.4	C	
	SB	LTR	1.06	68.3	E	LTR	1.15	101.6	F	LTR	1.07	71.5	E	
Overall Intersection		-	**0.85**	**33.6**	**C**	-	**0.91**	**39.4**	**D**	-	**0.90**	**35.8**	**D**	
STANTON STREET														
5. STANTON STREET AND ESSEX STREET														
Stanton Street	EB	LTR	0.48	27.7	C	LTR	0.50	28.3	C					Mitigation not required.
Essex Street	NB	TR	0.25	11.2	B	TR	0.27	11.4	B					
	SB	LT	0.36	12.0	B	LT	0.39	12.4	B					
Overall Intersection		-	**0.40**	**14.5**	**B**	-	**0.43**	**14.7**	**B**					
6. STANTON STREET AND NORFOLK STREET														
Stanton Street	EB	LT	0.19	15.9	B	LT	0.21	16.1	B					Mitigation not required.
Norfolk Street	NB	TR	0.51	20.6	C	TR	0.63	23.8	C					
Overall Intersection		-	**0.35**	**19.3**	**B**	-	**0.42**	**21.8**	**C**					
RIVINGTON STREET														
7. RIVINGTON STREET AND ESSEX STREET														
Rivington Street	WB	LTR	0.64	32.4	C	LTR	0.80	41.9	D					Mitigation not required.
Essex Street	NB	LT	0.28	11.3	B	LT	0.30	11.4	B					
	SB	TR	0.42	13.1	B	TR	0.45	13.5	B					
Overall Intersection		-	**0.50**	**16.7**	**B**	-	**0.58**	**19.5**	**B**					
8. RIVINGTON STREET AND NORFOLK STREET														
Rivington Street	WB	TR	0.20	16.2	B	TR	0.22	16.5	B					Mitigation not required.
Norfolk Street	NB	LT	0.63	20.9	C	LT	0.82	26.5	C					
Overall Intersection		-	**0.41**	**20.0**	**B**	-	**0.52**	**24.6**	**C**					

2022 No Action vs. 2022 With Action vs. 2022 Mitigation Weekday Midday Peak Hour Traffic Levels of Service (cont'd)

Intersection & Approach		2022 No Action				2022 With Action				2022 With Action with Mitigation				Mitigation Measures
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
SIGNALIZED INTERSECTIONS														
DELANCEY STREET														
9. DELANCEY STREET AND ALLEN STREET														
	EB	TR	0.82	27.9	C	TR	0.86	29.3	C	TR	0.86	29.3	C	Modify signal phasing: Allow the NB-right turn movement during the WB-lead phase. Signal timing remains the same during all peak hours.
	WB	L	0.75	41.9	D	L	0.77	43.1	D	L	0.77	43.1	D	
Delancey Street		TR	0.79	14.9	B	TR	0.80	15.2	B	TR	0.80	15.2	B	
	NB	T	0.67	34.7	C	T	0.71	35.7	D	TR	0.71	35.7	D	
Allen Street		R	0.79	50.6	D	R	0.87	61.4	E	R	0.37	15.5	B	
	SB	TR	0.71	33.8	C	TR	0.71	33.9	C	TR	0.71	33.9	C	
Overall Intersection		-	**0.79**	**25.4**	**C**	-	**0.84**	**26.6**	**C**	-	**0.79**	**24.9**	**C**	
10. DELANCEY STREET AND ORCHARD STREET														
	EB	T	0.57	11.4	B	T	0.59	11.7	B					Mitigation not required.
Delancey Street	WB	TR	0.72	13.6	B	TR	0.72	13.8	B					
Orchard Street	NB	LTR	0.34	27.9	C	LTR	0.34	27.9	C					
Overall Intersection		-	**0.59**	**13.1**	**B**	-	**0.60**	**13.3**	**B**					
11. DELANCEY STREET AND LUDLOW STREET														
	EB	TR	0.58	11.7	B	TR	0.61	12.1	B	TR	0.63	13.5	B	Modify signal timing: Shift 2 s of green time from EB / WB phase to the SB phase [EB / WB green time shifts from 54 s to 52 s; SB green time shifts from 26 s to 28 s].
Delancey Street	WB	T	0.73	13.2	B	T	0.74	13.4	B	T	0.77	14.9	B	
Ludlow Street	SB	LTR	1.00	84.2	F	LTR	1.10	114.2	F	LTR	1.01	85.5	F	
Overall Intersection		-	**0.82**	**17.7**	**B**	-	**0.86**	**20.0**	**B**	-	**0.85**	**19.4**	**B**	
12. DELANCEY STREET AND ESSEX STREET														
	EB	TR	0.68	16.5	B	TR	0.71	17.0	B					**Unmitigatable Impact**
Delancey Street	WB	TR	0.96	23.6	C	TR	0.97	24.4	C					
	NB	LTR	0.77	41.8	D	LTR	0.97	68.0	E					
Essex Street	SB	DefL	1.10	116.6	F	DefL	1.46	260.7	F					
		TR	0.76	44.4	D	TR	0.90	60.2	E					
Overall Intersection		-	**1.02**	**27.6**	**C**	-	**1.17**	**39.0**	**D**					
13. DELANCEY STREET AND NORFOLK STREET														
	EB	T	0.72	14.2	B	T	0.76	15.0	B	T	0.82	18.8	B	Install "No Standing 11 AM - 2 PM Mon - Fri" regulation along the north curb of the WB approach for 100-feet from the intersection to provide daylighting. Modify signal timing: Shift 4 s of green time from EB / WB phase to the NB phase [EB / WB greentime shifts from 53 s to 49 s; NB green time shifts from 27 s to 31 s].
Delancey Street	WB	TR	0.98	27.9	C	TR	1.01	33.5	C	TR	1.02	38.8	D	
		TR	0.77	40.3	D	TR	1.00	71.9	E	TR	0.87	44.4	D	
Norfolk Street	NB	R	0.82	44.7	D	R	1.01	76.6	E	R	0.88	46.8	D	
Overall Intersection		-	**0.93**	**24.2**	**C**	-	**1.01**	**31.9**	**C**	-	**0.96**	**31.9**	**C**	

2022 No Action vs. 2022 With Action vs. 2022 Mitigation Weekday Midday Peak Hour Traffic Levels of Service (cont'd)

Intersection & Approach		2022 No Action				2022 With Action				2022 With Action with Mitigation				Mitigation Measures
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
SIGNALIZED INTERSECTIONS														
DELANCEY STREET														
14. DELANCEY STREET AND SUFFOLK STREET														
	EB	T	0.81	16.1	B	T	0.83	16.4	B					Mitigation not required.
Delancey Street	WB	T	0.78	14.8	B	T	0.79	15.0	B					
Delancey Street Service Road	EB	TR	0.14	8.5	A	TR	0.45	11.5	B					
Suffolk Street	SB	R	0.06	22.8	C	R	0.08	23.2	C					
Overall Intersection		-	**0.56**	**15.3**	**B**	-	**0.58**	**15.5**	**B**					
15. DELANCEY STREET AND CLINTON STREET														
Delancey Street	EB	T	0.74	11.6	B	T	0.75	11.8	B					Mitigation not required.
		T	0.89	18.3	B	T	0.90	19.0	B					
Williamsburg Bridge	WB	R	0.89	40.8	D	R	0.91	43.3	D					
Delancey Street Service Road	EB	TR	0.12	6.4	A	TR	0.16	6.7	A					
	WB	TR	0.69	59.2	E	TR	0.73	62.8	E					
Clinton Street	NB	R	0.09	26.8	C	R	0.09	26.8	C					
Overall Intersection		-	**0.67**	**17.8**	**B**	-	**0.68**	**18.4**	**B**					
BROOME STREET														
16. BROOME STREET AND ESSEX STREET														
Broome Street	EB	LTR	0.13	20.9	C	LTR	0.19	21.8	C	LTR	0.19	21.8	C	Mitigation not required.
	NB	TR	0.28	11.4	B	TR	0.32	11.9	B	TR	0.48	23.6	C	Modify signal phasing: Add a new lead phase for the SB approach. The existing signal phasing [EB phase has 31 s of green time; NB / SB phase has 49 s of green time] would be modified to the following: EB phase will have 31 s of green time, SB-lead phase will have 11 s of green time, and NB / SB phase will have 33 s of green [each phase will have 3 s amber and 2 s all red].[Measures reflect signal phasing improvements needed to mitigate the intersection during the weekday PM peak period.]
Essex Street	SB	L	0.10	10.2	B	L	0.28	12.7	B	L	0.23	11.5	B	
		T	0.25	11.3	B	T	0.25	11.3	B	T	0.25	11.3	B	
Overall Intersection		-	**0.22**	**12.1**	**B**	-	**0.27**	**12.7**	**B**	-	**0.37**	**19.1**	**B**	

2022 No Action vs. 2022 With Action vs. 2022 Mitigation Weekday Midday Peak Hour Traffic Levels of Service (cont'd)

Intersection & Approach		2022 No Action				2022 With Action				2022 With Action with Mitigation				Mitigation Measures
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
SIGNALIZED INTERSECTIONS														
BROOME STREET														
17. BROOME STREET AND NORFOLK STREET														
Broome Street	EB	L	0.09	10.0	B	L	0.15	10.6	B					Mitigation not required.
	WB	R	0.32	12.5	B	R	0.36	13.0	B					
Norfolk Street	NB	T	0.71	28.8	C	T	0.91	39.0	D					
Overall Intersection		-	**0.47**	**21.2**	**C**	-	**0.57**	**27.1**	**C**					
GRAND STREET														
18. GRAND STREET AND ALLEN STREET														
Grand Street	EB	LTR	1.14	97.5	F	LTR	1.31	172.7	F	LTR	1.12	87.8	F	**Option 1** Install "No Standing 11 AM - 2 PM Mon - Fri" regulation along the north curb of the WB approach for 85-feet from the intersection to provide daylighting. Modify signal timing: Shift 3 s of green time from NB / SB phase to the EB / WB phase; shift 1 s from the NB / SB phase to SB-lead phase [EB / WB green time shifts from 27 s to 30 s; SB-lead phase green time shifts from 10 s to 11 s, NB / SB green time shifts from 23 s to 19 s, NB-lead phase green time remains the same].
	WB	LTR	0.90	57.9	E	LTR	1.09	106.2	F	LTR	0.75	36.1	D	
Allen Street	NB	L	0.39	44.2	D	L	0.39	44.2	D	L	0.39	44.2	D	
		TR	0.45	19.9	B	TR	0.46	20.1	C	TR	0.52	23.7	C	
	SB	L	1.07	111.1	F	L	1.11	125.3	F	L	1.01	91.8	F	
		TR	0.74	24.9	C	TR	0.75	24.9	C	TR	0.82	29.4	C	
Overall Intersection		-	**0.84**	**47.8**	**D**	-	**0.90**	**70.7**	**E**	-	**0.88**	**44.5**	**D**	
										LTR	1.02	49.1	D	**Option 2** Modify signal phasing: The existing signal phasing [EB / WB phase has 27 s of green; SB-lead phase has 10 s of green; NBTR / SBTR phase has 23 s of green; NB-lag phase has 10 s of green] would be modified to the following: EB / WB phase will have 32 s of green time; NBL / SBL phase will have 11 s of green time; NBTR / SBTR phase will have 32 s of green time [each phase will have 3 s amber and 2 s all red]. Pedestrians are not allowed to cross during the NBL / SBL phase.
										LTR	0.91	53.5	D	
										L	0.35	41.8	D	
										TR	0.55	25.7	C	
										L	1.01	91.8	F	
										TR	0.90	37.0	D	
										-	**0.97**	**44.3**	**D**	

2022 No Action vs. 2022 With Action vs. 2022 Mitigation Weekday Midday Peak Hour Traffic Levels of Service (cont'd)

Intersection & Approach		2022 No Action				2022 With Action				2022 With Action with Mitigation				Mitigation Measures
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
SIGNALIZED INTERSECTIONS														
GRAND STREET														
19. GRAND STREET AND ORCHARD STREET														
	EB	LT	0.71	21.7	C	LT	0.85	25.5	C					Mitigation not required.
Grand Street	WB	TR	0.55	21.8	C	TR	0.65	25.0	C					
Orchard Street	NB	LTR	0.15	15.4	B	LTR	0.15	15.4	B					
Overall Intersection		-	**0.43**	**21.0**	**C**	-	**0.50**	**24.3**	**C**					
20. GRAND STREET AND LUDLOW STREET														
	EB	TR	0.66	24.5	C	TR	0.76	28.4	C					Mitigation not required.
Grand Street	WB	LT	0.37	17.8	B	LT	0.48	19.6	B					
Ludlow Street	SB	LTR	0.27	17.2	B	LTR	0.29	17.5	B					
Overall Intersection		-	**0.46**	**20.8**	**C**	-	**0.52**	**23.3**	**C**					
21. GRAND STREET AND ESSEX STREET														
Grand Street	EB	LTR	0.65	25.0	C	LTR	0.78	30.8	C	LTR	0.77	30.5	C	Mitigation not required. Install "No Standing Anytime" regulation along the north curb of the WB approach for 100-feet from the intersection to allow for two moving lanes. Restripe the WB approach from one 11-foot travel lane, one 5-foot bike lane, and one 10-foot parking lane to one 11-foot left-through lane, one 5-foot bike lane, and one 10-foot right turn lane.[Measures reflect geometric improvements needed to mitigate the intersection during the weekday PM peak period.]
	WB	LTR	0.64	20.5	C	LTR	0.90	28.8	C	LT	0.46	17.9	B	
		-	-	-	-	-	-	-	-	R	0.44	18.1	B	
Essex Street	NB	LTR	0.30	16.9	B	LTR	0.33	17.2	B	LTR	0.33	17.2	B	
	SB	LTR	0.33	17.6	B	LTR	0.37	18.4	B	LTR	0.37	18.4	B	
Overall Intersection		-	**0.49**	**20.2**	**C**	-	**0.64**	**24.9**	**C**	-	**0.57**	**21.3**	**C**	
22. GRAND STREET AND NORFOLK STREET														
Grand Street	EB	L	0.23	13.5	B	L	0.53	23.0	C	L	0.29	13.8	B	Install "No Standing Anytime" regulation along the north curb of the WB approach for 100-feet from the intersection to allow for two moving lanes. Restripe the WB approach from one 11-foot travel lane, one 5-foot bike lane, and one 10-foot parking lane to one 11-foot left-through lane, one 5-foot bike lane, and one 10-foot right turn lane.
		T	0.43	15.2	B	T	0.44	15.3	B	T	0.44	15.3	B	
	WB	TR	0.97	39.3	D	TR	1.22	128.2	F	T	0.51	15.2	B	
		-	-	-	-	-	-	-	-	R	0.67	19.1	B	
Overall Intersection		-	**0.98**	**31.0**	**C**	-	**1.23**	**92.9**	**F**	-	**0.67**	**16.4**	**B**	

2022 No Action vs. 2022 With Action vs. 2022 Mitigation Weekday Midday Peak Hour Traffic Levels of Service (cont'd)

Intersection & Approach		2022 No Action				2022 With Action				2022 With Action with Mitigation				Mitigation Measures
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
SIGNALIZED INTERSECTIONS														
GRAND STREET														
23. GRAND STREET AND SUFFOLK STREET														
Grand Street	EB	T	0.38	14.3	B	T	0.38	14.4	B					Mitigation not required.
	WB	T	0.85	27.6	C	T	0.95	38.4	D					
Suffolk Street	SB	LR	0.06	18.7	B	LR	0.39	23.6	C					
Overall Intersection		-	**0.53**	**23.6**	**C**	-	**0.72**	**30.5**	**C**					
24. GRAND STREET AND CLINTON STREET														
Grand Street	EB	LTR	0.55	19.6	B	LTR	0.68	24.3	C					Mitigation not required.
	WB	L	0.06	11.8	B	L	0.07	12.0	B					
		T	0.72	21.8	C	T	0.79	24.8	C					
		R	0.47	17.8	B	R	0.55	20.3	C					
Clinton Street	NB	LTR	0.46	24.2	C	LTR	0.53	26.3	C					
	SB	LTR	0.03	17.1	B	LTR	0.06	17.4	B					
Overall Intersection		-	**0.60**	**20.8**	**C**	-	**0.68**	**23.9**	**C**					
25. GRAND STREET AND EAST BROADWAY														
Grand Street	EB	T	0.13	6.9	A	T	0.14	6.9	A					Mitigation not required.
	WB	LT	0.82	17.2	B	LT	0.90	21.9	C					
East Broadway	NB	R	0.00	6.1	A	R	0.00	6.1	A					
Overall Intersection		-	**0.82**	**15.7**	**B**	-	**0.90**	**19.7**	**B**					
UNSIGNALIZED INTERSECTIONS														
26. STANTON STREET AND LUDLOW STREET														
Stanton Street	EB	TR	-	9.0	A	TR	-	9.0	A					Mitigation not required.
Ludlow Street	SB	LT	-	10.8	B	LT	-	10.9	B					
Overall Intersection		-	**-**	**10.3**	**B**	-	**-**	**10.3**	**B**					
27. RIVINGTON STREET AND LUDLOW STREET														
Rivington Street	WB	LT	-	9.7	A	LT	-	9.7	A					Mitigation not required.
Ludlow Street	SB	TR	-	10.2	B	TR	-	10.3	B					
Overall Intersection		-	**-**	**10.0**	**A**	-	**-**	**10.1**	**B**					
28. BROOME STREET AND LUDLOW STREET														
Broome Street	EB	TR	-	14.0	B	TR	-	14.5	B					Mitigation not required.
Ludlow Street	SB	LT	-	7.4	A	LT	-	7.5	A					
Overall Intersection		-	**-**	**1.3**	**A**	-	**-**	**4.6**	**A**					

2022 No Action vs. 2022 With Action vs. 2022 Mitigation Weekday Midday Peak Hour Traffic Levels of Service (cont'd)

Intersection & Approach		2022 No Action				2022 With Action				2022 With Action with Mitigation				Mitigation Measures
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
UNSIGNALIZED INTERSECTIONS														
29. BROOME STREET AND SUFFOLK STREET														
Broome Street	WB	LT	-	7.3	A	LT	-	7.3	A					Mitigation not required.
Suffolk Street	SB	TR	-	10.2	B	TR	-	12.2	B					
Overall Intersection		-	**-**	**1.3**	**A**	-	**-**	**5.5**	**A**					
30. BROOME STREET AND CLINTON STREET														
Broome Street	NB	LTR	-	8.7	A	LTR	-	8.8	A					Mitigation not required.
	SB	LTR	-	9.3	A	LTR	-	9.3	A					
Overall Intersection		-	**-**	**6.4**	**A**	-	**-**	**5.9**	**A**					

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

2022 No Action vs. 2022 With Action vs. 2022 Mitigation Weekday PM Peak Hour Traffic Levels of Service

Intersection & Approach		2022 No Action				2022 With Action				2022 With Action with Mitigation				Mitigation Measures
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
SIGNALIZED INTERSECTIONS														
EAST HOUSTON STREET														
1. EAST HOUSTON STREET AND BOWERY														
East Houston Street	EB	L	0.41	33.1	C	L	0.41	33.5	C	L	0.43	34.5	C	Modify signal timing: Shift 1 s of green time from EBL / WBL lag phase to the EB / WB phase [EB / WB green time shifts from 29 s to 30 s; EBL / WBL lag phase green time shifts from 8 s to 7 s; signal timing during all other phases remain the same].
		TR	0.74	30.2	C	TR	0.77	31.0	C	TR	0.74	29.5	C	
	WB	L	0.70	39.8	D	L	0.71	41.3	D	L	0.74	43.3	D	
		TR	1.04	64.3	E	TR	1.09	79.6	E	TR	1.05	65.7	E	
Bowery	NB	L	0.80	50.1	D	L	0.80	50.1	D	L	0.80	50.1	D	
		TR	0.68	33.0	C	TR	0.68	33.1	C	TR	0.68	33.1	C	
	SB	L	0.48	26.8	C	L	0.48	27.0	C	L	0.48	27.0	C	
		TR	1.00	53.8	D	TR	1.00	53.8	D	TR	1.00	53.8	D	
Overall Intersection		-	**0.95**	**47.1**	**D**	-	**0.95**	**52.5**	**D**	-	**0.96**	**47.7**	**D**	
2. EAST HOUSTON STREET AND CHRYSTIE STREET / SECOND AVENUE														
East Houston Street	EB	T	0.72	32.4	C	T	0.74	33.2	C	T	0.72	31.7	C	Modify signal timing: Shift 1 s of green time from NB phase to the EB / WB phase and 1 s of green time from NB phase to the SB phase [EB / WB green time shifts from 26 s to 27 s; NB phase green time shifts from 21 s to 19 s; SB phase green time shifts from 20 s to 21s].
		R	1.07	105.1	F	R	1.14	125.7	F	R	1.09	106.4	F	
	WB	L	0.84	75.1	E	L	0.90	88.6	F	L	0.85	74.5	E	
		T	0.64	30.1	C	T	0.68	30.9	C	T	0.65	29.7	C	
Chrystie Street / Second Avenue	NB	L	0.68	37.3	D	L	0.69	37.6	D	L	0.76	42.7	D	
		LR	0.68	39.0	D	LR	0.68	39.0	D	LR	0.75	44.7	D	
	SB	L	1.06	77.3	E	L	1.06	78.5	E	L	1.00	58.8	E	
		LT	1.12	92.3	F	LT	1.15	107.1	F	LT	1.01	83.3	F	
		R	1.07	77.8	E	R	1.07	77.8	E	R	1.02	61.4	E	
Overall Intersection		-	**0.97**	**59.4**	**E**	-	**1.01**	**64.6**	**E**	-	**1.01**	**54.9**	**D**	
3. EAST HOUSTON STREET AND ALLEN STREET / FIRST AVENUE														
East Houston Street	EB	L	0.85	44.2	D	L	0.88	48.0	D					**Unmitigatable Impact**
		T	0.84	33.0	C	T	0.87	34.5	C					
		R	0.90	53.4	D	R	0.90	53.4	D					
	WB	L	0.36	27.6	C	L	0.37	28.6	C					
		TR	0.83	35.0	C	TR	0.88	38.7	D					
Allen Street	NB	L	0.39	28.1	C	L	0.43	28.7	C					
		T	0.99	56.0	E	T	1.01	60.2	E					
		R	0.19	26.1	C	R	0.19	26.1	C					
Overall Intersection		-	**0.95**	**40.8**	**D**	-	**0.97**	**43.4**	**D**					

2022 No Action vs. 2022 With Action vs. 2022 Mitigation Weekday PM Peak Hour Traffic Levels of Service (cont'd)

Intersection & Approach		2022 No Action				2022 With Action				2022 With Action with Mitigation				Mitigation Measures
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
SIGNALIZED INTERSECTIONS														
EAST HOUSTON STREET														
4. EAST HOUSTON STREET AND ESSEX STREET / AVENUE A														
East Houston Street	EB	L	0.30	14.6	B	L	0.33	15.3	B	L	0.32	15.9	B	Modify signal timing: Shift 2 s of green time from EB / WB phase to the EBL / WBL lead phase and 1 s of green time from EB / WB phase to the NB / SB phase [EBL / WBL lead phase green time shifts from 9 s to 11 s; EB / WB green time shifts from 32 s to 29 s; NB / SB green time shifts from 27 s to 28 s; LPI remains the same].
		TR	0.77	29.0	C	TR	0.81	30.4	C	TR	0.90	37.4	D	
	WB	L	1.00	83.9	F	L	1.02	90.5	F	L	0.99	67.1	E	
		T	0.65	26.7	C	T	0.70	27.8	C	T	0.77	32.1	C	
		R	0.26	22.0	C	R	0.27	22.2	C	R	0.30	24.9	C	
Essex Street / Avenue A	NB	LTR	0.74	33.7	C	LTR	0.77	35.1	D	LTR	0.74	32.8	C	
	SB	LTR	0.96	48.7	D	LTR	1.03	65.5	E	LTR	0.97	48.4	D	
Overall Intersection		-	**0.99**	**36.0**	**D**	-	**1.04**	**39.5**	**D**	-	**1.05**	**38.1**	**D**	
STANTON STREET														
5. STANTON STREET AND ESSEX STREET														
Stanton Street	EB	LTR	0.28	23.3	C	LTR	0.29	23.4	C					Mitigation not required.
Essex Street	NB	TR	0.32	11.9	B	TR	0.34	12.1	B					
	SB	LT	0.39	12.3	B	LT	0.42	12.6	B					
Overall Intersection		-	**0.35**	**13.2**	**B**	-	**0.37**	**13.4**	**B**					
6. STANTON STREET AND NORFOLK STREET														
Stanton Street	EB	LT	0.16	15.5	B	LT	0.17	15.6	B					Mitigation not required.
Norfolk Street	NB	TR	0.41	18.9	B	TR	0.54	21.3	C					
Overall Intersection		-	**0.29**	**17.8**	**B**	-	**0.35**	**19.8**	**B**					
RIVINGTON STREET														
7. RIVINGTON STREET AND ESSEX STREET														
Rivington Street	WB	LTR	0.75	37.6	D	LTR	0.86	47.8	D	LTR	0.83	43.5	D	Modify signal timing: Shift 1 s of green time from NB / SB phase to the WB phase [WB green time shifts from 31 s to 32 s; NB / SB green time shifts from 49 s to 48 s].
Essex Street	NB	LT	0.33	11.5	B	LT	0.35	11.7	B	LT	0.36	12.2	B	
	SB	TR	0.44	13.4	B	TR	0.48	13.8	B	TR	0.49	14.6	B	
Overall Intersection		-	**0.56**	**18.4**	**B**	-	**0.63**	**21.4**	**C**	-	**0.63**	**20.8**	**C**	
8. RIVINGTON STREET AND NORFOLK STREET														
Rivington Street	WB	TR	0.45	19.8	B	TR	0.47	20.1	C					Mitigation not required.
Norfolk Street	NB	LT	0.56	19.2	B	LT	0.75	22.7	C					
Overall Intersection		-	**0.50**	**19.5**	**B**	-	**0.61**	**21.7**	**C**					

2022 No Action vs. 2022 With Action vs. 2022 Mitigation Weekday PM Peak Hour Traffic Levels of Service (cont'd)

Intersection & Approach		2022 No Action				2022 With Action				2022 With Action with Mitigation				Mitigation Measures
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
SIGNALIZED INTERSECTIONS														
DELANCEY STREET														
9. DELANCEY STREET AND ALLEN STREET														
Delancey Street	EB	TR	1.08	72.0	E	TR	1.11	85.6	F	TR	1.11	85.6	F	**Partially Mitigated.**
	WB	L	0.73	43.9	D	L	0.75	44.8	D	L	0.75	44.8	D	Modify signal phasing: Allow the NB-right turn movement during the WB-lead phase. Signal timing remains the same during all peak hours. **[Measures reflect signal phasing improvements needed to mitigate the intersection during the weekday midday peak period.]**
		TR	1.01	39.6	D	TR	1.02	42.4	D	TR	1.02	42.4	D	
Allen Street	NB	T	0.66	33.8	C	T	0.70	34.8	C	TR	0.70	34.8	C	
		R	1.00	84.9	F	R	1.11	119.0	F	R	0.48	17.2	B	
	SB	TR	0.56	31.7	C	TR	0.56	31.7	C	TR	0.56	31.7	C	
Overall Intersection		-	**1.01**	**53.0**	**D**	-	**1.05**	**60.9**	**E**	-	**0.92**	**56.6**	**E**	
10. DELANCEY STREET AND ORCHARD STREET														
Delancey Street	EB	T	0.66	12.3	B	T	0.68	12.6	B					Mitigation not required.
	WB	TR	0.82	15.6	B	TR	0.82	15.7	B					
Orchard Street	NB	LTR	0.33	27.4	C	LTR	0.33	27.4	C					
Overall Intersection		-	**0.66**	**14.4**	**B**	-	**0.66**	**14.6**	**B**					
11. DELANCEY STREET AND LUDLOW STREET														
Delancey Street	EB	TR	0.70	13.3	B	TR	0.73	13.8	B	TR	0.75	15.4	B	Modify signal timing: Shift 2 s of green time from EB / WB phase to the SB phase [EB / WB green time shifts from 54 s to 52 s; SB green time shifts from 26 s to 28 s].
	WB	T	0.79	14.1	B	T	0.79	14.1	B	T	0.82	15.8	B	
Ludlow Street	SB	LTR	1.25	168.9	F	LTR	1.32	200.4	F	LTR	1.22	156.4	F	
Overall Intersection		-	**0.94**	**24.0**	**C**	-	**0.97**	**26.3**	**C**	-	**0.96**	**25.0**	**C**	
12. DELANCEY STREET AND ESSEX STREET														
Delancey Street	EB	TR	1.00	39.4	D	TR	1.03	46.3	D					**Unmitigatable Impact**
	WB	TR	1.05	54.8	D	TR	1.06	56.9	E					
Essex Street	NB	LTR	1.02	75.7	E	LTR	1.20	140.1	F					
	SB	LTR	1.00	70.7	E	LTR	1.15	119.3	F					
Overall Intersection		-	**1.04**	**51.9**	**D**	-	**1.11**	**65.7**	**E**					
13. DELANCEY STREET AND NORFOLK STREET														
Delancey Street	EB	T	1.06	53.4	D	T	1.08	63.3	E					**Unmitigatable Impact**
	WB	TR	1.00	29.0	C	TR	1.01	32.7	C					
Norfolk Street	NB	TR	1.01	71.5	E	TR	1.27	166.4	F					
		R	1.02	74.4	E	R	1.27	165.4	F					
Overall Intersection		-	**1.04**	**45.1**	**D**	-	**1.15**	**66.0**	**E**					

2022 No Action vs. 2022 With Action vs. 2022 Mitigation Weekday PM Peak Hour Traffic Levels of Service (cont'd)

Intersection & Approach		2022 No Action				2022 With Action				2022 With Action with Mitigation				Mitigation Measures
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
SIGNALIZED INTERSECTIONS														
DELANCEY STREET														
14. DELANCEY STREET AND SUFFOLK STREET														
Delancey Street	EB	T	1.07	52.7	D	T	1.08	59.3	E					**Unmitigatable Impact**
	WB	T	0.85	16.0	B	T	0.85	16.1	B					
Delancey Street Service Road	EB	TR	0.13	8.3	A	TR	0.41	10.6	B					
Suffolk Street	SB	R	0.21	25.0	C	R	0.28	26.9	C					
Overall Intersection		-	**0.78**	**35.4**	**D**	-	**0.81**	**38.4**	**D**					
15. DELANCEY STREET AND CLINTON STREET														
Delancey Street	EB	T	1.06	48.7	D	T	1.07	54.7	D					**Unmitigatable Impact**
Williamsburg Bridge	WB	T	1.07	55.1	E	T	1.08	57.9	E					
		R	1.07	80.0	F	R	1.09	86.8	F					
Delancey Street Service Road	EB	TR	0.09	6.2	A	TR	0.14	6.5	A					
	WB	TR	0.93	83.1	F	TR	0.93	82.9	F					
Clinton Street	NB	R	0.16	27.7	C	R	0.16	27.7	C					
Overall Intersection		-	**0.82**	**53.9**	**D**	-	**0.83**	**58.3**	**E**					
BROOME STREET														
16. BROOME STREET AND ESSEX STREET														
Broome Street	EB	LTR	0.13	20.9	C	LTR	0.18	21.8	C	LTR	0.18	21.8	C	Modify signal phasing: Add a new lead phase for the SB approach. The existing signal phasing [EB phase has 31 s of green time; NB / SB phase has 49 s of green time] would be modified to the following: EB phase will have 31 s of green time, SB-lead phase will have 11 s of green time, and NB / SB phase will have 33 s of green [each phase will have 3 s amber and 2 s all red].
Essex Street	NB	TR	0.43	12.9	B	TR	0.47	13.4	B	TR	0.71	27.6	C	
	SB	L	0.84	23.1	C	L	1.22	126.1	F	L	0.97	44.5	D	
		T	0.29	11.3	B	T	0.31	11.4	B	T	0.31	11.4	B	
Overall Intersection		-	**0.57**	**14.9**	**B**	-	**0.82**	**38.7**	**D**	-	**0.65**	**27.7**	**C**	
17. BROOME STREET AND NORFOLK STREET														
Broome Street	EB	L	0.65	36.7	D	L	0.85	48.1	D	L	0.78	40.6	D	Modify signal timing: Shift 2 s of green time from NB phase to the EB / WB phase [EB / WB green time shifts from 49 s to 51 s; NB green time shifts from 31 s to 29 s].
	WB	R	0.93	68.8	E	R	1.04	95.6	F	R	0.96	71.0	E	
Norfolk Street	NB	T	0.64	26.7	C	T	0.81	31.1	C	T	0.87	35.2	D	
Overall Intersection		-	**0.77**	**43.6**	**D**	-	**0.91**	**55.7**	**E**	-	**0.91**	**47.8**	**D**	

2022 No Action vs. 2022 With Action vs. 2022 Mitigation Weekday PM Peak Hour Traffic Levels of Service (cont'd)

Intersection & Approach		2022 No Action				2022 With Action				2022 With Action with Mitigation				Mitigation Measures
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
GRAND STREET														
18. GRAND STREET AND ALLEN STREET														
Grand Street	EB	LTR	0.98	57.5	E	LTR	1.12	100.5	F	LTR	0.97	52.3	D	**Option 1** Modify signal timing: Shift 3 s of green time from NB / SB phase to the EB / WB phase; shift 1 s from the NB / SB phase to SB-lead phase [EB / WB green time shifts from 27 s to 30 s; SB-lead phase green time shifts from 10 s to 11 s, NB / SB green time shifts from 23 s to 19 s, NB-lead phase green time remains the same].
	WB	LTR	0.65	35.6	D	LTR	0.87	52.2	D	LTR	0.78	40.1	D	
Allen Street	NB	L	0.26	39.8	D	L	0.26	39.8	D	L	0.26	39.8	D	
		TR	0.59	21.9	C	TR	0.60	22.1	C	TR	0.67	26.3	C	
	SB	L	0.95	86.0	F	L	0.98	92.8	F	L	0.89	71.7	E	
		TR	0.64	22.7	C	TR	0.64	22.7	C	TR	0.70	26.1	C	
Overall Intersection		-	**0.78**	**34.6**	**C**	-	**0.84**	**44.8**	**D**	-	**0.82**	**36.1**	**D**	
										LTR	0.89	39.4	D	**Option 2** Modify signal phasing: The existing signal phasing [EB / WB phase has 27 s of green; SB-lead phase has 10 s of green; NBTR / SBTR phase has 23 s of green; NB-lag phase has 10 s of green] would be modified to the following: EB / WB phase will have 32 s of green time; NBL / SBL phase will have 11 s of green time; NBTR / SBTR phase will have 32 s of green time [each phase will have 3 s amber and 2 s all red]. Pedestrians are not allowed to cross during the NBL / SBL phase.
										LTR	0.73	35.0	D	
										L	0.24	28.3	D	
										TR	0.71	28.9	C	
										L	0.89	71.7	E	
										TR	0.77	30.3	C	
										-	**0.84**	**35.4**	**D**	
19. GRAND STREET AND ORCHARD STREET														
Grand Street	EB	LT	0.68	22.4	C	LT	0.76	24.6	C					Mitigation not required.
	WB	TR	0.46	20.0	C	TR	0.57	22.7	C					
Orchard Street	NB	LTR	0.17	15.7	B	LTR	0.17	15.7	B					
Overall Intersection		-	**0.43**	**20.7**	**C**	-	**0.47**	**22.8**	**C**					
20. GRAND STREET AND LUDLOW STREET														
Grand Street	EB	TR	0.60	22.4	C	TR	0.68	24.5	C					Mitigation not required.
	WB	LT	0.34	17.1	B	LT	0.47	18.9	B					
Ludlow Street	SB	LTR	0.18	15.9	B	LTR	0.20	16.1	B					
Overall Intersection		-	**0.39**	**19.6**	**B**	-	**0.44**	**21.2**	**C**					

2022 No Action vs. 2022 With Action vs. 2022 Mitigation Weekday PM Peak Hour Traffic Levels of Service (cont'd)

Intersection & Approach		2022 No Action				2022 With Action				2022 With Action with Mitigation				Mitigation Measures
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
GRAND STREET														
21. GRAND STREET AND ESSEX STREET														
Grand Street	EB	LTR	0.65	24.8	C	LTR	0.76	29.7	C	LTR	0.71	26.9	C	Install "No Standing Anytime" regulation along the north curb of the WB approach for 100-feet from the intersection to allow for two moving lanes. Restripe the WB approach from one 11-foot travel lane, one 5-foot bike lane, and one 10-foot parking lane to one 11-foot left-through lane, one 5-foot bike lane, and one 10-foot right turn lane.
	WB	LTR	1.02	43.9	D	LTR	1.24	134.9	F	LT	0.39	16.9	B	
		-	-	-	-	-	-	-	-	R	0.90	27.1	C	
Essex Street	NB	LTR	0.38	17.8	B	LTR	0.40	18.2	B	LTR	0.40	18.2	B	
	SB	LTR	0.35	17.8	B	LTR	0.40	18.7	B	LTR	0.40	18.7	B	
Overall Intersection		-	**0.70**	**28.1**	**C**	-	**0.82**	**63.5**	**E**	-	**0.65**	**21.9**	**C**	
22. GRAND STREET AND NORFOLK STREET														
Grand Street	EB	L	0.25	14.1	B	L	0.57	25.9	C	L	0.34	15.4	B	Install "No Standing Anytime" regulation along the north curb of the WB approach for 100-feet from the intersection to allow for two moving lanes. Restripe the WB approach from one 11-foot travel lane, one 5-foot bike lane, and one 10-foot parking lane to one 11-foot left-through lane, one 5-foot bike lane, and one 10-foot right turn lane.
		T	0.45	15.3	B	T	0.47	15.6	B	T	0.47	15.6	B	
	WB	TR	1.05	52.3	D	TR	1.27	144.8	F	T	0.65	16.5	B	
		-	-	-	-	-	-	-	-	R	0.56	15.5	B	
Overall Intersection		-	**1.05**	**40.1**	**D**	-	**1.26**	**104.7**	**F**	-	**0.65**	**15.9**	**B**	
23. GRAND STREET AND SUFFOLK STREET														
Grand Street	EB	T	0.38	14.2	B	T	0.40	14.5	B	T	0.38	12.5	B	Modify signal timing: Shift 3 s of green time from SB phase to the EB / WB phase [EB / WB green time shifts from 47 s to 50 s; SB green time shifts from 33 s to 30 s].
	WB	T	0.99	44.7	D	T	1.07	67.0	E	T	1.00	45.5	D	
Suffolk Street	SB	LR	0.08	19.0	B	LR	0.41	23.8	C	LR	0.45	27.1	C	
Overall Intersection		-	**0.62**	**35.7**	**D**	-	**0.79**	**48.5**	**D**	-	**0.80**	**35.2**	**D**	
24. GRAND STREET AND CLINTON STREET														
Grand Street	EB	LTR	0.90	48.2	D	LTR	1.16	123.2	F	LTR	0.92	48.6	D	Install "No Standing 4 PM to 7 PM Mon - Fri" regulation along the south curb of the EB approach for 165-feet to reduce parking friction along the approach. Modify signal timing: Shift 2 s of green time from NB / SB phase to the EB / WB phase [EB / WB green time shifts from 45 s to 47 s; NB / SB green time shifts from 35 s to 33 s].
	WB	L	0.04	11.6	B	L	0.04	11.6	B	L	0.04	10.6	B	
		T	0.78	23.0	C	T	0.84	26.1	C	T	0.81	22.8	C	
		R	0.75	28.3	C	R	0.79	31.9	C	R	0.75	27.3	C	
Clinton Street	NB	LTR	0.69	30.8	C	LTR	0.79	37.4	D	LTR	0.84	44.4	D	
	SB	LTR	0.01	16.9	B	LTR	0.05	17.3	B	LTR	0.05	18.6	B	
Overall Intersection		-	**0.81**	**30.4**	**C**	-	**1.00**	**50.1**	**D**	-	**0.89**	**32.6**	**C**	
25. GRAND STREET AND EAST BROADWAY														
Grand Street	EB	T	0.12	6.8	A	T	0.13	6.9	A					Mitigation not required.
	WB	LT	0.88	19.1	B	LT	0.95	25.6	C					
East Broadway	NB	R	0.00	6.1	A	R	0.00	6.1	A					
Overall Intersection		-	**0.88**	**17.5**	**B**	-	**0.95**	**23.3**	**C**					

2022 No Action vs. 2022 With Action vs. 2022 Mitigation Weekday PM Peak Hour Traffic Levels of Service (cont'd)

Intersection & Approach		2022 No Action				2022 With Action				2022 With Action with Mitigation				Mitigation Measures
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
UNSIGNALIZED INTERSECTIONS														
26. STANTON STREET AND LUDLOW STREET														
Stanton Street	EB	TR	-	7.9	A	TR	-	7.9	A					Mitigation not required.
Ludlow Street	SB	LT	-	9.7	A	LT	-	9.8	A					
Overall Intersection		-	**-**	**9.4**	**A**	-	**-**	**9.4**	**A**					
27. RIVINGTON STREET AND LUDLOW STREET														
Rivington Street	WB	LT	-	10.8	B	LT	-	10.9	B					Mitigation not required.
Ludlow Street	SB	TR	-	11.0	B	TR	-	11.1	B					
Overall Intersection		-	**-**	**10.9**	**B**	-	**-**	**11.0**	**B**					
28. BROOME STREET AND LUDLOW STREET														
Broome Street	EB	TR	-	10.9	B	TR	-	11.1	B					Mitigation not required.
Ludlow Street	SB	LT	-	7.3	A	LT	-	7.3	A					
Overall Intersection		-	**-**	**5.5**	**A**	-	**-**	**5.3**	**A**					
29. BROOME STREET AND SUFFOLK STREET														
Broome Street	WB	LT	-	15.0	B	LT	-	15.5	C					Mitigation not required.
Suffolk Street	SB	TR	-	12.0	B	TR	-	15.8	C					
Overall Intersection		-	**-**	**2.5**	**A**	-	**-**	**6.8**	**A**					
30. BROOME STREET AND CLINTON STREET														
Broome Street	NB	LTR	-	9.4	A	LTR	-	9.7	A					Mitigation not required.
	SB	LTR	-	9.4	A	LTR	-	9.4	A					
Overall Intersection		-	**-**	**7.1**	**A**	-	**-**	**6.9**	**A**					

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

2022 No Action vs. 2022 With Action vs. 2022 Mitigation Saturday Peak Hour Traffic Levels of Service

Intersection & Approach		2022 No Action				2022 With Action				2022 With Action with Mitigation				Mitigation Measures
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
SIGNALIZED INTERSECTIONS														
EAST HOUSTON STREET														
1. EAST HOUSTON STREET AND BOWERY														
East Houston Street	EB	L	0.69	39.6	D	L	0.69	39.8	D	L	0.69	39.5	D	Modify signal timing: Shift 1 s of green time from NBL / SBL lag phase to the EB / WB phase [EB / WB green time shifts from 29 s to 30 s; NBL / SBL lag phase green time shifts from 8 s to 7 s; signal timing during all other phases remain the same].
		TR	0.87	33.6	C	TR	0.90	35.0	D	TR	0.87	32.6	C	
	WB	L	0.85	50.0	D	L	0.85	50.1	D	L	0.85	49.5	D	
		TR	1.01	50.6	D	TR	1.04	60.2	E	TR	1.00	49.2	D	
Bowery	NB	L	0.73	37.5	D	L	0.73	37.5	D	L	0.77	40.1	D	
		TR	0.97	45.5	D	TR	0.98	46.7	D	TR	0.98	46.7	D	
	SB	L	0.57	32.8	C	L	0.57	32.9	C	L	0.60	34.3	C	
		TR	1.02	54.3	D	TR	1.02	54.3	D	TR	1.02	54.3	D	
Overall Intersection		-	**0.98**	**44.8**	**D**	-	**1.00**	**48.1**	**D**	-	**1.00**	**44.5**	**D**	
2. EAST HOUSTON STREET AND CHRYSTIE STREET / SECOND AVENUE														
East Houston Street	EB	T	0.86	35.9	D	T	0.88	37.1	D	T	0.85	34.6	C	Modify signal timing: Shift 1 s of green time from NB phase to the EB / WB phase and 1 s of green time from NB phase to the SB phase [EB / WB green time shifts from 26 s to 27 s; NB phase green time shifts from 21 s to 19 s; and SB phase green time shifts from 20 s to 21 s].
		R	0.93	56.1	E	R	0.98	67.6	E	R	0.95	58.0	E	
	WB	L	0.71	55.7	E	L	0.73	57.1	E	L	0.73	56.5	E	
		T	0.92	38.7	D	T	0.95	42.3	D	T	0.91	37.8	D	
Chrystie Street / Second Avenue	NB	L	0.51	33.8	C	L	0.52	34.0	C	L	0.57	37.1	D	
		LR	0.60	37.6	D	LR	0.60	37.7	D	LR	0.67	42.5	D	
	SB	L	1.29	169.0	F	L	1.31	179.0	F	L	1.24	146.4	F	
		LT	1.28	163.6	F	LT	1.31	174.2	F	LT	1.25	146.4	F	
		R	0.98	46.9	D	R	0.98	46.9	D	R	0.94	40.1	D	
Overall Intersection		-	**0.94**	**76.2**	**E**	-	**0.95**	**81.0**	**F**	-	**0.95**	**70.2**	**E**	
3. EAST HOUSTON STREET AND ALLEN STREET / FIRST AVENUE														
East Houston Street	EB	L	0.82	40.7	D	L	0.82	40.7	D	L	0.82	40.6	D	Modify signal timing: Shift 1 s of green time from NB phase to the EB / WB phase [EB / WB green time shifts from 29 s to 30 s; NB phase green time shifts from 25 s to 24 s].
		T	0.89	32.9	C	T	0.91	34.1	C	T	0.88	31.8	C	
		R	1.27	160.2	F	R	1.27	160.2	F	R	1.22	137.6	F	
	WB	L	0.44	31.9	C	L	0.44	32.1	C	L	0.44	31.6	C	
		TR	1.13	98.3	F	TR	1.17	114.9	F	TR	1.13	97.9	F	
Allen Street	NB	L	0.38	27.7	C	L	0.41	28.2	C	L	0.43	29.2	C	
		T	0.82	36.0	D	T	0.84	36.7	D	T	0.87	39.6	D	
		R	0.24	26.8	C	R	0.24	26.8	C	R	0.26	27.8	C	
Overall Intersection		-	**1.00**	**64.6**	**E**	-	**1.00**	**70.1**	**E**	-	**0.99**	**62.9**	**E**	

2022 No Action vs. 2022 With Action vs. 2022 Mitigation Saturday Peak Hour Traffic Levels of Service (cont'd)

Intersection & Approach		2022 No Action				2022 With Action				2022 With Action with Mitigation				Mitigation Measures
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
SIGNALIZED INTERSECTIONS														
EAST HOUSTON STREET														
4. EAST HOUSTON STREET AND ESSEX STREET / AVENUE A														
East Houston Street	EB	L	0.34	15.7	B	L	0.34	16.1	B	L	0.32	16.6	B	Modify signal timing: Shift 1 s of green time from EB / WB phase to the EBL / WBL lead phase and 1 s of green time from EB / WB phase to the NB / SB phase [EBL / WBL lead phase green time shifts from 9 s to 10 s; EB / WB green time shifts from 32 s to 30 s; NB / SB green time shifts from 27 s to 28 s; LPI remains the same].
		TR	0.80	27.8	C	TR	0.83	28.7	C	TR	0.89	32.0	C	
	WB	L	0.88	40.2	D	L	0.90	43.7	D	L	0.90	44.5	D	
		T	0.84	32.2	C	T	0.87	34.1	C	T	0.93	40.8	D	
		R	0.14	20.2	C	R	0.15	20.2	C	R	0.16	21.7	C	
Essex Street / Avenue A	NB	LTR	0.70	32.6	C	LTR	0.73	33.4	C	LTR	0.69	31.6	C	
	SB	LTR	1.08	72.8	E	LTR	1.14	98.1	F	LTR	1.07	68.0	E	
Overall Intersection		-	**0.90**	**36.4**	**D**	-	**0.94**	**41.2**	**D**	-	**0.92**	**40.1**	**D**	
STANTON STREET														
5. STANTON STREET AND ESSEX STREET														
Stanton Street	EB	LTR	0.24	22.4	C	LTR	0.24	22.5	C					Mitigation not required.
Essex Street	NB	TR	0.30	11.7	B	TR	0.32	11.9	B					
	SB	LT	0.53	14.0	B	LT	0.57	14.4	B					
Overall Intersection		-	**0.42**	**13.8**	**B**	-	**0.44**	**14.2**	**B**					
6. STANTON STREET AND NORFOLK STREET														
Stanton Street	EB	LT	0.22	16.1	B	LT	0.23	16.2	B					Mitigation not required.
Norfolk Street	NB	TR	0.39	18.6	B	TR	0.51	20.9	C					
Overall Intersection		-	**0.30**	**17.7**	**B**	-	**0.37**	**19.4**	**B**					
RIVINGTON STREET														
7. RIVINGTON STREET AND ESSEX STREET														
Rivington Street	WB	LTR	0.70	35.0	C	LTR	0.82	43.7	D					Mitigation not required.
Essex Street	NB	LT	0.33	11.6	B	LT	0.34	11.7	B					
	SB	TR	0.85	35.1	D	TR	0.91	40.6	D					
Overall Intersection		-	**0.78**	**27.6**	**C**	-	**0.87**	**32.4**	**C**					
8. RIVINGTON STREET AND NORFOLK STREET														
Rivington Street	WB	TR	0.47	20.0	B	TR	0.49	20.4	C					Mitigation not required.
Norfolk Street	NB	LT	0.42	17.8	B	LT	0.60	20.4	C					
Overall Intersection		-	**0.44**	**18.9**	**B**	-	**0.54**	**20.4**	**C**					

2022 No Action vs. 2022 With Action vs. 2022 Mitigation Saturday Peak Hour Traffic Levels of Service (cont'd)

Intersection & Approach		2022 No Action				2022 With Action				2022 With Action with Mitigation				Mitigation Measures
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
SIGNALIZED INTERSECTIONS														
DELANCEY STREET														
9. DELANCEY STREET AND ALLEN STREET														
Delancey Street	EB	TR	0.87	29.3	C	TR	0.91	31.2	C	TR	0.91	31.2	C	Mitigation not required.
	WB	L	0.76	40.8	D	L	0.78	41.5	D	L	0.78	41.5	D	Modify signal phasing: Allow the NB-right turn movement during the WB-lead phase. Signal timing remains the same during all peak hours. **[Measures reflect signal phasing improvements needed to mitigate the intersection during the weekday midday peak period.]**
		TR	0.82	15.5	B	TR	0.83	15.9	B	TR	0.83	15.9	B	
Allen Street	NB	T	0.74	36.8	D	T	0.77	38.2	D	TR	0.77	38.2	D	
		R	0.85	58.4	E	R	0.87	62.3	E	R	0.36	15.4	B	
	SB	TR	0.77	35.7	D	TR	0.77	35.9	D	TR	0.77	35.9	D	
Overall Intersection		-	**0.84**	**26.8**	**C**	-	**0.86**	**28.0**	**C**	-	**0.83**	**26.3**	**C**	
10. DELANCEY STREET AND ORCHARD STREET														
Delancey Street	EB	T	0.58	11.4	B	T	0.60	11.7	B					Mitigation not required.
	WB	TR	0.77	14.6	B	TR	0.78	14.8	B					
Orchard Street	NB	LTR	0.29	26.7	C	LTR	0.29	26.7	C					
Overall Intersection		-	**0.61**	**13.6**	**B**	-	**0.62**	**13.8**	**B**					
11 .DELANCEY STREET AND LUDLOW STREET														
Delancey Street	EB	TR	0.58	11.7	B	TR	0.61	12.1	B	TR	0.63	13.5	B	Modify signal timing: Shift 2 s of green time from EB / WB phase to the SB phase [EB / WB green time shifts from 54 s to 52 s; SB green time shifts from 26 s to 28 s].
	WB	T	0.68	12.3	B	T	0.69	12.4	B	T	0.72	13.8	B	
Ludlow Street	SB	LTR	1.15	130.5	F	LTR	1.25	168.3	F	LTR	1.15	128.0	F	
Overall Intersection		-	**0.84**	**21.5**	**C**	-	**0.87**	**24.6**	**C**	-	**0.87**	**22.7**	**C**	
12. DELANCEY STREET AND ESSEX STREET														
Delancey Street	EB	TR	0.88	25.3	C	TR	0.90	26.7	C					**Unmitigatable Impact**
	WB	TR	1.02	39.6	D	TR	1.03	41.8	D					
	NB	LTR	0.74	38.2	D	LTR	0.91	54.7	D					
	SB	DefL	1.10	101.9	F	DefL	1.34	198.8	F					
Essex Street		TR	0.65	36.7	D	TR	0.77	43.0	D					
Overall Intersection		-	**1.07**	**37.6**	**D**	-	**1.18**	**47.1**	**D**					
13. DELANCEY STREET AND NORFOLK STREET														
Delancey Street	EB	T	0.77	14.9	B	T	0.81	15.6	B	T	0.87	19.7	B	**Partially Mitigated.** Modify signal timing: Shift 4 s of green time from EB / WB phase to the NB phase [EB / WB green time shifts from 53 s to 49 s; NB green time shifts from 27 s to 31 s].
	WB	TR	0.93	21.2	C	TR	0.95	22.9	C	TR	1.03	41.9	D	
Norfolk Street	NB	TR	0.95	63.0	E	TR	1.11	106.0	F	TR	0.97	60.4	E	
		R	0.93	59.8	E	R	1.13	114.2	F	R	0.98	65.4	E	
Overall Intersection		-	**0.94**	**24.0**	**C**	-	**1.01**	**33.1**	**C**	-	**1.01**	**36.2**	**D**	

2022 No Action vs. 2022 With Action vs. 2022 Mitigation Saturday Peak Hour Traffic Levels of Service (cont'd)

Intersection & Approach		2022 No Action				2022 With Action				2022 With Action with Mitigation				Mitigation Measures
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
SIGNALIZED INTERSECTIONS														
DELANCEY STREET														
14. DELANCEY STREET AND SUFFOLK STREET														
Delancey Street	EB	T	0.99	27.3	C	T	1.00	29.5	C					Mitigation not required.
	WB	T	0.75	14.3	B	T	0.75	14.4	B					
Delancey Street Service Road	EB	TR	0.11	8.2	A	TR	0.41	10.9	B					
Suffolk Street	SB	R	0.25	25.5	C	R	0.33	28.0	C					
Overall Intersection		-	**0.74**	**21.4**	**C**	-	**0.78**	**22.4**	**C**					
15. DELANCEY STREET AND CLINTON STREET														
Delancey Street	EB	T	0.93	15.1	B	T	0.94	15.5	B					Mitigation not required.
Williamsburg Bridge	WB	T	0.84	15.4	B	T	0.85	15.7	B					
		R	0.97	54.1	D	R	0.99	57.4	E					
Delancey Street Service Road	EB	TR	0.08	6.2	A	TR	0.15	6.6	A					
	WB	TR	0.72	57.4	E	TR	0.74	59.8	E					
Clinton Street	NB	R	0.09	26.7	C	R	0.09	26.7	C					
Overall Intersection		-	**0.70**	**19.3**	**B**	-	**0.70**	**19.8**	**B**					
BROOME STREET														
16. BROOME STREET AND ESSEX STREET														
Broome Street	EB	LTR	0.18	21.4	C	LTR	0.25	22.6	C	LTR	0.25	22.6	C	Mitigation not required.
Essex Street	NB	TR	0.25	11.2	B	TR	0.29	11.6	B	TR	0.43	22.8	C	Modify signal phasing: Add a new lead phase for the SB approach. The existing signal phasing [EB phase has 31 s of green time; NB / SB phase has 49 s of green time] would be modified to the following: EB phase will have 31 s of green time, SB-lead phase will have 11 s of green time, and NB / SB phase will have 33 s of green [each phase will have 3 s amber and 2 s all red]. **[Measures reflect signal phasing improvements needed to mitigate the intersection during the weekday PM peak period.]**
	SB	L	0.15	10.7	B	L	0.32	13.3	B	L	0.26	11.8	B	
		T	0.22	11.0	B	T	0.22	11.0	B	T	0.22	11.0	B	
Overall Intersection		-	**0.22**	**12.5**	**B**	-	**0.29**	**13.1**	**B**	-	**0.39**	**18.7**	**B**	
17. BROOME STREET AND NORFOLK STREET														
Broome Street	EB	L	0.12	10.3	B	L	0.19	10.9	B					Mitigation not required.
	WB	R	0.58	17.1	B	R	0.62	18.1	B					
Norfolk Street	NB	T	0.71	27.7	C	T	0.88	33.3	C					
Overall Intersection		-	**0.63**	**21.0**	**C**	-	**0.72**	**24.1**	**C**					

2022 No Action vs. 2022 With Action vs. 2022 Mitigation Saturday Peak Hour Traffic Levels of Service (cont'd)

Intersection & Approach		2022 No Action				2022 With Action				2022 With Action with Mitigation				Mitigation Measures
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
SIGNALIZED INTERSECTIONS														
GRAND STREET														
18. GRAND STREET AND ALLEN STREET														
Grand Street	EB	LTR	0.96	53.4	D	LTR	1.11	97.3	F	LTR	0.96	49.4	D	**Option 1** Modify signal timing: Shift 3 s of green time from NB / SB phase to the EB / WB phase; shift 1 s from the NB / SB phase to SB-lead phase [EB / WB green time shifts from 27 s to 30 s; SB-lead phase green time shifts from 10 s to 11 s, NB / SB green time shifts from 23 s to 19 s, NB-lead phase green time remains the same].
	WB	LTR	0.68	36.9	D	LTR	0.85	50.1	D	LTR	0.76	39.0	D	
Allen Street	NB	L	0.55	49.7	D	L	0.55	49.7	D	L	0.55	49.7	D	
		TR	0.47	20.1	C	TR	0.48	20.2	C	TR	0.53	23.8	C	
	SB	L	1.06	112.3	F	L	1.08	119.4	F	L	0.98	89.4	F	
		TR	0.60	21.9	C	TR	0.60	21.9	C	TR	0.66	25.0	C	
Overall Intersection		-	**0.72**	**38.1**	**D**	-	**0.79**	**48.3**	**D**	-	**0.77**	**37.8**	**D**	
										LTR	0.88	37.4	D	**Option 2** Modify signal phasing: The existing signal phasing [EB / WB phase has 27 s of green; SB-lead phase has 10 s of green; NBTR / SBTR phase has 23 s of green; NB-lag phase has 10 s of green] would be modified to the following: EB / WB phase will have 32 s of green time; NBL / SBL phase will have 11 s of green time; NBTR / SBTR phase will have 32 s of green time [each phase will have 3 s amber and 2 s all red]. Pedestrians are not allowed to cross during the NBL / SBL phase.
										LTR	0.71	34.2	C	
										L	0.50	45.9	D	
										TR	0.57	25.8	C	
										L	0.98	89.4	F	
										TR	0.72	28.8	C	
										-	**0.83**	**36.7**	**D**	
19. GRAND STREET AND ORCHARD STREET														
Grand Street	EB	LT	0.70	22.2	C	LT	0.78	24.1	C					Mitigation not required.
	WB	TR	0.50	20.9	C	TR	0.59	23.2	C					
Orchard Street	NB	LTR	0.14	15.4	B	LTR	0.14	15.4	B					
Overall Intersection		-	**0.42**	**21.1**	**C**	-	**0.46**	**23.1**	**C**					
20. GRAND STREET AND LUDLOW STREET														
Grand Street	EB	TR	0.58	21.6	C	TR	0.66	23.6	C					Mitigation not required.
	WB	LT	0.35	17.8	B	LT	0.47	20.0	B					
Ludlow Street	SB	LTR	0.24	16.6	B	LTR	0.26	16.9	B					
Overall Intersection		-	**0.41**	**19.5**	**B**	-	**0.46**	**21.2**	**C**					

2022 No Action vs. 2022 With Action vs. 2022 Mitigation Saturday Peak Hour Traffic Levels of Service (cont'd)

Intersection & Approach		2022 No Action				2022 With Action				2022 With Action with Mitigation				Mitigation Measures
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
SIGNALIZED INTERSECTIONS														
GRAND STREET														
21. GRAND STREET AND ESSEX STREET														
Grand Street	EB	LTR	0.71	27.1	C	LTR	0.84	35.4	D	LTR	0.89	42.1	D	Mitigation not required.
	WB	LTR	0.54	18.7	B	LTR	0.76	22.4	C	LT	0.42	17.3	B	Install "No Standing Anytime" regulation along the north curb of the WB approach for 100-feet from the intersection to allow for two moving lanes.
		-	-	-	-	-	-	-	-	R	0.34	16.7	B	
Essex Street	NB	LTR	0.24	16.1	B	LTR	0.26	16.3	B	LTR	0.26	16.3	B	Restripe the WB approach from one 11-foot travel lane, one 5-foot bike lane, and one 10-foot parking lane to one 11-foot left-through lane, one 5-foot bike lane, and one 10-foot right turn lane.
	SB	LTR	0.26	16.5	B	LTR	0.29	16.9	B	LTR	0.29	16.9	B	
Overall Intersection		-	**0.49**	**20.4**	**C**	-	**0.56**	**24.4**	**C**	-	**0.59**	**24.9**	**C**	**[Measures reflect geometric improvements needed to mitigate the intersection during the weekday PM peak period.]**
22. GRAND STREET AND NORFOLK STREET														
Grand Street	EB	L	0.15	12.1	B	L	0.39	17.4	B	L	0.20	12.3	B	Install "No Standing Anytime" regulation along the north curb of the WB approach for 100-feet from the intersection to allow for two moving lanes.
		T	0.42	14.7	B	T	0.42	14.8	B	T	0.42	14.8	B	
	WB	TR	0.93	32.2	C	TR	1.15	98.2	F	T	0.46	14.4	B	Restripe the WB approach from one 11-foot travel lane, one 5-foot bike lane, and one 10-foot parking lane to one 11-foot left-through lane, one 5-foot bike lane, and one 10-foot right turn lane.
		-	-	-	-	-	-	-	-	R	0.67	18.4	B	
Overall Intersection		-	**0.94**	**26.3**	**C**	-	**1.15**	**72.1**	**E**	-	**0.67**	**15.8**	**B**	
23. GRAND STREET AND SUFFOLK STREET														
Grand Street	EB	T	0.41	14.7	B	T	0.42	14.8	B					Mitigation not required.
	WB	T	0.88	29.2	C	T	0.96	40.7	D					
Suffolk Street	SB	LR	0.07	18.7	B	LR	0.32	22.2	C					
Overall Intersection		-	**0.54**	**24.5**	**C**	-	**0.70**	**31.5**	**C**					

2022 No Action vs. 2022 With Action vs. 2022 Mitigation Saturday Peak Hour Traffic Levels of Service (cont'd)

Intersection & Approach		2022 No Action				2022 With Action				2022 With Action with Mitigation				Mitigation Measures
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
SIGNALIZED INTERSECTIONS														
GRAND STREET														
24. GRAND STREET AND CLINTON STREET														
Grand Street	EB	LTR	0.77	30.7	C	LTR	0.92	48.8	D	LTR	0.88	41.0	D	Modify signal timing: Shift 1 s of green time from NB / SB phase to the EB / WB phase [EB / WB green time shifts from 45 s to 46 s; NB / SB green time shifts from 35 s to 34 s].
	WB	L	0.04	11.7	B	L	0.05	11.7	B	L	0.05	11.2	B	
		T	0.71	20.9	C	T	0.78	23.3	C	T	0.76	22.0	C	
		R	0.71	25.2	C	R	0.83	34.9	C	R	0.80	31.2	C	
Clinton Street	NB	LTR	0.52	24.8	C	LTR	0.59	27.1	C	LTR	0.61	28.6	C	
	SB	LTR	0.01	16.9	B	LTR	0.05	17.3	B	LTR	0.05	18.0	B	
Overall Intersection		-	**0.66**	**24.5**	**C**	-	**0.78**	**31.6**	**C**	-	**0.76**	**28.8**	**C**	
25. GRAND STREET AND EAST BROADWAY														
Grand Street	EB	T	0.12	6.8	A	T	0.13	6.9	A					Mitigation not required.
	WB	LT	0.81	16.7	B	LT	0.88	20.0	B					
East Broadway	NB	R	0.00	6.1	A	R	0.00	6.1	A					
Overall Intersection		-	**0.81**	**15.3**	**B**	-	**0.87**	**18.1**	**B**					
UNSIGNALIZED INTERSECTIONS														
26. STANTON STREET AND LUDLOW STREET														
Stanton Street	EB	TR	-	8.5	A	TR	-	8.5	A					Mitigation not required.
Ludlow Street	SB	LT	-	10.8	B	LT	-	10.9	B					
Overall Intersection		-	**-**	**10.2**	**B**	-	**-**	**10.2**	**B**					
27. RIVINGTON STREET AND LUDLOW STREET														
Rivington Street	WB	LT	-	11.8	B	LT	-	11.9	B					Mitigation not required.
Ludlow Street	SB	TR	-	12.4	B	TR	-	12.5	B					
Overall Intersection		-	**-**	**12.1**	**B**	-	**-**	**12.2**	**B**					
28. BROOME STREET AND LUDLOW STREET														
Broome Street	EB	TR	-	12.2	B	TR	-	12.7	B					Mitigation not required.
Ludlow Street	SB	LT	-	7.3	A	LT	-	7.3	A					
Overall Intersection		-	**-**	**5.6**	**A**	-	**-**	**5.6**	**A**					
29. BROOME STREET AND SUFFOLK STREET														
Broome Street	WB	LT	-	7.2	A	LT	-	7.2	A					Mitigation not required.
Suffolk Street	SB	TR	-	11.9	B	TR	-	15.2	C					
Overall Intersection		-	**-**	**0.9**	**A**	-	**-**	**4.7**	**A**					

2022 No Action vs. 2022 With Action vs. 2022 Mitigation Saturday Peak Hour Traffic Levels of Service (cont'd)

Intersection & Approach		2022 No Action				2022 With Action				2022 With Action with Mitigation				Mitigation Measures
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
UNSIGNALIZED INTERSECTIONS														
30. BROOME STREET AND CLINTON STREET														
Broome Street	NB	LTR	-	10.0	B	LTR	-	10.2	B					Mitigation not required.
	SB	LTR	-	8.1	A	LTR	-	8.1	A					
Overall Intersection		-	**-**	**8.6**	**A**	-	**-**	**8.3**	**A**					

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

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