Chapter 20: Mitigation

A. INTRODUCTION

In accordance with the 2012 *City Environmental Quality Review (CEQR) Technical Manual,* where significant adverse impacts are identified, mitigation to reduce or eliminate the impacts to the fullest extent practicable is developed and evaluated.

As described below, measures to further mitigate adverse impacts ~~will be~~have been ~~refined and~~ evaluated between the Draft ~~and Final~~ Environmental Impact Statement (DEIS) and Final EIS (FEIS). Therefore, ~~the~~ this ~~Final~~ FEIS ~~may~~ includes more complete information and commitments on all practicable mitigation measures to be implemented with the Proposed Action.

PRINCIPAL CONCLUSIONS

Where significant adverse impacts have been identified—in the areas of community facilities, open space, shadows, historic resources, transportation, and construction—measures have been examined to minimize or eliminate the anticipated impacts.

As discussed in Chapter 4, "Community Facilities," the Applicant has expressed a commitment to the development of a public elementary school on Projected Development Site 1 and has entered into a letter of intent with the School Construction Authority (SCA). However, if ~~1,388~~1,529 residential units or more are developed in the Rezoning Area before a public elementary school is operational, the Proposed Action would result in a significant adverse impact to elementary schools in Community School District 2 (CSD 2)/Sub-District 2 unless and until the proposed elementary school is operational. In order to address the Proposed Action's potential significant adverse impact on elementary schools, the Applicant will enter into Restrictive Declarations, recorded against the development sites it owns or controls, pursuant to which the Applicant would agree that it would not apply for building permits with respect to any such development sites prior to the development of Projected Development Site 1, unless, at the time a building permit is sought for a building on one of the Applicant-owned or controlled development sites, the total number of residential units built, under construction, or the subject of a pending or issued building permit, inclusive of the units proposed for such development site, falls below a unit count set forth in the Restrictive Declaration. For this purpose, the unit count would be sufficiently low to minimize the potential for an impact on public elementary schools to occur prior to the development of Projected Development Site 1. ~~Between the Draft and Final EIS, the lead agency will consider additional feasible and practicable measures that would provide assurance that construction of Projected Development Site 1 would take place as early as possible relative to conditions which may otherwise result in a significant adverse elementary school impact.~~

With respect to open space, potential mitigation measures ~~will be~~ were explored by the Applicant in consultation with the lead agency, the New York City Department of City Planning (DCP), and the New York City Department of Parks and Recreation (DPR) between the Draft and Final EIS. The significant adverse impact on open space would be partially mitigated by means of

Restrictive Declarations requiring a financial contribution by the Applicant towards the improvement of active open space, with a principal focus upon improvements to the Tony Dapolito Recreation Center operated by DPR that would enhance its ability to attract additional members from the community and increase its potential utilization. The scope of those and/or other improvements to open space would be developed by DPR in consultation with the community. ~~If feasible mitigation is found, the impacts will be considered partially mitigated. Absent the implementation of such measures, the Proposed Action could have an unmitigated significant adverse impact on open space.~~ ~~Likewise, to offset~~ With respect to the significant adverse shadow impacts to the users of Trump SoHo Plaza and SoHo Square, no feasible mitigation measures for this significant adverse impact were identified. Therefore, the Proposed Action would result in unmitigated significant adverse shadow impacts on Trump SoHo Plaza and SoHo Square. ~~the Applicant will consult with DPR and DCP with respect to potential mitigation measures between the Draft and Final EIS. If feasible mitigation is found, the impacts will be considered partially mitigated. In the absence of feasible mitigation, the Proposed Action would result in unmitigated significant adverse shadow impacts on Trump SoHo Plaza and SoHo Square.~~

As described in Chapter 7, "Historic and Cultural Resources," portions of four projected development sites (Sites 5, 10, 12, and 13) and two potential development sites (Sites 22 and 23) were identified as archaeologically sensitive for resources associated with the 19th century occupation of the 20 historic lots included within those sites. None of the sites identified as archaeologically sensitive are under the Applicant's control. Future development on these properties could include as-of-right development, and there are no mechanisms available through CEQR to require that such development undertake archaeological testing to determine the presence or absence of archaeological resources or mitigation for any identified significant resources through avoidance or excavation and data recovery (i.e., Phase 2 or Phase 3 archaeological testing). Therefore, the as-of-right development that is anticipated to occur as a result of the Proposed Action could result in unmitigated significant adverse impacts on archaeological resources. Likewise, as-of-right development that is anticipated to occur as a result of the Proposed Action on properties not controlled by the Applicant could result in unmitigated significant adverse construction-related impacts on architectural resources.

As discussed in Chapter 13, "Transportation," traffic conditions were evaluated at ~~22~~ 28 intersections for the weekday AM, midday, and PM peak hours, and at ~~18~~ 23 intersections for the Saturday midday peak hour. The Proposed Action would result in significant adverse traffic impacts at ~~13~~ 14 intersections during the weekday AM peak hour, 3 intersections during the weekday midday peak hour, ~~13~~ 14 intersections during the weekday PM peak hour, and 5 intersections during the Saturday midday peak hour. As summarized in **Table 20-1**, with the implementation of standard mitigation measures (including primarily signal timing changes and daylighting), the significant adverse traffic impacts identified above could be fully mitigated except at two intersections during the weekday AM peak hour, ten intersections during the weekday PM peak hour, and four intersections during the Saturday midday peak hour.

The Proposed Action would also result in significant adverse pedestrian impacts at two crosswalk locations: the north crosswalk of Avenue of the Americas and Spring Street during the weekday PM peak period, and the north crosswalk of Varick Street and Spring Street during the weekday AM and PM peak periods. These impacts could be fully mitigated with crosswalk widenings. In addition, new construction hotel development that could occur as-of-right after the

Table 20-1
Summary of Significant Adverse Traffic Impacts

Intersection		AM Peak Hour		Midday Peak Hour		PM Peak Hour		Saturday Peak Hour	
EB/WB Street	**NB/SB Street**	**Significant Impacts**	**Mit**	**Significant Impacts**	**Mit**	**Significant Impacts**	**Mit**	**Significant Impacts**	**Mit**
Clarkson St	West St	SB-L	Yes			SB-L	Yes		
West Houston St	West St	WB-R	No	~~WB-R~~	~~Yes~~	WB-R	Yes		
Canal St North	West St	WB-LR WB-R	Yes Yes						
King St	Hudson St	NB-TR	Yes						
Charlton St	Hudson St					WB-TR	Yes		
Canal St	Hudson St	WB-~~TR~~ NB-LT (west lanes)	No No	WB-T	Yes	 NB-LT (west lanes)	 No		
West Houston St	Varick St	SB-TR (west lanes)	Yes			SB-TR (west lanes)	No		
King St	Varick St	SB-T (west lanes)	Yes			SB-T (west lanes)	No	SB-T (west lanes)	No
Charlton St	Varick St	 SB-TR (west lanes)	 Yes			WB-LT SB-TR (west lanes)	Yes No	 SB-TR (west lanes)	 No
Vandam St	Varick St					SB-TR (west lanes)	No		
Spring St	Varick St	 SB-LT (~~west~~ east lanes)	 Yes	 EB-R	 Yes	EB-T EB-R SB-T (west lanes)	No No No	 EB-TR EB-R SB-LT (east lanes)	 Yes Yes Yes
Dominick St	Varick St					SB-TR (west lanes)	No	SB-TR (west lanes)	No
Broome St	Varick St			SB-TR (west lanes) SB-R (west lanes)	Yes Yes	SB-TR (west lanes) SB-R (west lanes)	No No	SB-TR (west lanes) SB-R (west lanes)	No No
Canal St	Varick St	WB-LT	Yes			 SB-L	 No		
West Houston St	Ave of the Americas	NB-LTR	Yes						
Spring St	Ave of the Americas	EB-L	Yes						
Canal St/Laight St	Ave of the Americas	 NB-LTR	 Yes			WB-TR	No		
West Houston St	Washington St					SB-TR	Yes		
Spring Street	Hudson Street	EB-LT	Yes						

Notes: EB = Eastbound; WB = Westbound; NB = Northbound; SB = Southbound; L = Left Turn; T = Through; R = Right Turn; Mit = Mitigation Provided; Unmitigatable Impacts are Highlighted

"residential development goal" is met could result in unmitigated significant adverse traffic impacts. Under the hotel development scenario, the impacts identified at study area intersections along the Varick Street corridor would worsen (with those at Charlton, Vandam, Spring, and Dominick Streets likely realizing the greatest effects), and the impacts identified at three intersections along Hudson Street (at Canal, Charlton, and King Streets) would worsen. For intersections farther away from the sites selected for the hotel development scenario, the projected traffic increases would be more dispersed and would have lesser effects on their operating levels.

With respect to construction, the Proposed Action could result in significant adverse construction traffic and pedestrian impacts. These impacts could be mitigated using the same measures identified for the operational significant adverse traffic and pedestrian impacts. However, there could also be significant adverse construction traffic impacts at two intersections during the weekday AM peak hour, ten intersections during the weekday PM peak hour, and four intersections during the Saturday midday peak hour during construction that cannot be fully mitigated.

~~Furthermore, as described in Chapter 13, "Transportation," additional intersections may be analyzed between the Draft and Final EIS. These intersections will be selected in consultation with DCP and NYCDOT. The analysis of these additional intersections may identify additional significant adverse traffic impacts, for which mitigation measures would be identified. If feasible measures are not available to fully mitigate these impacts, they would be identified as unmitigated in the Final EIS. In conjunction with the updates to the transportation-related~~

~~analyses between the Draft and Final EIS, the mitigation analysis as it relates to transportation will be further refined and the implementation timing of the proposed mitigation measures will also be assessed.~~

B. COMMUNITY FACILITIES AND SERVICES

As discussed in Chapter 4, "Community Facilities," the Applicant has expressed a commitment to the development of a public elementary school on Projected Development Site 1 and has entered into a letter of intent with SCA, a copy of which is found in **Appendix 2**. In accordance with the letter of intent, the Applicant is prepared to build out space (to core and shell) that would accommodate a 444-seat elementary school, along with an outdoor playground. However, the opening of a new public school requires the provision of adequate public funding within the SCA/Department of Education (DOE) budget to fit-out the space and operate the school, which is outside of the Applicant's control. In addition, in the event that construction of Projected Development Site 1 is not among the early sites to be developed (as described in the conceptual construction schedule provided in Chapters 1 and 18), there is the potential for a significant adverse impact to elementary schools in CSD 2/Sub-District 2 to occur until such time that the proposed elementary school is constructed and operational. Specifically, if ~~1,388~~1,529 residential units or more are developed in the Rezoning Area before a public elementary school is operational, the Proposed Action would result in an unmitigated significant adverse impact to elementary schools in CSD 2/Sub-District 2 unless and until the proposed elementary school is constructed and operational. The analysis of public elementary school conditions relies on conservative assumptions regarding both the background growth in the student population and the development of new residential units in the With-Action condition. Should this high level of background growth in the sub-district and residential development in the Rezoning Area not occur, more residential units could be constructed before a significant adverse elementary school impact would occur.

In order to address the Proposed Action's potential significant adverse impact on elementary schools, the Applicant will enter into Restrictive Declarations, recorded against the development sites it owns or controls, pursuant to which the Applicant would agree that it would not apply for building permits with respect to any such development sites prior to the development of Projected Development Site 1, unless, at the time a building permit is sought for a building on one of the Applicant-owned or controlled development sites, the total number of residential units built, under construction, or the subject of a pending or issued building permit, inclusive of the units proposed for such development site, falls below a unit count set forth in the Restrictive Declaration. For this purpose, the unit count would be sufficiently low to minimize the potential for an impact on public elementary schools to occur prior to the development of Projected Development Site 1.

~~Between the Draft and Final EIS, the lead agency will consider additional feasible and practicable measures that would provide assurance that construction of Projected Development Site 1 would take place as early as possible relative to conditions which may otherwise result in a significant adverse elementary school impact. No further mitigation measures are proposed in the event that SCA were to decline to develop the proposed public elementary school.~~

C. OPEN SPACE

As discussed in Chapter 5, "Open Space," given the anticipated decrease in the active and total open space ratios in the residential study area and the fact that open space ratios in the study area would remain below the city guideline ratios, the Proposed Action would result in a significant

adverse impact to active and total open space resources in the residential study area. These impacts would occur with the completion of ~~1,788~~ 1,771 residential units in the Rezoning Area (prior to the full build-out of the reasonable worst-case development scenario [RWCDS]). The significant adverse impact on open space could be fully mitigated with the addition of 2.7 acres of new open space, of which approximately 0.8 acres would need to be active recreation space.

The *CEQR Technical Manual* lists potential mitigation measures for open space impacts. These measures include, but are not limited to, creating new open space within the study area; funding for improvements, renovation, or maintenance at existing local parks; or improving existing open spaces to increase their utility or capacity to meet identified open space needs in the area, such as through the provision of additional active open space facilities.

The following describes possible measures to mitigate the Proposed Action's significant adverse open space impact that were examined between the Draft and Final EIS:

- Reexamine the conceptual design for Duarte Square Park to provide amenities to serve the growing residential population in the area.

  In 2002, pursuant to a proposal put forth by the Applicant and DPR (ULURP No. 010340MMM, CEQR No. 00DCP047M), the City Planning Commission (CPC) approved an amendment to the city map involving the demapping and disposition to the Applicant of a 9,945 square foot segment of the former Sullivan Street between Grand and Canal Streets, together with the mapping as public park of an existing open space of 11,272 square feet at Duarte Square, a triangular-shaped area located at the northwest corner of Canal Street and Avenue of the Americas. Pursuant to a Mapping Agreement dated May 15, 2006 between the Applicant and the City of New York, the Applicant agreed to provide for the design and construction of certain improvements to Duarte Square Park, including the enlargement of the existing open space to include adjacent areas owned by the Applicant and subject to open space and sewer easements. At the time of the 2002 CPC approval, a conceptual plan for the redesign of the park and the adjacent easement areas had been established, including increased seating, additional trees, a water feature, and a kiosk for the sale of food and drinks. The 2002 conceptual park design had been contemplated in the context of a predominantly commercial district and the park's adjacency to a then-proposed 432-foot tall office building to be constructed on property that is identified as Projected Development Site 1 in the current RWCDS. Rather than improving Duarte Square Park as previously contemplated, as partial mitigation the Applicant ~~would work with DPR to~~ investigated developing a new design intended to meet the needs of a growing residential population with DPR.
- Coordinate with the SCA and DOE to provide public access to the future school yard on Projected Development Site 1 during non-school hours and times not being used for school functions. The school yard would remain under the jurisdiction of DOE, but would be open for public use after school, on weekends, and during the summer. ~~Further~~ Coordination with DPR and DOE ~~would be necessary~~ was undertaken to determine whether the proposed schoolyard has the potential to serve as public open space. ~~and the Applicant would work with DPR and DOE to provide for maintenance and operations of the schoolyard during public access hours.~~
- Explore the potential to provide public access to the Port Authority-owned open spaces near the Holland Tunnel entrance (in the block bounded by Watts, Broome, Varick, and Hudson Streets). ~~Further~~ Coordination with the Port Authority ~~would be required~~ was undertaken to determine whether this potential measure ~~is~~ was feasible.

In addition to the measures described above, the Applicant also explored the possibility of open space improvements to the site at 388 Hudson Street (which is currently being utilized for construction related to DEP's City Water Tunnel No. 3) and to SoHo Square.

~~These~~ Mitigation measures ~~and others~~ for the open space impact ~~will be~~ were explored by the Applicant in consultation with the lead agency, DCP, and DPR between the Draft and Final EIS, but no firm resolution regarding the implementation of these measures was reached.

The significant adverse impact on open space would be partially mitigated by means of Restrictive Declarations requiring a financial contribution by the Applicant towards the improvement of active open space, with a principal focus upon improvements to the Tony Dapolito Recreation Center operated by DPR that would enhance its ability to attract additional members from the community and increase its potential utilization. The scope of those and/or other improvements to open space would be developed by DPR in consultation with the community. The financial contribution to the Tony Dapolito Recreation Center would constitute partial mitigation because, as noted above, fully mitigating this impact would require the addition of new open space. Nonetheless, improvements to the Tony Dapolito Recreation Center, among other recreational opportunities, would be appropriate mitigation as it would allow year-round access to active recreation space and would appeal to a wide range of users.~~If feasible mitigation is found, the impacts will be considered partially mitigated. Absent the implementation of such measures, the Proposed Action could have an unmitigated significant adverse impact on open space.~~

D. SHADOWS

As described in Chapter 6, "Shadows," the incremental shadows cast by a future building on Projected Development Site 2 in the future with the Proposed Action (the With-Action condition) could result in significant adverse shadow impacts to Trump SoHo Plaza and SoHo Square. Under the RWCDS, these impacts would occur when Projected Development Site 2 is constructed. It should be noted that although the RWCDS for the future without the Proposed Action (the No-Action condition) assumes a development on Projected Development Site 2 with a height of only 30 feet, there is no height restriction under the current zoning in the Rezoning Area. Therefore, in the No-Action condition Projected Development Site 2 could be constructed to heights as tall as or taller than the 320-foot height limit in the With-Action condition, which would result in similar shadows on Trump SoHo Plaza and SoHo Square.

During the spring, late summer and fall, the Proposed Action would result in long durations of incremental shadow on Trump SoHo Plaza. The plaza already experiences periods of existing shadows, and the new project-generated shadows would reduce and at times eliminate the remaining periods of sunlight. Therefore, the analysis concluded that the Proposed Action would result in significant adverse shadow impacts to the users of this open space resource.

At SoHo Square during the spring and fall (the March 21/September 21 analysis day), the incremental shadow would remove the remaining areas of sunlight within the open space for about an hour, which would result in a significant adverse shadow impact to the users of this resource.

The *CEQR Technical Manual* identifies several different measures that could mitigate significant adverse shadow impacts on open spaces. These measures include relocating sunlight-sensitive features within an open space to avoid sunlight loss; relocating or replacing vegetation; undertaking additional maintenance to reduce the likelihood of species loss; or providing

replacement facilities on another nearby site. Other potential mitigation strategies include the redesign or reorientation of the open space site plan to provide for replacement facilities, vegetation, or other features. *CEQR Technical Manual* guidelines also discuss strategies to reduce or eliminate shadow impacts, including modifications to the height, shape, size, or orientation of the proposed development that creates the significant adverse shadow impact. To substantially reduce the extent of incremental shadows and eliminate the significant adverse shadow impact on Trump SoHo Plaza, Projected Development Site 2 would need to be limited to approximately 70 feet or less in height. Likewise, to substantially reduce the extent of incremental shadows and eliminate the significant adverse shadow impact on SoHo Square, Projected Development Site 2 would need to be limited to approximately 130 feet or less in height. The *CEQR Technical Manual* notes that where the affected resource is a city park, as is the case with SoHo Square, it is appropriate for the lead agency to coordinate mitigation options with the DPR, and that the lead agency may also wish to coordinate with DPR as an expert agency on resources that are not city parks, as is the case with the Trump SoHo Plaza.

~~Between the Draft and Final EIS, the Applicant will consult with DPR and DCP with respect to potential mitigation measures to offset the significant adverse impact to the users of Trump SoHo Plaza and SoHo Square. If feasible mitigation is found, the impacts will be considered partially mitigated. In the absence of feasible mitigation~~

No feasible mitigation measures for this significant adverse impact were identified. Therefore, the Proposed Action would result in unmitigated significant adverse shadow impacts on Trump SoHo Plaza and SoHo Square.

E. HISTORIC AND CULTURAL RESOURCES

ARCHAEOLOGICAL RESOURCES

As described in Chapter 7, "Historic and Cultural Resources," portions of four projected development sites (Sites 5, 10, 12, and 13) and two potential development sites (Sites 22 and 23) were identified as archaeologically sensitive for resources associated with the 19th century occupation of the 20 historic lots included within those sites. The Phase 1A Archaeological Documentary Study completed by AKRF in February 2012 recommended Phase 1B archaeological testing for these sites to determine the presence or absence of archaeological resources.

However, none of the six potential and projected development sites identified as archaeologically sensitive are under the Applicant's control. Future development on these properties could include as-of-right development, and there are no mechanisms available through CEQR to require that such development undertake archaeological testing to determine the presence or absence of archaeological resources or mitigation for any identified significant resources through avoidance or excavation and data recovery (i.e., Phase 2 or Phase 3 archaeological testing). Therefore, the as-of-right development that is anticipated to occur as a result of the Proposed Action could result in unmitigated significant adverse impacts on archaeological resources.

It should be noted that if any of these sites were to be developed through future discretionary actions that would be subject to review under CEQR, Phase 1B testing would be completed to confirm the presence or absence of archaeological resources as part of any future discretionary action. This testing, and any subsequent archaeology that may be needed, would be completed in consultation with the Landmarks Preservation Commission (LPC).

ARCHITECTURAL RESOURCES

As described in Chapter 7, "Historic and Cultural Resources," under the standards of the *CEQR Technical Manual*, construction of projected and potential development and enlargement sites not controlled by the Applicant could potentially result in construction-related impacts to ~~7~~ **one known resource and six** potential architectural resources due to their location within 90 feet of such development and enlargement sites. The resources would be afforded limited protection under New York City Department of Buildings (DOB) regulations applicable to all buildings located adjacent to construction sites (C26-112.4); however, since the resources are not New York City Landmarks (NYCL) or National Register-listed (NR-listed) properties, they are not afforded special protections under DOB Technical Policy and Procedure Notice (TPPN) #10/88 (*TPPN #10/88*). Additional protective measures afforded under *TPPN #10/88* would only become applicable if the resources are designated or listed in the future prior to the initiation of adjacent construction. If the resources are not designated or listed, they would not be subject to *TPPN #10/88* and may, therefore, be adversely impacted by adjacent development resulting from the Proposed Action.

The *CEQR Technical Manual* identifies protective measures, such as construction monitoring, as a possible mitigation measure for construction-related significant adverse impacts to architectural resources. However, future development on properties not controlled by the Applicant could be as-of-right development, and there are no mechanisms available through CEQR to require that such protective measures are undertaken. Therefore, as-of-right development that is anticipated to occur as a result of the Proposed Action on properties not controlled by the Applicant could result in unmitigated significant adverse construction-related impacts on architectural resources.

F. TRANSPORTATION

~~As described in Chapter 1, "Project Description," and Chapter 13, "Transportation," the transportation analyses were prepared based on a slight variation of the No-Action and With-Action RWCDS assumptions. As a result of recent building permits issued for new developments in the Rezoning Area that were not accounted for in the Draft Scope of Work, several changes were made to the No-Action and With-Action RWCDS assumptions. The changes to the RWCDS occurred shortly prior to certification of the Draft EIS, after substantial work had been completed on the transportation analyses. Because the RWCDS assumptions for the transportation analyses analyzed a larger incremental development between the No-Action and With-Action conditions (the updated RWCDS assumptions would yield up to approximately 470 fewer incremental person trips and up to approximately 80 fewer incremental vehicle trips), the transportation analyses are conservative in that they present a larger potential for project-generated impacts. Correspondingly, the transportation mitigation analyses presented below are based on the more conservative version of the No-Action and With-Action RWCDS assumptions.~~

~~Between the Draft and Final EIS, the transportation-related analyses will be updated to reflect the final RWCDS. Where impacts would continue to exist with the smaller trip increments as a result of the updated No-Action and With-Action RWCDS assumptions, similar measures (including primarily signal timing changes, daylighting, and crosswalk widenings) are likely to be warranted to mitigate those impacts. At other locations, some impacts may be completely eliminated. Impacts determined to be unmitigatable under the current analysis may also become mitigatable by imposing standard mitigation measures. Furthermore, as described in Chapter 13,~~

~~"Transportation," additional intersections may be analyzed between the Draft and Final EIS. These intersections will be selected in consultation with DCP and NYCDOT. The analysis of these additional intersections may identify additional significant adverse traffic impacts, for which mitigation measures would be identified. If feasible measures are not available to fully mitigate these impacts, they would be identified as unmitigated in the Final EIS.~~

~~In conjunction with the updates to the transportation related analyses between the Draft and Final EIS, the mitigation analysis as it relates to transportation will be further refined and the implementation timing of the proposed mitigation measures will also be assessed.~~

TRAFFIC

As discussed in Chapter 13, "Transportation," traffic conditions were evaluated at ~~22~~ 28 intersections for the weekday AM, midday, and PM peak hours, and at ~~18~~ 23 intersections for the Saturday midday peak hour. The Proposed Action would result in significant adverse traffic impacts at ~~13~~ 14 intersections during the weekday AM peak hour, 3 intersections during the weekday midday peak hour, ~~13~~ 14 intersections during the weekday PM peak hour, and 5 intersections during the Saturday midday peak hour. **Table 20-2** summarizes the recommended mitigation measures that are subject to review and approval by the New York City Department of Transportation (NYCDOT).

With these mitigation measures in place, all significant adverse traffic impacts identified above could be fully mitigated except at two intersections during the weekday AM peak hour, ten intersections during the weekday PM peak hour, and four intersections during the Saturday midday peak hour. As presented in Chapter 13, "Transportation," most of the impacted lane groups/movements at these unmitigated intersections operate at congested levels (mid-LOS D or worse) under the existing condition and all of them are expected to operate at congested levels under the No-Action condition, due in part to the high traffic volumes passing through the study area to access the Holland Tunnel. Specifically, the impacted lane groups/movements at the Varick Street intersections of Vandam, Spring, Dominick, and Broome Streets (which could not be mitigated during the weekday PM peak hour) and at the Varick Street intersections of Dominick and Broome Streets (which could not be mitigated during the Saturday midday peak hour) near the Holland Tunnel entrance are already projected to operate at LOS F under the No-Action condition. A negligible increase in incremental project-generated traffic volumes for the impacted lane groups/movements over the No-Action condition (fewer than ~~15~~ 20 peak hour vehicle trips during the weekday PM peak hour and ~~fewer than~~ approximately 5 peak hour vehicle trips during the Saturday midday peak hour) at these intersections would result in the significant adverse impact identified above. In addition, during traffic peak hours, New York City Police Department (NYPD) Traffic Enforcement Agents (TEAs) are positioned at critical intersections (including West Street and Canal Street; Hudson Street and Canal Street; Varick Street at Watts and Canal Streets; and Avenue of the Americas and Canal Street/Laight Street) overriding traffic signals to facilitate traffic flow near the Holland Tunnel. **Table 20-3** compares the level of service (LOS) conditions for the 2022 No-Action, With-Action, and Mitigation conditions for all four peak hours. Provided below is a discussion of each intersection with significant adverse traffic impacts and its recommended mitigation.

Table 20-2
Recommended Mitigation Measures

Intersection	Weekday AM	Weekday Midday	Weekday PM	Saturday Midday
West Street (Route 9A) and Clarkson Street	Shift ~~2~~ 1 second of green time from the NB/SB phase to the SB left-turn phase.	No significant adverse impact	Shift 2 seconds of green time from the NB/SB phase to the SB left-turn phase.	
West Street (Route 9A) and West Houston Street	Unmitigated	~~Shift 1 second of green time from the NB/SB phase to the EB/WB phase.~~ No significant adverse impact	Shift 1 second of green time from the NB/SB phase to the EB/WB phase.	
West Street (Route 9A) and Canal Street North	Shift 1 second of green time from NB/SB phase to the WB phase.	No significant adverse impact	No significant adverse impact	No significant adverse impact
Hudson Street and King Street	Shift 2 seconds of green time from the EB phase to the NB phase.	No significant adverse impact	No significant adverse impact	No significant adverse impact
Hudson Street and Charlton Street	No significant adverse impact	No significant adverse impact	Shift 4 second of green time from the NB phase to the WB phase.	No significant adverse impact
Hudson Street and Canal Street	Unmitigated	~~No significant adverse impact~~ Shift 1 second of green time from the EB+EB left-turn/WB right-turn phase to the EB/WB phase.	Unmitigated	
Varick Street and West Houston Street	Shift 2 seconds of green time from the WB phase to the SB phase.	No significant adverse impact	Unmitigated	No significant adverse impact
Varick Street and King Street	1) Install No Standing 7AM-10AM Monday-Friday sign on the south side of the EB approach for approximately 100 feet from the intersection to provide a EB right-turn lane; 2) Shift 2 seconds of green time from the EB phase to the SB phase.	No significant adverse impact	Unmitigated	Unmitigated
Varick Street and Charlton Street	Shift 1 second of green time from the WB phase to the SB phase.	No significant adverse impact	Install No Standing 4PM-7PM Monday-Friday sign on the south side of the WB approach for approximately 100 feet from the intersection to provide a WB left-turn lane; Unmitigated (southbound tunnel approach)	Unmitigated
Varick Street and Vandam Street	No significant adverse impact	No significant adverse impact	Unmitigated	No significant adverse impact
Varick Street and Spring Street	Install No Parking 7AM-10AM Monday through Friday sign on the east side of the SB approach from Vandam Street to Spring Street.	Shift ~~2~~ 1 second of green time from the SB phase to the EB phase.	Unmitigated	1) Install No Standing 1PM-7PM Saturday sign on the north side of the EB approach for approximately 100 feet from the intersection to provide an additional EB right-turn lane; 2) Install No Parking 1PM-4PM Saturday sign on the east side of the SB approach from Vandam Street to Spring Street.
Varick Street and Dominick Street	No significant adverse impact	No significant adverse impact	Unmitigated	Unmitigated
Varick Street and Broome Street	No significant adverse impact	Install No Standing 7AM-7PM Monday-Friday sign on the west side of the SB approach from Dominick Street to Broome Street to provide an additional SB right-turn lane.	Unmitigated	Unmitigated
Varick Street and Canal Street	Shift 1 second of green time from SB phase to EB/WB phase.	No significant adverse impact	Unmitigated	No significant adverse impact
Avenue of the Americas and West Houston Street	Shift 2 seconds of green time from the WB phase to the NB phase.	No significant adverse impact	No significant adverse impact	No significant adverse impact
Avenue of the Americas and Spring Street	Shift 3 seconds of green time from the NB phase to the EB phase.	No significant adverse impact	No significant adverse impact	
Avenue of the Americas and Canal Street/Laight Street	1) Install No Standing 7AM-10AM Monday through Friday on the north side of the WB approach from West Broadway to Avenue of the Americas to provide an additional WB through/right-turn lane; 2) Shift 1 second of green time from the EB/WB Canal Street phase to the NB phase.	No significant adverse impact	Unmitigated	No significant adverse impact
Washington Street and West Houston Street	No significant adverse impact	No significant adverse impact	Shift 1 second of green time from the WB phase to the SB phase.	No significant adverse impact
Hudson Street and Spring Street	Shift 1 second of green time from the NB phase to the EB phase.	No significant adverse impact	No significant adverse impact	

Notes: EB = Eastbound; WB = Westbound; NB = Northbound; SB = Southbound

Table 20-3
2022 No-Action, With-Action, and Mitigation Conditions
Traffic Level of Service Analysis

Intersection	2022 No-Action				2022 With-Action				2022 Mitigation			
	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS
Weekday AM Peak Hour												
West Street (Route 9A) & Clarkson Street												
Northbound	TR	0.84	18.6	B	TR	0.85	19.1	B	TR	0.86	20.0-	B
Southbound	L	1.14	149.3	F	L	1.18	164.7	F+	L	1.14	150.9	F
	T	0.82	18.6	B	T	0.82	18.6	B	T	0.83	19.5	B
	Intersection		26.5	C	Intersection		27.9	C	Intersection		27.9	C
West Street (Route 9A) & West Houston Street												
Eastbound	L	0.11	48.5	D	L	0.11	48.6	D	Unmitigated			
	R	0.03	46.1	D	R	0.03	46.1	D				
Westbound	L	0.60	60.2	E	L	0.62	61.1	E				
	LT	0.70	65.1	E	LT	0.72	66.4	E				
	R	1.16	164.5	F	R	1.26	203.9	F+				
Northbound	L	0.38	77.6	E	L	0.38	77.6	E				
	T	0.88	28.2	C	T	0.88	28.5	C				
Southbound	T	0.97	40.2	D	T	0.97	40.3	D				
	R	0.02	11.8	B	R	0.02	11.8	B				
	Intersection		42.0	D	Intersection		44.8	D				
West Street (Route 9A) & Canal Street North												
Westbound	L	0.52	61.9	E	L	0.58	64.6	E	L	0.55	62.2	E
	LR	1.01	124.6	F	LR	1.06	137.6	F+	LR	1.00	121.1	F
	R	1.02	127.4	F	R	1.07	142.3	F+	R	1.02	126.5	F
Northbound	T	0.77	9.7	A	T	0.78	9.8	A	T	0.78	10.4	B
Southbound	T	0.52	5.9	A	T	0.52	6.0	A	T	0.53	6.4	A
	Intersection		15.5	B	Intersection		16.7	B	Intersection		16.2	B
Hudson Street & King Street												
Eastbound	LT	0.17	21.3	C	LT	0.22	21.9	C	LT	0.23	23.5	C
Northbound	TR	0.93	31.8	C	TR	1.03	53.1	D+	TR	0.98	40.0	D
	Intersection		31.1	C	Intersection		50.8	D	Intersection		38.8	D
Hudson Street & Canal Street												
Eastbound	L	0.84	45.3	D	L	0.84	45.3	D	Unmitigated			
	T	0.72	19.1	B	T	0.72	19.1	B				
Westbound	T	1.90	446.1	F	T	2.03	504.3	F+				
	R	0.50	14.3	B	R	0.50	14.3	B				
Northbound	T	0.33	26.2	C	T	0.33	26.2	C				
(East Lanes)	R	0.31	29.6	C	R	0.31	29.6	C				
Northbound (West Lanes)	LT	1.12	101.0	F	LT	1.14	108.5	F+				
	Intersection		130.3	F	Intersection		148.8	F				
Varick Street & West Houston Street												
Westbound	L	0.74	30.5	C	L	0.78	33.1	C	L	0.84	40.2	D
	T	0.55	21.0	C	T	0.55	21.0	C	T	0.58	23.0	C
Southbound (East Lanes)	T	0.83	28.8	C	T	0.83	28.5	C	T	0.79	25.2	C
Southbound (West Lanes)	TR	1.01	53.7	D	TR	1.07	73.3	E+	TR	1.02	54.9	D
	Intersection		37.1	D	Intersection		45.0+	D	Intersection		38.1	D
Varick Street & King Street												
Eastbound	-	-	-	-	-	-	-	-	T	0.43	23.4	C
	TR	0.65	29.2	C	TR	0.81	38.2	D	-	-	-	-
	-	-	-	-	-	-	-	-	R	0.55	26.7	C
Southbound (East Lanes)	LT	0.61	17.7	B	LT	0.62	17.9	B	LT	0.58	16.1	B
Southbound (West Lanes)	T	1.02	52.6	D	T	1.07	67.3	E+	T	1.02	51.4	D
	Intersection		38.7	D	Intersection		48.3	D	Intersection		37.1	D

Table 20-3 (cont'd)
2022 No-Action, With-Action, and Mitigation Conditions
Traffic Level of Service Analysis

	2022 No-Action				2022 With-Action				2022 Mitigation			
Intersection	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS
Varick Street & Charlton Street												
Westbound	LT	0.73	34.1	C	LT	0.76	36.3	D	LT	0.79	39.1	D
Southbound (East Lanes)	T	0.80	22.9	C	T	0.81	23.6	C	T	0.79	22.2	C
Southbound (West Lanes)	TR	0.92	33.6	C	TR	1.00	48.7	D+	TR	0.98	42.7	D
	Intersection		28.9	C	Intersection		36.3	D	Intersection		33.4	C
Varick Street & Spring Street												
Eastbound	TR	0.73	34.1	C	TR	0.79	37.3	D	TR	0.79	37.3	D
	R	0.61	33.2	C	R	0.75	41.3	D	R	0.75	41.3	D
Southbound (East Lanes)	LT	1.00	46.1	D	LT	1.06	62.3	E+	LT	0.98	39.8	D
Southbound (West Lanes)	T	0.44	13.5	B	T	0.46	13.7	B	T	0.46	13.7	B
	Intersection		32.7	C	Intersection		40.9	D	Intersection		30.9	C
Varick Street & Canal Street												
Eastbound	TR	0.39	10.5	B	TR	0.39	10.6	B	TR	0.38	10.0-	A
Westbound	LT	1.07	66.1	E	LT	1.09	70.8	E+	LT	1.07	62.7	E
Southbound	L	0.40	30.6	C	L	0.49	34.5	C	L	0.52	36.8	D
	LTR	0.70	30.7	C	LTR	0.75	32.1	C	LTR	0.78	33.8	C
	Intersection		41.7	D	Intersection		44.2	D	Intersection		41.2	D
Avenue of the Americas & West Houston Street												
Westbound	T	0.71	27.0	C	T	0.73	27.4	C	T	0.77	30.4	C
	R	0.76	30.5	C	R	0.76	30.5	C	R	0.81	35.0+	D
Northbound	LTR	1.04	55.1	E	LTR	1.09	72.4	E+	LTR	1.04	50.2	D
	Intersection		44.4	D	Intersection		55.2	E	Intersection		43.1	D
Avenue of the Americas & Spring Street												
Eastbound	L	0.82	38.0	D	L	0.96	62.1	E+	L	0.87	42.3	D
	T	0.46	19.4	B	T	0.47	19.6	B	T	0.44	17.2	B
Northbound	TR	0.81	21.5	C	TR	0.82	21.8	C	TR	0.89	27.6	C
	Intersection		23.4	C	Intersection		27.2	C	Intersection		28.2	C
Avenue of the Americas & Canal Street/Laight Street												
Eastbound (Canal Street)	T	0.66	31.4	C	T	0.67	31.7	C	T	0.70	33.1	C
Eastbound (Laight Street)	T	0.81	58.4	E	T	0.81	58.4	E	T	0.81	58.4	E
Westbound	TR	1.04	56.6	E	TR	1.05	61.3	E+	TR	0.71	18.5	B
Northbound	LTR	1.10	84.0	F	LTR	1.12	91.1	F+	LTR	1.08	76.4	E
	Intersection		63.5	E	Intersection		67.5	E	Intersection		50.2	D
Hudson Street and Spring Street												
Eastbound	LT	0.86	44.4	D	LT	0.90	49.6	D+	LT	0.87	45.0	D
Northbound	TR	0.84	23.2	C	TR	0.90	27.9	C	TR	0.92	30.6	C
	Intersection		28.6	C	Intersection		33.3	C	Intersection		34.2	C
Weekday Midday Peak Hour												
Hudson Street & Canal Street												
Eastbound	L	0.72	38.3	D	L	0.72	38.3	D	L	0.76	40.7	D
	T	0.68	17.7	B	T	0.68	17.7	B	T	0.68	17.7	B
Westbound	T	1.78	393.0	F	T	1.80	401.5	F+	T	1.73	371.3	F
	R	0.49	14.6	B	R	0.49	14.6	B	R	0.49	14.6	B
Northbound	T	0.33	26.2	C	T	0.33	26.2	C	T	0.33	26.2	C
(East Lanes)	R	0.33	30.1	C	R	0.33	29.9	C	R	0.33	29.9	C
Northbound												
(West Lanes)	LT	0.95	51.9	D	LT	0.95	52.5	D	LT	0.95	52.5	D
	Intersection		108.4	F	Intersection		111.0	F	Intersection		106.0	F
Varick Street & Spring Street												
Eastbound	TR	0.75	35.7	D	TR	0.76	36.4	D	TR	0.73	34.1	C
	R	0.73	43.4	D	R	0.82	54.5	D+	R	0.76	46.8	D
Southbound (East Lanes)	LT	0.95	35.9	D	LT	0.95	36.9	D	LT	0.97	41.8	D
Southbound (West Lanes)	T	0.56	21.2	C	T	0.56	21.1	C	T	0.57	22.2	C
	Intersection		31.9	C	Intersection		33.5	C	Intersection		35.1	D

Table 20-3 (cont'd)
2022 No-Action, With-Action, and Mitigation Conditions
Traffic Level of Service Analysis

Intersection	2022 No-Action				2022 With-Action				2022 Mitigation			
	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS
Varick Street & Broome Street												
Westbound	L	0.23	19.5	B	L	0.23	19.5	B	L	0.23	19.5	B
Southbound (East Lanes)	T	0.45	15.2	B	T	0.43	15.0	B	T	0.43	15.0	B
Southbound (West Lanes)	TR	1.05	75.7	E	TR	1.13	105.7	F+	TR	0.85	34.7	C
	R	1.01	79.9	E	R	1.23	158.1	F+	R	0.84	36.5	D
	Intersection		42.7	D	Intersection		70.5	E	Intersection		24.5	C
Weekday PM Peak Hour												
West Street (Route 9A) & Clarkson Street												
Northbound	TR	0.88	20.8	C	TR	0.89	21.1	C	TR	0.90	23.4	C
Southbound	L	0.80	72.2	E	L	0.89	83.9	F+	L	0.84	74.9	E
	T	0.80	17.4	B	T	0.80	17.5	B	T	0.81	19.1	B
	Intersection		21.7	C	Intersection		22.7	C	Intersection		24.2	C
West Street (Route 9A) & West Houston Street												
Eastbound	L	0.74	88.9	F	L	0.75	91.2	F	L	0.71	83.2	F
	R	0.09	47.2	D	R	0.09	47.2	D	R	0.09	46.3	D
Westbound	L	0.70	65.6	E	L	0.71	66.4	E	L	0.69	64.1	E
	LT	0.76	69.8	E	LT	0.77	70.8	E	LT	0.75	67.9	E
	R	1.21	177.9	F	R	1.24	187.1	F+	R	1.20	172.3	F
Northbound	L	0.45	80.9	F	L	0.45	80.9	F	L	0.45	80.9	F
	T	0.88	28.5	C	T	0.89	28.8	C	T	0.90	30.0	C
Southbound	T	0.92	33.0	C	T	0.92	33.0	C	T	0.93	34.8	C
	R	0.05	12.1	B	R	0.05	12.1	B	R	0.05	12.5	B
	Intersection		43.6	D	Intersection		44.6	D	Intersection		44.5	D
Hudson Street & Charlton Street												
Westbound	TR	0.85	45.4	D	TR	1.04	83.7	F+	TR	0.90	47.9	D
Northbound	LT	0.78	20.3	C	LT	0.81	21.4	C	LT	0.88	28.3	C
	Intersection		26.6	C	Intersection		38.8	D	Intersection		33.8	C
Hudson Street & Canal Street												
Eastbound	L	1.08	107.0	F	L	1.08	107.0	F				
	T	0.54	14.5	B	T	0.54	14.5	B				
Westbound	T	0.40	29.0	C	T	0.48	30.8	C				
	R	1.07	86.4	F	R	1.07	85.9	F				
Northbound (East Lanes)	T	1.03	87.8	F	T	1.03	87.8	F	Unmitigated			
	R	0.07	23.9	C	R	0.06	23.9	C				
Northbound (West Lanes)	LT	1.14	109.4	F	LT	1.16	115.0	F+				
	Intersection		82.6	F	Intersection		83.8	F				
Varick Street & West Houston Street												
Westbound	L	0.58	23.2	C	L	0.59	23.5	C				
	T	0.63	23.1	C	T	0.63	22.9	C				
Southbound (East Lanes)	T	0.87	30.9	C	T	0.87	31.3	C	Unmitigated			
Southbound (West Lanes)	TR	1.28	183.0	F	TR	1.41	237.8	F+				
	Intersection		57.9	E	Intersection		72.2	E				
Varick Street & King Street												
Eastbound	TR	0.65	29.4	C	TR	0.79	37.0	D				
Southbound (East Lanes)	LT	0.89	28.8	C	LT	0.89	28.9	C	Unmitigated			
Southbound (West Lanes)	T	1.09	174.3	F	T	1.24	228.0	F+				
	Intersection		61.3	E	Intersection		77.6	E				

Table 20-3 (cont'd)
2022 No-Action, With-Action, and Mitigation Conditions
Traffic Level of Service Analysis

Intersection	2022 No-Action				2022 With-Action				2022 Mitigation			
	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS
Varick Street & Charlton Street [1]												
Westbound	-	-	-	-	-	-	-	-	L	0.79	41.1	D
	LT	1.07	93.1	F	LT	1.13	113.7	F+	-	-	-	-
	-	-	-	-	-	-	-	-	T	0.33	21.6	C
Southbound (East Lanes)	T	0.89	28.5	C	T	0.90	29.9	C	T	0.90	29.9	C
Southbound (West Lanes)	TR	1.20	250.5	F	TR	1.62	440.8	F+	TR	1.62	440.8	F+
	Intersection		81.5	E	Intersection		129.7	F	Intersection		111.7	F
Varick Street & Vandam Street												
Westbound	LT	0.24	20.4	C	LT	0.25	20.5	C	Unmitigated			
Southbound (East Lanes)	T	0.59	16.7	B	T	0.60	16.8	B				
Southbound (West Lanes)	TR	1.19	145.4	F	TR	1.22	157.4	F+				
	Intersection		54.9	D	Intersection		58.6	E				
Varick Street & Spring Street												
Eastbound	T	0.97	83.6	F	T	1.11	122.3	F+	Unmitigated			
	-	-	-	-	-	-	-	-				
	R	1.21	157.3	F	R	1.45	255.4	F+				
Southbound (East Lanes)	LT	0.65	16.7	B	LT	0.66	16.9	B				
Southbound (West Lanes)	T	0.96	148.7	F	T	0.98	159.3	F+				
	Intersection		73.7	E	Intersection		98.2	F				
Varick Street & Dominick Street												
Southbound (East Lanes)	LT	0.54	16.3	B	LT	0.56	16.8	B	Unmitigated			
Southbound (West Lanes)	TR	1.23	152.5	F	TR	1.29	178.0	F+				
	Intersection		74.7	E	Intersection		85.2	F				
Varick Street & Broome Street												
Westbound	L	0.43	22.7	C	L	0.42	22.5	C	Unmitigated			
Southbound (East Lanes)	T	0.50	15.9	B	T	0.52	16.1	B				
Southbound	TR	1.20	190.7	F	TR	1.62	372.3	F+				
(West Lanes)	R	1.26	188.8	F	R	1.68	381.3	F+				
	Intersection		78.1	E	Intersection		145.6	F				
Varick Street & Canal Street												
Eastbound	TR	0.33	9.9	A	TR	0.33	9.9	A	Unmitigated			
Westbound	LT	1.16	121.6	F	LT	1.15	120.5	F				
Southbound	L	0.76	52.3	D	L	0.88	72.2	E+				
	LTR	0.70	30.7	C	LTR	0.75	32.1	C				
	Intersection		56.8	E	Intersection		57.6	E				
Avenue of the Americas & Canal Street/Laight Street												
Eastbound (Canal Street)	T	0.44	23.7	C	T	0.45	23.8	C	Unmitigated			
Eastbound (Laight Street)	T	1.06	92.5	F	T	1.06	92.5	F				
Westbound	TR	1.17	129.7	F	TR	1.18	132.5	F+				
Northbound	TR	0.58	25.1	C	TR	0.58	25.1	C				
	Intersection		69.8	E	Intersection		70.4	E				
Washington Street and West Houston Street												
Westbound	LT	0.52	19.4	B	LT	0.53	19.6	B	LT	0.55	20.5	C
Southbound	TR	0.92	45.9	D	TR	0.95	51.4	D+	TR	0.93	46.1	D
	Intersection		30.4	C	Intersection		32.8	C	Intersection		31.1	C

Table 20-3 (cont'd)
2022 No-Action, With-Action, and Mitigation Conditions
Traffic Level of Service Analysis

Intersection	2022 No-Action				2022 With-Action				2022 Mitigation			
	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS
Saturday Midday Peak Hour												
Varick Street & King Street												
Eastbound	TR	0.33	21.6	C	TR	0.51	25.3	C	Unmitigated			
Southbound (East Lanes)	LT	0.94	35.5	D	LT	0.95	36.3	C				
Southbound (West Lanes)	T	1.04	88.2	F	T	1.09	103.5	F+				
	Intersection		55.0+	E	Intersection		61.2	E				
Varick Street & Charlton Street												
Westbound	-	-	-	-	-	-	-	-	Unmitigated			
	LT	0.74	35.3	C	LT	0.81	40.3	D				
	-	-	-	-	-	-	-	-				
Southbound (East Lanes)	T	0.86	26.5	C	T	0.88	27.7	C				
Southbound (West Lanes)	TR	1.09	95.3	F	TR	1.23	149.4	F+				
	Intersection		50.5	D	Intersection		70.9	E				
Varick Street & Spring Street												
Eastbound	-	-	-	-	-	-	-	-	T	0.97	83.2	F
	TR	1.22	167.5	F	TR	1.31	201.5	F+	-	-	-	-
	R	1.36	240.3	F	R	1.69	381.9	F+	R	1.14	140.3	F
Southbound (East Lanes)	LT	1.03	54.9	D	LT	1.08	71.4	E+	LT	1.00	45.3	D
Southbound (West Lanes)	T	1.15	118.6	F	T	1.15	119.2	F	T	1.15	119.2	F
	Intersection		101.0	F	Intersection		126.9	F	Intersection		79.5	E
Varick Street & Dominick Street												
Southbound (East Lanes)	LT	0.56	16.8	B	LT	0.58	17.0	B	Unmitigated			
Southbound (West Lanes)	TR	1.21	143.7	F	TR	1.22	149.3	F+				
	Intersection		70.7	E	Intersection		72.7	E				
Varick Street & Broome Street												
Westbound	L	0.30	20.5	C	L	0.32	20.7	C	Unmitigated			
Southbound (East Lanes)	T	0.55	16.5	B	T	0.56	16.6	B				
Southbound	TR	1.85	429.0	F	TR	2.09	538.0	F+				
(West Lanes)	R	2.01	501.4	F	R	2.33	649.4	F+				
	Intersection		197.7	F	Intersection		252.1	F				

Notes: L = Left Turn, T = Through, R = Right Turn, DefL = Defacto Left Turn, LOS = Level of Service.
+ Denotes a significant adverse traffic impact
(1) Varick Street and Charlton Street – unmitigated intersection (westbound impact mitigated; southbound impact unmitigated).

WEST STREET (ROUTE 9A) AND CLARKSON STREET

The significant adverse impact at the southbound left-turn of this intersection during the weekday AM and PM peak hours could be fully mitigated by shifting 1 and 2 seconds of green time from the northbound/southbound phase to the southbound left-turn phase, respectively.

WEST STREET (ROUTE 9A) AND WEST HOUSTON STREET

The significant adverse impact at the westbound right-turn of this intersection during the weekday AM peak hour could not be mitigated.

During the ~~weekday midday and~~ PM peak hour, the significant adverse impact at this intersection's westbound right-turn could be fully mitigated by shifting 1 second of green time from the northbound/southbound phase to the eastbound/westbound phase.

WEST STREET (ROUTE 9A) AND CANAL STREET NORTH

The significant adverse impact at the westbound left-turn/right-turn and westbound right-turn of this intersection during the weekday AM peak hour could be fully mitigated by shifting 1 second of green time from the northbound/southbound phase to the westbound phase.

WASHINGTON STREET AND WEST HOUSTON STREET

The significant adverse impact at the southbound approach of this intersection during the weekday PM peak hour could be fully mitigated by shifting 1 second of green time from the westbound phase to the southbound phase.

HUDSON STREET AND KING STREET

The significant adverse impact at the northbound approach of this intersection during the weekday AM peak hour could be fully mitigated by shifting 2 seconds of green time from the eastbound phase to the northbound phase.

HUDSON STREET AND CHARLTON STREET

The significant adverse impact at the westbound approach of this intersection during the weekday PM peak hour could be fully mitigated by shifting 4 second of green time from the northbound phase to the westbound phase.

HUDSON STREET AND CANAL STREET

The significant adverse impacts at the westbound through during the weekday AM peak hour, and the northbound left-turn/through (west lanes) during the weekday AM and PM peak hours of this intersection could not be mitigated.

The significant adverse impact at the westbound through during the weekday midday peak hour could be fully mitigated by shifting 1 second of green time from the eastbound/eastbound left-turn phase and westbound right-turn phase to the eastbound/westbound phase.

HUDSON STREET AND SPRING STREET

The significant adverse impact at the eastbound approach during the weekday AM peak hour could be fully mitigated by shifting 1 second of green time from the northbound phase to the eastbound phase.

VARICK STREET (EAST AND WEST LANES) AND WEST HOUSTON STREET

The significant adverse impact at the southbound through/right-turn (west lanes) of this intersection during the weekday AM peak hour could be fully mitigated by shifting 2 seconds of green time from the westbound phase to the southbound phase.

The significant adverse impact at the southbound through/right-turn (west lanes) of this intersection during the weekday PM peak hour could not be mitigated. However, NYPD TEAs

are positioned further downstream on Varick Street overriding traffic signals to facilitate traffic flow along the Varick Street corridor during traffic peak hours.

VARICK STREET (EAST AND WEST LANES) AND KING STREET

The significant adverse impact at the southbound through (west lanes) of this intersection during the weekday AM peak hour could be fully mitigated by prohibiting parking (installing a No Standing 7 AM–10 AM Monday through Friday sign) on the south side of King Street on the eastbound approach for approximately 100 feet from the intersection to provide a daylighted right-turn lane and by shifting 2 seconds of green time from the eastbound phase to the southbound phase.

The significant adverse impact at the southbound through (west lanes) of this intersection during the weekday PM and Saturday midday peak hours could not be mitigated. However, NYPD TEAs are positioned further downstream on Varick Street overriding traffic signals to facilitate traffic flow along the Varick Street corridor during traffic peak hours.

VARICK STREET (EAST AND WEST LANES) AND CHARLTON STREET

The significant adverse impact at the southbound through/right-turn (west lanes) of this intersection during the weekday AM peak hour could be fully mitigated by shifting 1 second of green time from the westbound phase to the southbound phase.

The significant adverse impacts at the westbound approach of this intersection during the weekday PM peak hour could be mitigated by installing a No Standing 4 PM–7 PM Monday to Friday sign for approximately 100 feet from the intersection to create a daylighted left-turn lane.

The significant adverse impact at the southbound through/right-turn (west lanes) of this intersection during the weekday PM and Saturday midday peak hours could not be mitigated. However, NYPD TEAs are positioned further downstream on Varick Street overriding traffic signals to facilitate traffic flow along the Varick Street corridor during traffic peak hours.

VARICK STREET (EAST AND WEST LANES) AND VANDAM STREET

The significant adverse impact at the southbound through/right-turn (west lanes) of this intersection during the weekday PM peak hour could not be mitigated. As noted above, this impacted lane group already operates at congested levels (LOS F) during the weekday PM peak hour and a negligible increase in incremental project-generated traffic volumes over the No-Action condition (fewer than 10 incremental vehicle trips) would result in this impact. In addition, NYPD TEAs are positioned further downstream on Varick Street overriding traffic signals to facilitate traffic flow along the Varick Street corridor during traffic peak hours.

VARICK STREET (EAST AND WEST LANES) AND SPRING STREET

The significant adverse impact at the southbound left-turn/through (east lanes) of this intersection during the weekday AM peak hour could be fully mitigated by prohibiting parking (installing a No Parking 7 AM–10 AM Monday through Friday sign) on the east side of Varick Street on the southbound approach from Vandam Street to Spring Street.

The significant adverse impact at the exclusive eastbound right-turn of this intersection during the weekday midday peak hour could be fully mitigated by shifting 1 second of green time from the southbound phase to the eastbound phase.

The significant adverse impacts at the eastbound through and eastbound right-turn of this intersection during the weekday PM peak hour could not be mitigated.

The significant adverse impacts at the eastbound approach and southbound left-turn/through (east lanes) of this intersection during the Saturday midday peak hour could be fully mitigated by prohibiting parking (installing a No Standing 1 PM–7 PM Saturday sign) on the north side of Spring Street on the eastbound approach for approximately 100 feet from the intersection to provide an additional EB right-turn lane and by prohibiting parking (installing a No Parking 1 PM–4 PM Saturday sign) on the east side of Varick Street on the southbound approach.

VARICK STREET (EAST AND WEST LANES) AND DOMINICK STREET

The significant adverse impact at the southbound through/right-turn (west lanes) of this intersection during the weekday PM and Saturday midday peak hours could not be mitigated. As noted above, this impacted lane group already operates at congested levels (LOS F) during the weekday PM and Saturday midday peak hours and negligible increases in incremental project-generated traffic volumes over the No-Action condition (fewer than 15 incremental vehicle trips during the weekday PM peak hour and fewer than 5 incremental vehicle trips during the Saturday midday peak hour) would result in this impact. In addition, NYPD TEAs are positioned further downstream on Varick Street overriding traffic signals to facilitate traffic flow along the Varick Street corridor during traffic peak hours.

VARICK STREET (EAST AND WEST LANES) AND BROOME STREET

The significant adverse impacts at the southbound through/right-turn and southbound right-turn (west lanes) of this intersection during the weekday midday and Saturday midday peak hours could be fully mitigated by installing a No Standing 7 AM–7 PM Monday to Friday sign on the west side of Varick Street on the southbound approach from Dominick Street to Broome Street to provide for an additional southbound right-turn lane.

The significant adverse impact at the southbound through/right-turn and southbound right-turn (west lanes) of this intersection during the weekday PM and Saturday midday peak hours could not be mitigated. As noted above, these impacted lane groups already operate at congested levels (LOS F) during the weekday PM and Saturday midday peak hours and negligible increases in incremental project-generated traffic volumes over the No-Action condition (fewer than 10 incremental vehicle trips during the weekday PM peak hour and fewer than 5 incremental vehicle trips during the Saturday midday peak hour) would result in these impacts. In addition, NYPD TEAs are positioned further downstream on Varick Street overriding traffic signals to facilitate traffic flow along the Varick Street corridor during traffic peak hours.

VARICK STREET AND CANAL STREET

The significant adverse impact at the westbound approach of this intersection during the weekday AM peak hour could be fully mitigated by shifting 1 second of green time from the southbound phase to the eastbound/westbound phase.

The significant adverse impact at the southbound left-turn of this intersection during the weekday PM peak hour could not be mitigated. However, NYPD TEAs are positioned at this intersection overriding traffic signals to facilitate traffic flow during traffic peak hours.

AVENUE OF THE AMERICAS AND WEST HOUSTON STREET

The significant adverse impact at the northbound approach of this intersection during the weekday AM peak hour could be fully mitigated by shifting 2 seconds of green time from the westbound phase to the northbound phase.

AVENUE OF THE AMERICAS AND SPRING STREET

The significant adverse impact at the eastbound left-turn of this intersection during the weekday AM peak hour could be fully mitigated by shifting 3 seconds of green time from the northbound phase to the eastbound phase.

AVENUE OF THE AMERICAS AND CANAL STREET/LAIGHT STREET

The significant adverse impacts at the westbound approach and northbound approach of this intersection during the weekday AM peak hour could be fully mitigated by installing a No Standing 7 AM–10 AM Monday through Friday sign on the north side of Canal Street on the westbound approach from West Broadway to Avenue of the Americas to provide an additional westbound through/right-turn lane and by shifting 1 second of green time from the eastbound/westbound Canal Street phase to the northbound phase.

The significant adverse impact at the westbound approach of this intersection during the weekday PM peak hour could not be mitigated. This impacted lane group already operates at congested levels (LOS F) during the weekday PM peak hour and a negligible increase in incremental project-generated traffic volumes over the No-Action condition (fewer than 5 incremental vehicle trips during the weekday PM peak hour) would result in this impact. In addition, NYPD TEAs are positioned at this intersection overriding traffic signals to facilitate traffic flow during traffic peak hours.

PEDESTRIANS

As discussed in Chapter 13, "Transportation," the Proposed Action would result in significant adverse pedestrian impacts at two crosswalk locations: the north crosswalk of Avenue of the Americas and Spring Street during the weekday PM peak period, and the north crosswalk of Varick Street and Spring Street during the weekday AM and PM peak periods. Potential measures to mitigate these significant adverse impacts are described below, and the mitigated conditions are summarized in **Table 20-4**. Implementation of these measures would be subject to review and approval by NYCDOT.

Table 20-4
2022 No-Action, With-Action, and Mitigation Conditions
Pedestrian Level of Service Analysis

Location	Mitigation Measures	AM Peak Period						PM Peak Period					
		2022 No-Action		2022 With-Action		2022 Mitigation		2022 No-Action		2022 With-Action		2022 Mitigation	
		SFP	LOS	SFP	LOS	SFP	LOS	SFP	LOS	SFP	LOS	SFP	LOS
Avenue of the Americas and Spring Street – North Crosswalk	Widening by 2.5 feet from 15 feet to 17.5 feet	31.8	C	21.9	D	No Significant Adverse Impact		21.4	D	16.2	D+	19.5	D
Varick Street and Spring Street – North Crosswalk	Widening by 4.5 feet from 14 feet to 18.5 feet	30.0	C	18.1	D+	24.5	C	19.1	D	12.8	E+	17.8	D

Note: SFP = square feet per pedestrian; LOS = level of service
+ Denotes a significant adverse traffic impact

AVENUE OF THE AMERICAS AND SPRING STREET

The north crosswalk at this intersection would deteriorate from level of service (LOS) D (~~22.0~~ 21.4 SFP) to LOS D (~~16.4~~ 16.2 SFP) during the weekday PM peak period. Restriping the width of this crosswalk from its existing width of 15 feet to ~~18~~ 17.5 feet would be required to fully mitigate the projected significant adverse crosswalk impact.

VARICK STREET AND SPRING STREET

The north crosswalk at this intersection would deteriorate from LOS C (~~30.6~~ 30.0 SFP) to LOS D (18.1 SFP) during the weekday AM peak period. It would deteriorate from LOS D (~~19.4~~ 19.1 SFP) to LOS E (~~12.7~~ 12.8 SFP) during the weekday PM peak period. Restriping the width of this crosswalk from its existing width of 14 feet to ~~19~~ 18.5 feet would be required to fully mitigate the projected significant adverse crosswalk impacts.

EFFECTS OF TRAFFIC MITIGATIONS 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.

MITIGATION IMPLEMENTATION

Subject to the approvals of NYCDOT, the above recommended mitigation measures would be implemented to mitigate the projected significant adverse transportation impacts at the completion of the Proposed Action's full build-out in 2022. Because the development of the Proposed Action would occur over approximately 10 years and include various project sites and components that would be completed and occupied prior to the 2022 full build-out, an "interim impact assessment" was conducted to determine the impacts that could occur prior to the 2022 full build-out and the mitigation measures that could be advanced to address these impacts.

As discussed above, small increases in incremental project-generated traffic volumes at some of the congested lane groups/movements near the Holland Tunnel would result in the significant adverse impacts identified above upon the full build-out of the Proposed Action. Thus, almost any new development in the Rezoning Area that would generate incremental trips exceeding the CEQR analysis threshold for vehicular traffic (i.e, approximately 350 residential units; 110,000 sf of commercial office; 90,000 sf of destination retail; 40,000 sf of local retail; 200 hotel rooms; or 650 dormitory beds) could potentially result in significant adverse traffic impacts. Based on this criteria and the sequencing of the various development sites presented in the No-Action and With-Action condition construction schedules presented in Chapter 18, "Construction," there could be a potential for significant adverse traffic impacts during the 1st quarter of 2018 when an incremental development of approximately 170,000 sf of commercial retail, 40,000 sf of destination retail, 9,000 of local retail, completion of the proposed public elementary school, 773 dormitory beds and 1,100 residential units would generate net incremental vehicular trips exceeding the CEQR analysis threshold during the weekday AM peak hour. The first Saturday significant adverse traffic impacts could occur by the 2nd quarter of 2020 when an incremental development of approximately 161,000 sf of commercial office, 43,000 sf of destination retail, 23,000 sf of local retail, completion of the proposed public elementary school, 773 dormitory

beds, and 2,100 residential units would generate net incremental vehicular trips exceeding the CEQR analysis threshold during the Saturday midday peak hour. Some or all of the 2022 With-Action mitigation measures could be advanced to these earlier points in time to mitigate the potential significant adverse impacts.

The same situation would apply to the pedestrian analysis, in which almost any new development in the Rezoning Area that would generate incremental trips exceeding the CEQR analysis threshold for pedestrians could potentially result in the significant adverse pedestrian impacts identified above. These potential pedestrian impacts could occur during the ~~same earlier points in time as the potential traffic impacts discussed above~~ 2nd Quarter of 2017 when an incremental development of approximately 120,000 sf of commercial retail, 19,000 sf of destination retail, 1,000 of local retail, completion of the proposed public elementary school, 773 dormitory beds and 500 residential units would generate net incremental pedestrian trips ~~are projected to~~ exceeding the CEQR analysis thresholds during ~~one or more~~ the weekday AM and PM peak hours. Some or all of the 2022 With-Action mitigation measures (crosswalk widening) could likewise be advanced to these earlier points in time to mitigate the potential significant adverse impacts.

G. CONSTRUCTION

TRANSPORTATION

As discussed in Chapter 18, "Construction," the cumulative operational and peak construction traffic increments (evaluated for peak construction in 2016 and in 2019) would be lower than the full operational traffic increments associated with the Proposed Action in 2022. Therefore, the potential traffic impacts during peak construction would be within the envelope of significant adverse traffic impacts identified for the With-Action condition in Chapter 13, "Transportation." Nonetheless, because existing and No-Action traffic conditions at some of the study area intersections through which construction-related traffic would also travel were determined to operate at unacceptable levels during commuter peak hours, it is possible that significant adverse traffic impacts could occur at some or many of these locations during construction. In order to alleviate construction traffic impacts, measures recommended to mitigate impacts associated with the operational traffic of the Proposed Action could be implemented ~~during~~ prior to peak construction in 2016 ~~before full build-out of the Proposed Action~~. As detailed above, measures to mitigate the operational traffic impacts in 2022 were recommended for implementation at ~~17~~ 19 intersections during weekday peak hours. These measures would encompass primarily signal timing adjustments and other operational measures, all of which could be implemented earlier at the discretion of NYCDOT to address actual conditions experienced at that time. However, as with the With-Action condition, there could also be significant adverse traffic impacts at two intersections during the weekday AM peak hour, ten intersections during the weekday PM peak hour, and four intersections during the Saturday midday peak hour during construction that cannot be fully mitigated. ~~Furthermore, as described in Chapter 13, "Transportation," additional intersections may be analyzed between the Draft and Final EIS. These intersections will be selected in consultation with DCP and NYCDOT. The analysis of these additional intersections may identify additional significant adverse traffic impacts, for which mitigation measures would be identified. If feasible measures are not available to fully mitigate these impacts, they would be identified as unmitigated in the Final EIS.~~

With respect to pedestrians, because the full build-out of the Proposed Action is expected to result in crosswalk impacts at two intersections—north crosswalk of Avenue of the Americas and Spring Street and north crosswalk of Varick Street and Spring Street, as discussed above, the same or lesser significant adverse pedestrian impacts could occur during construction prior to the full build-out of the Proposed Action. Accordingly, the same crosswalk widenings recommended to mitigate the pedestrian impacts for the Proposed Action could be advanced to mitigate the same impacts during construction.

~~As discussed in Chapter 18, "Construction," the construction-related transportation analyses reflect a slight variation of the No-Action and With-Action RWCDS assumptions that would yield more conservative impact findings. Between the Draft and Final EIS, the construction transportation analyses will be updated to reflect the final RWCDS.~~

H. CONCEPTUAL ANALYSIS

The analysis presented in Chapter 22, "Conceptual Analysis," determined that the hotel development scenario could result in significant adverse traffic impacts. It is not known which, if any, of the many properties in the Rezoning Area would be converted to new hotel use or developed with new hotel construction. However, for the purposes of the conceptual analysis, three sites were selected as representative of the type and amount of development that could occur under the hypothetical hotel development scenario. As compared with the total trip generation associated with the RWCDS, the hypothetical hotel development scenario would result in increases in the number of vehicle, pedestrian, and transit trips within the Rezoning Area during the weekday AM, weekday midday, weekday PM, and Saturday midday peak hours, with the greatest increases occurring during the weekday midday peak hour.

For any hotel construction or conversion that requires a special permit, any impacts that result from such construction or conversion would be assessed and disclosed to the public under and pursuant to a separate environmental review, and measures to mitigate any impacts would be presented, if warranted. However, any new hotel construction that occurs after the "residential development goal" is met could proceed as-of-right under the Special District text of the Proposed Action, and such development could result in unmitigated significant adverse traffic impacts. (New hotel construction would replace the residential development assumed under the RWCDS.) Under the hotel development scenario, the impacts identified at study area intersections along the Varick Street corridor would worsen (with those at Charlton, Vandam, Spring, and Dominick Streets likely realizing the greatest effects), and the impacts identified at three intersections along Hudson Street (at Canal, Charlton, and King Streets) would worsen. For intersections farther away from the sites selected for the hotel development scenario, the projected traffic increases would be more dispersed and would have lesser effects on the operating levels of these intersections. ✷