Chapter 21: Mitigation

A. INTRODUCTION

In accordance with the 2010 *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 refined and evaluated between the Draft Environmental Impact Statement (DEIS) and Final EIS (FEIS). Therefore, the FEIS may include more complete information and commitments on all practicable mitigation measures to be implemented with the proposed projects.

B. SHADOWS

As described in Chapter 6, "Shadows," the shadows cast by the proposed Bleecker Building would result in a significant adverse impact on LaGuardia Corner Gardens, a GreenThumb community garden located along LaGuardia Place adjacent to the Bleecker Building site on the South Block.[1] The garden was created on City-owned land in 1981 by volunteers and is a community asset, providing gardening opportunities for members. Although the garden is open to the public for only limited hours throughout the year (generally for several hours Saturday and Sundays April through October, and two hours on Tuesdays, Wednesdays and Thursdays mid-May through mid September), it is clearly visible at all times to pedestrians along LaGuardia Place and is considered an important community resource. The Bleecker Building would cast between four and five-and-a-half hours of new shadow on the garden during morning hours throughout the growing season (in the spring, summer, and fall). While the remaining sunlight could support shade-tolerant species, the proposed project's incremental shadows would jeopardize the viability of shade-intolerant species.

The *CEQR Technical Manual* identifies several different measures that could mitigate significant adverse shadow impacts on sunlight-sensitive resources such as community gardens. These measures include: relocating sunlight-sensitive vegetation within the garden to avoid sunlight loss; replacing sunlight-sensitive vegetation with more shade-tolerant species; monitoring vegetation for a set period of time while undertaking additional maintenance to reduce the likelihood of species loss; and/or re-orienting the garden or providing for replacement facilities on another nearby site. Potential mitigation strategies also can include modifications to the height, shape, size, or orientation of the proposed building(s) that create the significant adverse shadow impacts. The *CEQR Technical Manual* notes that where the affected resource is a city park, it is appropriate for the lead agency to coordinate mitigation options with the Department of Parks and Recreation (DPR), and that the lead agency may also wish to

[1] The construction-related impacts on LaGuardia Corner Gardens are discussed in Section E, below.

coordinate with DPR as an expert agency on resources that are not city parks, as is the case with the LaGuardia Corner Gardens.

Mitigation options considered, but rejected, for the significant adverse shadow impact on LaGuardia Corner Gardens included moving the proposed Bleecker Building eastward toward the center of the South Block, or southward toward West Houston Street, as well as reducing the height of the proposed Bleecker Building. While a change in the location of the Bleecker Building (either eastward or southward) would reduce the incremental shadows cast on the LaGuardia Corner Gardens, such an adjustment in site plan would result in an encroachment on the boundary of University Village, which has been determined eligible for listing on the State and National Registers of Historic Places (S/NR-eligible), and is also a designated New York City Landmark (NYCL). Given that such an adjustment could have adverse contextual effects on this historic resource, and that the reduction in shadows would only partially mitigate the significant adverse shadow impact, the relocation of the proposed Bleecker Building was rejected as a potential mitigation measure.

Reducing the proposed height of the Bleecker Building and/or re-orienting the tower portion of the building also were considered, but rejected as potential mitigation measures. Re-orienting the tower so that the nine-story portion of the building faces LaGuardia Place was rejected because shadow modeling of this configuration showed only marginal improvements in shadows on the LaGuardia Corner Gardens, and because the re-orientation could have adverse effects on the north-facing views from 505 LaGuardia Place. A reduction in height of the proposed Bleecker Building was rejected because the reduction in height that would be necessary to mitigate the significant adverse shadows impact would substantially compromise the goals and objectives of the Proposed Actions. As described in Chapter 22, "Alternatives to the Proposed Actions," a No Action (as-of-right) building at this location would be approximately 140 feet in height (170 feet high including rooftop mechanical), and would still result in significant adverse shadow impacts on the LaGuardia Corner Gardens. Based on further shadow modeling, it was determined that the proposed Bleecker Building would have to be approximately 50 feet in height or less in order to fully mitigate the significant adverse shadow impacts on LaGuardia Corner Gardens. Such a reduction in height would not allow for the provision of a 100,000-square-foot public school within the building in combination with the amount of NYU dormitory space that would be necessary for NYU to redevelop the site as a dormitory and public school building. As described in Chapter 1, "Project Description," a purpose and need for the Proposed Actions is to develop NYU dormitories so that more undergraduate students would have opportunity to live in student housing in order to create a strong academic community and to become better acclimated to the City. Additionally, the proposed Bleecker Building is the best location for a public school within the proposed project because it could be built earlier than the buildings on the North Block—allowing the New York City School Construction Authority (SCA) greater flexibility in the timing of the public school—and the building's design would allow for the public school as a separate and distinct use, with a separate entrance exclusive to the public school along Bleecker Street.

A partial mitigation measure under consideration is planting shade-tolerant species in portions of the LaGuardia Corner Gardens that would receive substantial shadowing as a result of the proposed project, and monitoring the health of the replanted garden. This mitigation would occur when the garden is restored (i.e., after the construction of the proposed Bleecker Building). While this mitigation is feasible, it would not serve to fully mitigate the significant adverse impact because the extent of project-generated shadows during the growing season could substantially alter the types of plantings that would be viable, and would require a change in the

types of plant materials that could grow successfully in the garden. The selection of viable perennial flowers and plants would be more limited in the future with the proposed project, and would require more careful planning and maintenance, which could be supported by NYU. For example, upon completion of the proposed Bleecker Building, NYU could provide more refined analysis of light availability during the growing season, and in coordination with the gardens' operators could support measures to increase the viability of plants such as: creating raised beds to enhance soil quality; providing constant access to water for shade-grown plants through an irrigation system or rain barrel; and providing for two to three organic fertilizer applications evenly spaced throughout the year.

A potential mitigation measure with uncertain feasibility is the relocation of the LaGuardia Corner Gardens prior to construction of the Bleecker Building, either further south on the South Block or elsewhere in a ¼-mile study area. The feasibility of this mitigation is uncertain because the LaGuardia Corner Gardens and other potential relocation sites—including less shadowed locations further south along the LaGuardia Place Strip—are not owned or controlled by the project sponsor.

Between the DEIS and FEIS, options will be explored to determine the feasibility of the above-described mitigation measures, and to identify different mitigation measures for this significant adverse shadows impact. This further analysis of mitigation will be coordinated with the lead agency; with DPR, which is an expert agency on resources that are not City parks and which provides programming and material support to LaGuardia Corner Gardens as a member of the City's GreenThumb program; and with the New York City Department of Transportation (NYCDOT), which has jurisdiction over the LaGuardia Corner Gardens and other property on the LaGuardia Place Strip.

In the absence of the relocation of facilities or other mitigation measures not yet identified, the significant adverse shadow impacts on the LaGuardia Corner Gardens would only be partially mitigated by the planting of shade-tolerant species in coordination with support for monitoring and maintenance by NYU.

C. HISTORIC AND CULTURAL RESOURCES

WASHINGTON SQUARE VILLAGE

As detailed in Chapter 7, "Historic and Cultural Resources," Washington Square Village has been determined eligible for listing on the State and National Registers of Historic Places (S/NR). The proposed project would result in alterations to the Washington Square Village complex—including the proposed development of two new buildings and landscaping, which require the elimination of the LaGuardia Retail building and the elevated garden, as well as limited alterations to the Washington Square Village buildings themselves. These alterations to the Washington Square Village complex would remove elements of this architectural resource that contribute to its significance. Therefore, the proposed project would have a significant adverse impact on this architectural resource.

Measures to minimize or partially mitigate significant adverse impacts to Washington Square Village would be implemented in consultation with the New York State Office of Parks, Recreation and Historic Preservation (OPRHP) and would be set forth in a Letter of Resolution (LOR) to be signed by the applicant, OPRHP, DASNY, and other involved agencies to be executed prior to publication of the FEIS. Potential mitigation measures include the following:

- Preparation of Historic American Buildings Survey (HABS) documentation of Washington Square Village would be prepared which would include photographic documentation, historic plans, and an accompanying historical narrative.
- NYU would consult with OPRHP regarding proposed changes to the ground floor facades of Washington Square Village's north and south buildings as design plans proceed. The LOR will specify the points in the design process at which consultation with OPRHP would occur.
- Prior to construction of the proposed project, and in consultation with OPRHP and the New York City Landmarks Preservation Commission (LPC), NYU would develop and implement Construction Protection Plans (CPPs) for University Village, Washington Square Village, the buildings in the Commercial Overlay Area that would be directly affected by ground floor alterations and buildings immediately adjacent to these buildings, and Shimkin Hall. The CPPs would be prepared in coordination with a licensed professional engineer and would follow the guidelines set forth in Section 523 of the *CEQR Technical Manual*, including conforming to LPC's *New York City Landmarks Preservation Commission Guidelines for Construction Adjacent to a Historic Landmark* and *Protection Programs for Landmark Buildings*. The CPP would also comply with the procedures set forth in the New York City Department of Buildings (DOB)'s *Technical Policy and Procedure Notice* (TPPN) #10/88.[1]

POTENTIAL NOHO HISTORIC DISTRICT EXPANSION

As detailed in Chapter 7, "Historic and Cultural Resources," four of the six buildings[2] in the Commercial Overlay Area that would be modified with ground floor alterations as a result if the Proposed Actions are contributing to the S/NR-eligible Potential NoHo Historic District Expansion. The four buildings—82 Washington Square East (80-84 Washington Square East/30-36 Washington Place), 14 Washington Place (12-16 Washington Place/240-242 Greene Street), 246-248 Greene Street/20-22 Waverly Place, and 18 Waverly Place—could be adversely affected by the projected ground floor alterations. Although these buildings are within an S/NR-eligible historic district, because there is no federal or state funding involved with the proposed ground floor alterations, there is no regulatory process to control changes to these architectural resources. Further, none of these architectural resources is an NYCL and, therefore, alterations to these architectural resources would not require LPC's review and approval. The analysis in this DEIS finds that depending on the extent of alterations and intact historic material to be removed, future alterations to the ground floors of these architectural resources could in some cases result in significant adverse impacts. To address this potential significant adverse impact, prior to the commencement of construction of the proposed project,[3] in consultation with LPC

[1] TPPN #10/88 was issued by DOB on June 6, 1988, to supplement Building Code regulations with regard to historic structures. TPPN #10/88 outlines procedures for the avoidance of damage to historic structures resulting from adjacent construction, defined as construction within a lateral distance of 90 feet from the historic resource.

[2] As part of an environmental review for a separate project in 2007, the buildings at 7 Washington Place/283 Mercer Street and 15 Washington Place were determined by OPRHP to be ineligible for listing on the State/National Registers of Historic Places and to be non-contributing to the Potential NoHo Historic District Expansion (see Appendix A, "Historic and Cultural Resources.")

[3] Submission of the CPPs may be phased so that a CPP is not required for a particular building until construction will occur at or proximate to that building.

and OPRHP, NYU would develop and implement CPPs for the four Commercial Overlay Area buildings that are contributing to the potential NoHo Historic District Expansion. The CPPs would be prepared in coordination with a licensed professional engineer and would follow the guidelines set forth in Section 523 of the *CEQR Technical Manual*, including conforming to LPC's New York City Landmarks Preservation Commission Guidelines for Construction Adjacent to a Historic Landmark and Protection Programs for Landmark Buildings. The CPPs will also comply with the procedures set forth in the New York City Department of Buildings Technical Policy and Procedure Notice (TPPN) #10/88. However, currently there are no specific redevelopment plans for the four buildings contributing to the S/NR-eligible Potential NoHo Historic District Expansion, so at this time it can not be determined whether this measure would fully mitigate potential impacts.

D. TRANSPORTATION

As discussed in Chapter 14, "Transportation," Reasonable Worst-Case Development Scenario (RWCDS) 3 was determined to be the overall worst-case development scenario for the study of potential transportation-related impacts. However, because RWCDS 1 would be expected to generate substantially more subway trips than RWCDS 3, its potential impacts on the subway system were also evaluated. Where impacts were identified, measures that could be implemented to mitigate these impacts are discussed below.

TRAFFIC

2021 PHASE 1

As discussed in Chapter 14, "Transportation," under the Phase 1—2021 Scenario there would be the potential for significant adverse traffic impacts at: two intersections during the weekday AM peak hour; three intersections during the weekday midday peak hour; and three intersections during the weekday PM peak hour. **Table 21-1** summarizes the recommended mitigation measures that are subject to review and approval by NYCDOT.

Table 21-1
Phase 1 (2021) Recommended Mitigation Measures

Intersection	AM	Midday	PM
West Houston Street and Sixth Avenue	Shift 1 second of green time from the WB phase to the NB phase.	No significant adverse impact	Shift 1 second of green time from the NB phase to the WB phase.
West Houston Street and LaGuardia Place/West Broadway	No significant adverse impact	Shift 2 seconds of green time from the EB/WB phase to the NB/SB phase.	No significant adverse impact
Bleecker Street and Mercer Street	Eliminate 4-5 alternate side parking spaces on the south side of Bleecker Street on the EB approach; install No Standing Anytime sign approximately 100 feet from the intersection; paint transitional striping on the pavement.	Eliminate 4-5 alternate side parking spaces on the south side of Bleecker Street on the EB approach; install No Standing Anytime sign approximately 100 feet from the intersection; paint transitional striping on the pavement.	Eliminate 4-5 alternate side parking spaces on the south side of Bleecker Street on the EB approach; install No Standing Anytime sign approximately 100 feet from the intersection; paint transitional striping on the pavement.
West Houston Street and Mercer Street	No significant adverse impact	No significant adverse impact	Shift 1 second of green time from the EB/WB phase to the SB phase.
East Houston Street and Lafayette Street	No significant adverse impact	Shift 1 second of green time from the EB/WB phase to the exclusive EB phase.	No significant adverse impact

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

With these mitigation measures in place, all of the significant adverse traffic impacts identified above would be fully mitigated, operating at the same or better service conditions as the No Build condition. **Table 21-2** compares the LOS conditions for the 2021 No Build, Build, and Build- with-Mitigation conditions for all three peak hours. Provided below is a discussion of each intersection with significant adverse traffic impact and its required mitigation.

Table 21-2
2021 No Build, Build, and Build with Mitigation Conditions
Level of Service Analysis

	2021 No Build				2021 Build					2021 Build with 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
Weekday AM Peak Hour													
West Houston Street and Sixth Avenue													
Westbound	T	0.69	25.7	C	T	0.72	26.3	C		T	0.74	27.6	C
	R	0.73	28.6	C	R	0.76	30.2	C		R	0.79	32.4	C
Northbound	LTR	1.11	80.4	F	LTR	1.12	83.8	F	+	LTR	1.09	70.7	E
	Intersection		59.5	E	Intersection		61.7	E		Intersection		54.4	D
Bleecker Street and Mercer Street													
Eastbound	TR	0.78	32.2	C	TR	1.00	66.0	E	+	TR	0.85	37.6	D
Southbound	LT	0.31	17.4	B	LT	0.35	18.1	B		LT	0.35	18.1	B
	Intersection		27.4	C	Intersection		51.1	D		Intersection		31.5	C
Weekday Midday Peak Hour													
West Houston Street and LaGuardia Place/West Broadway													
Eastbound	LTR	0.78	32.2	C	LTR	0.83	36.0	D		LTR	0.89	43.0	D
Westbound	L	0.53	46.8	D	L	0.53	46.8	D		L	0.53	46.8	D
	TR	0.60	14.5	B	TR	0.64	15.3	B		TR	0.67	17.0	B
Northbound	LT	0.78	41.0	D	LT	0.79	42.2	D		LT	0.73	35.9	D
	R	0.82	49.1	D	R	0.91	63.9	E	+	R	0.84	50.8	D
Southbound	LT	0.69	39.8	D	LT	0.73	43.1	D		LT	0.65	35.2	D
	R	0.19	22.9	C	R	0.18	22.8	C		R	0.17	21.2	C
	Intersection		27.4	C	Intersection		30.0	C		Intersection		30.1	C
Bleecker Street and Mercer Street													
Eastbound	TR	1.00	66.4	E	TR	1.15	114.4	F	+	L	0.98	58.5	E
Southbound	LT	0.41	18.9	B	LT	0.48	20.1	C		T	0.48	20.1	C
	Intersection		49.9	D	Intersection		80.1	F		Intersection		44.5	D
East Houston Street and Lafayette Street													
Eastbound	L	1.05	95.1	F	L	1.06	99.0	F	+	L	0.99	78.5	E
	T	0.42	13.7	B	T	0.43	13.8	B		T	0.43	13.8	B
Westbound	TR	0.66	25.0	C	TR	0.67	25.2	C		TR	0.69	26.3	C
Northbound	LT	0.66	27.6	C	LT	0.68	28.2	C		LT	0.68	28.2	C
	R	0.38	24.4	C	R	0.38	24.4	C		R	0.38	24.4	C
	Intersection		27.0	C	Intersection		27.4	C		Intersection		26.4	C
Weekday PM Peak Hour													
West Houston Street and Sixth Avenue													
Westbound	T	0.67	25.0	C	T	0.69	25.5	C		T	0.67	24.3	C
	R	0.96	52.7	D	R	0.98	58.2	E	+	R	0.95	50.8	D
Northbound	LTR	0.93	31.7	C	LTR	0.94	32.3	C		LTR	0.96	37.3	D
	Intersection		34.0	C	Intersection		35.5	D		Intersection		36.5	D
Bleecker Street and Mercer Street													
Eastbound	TR	1.08	89.5	F	TR	1.24	150.1	F	+	TR	1.06	79.6	E
Southbound	LT	0.56	21.7	C	LT	0.63	23.6	C		LT	0.63	23.6	C
	Intersection		62.1	E	Intersection		97.7	F		Intersection		56.4	E
West Houston Street and Mercer Street													
Eastbound	TR	0.46	15.3	B	TR	0.46	15.4	B		TR	0.47	16.1	B
Westbound	L	0.33	19.0	B	L	0.38	20.5	C		L	0.39	21.9	C
	T	0.76	20.8	C	T	0.76	21.0	C		T	0.78	22.2	C
Southbound	LTR	0.73	31.2	C	LTR	0.92	47.9	D	+	LTR	0.89	43.2	D
	Intersection		20.6	C	Intersection		23.8	C		Intersection		23.8	C

Notes: L = Left Turn, T = Through, R = Right Turn, DefL = Defacto Left Turn; LOS = Level of Service
+ Denotes a significant adverse traffic impact

West Houston Street and Sixth Avenue

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

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

West Houston Street and LaGuardia Place/West Broadway

The significant adverse impact at the northbound right-turn at this intersection during the midday peak hour could be fully mitigated by shifting 2 seconds of green time from the eastbound/westbound phase to northbound/southbound phase.

Bleecker Street and Mercer Street

The significant adverse impact at the eastbound approach at this intersection during all three peak hours could be fully mitigated by widening the eastbound Bleecker Street moving lane from 11 feet to effectively 16 feet. This widening can be achieved by eliminating 4 to 5 alternate side parking spaces on the south side of Bleecker Street on the eastbound approach, installing a No Standing Anytime sign at approximately 100 from the intersection, and painting transitional striping on the pavement.

West Houston Street and Mercer Street

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

East Houston Street and Lafayette Street

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

2031 PHASE 2

Under the Phase 2—2031 Full Build-out Scenario, there would be the potential for significant adverse traffic impacts at: three intersections during the weekday AM peak hour; six intersections during the weekday midday peak hour; and seven intersections during the weekday PM peak hour. **Table 21-3** summarizes the recommended mitigation measures that are subject to review and approval by NYCDOT.

With these mitigation measures in place, all of the significant adverse traffic impacts described above would be fully mitigated, operating at the same or better service conditions as the No Build condition. **Table 21-4** compares the LOS conditions for the 2031 No Build, Build, and Build with Mitigation conditions for all three peak hours. Provided below is a discussion of each intersection with a significant adverse traffic impact and its required mitigation.

Table 21-3
2031 Recommended Mitigation Measures

Intersection	AM	Midday	PM
West Houston Street and Sixth Avenue	Restripe the second moving lane from the median on the westbound approach from 14-feet to 13-feet. Restripe the third moving lane from the median on the westbound from 11-feet to 12-feet. Shift 1 second of green time from the WB phase to the NB phase.	Restripe the second moving lane from the median on the westbound approach from 14-feet to 13-feet. Restripe the third moving lane from the median on the westbound from 11-feet to 12-feet.	Restripe the second moving lane from the median on the westbound approach from 14-feet to 13-feet. Restripe the third moving lane from the median on the westbound from 11-feet to 12-feet.
West 4th Street and LaGuardia Place	No significant adverse impact	No significant adverse impact	Shift 1 second of green time from the EB phase to the NB phase.
West 3rd Street and LaGuardia Place	No significant adverse impact	Shift 1 second of green time from the WB phase to the NB/SB phase.	No significant adverse impact
Bleecker Street and LaGuardia Place	Shift 1 second of green time from the NB/SB phase to the EB phase.	Shift 1 second of green time from the NB/SB phase to the EB phase.	No significant adverse impact
West Houston Street and LaGuardia Place/West Broadway	No significant adverse impact	Shift 1 second of green time from the EB/WB phase to the NB/SB phase. Shift 1 second of green time from the exclusive WB phase to the NB/SB phase.	Shift 2 seconds of green time from the EB/WB phase to the NB/SB phase.
Bleecker Street and Mercer Street	Eliminate 4-5 alternate side parking spaces on the south side of Bleecker Street on the EB approach; install No Standing Anytime sign approximately 100 feet from the intersection; paint transitional striping on the pavement.	Eliminate 4-5 alternate side parking spaces on the south side of Bleecker Street on the EB approach; install No Standing Anytime sign approximately 100 feet from the intersection; paint transitional striping on the pavement.	Eliminate 4-5 alternate side parking spaces on the south side of Bleecker Street on the EB approach; install No Standing Anytime sign approximately 100 feet from the intersection; paint transitional striping on the pavement. Shift 1 second of green time from the SB phase to the EB phase.
West Houston Street and Mercer Street	No significant adverse impact	No significant adverse impact	Shift 2 seconds of green time from the EB/WB phase to the SB phase.
West 4th Street and Broadway	No significant adverse impact	Shift 1 second of green time from the EB phase to the SB phase.	Shift 1 second of green time from the EB phase to the SB phase.
West 3rd Street and Broadway	No significant adverse impact	No significant adverse impact	Shift 1 second of green time from the SB phase to the WB phase.

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

Table 21-4
2031 No Build, Build, and Build with Mitigation Conditions
Traffic Level of Service Analysis

Intersection	2031 No Build				2031 Build					2031 Build with 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 Houston Street and Sixth Avenue													
Westbound	T	0.70	25.9	C	T	0.73	26.6	C		T	0.76	28.5	C
	R	0.74	29.0	C	R	0.78	31.2	C		R	0.79	32.6	C
Northbound	LTR	1.12	85.9	F	LTR	1.14	91.5	F	+	LTR	1.11	77.9	E
	Intersection		63.0	E	Intersection		66.6	E		Intersection		59.0	E
Bleecker Street and LaGuardia Place													
Eastbound	LTR	0.85	37.2	D	LTR	0.92	46.3	D	+	LTR	0.89	41.9	D
Northbound	TR	0.55	22.8	C	TR	0.73	31.2	C		TR	0.75	33.4	C
Southbound	LT	0.30	17.3	B	LT	0.37	18.5	B		LT	0.38	19.3	B
	Intersection		29.3	C	Intersection		36.1	D		Intersection		34.8	C
Bleecker Street and Mercer Street													
Eastbound	TR	0.79	33.0	C	TR	1.03	74.7	E	+	TR	0.88	40.8	D
Southbound	LT	0.31	17.5	B	LT	0.36	18.3	B		LT	0.36	18.3	B
	Intersection		28.0	C	Intersection		56.7	E		Intersection		33.6	C
Weekday Midday Peak Hour													
West Houston Street and Sixth Avenue													
Westbound	T	0.70	25.8	C	T	0.72	26.5	C		T	0.73	26.9	C
	R	0.93	47.7	D	R	0.96	52.9	D	+	R	0.94	49.2	D
Northbound	LTR	0.98	39.1	D	LTR	0.99	42.1	D		LTR	0.99	42.1	D
	Intersection		37.3	D	Intersection		40.0	D		Intersection		39.5	D
West 3rd Street and LaGuardia Place													
Westbound	LTR	0.36	17.4	B	LTR	0.43	18.6	B		LTR	0.44	19.4	B
Northbound	LT	0.87	42.7	D	LT	0.90	47.9	D	+	LT	0.88	43.4	D
Southbound	TR	0.13	15.1	B	TR	0.14	15.2	B		TR	0.14	14.6	B
	Intersection		28.2	C	Intersection		30.9	C		Intersection		29.3	C
Bleecker Street and LaGuardia Place													
Eastbound	LTR	0.98	59.0	E	LTR	1.00	64.7	E	+	LTR	0.97	56.8	E
Northbound	TR	0.67	26.8	C	TR	0.70	27.5	C		TR	0.72	29.2	C
Southbound	LT	0.34	18.0	B	LT	0.35	18.1	B		LT	0.36	18.9	B
	Intersection		41.1	D	Intersection		43.7	D		Intersection		40.6	D
West Houston Street and LaGuardia Place/West Broadway													
Eastbound	LTR	0.79	33.0	C	LTR	0.86	37.8	D		LTR	0.88	41.3	D
Westbound	L	0.54	47.1	D	L	0.54	47.1	D		L	0.58	51.1	D
	TR	0.60	14.6	B	TR	0.65	15.4	B		TR	0.67	17.1	B
Northbound	LT	0.80	43.0	D	LT	0.82	44.9	D		LT	0.75	37.0	D
	R	0.83	50.3	D	R	0.92	65.9	E	+	R	0.86	53.0	D
Southbound	LT	0.71	41.5	D	LT	0.77	46.8	D	+	LT	0.68	37.3	D
	R	0.19	22.9	C	R	0.18	22.9	C		R	0.17	21.3	C
	Intersection		28.0	C	Intersection		31.2	C		Intersection		30.3	C
Bleecker Street and Mercer Street													
Eastbound	TR	1.01	69.0	E	TR	1.17	123.6	F	+	TR	1.00	63.8	E
Southbound	LT	0.41	18.9	B	LT	0.48	20.3	C		LT	0.48	20.3	C
	Intersection		51.6	D	Intersection		85.8	F		Intersection		47.9	D
West 4th Street and Broadway													
Eastbound	TR	0.48	27.9	C	TR	0.49	28.1	C		TR	0.50	29.3	C
Southbound	LT	1.01	47.3	D	LT	1.04	54.5	D	+	LT	1.02	47.9	D
	Intersection		44.7	D	Intersection		50.9	D		Intersection		45.4	D

Notes:
L = Left Turn, T = Through, R = Right Turn, DefL = Defacto Left Turn; LOS = Level of Service
+ Denotes a significant adverse traffic impact

Table 21-4 (cont'd)
2031 No Build, Build, and Build with Mitigation Conditions
Traffic Level of Service Analysis

	2031 No Build				2031 Build					2031 Build with 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
Weekday PM Peak Hour													
West Houston Street and Sixth Avenue													
Westbound	T	0.68	25.2	C	T	0.70	25.8	C		T	0.71	26.2	C
	R	0.97	55.6	E	R	1.00	62.8	E	+	R	0.98	58.3	E
Northbound	LTR	0.94	32.9	C	LTR	0.95	34.1	C		LTR	0.95	34.1	C
	Intersection		35.3	D	Intersection		37.5	D		Intersection		36.7	D
West 4th Street and LaGuardia Place													
Eastbound	TR	0.56	26.0	C	TR	0.59	27.1	C		TR	0.61	28.5	C
Northbound	R	0.67	28.1	C	R	0.89	50.6	D	+	T	0.86	44.2	D
	Intersection		27.0	C	Intersection		38.6	D		Intersection		36.2	D
West Houston Street and LaGuardia Place/West Broadway													
Eastbound	LTR	0.63	26.8	C	LTR	0.67	26.6	C		LTR	0.71	30.7	C
Westbound	L	0.40	41.8	D	L	0.40	41.8	D		L	0.40	41.8	D
	TR	0.64	15.2	B	TR	0.68	15.7	B		TR	0.71	17.7	B
Northbound	LT	0.84	47.5	D	LT	0.88	53.8	D	+	LT	0.80	41.7	D
	R	0.65	36.5	D	R	0.67	38.2	D		R	0.63	33.6	C
Southbound	LT	0.85	56.3	E	LT	0.96	78.0	E	+	LT	0.86	56.2	E
	R	0.28	24.6	C	R	0.32	25.4	C		R	0.30	23.5	C
	Intersection		26.4	C	Intersection		29.4	C		Intersection		27.6	C
Bleecker Street and Mercer Street													
Eastbound	TR	1.10	94.2	F	TR	1.30	177.1	F	+	TR	1.08	86.8	F
Southbound	LT	0.56	21.9	C	LT	0.64	24.0	C		LT	0.66	25.3	C
	Intersection		64.9	E	Intersection		113.0	F		Intersection		61.1	E
West Houston Street and Mercer Street													
Eastbound	TR	0.46	15.4	B	TR	0.48	15.6	B		TR	0.50	17.0	B
Westbound	L	0.34	19.4	B	L	0.40	21.7	C		L	0.43	24.7	C
	T	0.77	21.1	C	T	0.78	21.3	C		T	0.81	23.9	C
Southbound	LTR	0.75	31.9	C	LTR	0.93	50.8	D	+	LTR	0.88	41.2	D
	Intersection		20.9	C	Intersection		24.5	C		Intersection		24.7	C
West 4th Street and Broadway													
Eastbound	TR	0.57	30.1	C	TR	0.61	31.3	C		TR	0.64	32.9	C
Southbound	LT	0.57	39.7	D	LT	1.01	45.5	D	+	LT	0.99	39.9	D
	Intersection		38.1	D	Intersection		43.0	D		Intersection		38.6	D
West 3rd Street and Broadway													
Westbound	L	0.53	31.5	C	L	0.54	32.1	C		L	0.52	30.5	C
	T	0.80	41.6	D	T	0.86	46.8	D	+	T	0.83	42.8	D
Southbound	T	0.86	23.0	C	T	0.86	23.3	C		T	0.88	25.2	C
	R	0.49	18.3	B	R	0.59	22.5	C		R	0.61	24.5	C
	Intersection		26.9	C	Intersection		28.6	C		Intersection		29.0	C

Notes:
L = Left Turn, T = Through, R = Right Turn, DefL = Defacto Left Turn; LOS = Level of Service
+ Denotes a significant adverse traffic impact

West Houston Street and Sixth Avenue

The significant adverse impact at the northbound approach at this intersection during the AM peak hour could be fully mitigated by shifting 1 second of green time from the westbound phase to the northbound phase and by restriping the second moving lane from the median on the westbound approach from 14-feet to 13-feet and by restriping the third moving lane from the median on the westbound approach from 11-feet to 12-feet.

The significant adverse impact at the westbound right-turn at this intersection during the midday and PM peak hours could be fully mitigated by restriping the second moving lane from the

median on the westbound approach from 14-feet to 13-feet and by restriping the third moving lane from the median on the westbound approach from 11-feet to 12-feet.

West 4th Street and LaGuardia Place

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

West 3rd Street and LaGuardia Place

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

Bleecker Street and LaGuardia Place

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

West Houston Street and LaGuardia Place/West Broadway

The significant adverse impacts at the northbound right-turn and southbound left-turn/through at this intersection during the midday peak hour could be fully mitigated by shifting 1 second of green time from the eastbound/westbound phase and from the exclusive westbound phase, respectively, to the northbound/southbound phase.

The significant adverse impacts at the northbound left-turn/through and southbound left-turn/through at this intersection during the PM peak hour could be fully mitigated by shifting 2 seconds of green time from the eastbound/westbound phase to the northbound/southbound phase.

Bleecker Street and Mercer Street

The significant adverse impact at the eastbound approach at this intersection during all three peak hours could be fully mitigated by widening the eastbound Bleecker Street moving lane from 11 feet to effectively 16 feet. This widening can be achieved by eliminating 4 to 5 alternate side parking spaces on the south side of Bleecker Street on the eastbound approach, installing a No Standing Anytime sign at approximately 100 from the intersection, and painting transitional striping on the pavement. In addition, a shift of 1 second of green time from the southbound phase to the eastbound phase would be required during the PM peak hour.

West Houston Street and Mercer Street

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

West 4th Street and Broadway

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

West 3rd Street and Broadway

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

TRANSIT

As discussed in Chapter 14, "Transportation," the Proposed Actions under RWCDS 3 would not result in any significant adverse transit impacts by 2021 Phase 1 completion, but would result in significant adverse impacts to stairways at the Broadway-Lafayette and the West 4th Street subway stations (stairways S9 and S2A/B, respectively) upon the proposed project's full build-out in 2031. If NYU proceeds with the development of RWCDS 1, the same impacts at these two stations would occur in both 2021 and 2031. Potential measures to mitigate these significant adverse impacts are described below.

Mitigation that would improve conditions at these stations includes widenings of the impacted stairways and/or providing additional station access locations, which are long-term capital improvements. The feasibility of these mitigation measures is yet to be determined and would be subject to future evaluations by the Metropolitan Transportation Authority (MTA) New York City Transit (NYCT).

SUBWAY STATION OPERATIONS

Under RWCDS 3 during the AM peak period, the stairway on the northeast corner of the Broadway and West Houston Street intersection at the Broadway-Lafayette Station (S9) would decline from LOS C (v/c = 0.71) under the 2031 No Build condition to LOS D (v/c = 1.01) under the 2031 Build condition. During the PM peak period, the same stairway would decline from LOS D (v/c = 1.11) under the 2031 No Build condition to LOS E (v/c = 1.48) under the 2031 Build condition. Also, during the PM peak period, the stairway at the West 4th Street station (S2A/B), which is located on the northeast corner of the Sixth Avenue and West 3rd Street intersection, would decline from LOS C (v/c = 0.96) under the 2031 No Build condition to LOS D (v/c = 1.11) under the 2031 Build condition. These declines constitute significant adverse subway station impacts that require an evaluation of potential mitigation measures. According to the *CEQR Technical Manual*, stairway widths are considered in terms of multiples of 30-inch pedestrian lanes, such that all stairway widenings should result in a total width that would be a multiple of 30 inches. As shown in **Table 21-5**, the two significantly impacted stairways would have to be widened to 90 inches (7.5 feet) from their current widths of 3.8 feet (Broadway-Lafayette Station) and 6.6 feet (West 4th Street Station), respectively.

With RWCDS 1, the same two stairways would experience significant adverse impacts. However, these impacts would occur in both 2021 and 2031. In 2021 during the PM peak period, both the S9 stairway at the Broadway-Lafayette Station and the S2A/B stairway at the West 4th Street Station would deteriorate to LOS D with v/c ratios of 1.28 and 1.02, respectively. In 2031, the S9 stairway at the Broadway-Lafayette Station would deteriorate to LOS D (v/c = 1.09) during the AM peak period and to LOS E (v/c = 1.53) during the PM peak period. At the same time, the S2A/B stairway at the West 4th Street Station would deteriorate to LOS D (v/c = 1.14) during the PM peak period. As shown in **Table 21-5**, these significant adverse impacts could be mitigated with the same stairway widenings described above.

Table 21-5
2021 and 2031 Mitigated Build Condition Subway Stairway Analysis

Stairway	Width (ft.)	Effective Width (ft.)	15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS
			Down	Up				
Reasonable Worst-Case Development Scenario 3								
2031 Weekday AM Peak 15-Minutes								
Broadway-Lafayette Station (B,D,F,M Lines) – Broadway and Houston Street								
NE (S9)	8.5	7.5	40	455	0.95	0.90	0.51	B
2031 Weekday PM Peak 15-Minutes								
Broadway-Lafayette Station (B,D,F,M Lines) – Broadway and Houston Street								
NE (S9)	8.5	7.5	435	310	0.95	0.90	0.75	C
West Fourth Street Station (A,B,C,D,E,F,M Lines) – Sixth Avenue and West 3rd Street								
NE (S2A/B)	8.5	7.5	496	464	0.95	0.90	0.97	C
Reasonable Worst-Case Development Scenario 1								
2021 Weekday PM Peak 15-Minutes								
Broadway-Lafayette Station (B,D,F,M Lines) – Broadway and Houston Street								
NE (S9)	8.5	7.5	369	275	0.95	0.90	0.65	B
West Fourth Street Station (A,B,C,D,E,F,M Lines) – Sixth Avenue and West 3rd Street								
NE (S2A/B)	8.5	7.5	450	437	0.95	0.90	0.90	C
2031 Weekday AM Peak 15-Minutes								
Broadway-Lafayette Station (B,D,F,M Lines) – Broadway and Houston Street								
NE (S9)	8.5	7.5	33	499	0.95	0.90	0.55	B
2031 Weekday PM Peak 15-Minutes								
Broadway-Lafayette Station (B,D,F,M Lines) – Broadway and Houston Street								
NE (S9)	8.5	7.5	459	311	0.95	0.90	0.78	C
West Fourth Street Station (A,B,C,D,E,F,M Lines) – Sixth Avenue and West 3rd Street								
NE (S2A/B)	8.5	7.5	519	469	0.95	0.90	1.00	D

Notes:
Capacities were calculated based on rates presented in the 2010 *CEQR Technical Manual*.
Surging factors are only applied to the exiting pedestrian volume (2010 *CEQR Technical Manual*).
V/C = [Vin / (150 * We * Sf * Ff)]+ [Vx/ (150 * We * Sf * Ff)]
Where
Vin = Peak 15-minute entering passenger volume
Vx = Peak 15-minute exiting passenger volume
We = Effective width of stairs
Sf = Surging factor (if applicable)
Ff = Friction factor (if applicable)

The engineering analysis to determine the feasibility of implementing and any implementation of the above-described mitigation measures would be coordinated with the MTA NYCT to allow enough time for design and specification approvals, and for their construction to address the increased demand that would result from development of the proposed project. For the Broadway-Lafayette Station, the MTA NYCT has also identified a street-level connection on the west side of Broadway between West Houston Street and Bleecker Street. This mitigation would involve reopening slabbed stair by the Cable Building (northwest corner of Broadway and West Houston Street), restoring a closed control area, and reconnecting platform and street-level stairways. The reopening of this station access would help to relieve the high usage projected for the S9 stairway on the northeast corner of Broadway and West Houston Street. Between the draft and final publication of this EIS, additional feasibility evaluation of these mitigation measures will be undertaken. If the stairway widenings or other alternate mitigation measures

are determined to be infeasible, the projected significant adverse stairway impacts would remain unmitigated.

Between the DEIS and FEIS, additional station elements at the Broadway-Lafayette and West 4th Street Stations, as well as the Prince Street Station will be analyzed. Any significant adverse impacts that may be identified for these other station elements will be disclosed in the FEIS. If feasible mitigation measures cannot be determined for these impacts, they would also be disclosed as unmitigated significant adverse impacts.

PEDESTRIANS

As discussed in Chapter 14, "Transportation," the Proposed Actions would result in significant adverse pedestrian impacts at one corner location and one crosswalk location: 1) southeast corner of University Place and Waverly place (2021 Phase 1 and 2031 Phase 2); and 2) west crosswalk of Washington Square East and West 4th Street (2031 Phase 2 only). Potential measures to mitigate these significant adverse impacts are described below, and the mitigated conditions are summarized in **Table 21-6**.

Table 21-6
2021 & 2031 No Build, Build, and Mitigated Build Conditions
Pedestrian Level of Service Analysis

Location	Mitigation Measures	No Build		Build		Mitigated Build	
		SFP	LOS	SFP	LOS	SFP	LOS
Phase 1 – 2021 (Weekday Midday Peak 15-Minutes)							
University Place and Waverly Place – SE corner	6-inch sidewalk extension (corner bulb-out)	12.5	E	11.2	E	12.3	E
Phase 2 – 2031 (Weekday Midday Peak 15-Minutes)							
University Place and Waverly Place – SE corner	6-inch sidewalk extension (corner bulb-out)	12.2	E	10.7	E	11.8	E
Washington Square East and West 4th Street – West Crosswalk	Widening by 2.5 feet to 16 feet	24.4	D	17.0	D	20.8	D
Phase 2 – 2031 (Weekday PM Peak 15-Minutes)							
Washington Square East and West 4th Street – West Crosswalk	Widening by 2.5 feet to 16 feet	24.4	D	17.0	D	20.3	D

Note: SFP = square feet per pedestrian.

2021 PHASE 1

University Place and Waverly Place

The southeast corner at this intersection would deteriorate from LOS E (12.5 SFP) to LOS E (11.2 SFP) during the midday peak period. This significant adverse pedestrian impact could be fully mitigated with a 2-inch corner "bulb-out" or sidewalk extension on either Waverly Place or University Place. However, since a more severe impact was identified at this location for the proposed project's 2031 full build-out, the mitigation measure identified below for the 2031 Phase 2 impact should be implemented at this location.

2031 PHASE 2

University Place and Waverly Place

The southeast corner at this intersection would deteriorate from LOS E (12.2 SFP) to LOS E (10.7 SFP) during the midday peak period. This significant adverse pedestrian impact could be fully mitigated with a 6-inch corner "bulb-out" or sidewalk extension on either Waverly Place or University Place.

Washington Square East and West 4th Street

The west crosswalk at this intersection would deteriorate from LOS C (24.4 SFP) to LOS D (17.0 SFP) during the midday peak period. It would deteriorate from LOS D (23.6 SFP) to LOS D (16.6 SFP) during the PM peak period. Restriping the width of this crosswalk from its existing width of 13.5 feet to 16 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 approvals of the relevant agencies, including NYCDOT and NYCT, the above recommended mitigation measures would be implemented to mitigate the projected significant adverse transportation impacts at the completion of the project's Phase 1 and Phase 2 build-outs, in 2021 and 2031, respectively. Because the development of the proposed project would span approximately 20 years and include various components that would be completed and occupied prior to the 2021 and 2031 milestones, an "interim impact assessment" was conducted to determine, among those identified for Phase 1 and Phase 2 project completion, the impacts that would occur prior to these milestones and the mitigation measures that could be advanced to address these impact. For this assessment, three interim conditions were considered, as follows:

1) Completion of the Zipper Building in Phase 1 (currently anticipated for end of 2018);
2) Completion of the Mercer Building and center below-grade space in Phase 2 (currently anticipated for end of 2026); and
3) Completion of the Mercer Building above-grade space in Phase 2 (currently anticipated for end of 2028).

Trip projections for these interim conditions were prepared in the same manner as those described for the Phase 1 and Phase 2 Build conditions. Since these interim conditions represent partial build-out of the Phase 1 or Phase 2 development programs, their potential impacts would be within the envelope of impacts identified for each of these analysis phases. Hence, only locations found to incur significant adverse impacts upon Phase 1 and Phase completions were evaluated for this interim impact assessment.

For interim condition 1) above, the analysis of Phase 1 impacted locations found that for traffic, the five intersections identified to be significantly impacted under RWCDS 3 would likewise be significantly impacted during one or more analysis peak hours with the completion of the Zipper Building and the required mitigation measures would be the same as those described for the 2021 Build condition. For transit, the two stairways (S9 at the Broadway-Lafayette Station and S2A/B at the West 4th Street Station) identified to be significantly impacted during the 2021 PM peak period under RWCDS 1 would likewise be significantly impacted with the completion of the Zipper Building and the required mitigation measures would be the same as those described for the 2021 Build condition. With regard to pedestrians, the 2021 significant adverse impact identified for the southeast corner of University Place and Waverly Place is expected to be also impacted with the completion of the Zipper Building and the required mitigation measure would be the same as that described for the 2021 Build condition. Based on the results of this interim impact assessment, all recommended 2021 Phase 1 mitigation measures, would need to be advanced upon the completion and occupancy of the Zipper Building.

For interim condition 2) above, the analysis of Phase 2 impacted locations found that for traffic, the nine intersections identified to be significantly impacted under RWCDS 3 would likewise be significantly impacted during one or more analysis peak hours with the completion of the Mercer Building and center below-grade space except for the intersections of West 3rd Street at LaGuardia Place and West 3rd Street at Broadway. The required traffic mitigation measures at the impacted intersections under interim condition 2) would be the same as those described for the 2031 Build condition. For transit, the two stairways (S9 at the Broadway-Lafayette Station and S2A/B at the West 4th Street Station) identified to be significantly impacted during the 2031 PM peak period under both RWCDS 1 and RWCDS 3 would likewise be significantly impacted with the completion of the Mercer Building and center below-grade space and the required mitigation measures would be the same as those described for the 2021 and 2031 Build conditions. With regard to pedestrians, the 2031 significant adverse impacts identified for the southeast corner of University Place and Waverly Place and the west crosswalk of Washington Square East and West 4th Street are expected to be also impacted with the completion of the Mercer Building and center below-grade space and the required mitigation measures would be the same as those described for the 2031 Build condition. Based on the results of this interim impact assessment, all recommended 2031 Phase 2 mitigation measures, with the exception of signal timing changes at two intersections (the intersections of West 3rd Street at LaGuardia Place and West 3rd Street at Broadway), would need to be advanced upon the completion and occupancy of the Mercer Building and center below-grade space.

For interim condition 3) above, the analysis of Phase 2 impacted locations found that for traffic, in addition to the intersections identified as impacted under interim condition 2, at which required mitigation measures should already be in place, the intersection of West 3rd Street at LaGuardia Place would also likewise be significantly impacted with the completion of the Mercer Building above-grade space and require the same mitigation identified for the 2031 Build condition. Hence, the only mitigation for the project's full build-out in 2031 that would not be required by this time is the signal retiming recommended for the West 3rd Street and Broadway intersection. For transit and pedestrians, since all projected impacts would already exist prior to the completion of the Mercer Building above-grade space, the implementation of the required measures to mitigate these impacts should already be in place.

WEEKEND CONDITION ASSESSMENT

As discussed in Chapter 14, "Transportation," the development program planned for the NYU Core project contains primarily university-oriented uses that would generate most of their trip-making during weekday peak periods. However, some of the project's supporting uses, such as the local retail, hotel, and conference space, albeit expected to primarily serve the university population and its visitors, would together with the university academic and housing uses generate a measurable amount of vehicular and pedestrian trips during weekend peak periods. To determine the potential for transportation-related impacts during non-weekday peak hours, a semi-quantitative/qualitative assessment of a representative weekend peak period (Saturday afternoon) for the Phase 2–2031 Full Build-Out scenario was prepared. This assessment, which included estimates of project-generated Saturday peak hour trips and comparisons of weekday and Saturday background conditions, concluded that the potential transportation-related impacts during the Saturday afternoon peak hour would be within the envelope of impacts identified for the weekday peak hours.

TRAFFIC

The findings made for the weekday peak hours represent the worst-case traffic conditions and provided the disclosure on the extent of potential significant adverse traffic impacts at area intersections. Because the weekday peaks reflect the reasonable worst-case traffic conditions, any impacts that may occur during the Saturday peak hours would be of lesser magnitude and would be addressed with the same or lesser mitigation measures identified for the weekday peak hours.

PEDESTRIAN

The findings made for the weekday peak hours represent the worst-case pedestrian conditions and provided the disclosure on the extent of potential significant adverse pedestrian impacts at area sidewalks, corner reservoirs, and crosswalks. In addition, since the mitigation measures discussed above would involve only sidewalk extension and crosswalk restriping, they would be applicable across weekday and weekend time periods. Because the weekday peaks reflect the reasonable worst-case transportation conditions, any impacts that may occur during the Saturday peak hours would be of lesser magnitude and would be addressed with the same or lesser mitigation measures identified for the weekday peak hours.

E. CONSTRUCTION IMPACTS

TRAFFIC

A detailed traffic analysis conducted for the area intersections most affected by estimated construction-related traffic concluded that Phase 1 construction of the proposed project would not result in any significant adverse traffic impacts. During Phase 2 construction, peak activities generated by construction workers and truck deliveries would be substantially lower in comparison to those during Phase 1 construction. However, together with new trips resulting from the completion of Phase 1 components of the proposed project, there would still be a potential for significant adverse traffic impacts during Phase 2 construction. It is expected that mitigation measures would be imposed at three intersections to mitigate the 2021 operational traffic impacts identified in the DEIS. While the slightly higher traffic levels during peak construction in Phase 2 could result in additional construction-related impacts beyond the

operational impacts identified for the 2021 Phase 1 Build condition, the required mitigation measures are expected to be part of those presented for the 2031 full build-out of the proposed project. The additional mitigation would encompass only signal timing adjustments that would be required to mitigate the 2031 Build condition traffic impacts. These adjustments could be implemented early at the discretion of NYCDOT to address actual conditions experienced at that time.

TRANSIT

After the completion of Phase 1 components of the proposed project, the area's subway stations would incur increases in passengers generated by the completed uses. As discussed in Chapter 14, "Transportation," subway impacts are expected to occur in 2021 with the development of RWCDS 1. Hence, the combination of the Phase 2 construction worker subway trips and those generated by the completed Phase 1 project during the commuter peak hours would result in comparable significant adverse impacts to the subway station elements described for the proposed project (i.e., S9 stairway at the Broadway-Lafayette Station and S2A/B stairway at the West 4th Street Station), requiring the same mitigation measures.

PEDESTRIANS

After the completion of Phase 1 components of the proposed project, the combination of the Phase 2 construction worker pedestrian trips and those generated by the completed Phase 1 project during the commuter peak hours would result in a comparable significant adverse impact at the southeast corner of University Place and Waverly Place, requiring the same mitigation measure described for the project's 2021 Phase 1 build-out.

NOISE[1]

NYU has committed to a proactive approach to minimize noise during construction activities. This approach includes both source and path controls that exceed measures typical of standard construction practices. For example, in terms of source controls, as early in the construction period as practicable electrical-powered equipment would be selected for certain noisy equipment, such as concrete vibrators, crabs for panels, hoists, and man lifts (i.e., early electrification). Path noise control measures (i.e., portable noise barriers, panels, enclosures, and acoustical tents, where feasible) were used for certain dominant noise equipment, i.e., concrete trowel, crane, drill rig, and generator.

Even with such measures, the results of detailed construction analyses reported in Chapter 20, "Construction Impacts," indicate that significant adverse noise impacts are predicted to occur for two or more consecutive years at forty-seven (47) of the seventy-three (73) analyzed receptor sites. Significant noise impacts are predicted to occur at the following residential locations (see **Figure 20-13** for locations of receptors cited below):

- Washington Square Village 1 & 2 - at various locations on the south façades of the residential buildings (Receptors from A1 through A8), at various locations on the west façade of the residential building (Receptor A9), and at various locations on the east façade of the residential building (Receptor A15);

[1] Construction-related noise impacts on open spaces are described separately under *Open Space/Direct Effects* subheadings of Section E.

- Washington Square Village 3 & 4 - at various locations on the north façades of the residential buildings (Receptors from B1 through B8), at various locations on the west façade of the residential building (Receptor B9), at various locations on the south façades of the residential buildings (Receptors from B10 through B17), and at various locations on the east façade of the residential building (Receptor B18);
- Silver Tower II - at various locations on the four facades of the residential building (Receptors from C1 through C4);
- Silver Tower I - at various locations on the east façade of the residential building (Receptor D2), and at various locations on the south façade of the residential building (Receptor D3);
- 505 LaGuardia Place - at various locations on the west façade of the residential building (Receptor E3), and at various locations on the north façade of the residential building (Receptor E4);
- At top floor locations on the north façades of the residential buildings located on West Houston Street between Greene Street and Mercer Street (Receptor F);
- At various locations on the east façades of the sensitive receptor buildings located on LaGuardia Place between West 3rd Street and West Houston Street (Receptors I, J, and K);
- At top floor locations on the east façades of the sensitive receptor buildings located on LaGuardia Place between Washington Square South and West 3rd Street (Receptor Y); and
- At various locations on the west façades of the sensitive receptor buildings located on Mercer Street between Washington Square South and West Houston Street (Receptors O, P, Q, and BB); and
- At top floor locations on the west façades of the sensitive receptor buildings located on Mercer Street between West Houston Street and Prince Street (Receptors S and EE).

Significant construction-related noise impacts would also be expected to occur at sensitive locations/buildings proximate to the buildings identified above (e.g., sensitive locations between impacted receptors J and K as shown in **Figure 20-13**).

The buildings at many sensitive receptor locations where the significant noise impacts are predicted to occur have double-glazed windows and/or some form of alternative ventilation (i.e., central air conditioning, packaged terminal air conditioner [PTAC] units, or window air conditioning units). Buildings with both double-glazed windows and some form of alternative ventilation would be expected to have interior noise levels which would be approximately 25-35 dBA less than exterior noise levels. Buildings that do not have both double-glazed windows and alternative ventilation would provide less building attenuation. For example, interior noise levels for a building without alternative ventilation, during warm weather with an open window would be approximately 10-15 dBA less than exterior noise levels.

Measurements were made at various locations in the NYU-owned Washington Square Village and Silver Towers buildings to determine building attenuation values. The majority of those buildings' windows are single-pane. Occasionally, windows in apartments undergoing renovation will be replaced, but throughout the buildings overall, the windows are original to the buildings and single-pane. Based on the measured window/wall attenuation values, attenuation values for the Washington Square Village building locations tested ranged from 17-24 dBA, and attenuation values for the Silver Tower building locations tested ranged from 19-21 dBA. To maintain an interior $L_{10(1)}$ noise level of 45 dBA (the CEQR acceptable interior noise level criteria), a minimum of 30 dBA window/wall attenuation would be required. In order to improve

building window/wall attenuation, windows at the NYU-owned Washington Square Village and Silver Tower buildings would be re-caulked and storm windows would be offered. For the Washington Square Village buildings, NYU would offer to insulate/seal existing air conditioning units and provide an interior cover that improves the sound attenuation of the through-the-wall air conditions units, or NYU would offer to provide new air conditioning units. For the Silver Tower buildings, NYU would offer to replace existing PTAC units with high-attenuation PTAC units installed to fit properly/snugly in the PTAC sleeve. These steps are expected to increase window/wall attenuation values by up to approximately 5 dBA for the Washington Square Village buildings and by up to approximately 7 dBA for the Silver Towers buildings. However, these measures would not be sufficient to result in the minimum 30 dBA window/wall attenuation needed to fully mitigate project impacts. In order to achieve a window/wall attenuation value of that magnitude, in addition to re-caulking the existing windows and installing a storm window, the building HVAC systems would need to be replaced with systems that did not degrade the acoustical performance of the building façade (i.e., central air conditioning). Converting the existing HVAC systems for the Silver Towers and Washington Square Village buildings to central air conditioning is not practicable and potentially not feasible due to structural constraints, space and load requirements and tenant disruption issues.

Between the DEIS and FEIS, NYU will examine whether there are any additional practicable measures that can be utilized at these buildings to mitigate significant adverse noise impacts from construction. Absent the identification and commitment to implement such measures that would provide at least 30 dBA window/wall attenuation, construction activities would result in significant adverse noise impacts that would not be fully mitigated at both the Washington Square Village and Silver Tower buildings during portions of the construction period.

At locations on non-NYU buildings where significant noise impacts are predicted to occur, absent the development of additional measures to mitigate project-related construction noise, the project sponsors would offer to provide storm windows and /or window air conditioning units for buildings without double-glazed windows and/or alternative ventilation to mitigate project-related construction noise impacts. The 505 LaGuardia Place building already has storm windows installed and a means of alternate ventilation; consequently, the mitigation offering is not warranted for this building. With existing building attenuation measures (i.e., double-glazed windows and alternative ventilation) and the mitigation measures being provided for non-NYU-owned building, interior noise levels during much, if not all, of the time when project construction activities are taking place, would be expected to be below 45 dBA $L_{10(1)}$ (the CEQR acceptable interior noise level criteria).

With regard to the residential terrace locations (Washington Square Village 1-4, 566 LaGuardia Place, and 214 Mercer Street), while noise levels at these terraces already exceed the acceptable CEQR range (55 dBA $L_{10(1)}$ or less) for an outdoor area requiring serenity and quiet, during the daytime analysis periods construction activities are predicted to significantly increase noise levels, exacerbating these exceedances and resulting in significant adverse noise impacts. No feasible mitigation measures have been identified that could be implemented to eliminate the significant noise impacts at these terraces.

Between the DEIS and FEIS, options will be explored to (1) determine the practicability and feasibility of implementing any additional construction equipment control measures (beyond those already included in this analysis) that could be implemented during construction to reduce the magnitude of or eliminate project impacts; (2) perform detailed analyses for additional time periods to determine whether a more refined analysis would eliminate some of the conservative

results obtained by only examining the "worst-case" condition for each year; and (3) examine whether there are any additional practicable measures that can be utilized at these buildings which would mitigate project impacts. The proposed mitigation measures would partially mitigate significant project impacts (and significantly reduce construction-related noise levels) at some locations. However, absent the implementation of additional mitigation measures and/or refined analyses which result in lower noise levels, the proposed project would have significant adverse noise impacts that are not fully mitigated at the locations specified above.

OPEN SPACE

As described in Chapter 20, "Construction Impacts," during construction of the proposed Bleecker Building, under the LaGuardia Place Staging Option (construction staging only along the LaGuardia Place frontage) most, if not all of the LaGuardia Corner Gardens—a GreenThumb community garden that does not meet the *CEQR Technical Manual* guidance for consideration as a publicly accessible open space—would not be available for the approximately 39-month construction period because it would be located inside of the construction perimeter, within an area that would be utilized for construction staging. The temporary displacement of the LaGuardia Corner Gardens would be a significant adverse impact on this resource.

Under the Bleecker Street Staging Option (construction staging only along the Bleecker Street frontage), LaGuardia Corner Gardens would remain accessible throughout Bleecker Building construction. However, for an approximately 27-month period during construction most, if not all of the garden would need to be covered by a construction shed in order to provide a safe construction site. Specifically, protective measures would be necessary during above-grade work on the Bleecker Building (i.e., superstructure, building envelope, and interior finishes). The construction shed would reduce the overall utility of the garden, and would block most, if not all direct sunlight for an approximately 27-month period, thereby affecting the viability of plantings, and therefore would result in a significant adverse impact on this resource.

Under both construction staging options, the significant adverse impacts described above would be temporary in nature because upon completion of the Bleecker Building, the community garden could be restored. However, as detailed in Section B above, upon completion of the Bleecker Building the LaGuardia Corner Gardens would be significantly impacted by the building's shadows. Therefore, between the DEIS and FEIS, options will be explored to relocate the LaGuardia Corner Gardens, either further south on the South Block or elsewhere within a ¼-mile area of the project site. As mentioned in Section B above, the feasibility of relocation is uncertain because the LaGuardia Corner Gardens and other potential relocation sites—including less shadowed locations further south along the LaGuardia Place Strip—are not owned or controlled by the project sponsor.

If an acceptable relocation space cannot be identified between the DEIS and FEIS, other options will be further explored to refine construction staging and logistics for the Bleecker Building construction site with the goal of minimizing the extent and duration of disturbance of the LaGuardia Corner Gardens due to construction activities. For example, the possibility of staging construction from either the south or east of the Bleecker Building site will be further explored. However, this would require occupying property that the applicant owns, but does not control due to the existence of a long-term lease and, therefore, the applicant would need to obtain permission from that lessee. Absent the identification of acceptable relocation space, the temporary significant adverse construction impact could only be partially mitigated by the provision of temporary space and/or the refining of construction staging and logistics.

Furthermore, this partial mitigation would not minimize the significant adverse shadows impact on the LaGuardia Corner Gardens that is projected to occur once the Bleecker Building is operational.

As described in Chapter 20, "Construction Impacts," noise levels at on-site open space locations adjacent to where construction activities are taking place would increase significantly above the 3-5 dBA *CEQR Technical Manual* impact criteria. Due to the close proximity of on-site open spaces to construction activities, construction of the proposed project would result in significant adverse noise impacts on open spaces.

Noise levels at publicly accessible and private open space locations on the project site (e.g., Mercer Playground, Washington Square Village Elevated Garden, Silver Tower Oak Grove) are currently above the 55 dBA $L_{10(1)}$ recommended in the *CEQR Technical Manual* noise level for outdoor areas. Proposed construction activities would exacerbate these exceedances of the recommended level; average $L_{10(1)}$ noise levels would be in the high 60s to high 70s dBA in these open space locations during certain construction activities on the project site. Although the 55 dBA L10(1) guideline is a worthwhile goal for outdoor areas requiring serenity and quiet, this relatively low noise level is typically not achieved in parks and open space areas in New York City. Construction activities would not significantly increase $L_{eq(1)}$ noise levels for entire 19-year construction period on the project site. For example, at the open space area where the Washington Square Village Elevated Garden is currently located and where the proposed project's Public Lawn, Philosophy Garden, and Washington Square Village Play Garden would be located (i.e., Receptor Site 8 in **Figure 20-13**), noise levels would increase by more than 10 dBA for several years. No practical and feasible mitigation measures have been identified that could be implemented to reduce noise levels to below the 55 dBA $L_{10(1)}$ guideline and/or eliminate project impacts. Consequently, construction activities would result in noise levels in open space locations that would result in a significant adverse noise impact.

Between the DEIS and FEIS, options will be explored to (1) determine the practicability and feasibility of implementing any additional construction equipment control measures (beyond those already included in this analysis) that could be implemented during construction to reduce the magnitude of or eliminate project impacts at the open spaces specified above; and (2) perform detailed analyses for additional time periods to determine whether a more refined analysis would eliminate some of the conservative results obtained by only examining the "worst-case" condition for each year. Absent the development of additional mitigation measures and/or refined analyses which result in lower noise levels, the proposed project would result in significant adverse noise impacts that would not be fully mitigated at the locations specified above.

INDIRECT EFFECTS

As detailed in Chapter 20, "Construction Impacts," during all stages of Phase 1 construction, open space ratios in the non-residential (¼-mile) and residential (½-mile) study areas would improve, or would experience marginal decreases (less than 1 percent) that would not result in significant adverse impacts. However, during Phase 2 of construction—from 2022 to 2026 based on the conceptual construction schedule analyzed—open space ratios for both study areas would decrease (between 0.5 and 2.3 percent decreases as compared to future conditions without the Proposed Actions), with the exception of the passive open space ratio for the combined residential and non-residential populations in the ½-mile residential study area, which would remain virtually unchanged. During this period, as additional existing open spaces are displaced

to accommodate future project buildings and project open spaces, the Proposed Actions would temporarily exacerbate future deficiencies in passive and active open spaces both in the residential and non-residential study areas. According to the *CEQR Technical Manual*, in areas that are extremely lacking in open space, a reduction of open space ratios as small as 1 percent may be considered significant, as it may result in overburdening existing facilities or further exacerbating a deficiency in open space. Given that the study areas could be considered extremely lacking in open space resources, the projected decreases in open space ratios would result in temporary significant adverse impacts to active open space resources in the residential study area (the reductions in open space ratios in the non-residential study area would be less than 1 percent, and therefore would not be a significant adverse impact). The temporary impact on primarily active open space resources in the residential study area would not begin until the proposed Mercer Building has initiated construction, and would be eliminated by the provision of the project open spaces associated with the next stage of construction (i.e., completion of the Mercer Building and central portion of the North Block's proposed open space).

Between the DEIS and FEIS, NYU, in coordination with DPR will investigate the feasibility of full or partial mitigation for this temporary significant adverse impact. If feasible mitigation measures cannot be identified to fully mitigate this temporary impact, it would remain unmitigated. ✷