Chapter 18: Mitigation

A. INTRODUCTION

The preceding chapters of this Final Environmental Impact Statement (FEIS) discuss the potential for significant adverse environmental impacts resulting from the proposed Vanderbilt Corridor and One Vanderbilt project. Such potential impacts were identified in the transportation areas of traffic and pedestrians. Measures have been examined to minimize or eliminate these anticipated impacts. These mitigation measures are discussed below.

PRINCIPAL CONCLUSIONS

TRANSPORTATION

As discussed in Chapter 10, "Transportation," traffic conditions were evaluated at 31 intersections for the weekday AM, midday and PM peak hours and 10 intersections for the Saturday peak hour. In the 2021 With-Action condition, the proposed One Vanderbilt development would result in significant adverse traffic impacts at 14 intersections during the weekday AM peak hour, 6 intersections during the weekday midday peak hour, 14 intersections during the weekday PM peak hour, and 2 intersections during the Saturday peak hour. Most of the locations where significant adverse traffic impacts are predicted to occur could be fully mitigated with the implementation of standard mitigation measures (e.g., signal timing changes, approach daylighting and restriping, changing parking regulations). However, the significant adverse traffic impacts at the intersections of Third Avenue and East 42nd Street, Lexington Avenue and East 42nd Street, Madison Avenue and East 42nd Street, and Fifth Avenue and 42nd Street could not be fully mitigated during one or more analysis peak hours.

For transit, the analyses showed that more streamlined pedestrian flow within the Grand Central-42nd Street station complex would be achieved with the improvements funded by the proposed One Vanderbilt development. While operations at two station elements would be expected to deteriorate to levels in exceedance of the CEQR impact threshold, these impacts, when viewed in the context of the transit station improvements as a whole that are part of the proposed One Vanderbilt development, are not considered significant. Therefore, no mitigation measures specific to transit impacts were explored.

Pedestrian conditions were evaluated at 11 sidewalks, 15 corners, and 9 crosswalks for the weekday peak hours and 5 sidewalks, 5 corners, and 4 crosswalks for the Saturday peak hour. In the 2021 With-Action condition, the proposed One Vanderbilt development would result in significant adverse pedestrian impacts at 3 corners and 4 crosswalks during the weekday AM peak hour; 2 corners and 2 crosswalks during the weekday midday peak hour; 1 sidewalk, 3 corners, and 5 crosswalks during the weekday PM peak hour; and 1 crosswalk during the Saturday peak hour. Relocating sidewalk/corner obstructions, reconstructing an existing newsstand kiosk, extending existing curb lines to provide for additional corner reservoir space, and widening existing crosswalks, were identified to mitigate the projected pedestrian impacts.

The mitigation measures noted above would be subject to approval by the New York City Department of Transportation (DOT) prior to implementation. The traffic mitigation measures entail signal timing changes, approach daylighting and restriping, and changes to parking regulations—standard measures routinely implemented throughout the City and generally considered to be feasible. The pedestrian mitigation measures that consist of relocation of non-fixed sidewalk/corner obstructions (i.e., newspaper boxes and trash receptacles) and widening existing crosswalks within certain guidelines are also routinely implemented and are generally considered feasible. The pedestrian mitigation measures that require physical changes to street geometry (i.e., sidewalk/corner extension), relocation of fixed DOT-owned sidewalk/corner obstructions (i.e., signal pole), and widening existing crosswalks beyond certain guidelines will be reviewed by DOT at the time of implementation; if these measures are deemed infeasible at that time and no other alternative mitigation measures can be identified, those impacts would be unmitigated. Those mitigation measures that require physical changes to street geometry as described above will be designed and constructed at the sole cost of 317 Madison.

B. TRANSPORTATION

TRAFFIC

As discussed in Chapter 10, "Transportation," traffic conditions were evaluated at 31 intersections for the weekday AM, midday and PM peak hours and 10 intersections for the Saturday peak hour. In the 2021 With-Action condition, the proposed One Vanderbilt development would result in significant adverse traffic impacts at 14 intersections during the weekday AM peak hour, 6 intersections during the weekday midday peak hour, 14 intersections during the weekday PM peak hour, and 2 intersections during the Saturday peak hour, as summarized in **Table 18-1**.

Table 18-1
Summary of Significant Adverse Traffic Impacts

Intersection		Weekday AM Peak Hour	Weekday Midday Peak Hour	Weekday PM Peak Hour	Saturday Peak Hour
EB/WB Street	**NB/SB Street**				
East 42nd Street	Third Avenue	EB-L EB-T	EB-L EB-T WB-R	EB-L EB-T	
East 41st Street	Third Avenue			EB-LT	
East 42nd Street	Lexington Avenue	SB-R	EB-TR	SB-R	
East 47th Street	Park Avenue (SB)	SB-R		SB-R	
East 40th Street	Park Avenue (NB)			NB-TR	
East 40th Street	Park Avenue (SB)	SB-T (Viaduct Exit)		SB-T (Viaduct Exit)	
East 39th Street	Park Avenue (NB)	WB-LTR		WB-LTR	
East 46th Street	Vanderbilt Avenue	SB-LT		SB-LT	
East 42nd Street	Vanderbilt Avenue	WB-T		WB-T	
East 44th Street	Madison Avenue	EB-LT NB-T	EB-LT	EB-LT NB-T	
East 43rd Street	Madison Avenue	NB-L		NB-L	
East 42nd Street	Madison Avenue	WB-T NB-LT	WB-T NB-LT	WB-T	
47th Street	Fifth Avenue	SB-T			
46th Street	Fifth Avenue	SB-LT			
44th Street	Fifth Avenue	SB-LT		EB-R	
42nd Street	Fifth Avenue	WB-LT	WB-LT	WB-LT	WB-LT
West 42nd Street	Sixth Avenue		WB-R		WB-R
Total Impacted Intersections/Lane Groups		**14/17**	**6/9**	**14/16**	**2/2**

Notes: EB = Eastbound; WB = Westbound; NB = Northbound; SB = Southbound; L = Left Turn; T = Through; R = Right Turn

Tables 18-2A to **18-2D** itemize the recommended mitigation measures to address the identified impacts. With the implementation of these mitigation measures, which are subject to approval by DOT prior to implementation, most of the significant adverse traffic impacts identified above could be fully mitigated. However, the significant adverse traffic impacts at the intersections of Third Avenue and East 42nd Street (weekday AM and midday peak hours), Lexington Avenue and East 42nd Street (weekday PM peak hour), Madison Avenue and East 42nd Street (weekday AM, midday, and PM peak hours), and Fifth Avenue and 42nd Street (weekday AM, midday, and PM peak hours) could not be fully mitigated.

Table 18-2A
Recommended Mitigation Measures – Weekday AM Peak Hour

Intersection	No-Action Signal Timing	Recommended Mitigation Measures	Recommended Signal Timing
Third Avenue and East 42nd Street	EB/WB LPI: Green = 6 s EB/WB: Green = 21 s EB: Green = 13 s NB: Green = 35 s	Unmitigated	No change from No-Action
Lexington Avenue and East 42nd Street	EB/WB LPI: Green = 7 s EB/WB: Green = 30 s SB: Green = 43 s	Shift 1 second of green time from EB/WB phase to SB phase.	EB/WB LPI: Green = 7 s EB/WB: Green = 29 s SB: Green = 44 s
Park Avenue (NB and SB) and East 47th Street	WB: Green = 38 s NB/SB: Green = 41 s	Shift 1 second of green time from WB phase to NB/SB phase.	WB: Green = 37 s NB/SB: Green = 42 s
Park Avenue (NB and SB) and East 40th Street	EB: Green = 32 s NB/SB: Green = 48 s	1) Restripe EB approach from one 12-foot parking lane, one 12-foot left-turn/through lane, and one 10-foot right-turn lane to one 10-foot parking lane, one 11-foot left-turn/through lane, and one 13-foot right-turn lane; 2) Restripe the EB approach shared bike lane from the center lane to the south curbside lane; 3) Shift 1 second of green time from EB phase to NB/SB phase.	EB: Green = 31 s NB/SB: Green = 49 s
Park Avenue (NB and SB) and East 39th Street	WB: Green = 35 s NB/SB: Green = 45 s	Shift 1 second of green time from NB/SB phase to WB phase.	WB: Green = 36 s NB/SB: Green = 44 s
Vanderbilt Avenue and East 46th Street	EB: Green = 40 s NB/SB: Green = 40 s	Shift 1 second of green time from EB phase to NB/SB phase.	EB: Green = 39 s NB/SB: Green = 41 s
Vanderbilt Avenue and East 42nd Street	EB/WB: Green = 40 s NB/SB Pedestrian: Green = 40 s	Shift 1 second of green time from NB/SB pedestrian phase to EB/WB phase.	EB/WB: Green = 41 s NB/SB Pedestrian: Green = 39 s
Madison Avenue and East 44th Street	EB: Green = 35 s NB: Green = 45 s	1) Restripe the EB approach (north to south) from one 9-foot parking lane, one 5-foot bike lane, one 10-foot moving lane, and one 9-foot parking lane to one 10-foot parking lane, one 5-foot bike lane, one 10-foot moving lane, and one 8-foot parking lane. 2) Daylight north curbside of EB approach (install "No Standing 7 AM to 6 PM Monday to Friday") for 100-feet to create an additional left-turn lane; 3) Shift 1 second of green time from EB phase to NB phase.	EB: Green = 34 s NB: Green = 46 s
Madison Avenue and East 43rd Street	WB: Green = 35 s NB: Green = 45 s	1) Shift 2 second of green time from WB phase to NB phase. 2) Install "No Standing Anytime" for 75-feet on the north side of the East 43rd Street receiving side.	WB: Green = 33 s NB: Green = 47 s

Table 18-2A (cont'd)
Recommended Mitigation Measures – Weekday AM Peak Hour

Intersection	No-Action Signal Timing	Recommended Mitigation Measures	Recommended Signal Timing
Madison Avenue and East 42nd Street	EB/WB: Green = 35 s NB: Green = 45 s	1) Restripe the NB approach from one 12-foot west curbside lane, two 10.5-foot through lanes, and one 12-foot right-turn lane to one 11-foot west curbside lane, two 11-foot through lanes, and one 12-foot right-turn lane; 2) Impacts cannot be fully mitigated during this time period.	No change from No-Action
Fifth Avenue and 47th Street	WB Through: Green = 24 s WB: Green = 15 s SB: Green = 41 s	Shift 1 second of green time from WB through phase to SB phase.	WB Through: Green = 23 s WB: Green = 15 s SB: Green = 42 s
Fifth Avenue and 46th Street	EB: Green = 35 s SB: Green = 45 s	Shift 1 second of green time from EB phase to SB phase.	EB: Green = 34 s SB: Green = 46 s
Fifth Avenue and 44th Street	EB: Green = 35 s SB: Green = 45 s	1) Restripe EB approach from one 11-foot through lane and one 9-foot right-turn lane to one 10-foot through lane and one 10-foot right-turn lane; 2) Shift 1 second of green time from EB phase to SB phase.	EB: Green = 34 s SB: Green = 46 s
Fifth Avenue and 42nd Street	EB/WB: Green = 35 s SB: Green = 45 s	Unmitigated	No change from No-Action

Notes: EB = Eastbound; WB = Westbound; NB = Northbound; SB = Southbound; LPI = Leading Pedestrian Interval

Table 18-2B
Recommended Mitigation Measures – Weekday Midday Peak Hour

Intersection	No-Action Signal Timing	Recommended Mitigation Measures	Recommended Signal Timing
Third Avenue and East 42nd Street	EB/WB LPI: Green = 6 s EB/WB: Green = 21 s EB: Green = 13 s NB: Green = 35 s	Unmitigated	No change from No-Action
Lexington Avenue and East 42nd Street	EB/WB LPI: Green = 7 s EB/WB: Green = 30 s SB: Green = 43 s	Shift 1 second of green time from SB phase to EB/WB phase.	EB/WB LPI: Green = 7 s EB/WB: Green = 31 s SB: Green = 42 s
Madison Avenue and East 44th Street	EB: Green = 35 s NB: Green = 45 s	1) Restripe the EB approach (north to south) from one 9-foot parking lane, one 5-foot bike lane, one 10-foot moving lane, and one 9-foot parking lane to one 10-foot parking lane, one 5-foot bike lane, one 10-foot moving lane, and one 8-foot parking lane. 2) Daylight north curbside of EB approach (install "No Standing 7 AM to 6 PM Monday to Friday") for 100-feet to create an additional left-turn lane.	EB: Green = 35 s NB: Green = 45 s
Madison Avenue and East 42nd Street	EB/WB: Green = 35 s NB: Green = 45 s	Unmitigated	No change from No-Action
Fifth Avenue and 42nd Street	EB/WB: Green = 35 s SB: Green = 45 s	Unmitigated	No change from No-Action
Sixth Avenue and West 42nd Street	EB/WB: Green = 35 s NB: Green = 45 s	Shift 4 seconds of green time from NB phase to EB/WB phase.	EB/WB: Green = 39 s NB: Green = 41 s

Notes: EB = Eastbound; WB = Westbound; NB = Northbound; SB = Southbound; LPI = Leading Pedestrian Interval

Table 18-2C
Recommended Mitigation Measures – Weekday PM Peak Hour

Intersection	No-Action Signal Timing	Recommended Mitigation Measures	Recommended Signal Timing
Third Avenue and East 42nd Street	EB/WB LPI: Green = 6 s EB/WB: Green = 21 s EB: Green = 13 s NB: Green = 35 s	Shift 1 second of green time from NB phase to EB phase.	EB/WB LPI: Green = 6 s EB/WB: Green = 21 s EB: Green = 14 s NB: Green = 34 s
Third Avenue and East 41st Street	EB/WB: Green = 35 s NB: Green = 45 s	Shift 1 second of green time from NB phase to EB/WB phase.	EB/WB: Green = 36 s NB: Green = 44 s
Lexington Avenue and East 42nd Street	EB/WB LPI: Green = 7 s EB/WB: Green = 30 s SB: Green = 43 s	Unmitigated	No change from No-Action
Park Avenue (NB and SB) and East 47th Street	WB: Green = 38 s NB/SB: Green = 41 s	Shift 1 second of green time from WB phase to NB/SB phase.	WB: Green = 37 s NB/SB: Green = 42 s
Park Avenue (NB and SB) and East 40th Street	EB: Green = 32 s NB/SB: Green = 48 s	1) Restripe EB approach from one 12-foot parking lane, one 12-foot left-turn/through lane, and one 10-foot right-turn lane to one 10-foot parking lane, one 11-foot left-turn/through lane, and one 13-foot right-turn lane; 2) Restripe the EB approach shared bike lane from the center lane to the south curbside lane; 3) Shift 1 second of green time from EB phase to NB/SB phase.	EB: Green = 31 s NB/SB: Green = 49 s
Park Avenue (NB and SB) and East 39th Street	WB: Green = 35 s NB/SB: Green = 45 s	Shift 2 seconds of green time from NB/SB phase to WB phase.	WB: Green = 37 s NB/SB: Green = 43 s
Vanderbilt Avenue and East 46th Street	EB: Green = 40 s NB/SB: Green = 40 s	Shift 1 second of green time from EB phase to NB/SB phase.	EB: Green = 39 s NB/SB: Green = 41 s
Vanderbilt Avenue and East 42nd Street	EB/WB: Green = 40 s NB/SB Pedestrian: Green = 40 s	Shift 2 seconds of green time from NB/SB pedestrian phase to EB/WB phase.	EB/WB: Green = 42 s NB/SB Pedestrian: Green = 38 s
Madison Avenue and East 44th Street	EB: Green = 35 s NB: Green = 45 s	1) Restripe the EB approach (north to south) from one 9-foot parking lane, one 5-foot bike lane, one 10-foot moving lane, and one 9-foot parking lane to one 10-foot parking lane, one 5-foot bike lane, one 10-foot moving lane, and one 8-foot parking lane. 2) Daylight north curbside of EB approach (install "No Standing 7 AM to 6 PM Monday to Friday") for 100-feet to create an additional left-turn lane; 3) Shift 1 second of green time from EB phase to NB phase.	EB: Green = 34 s NB: Green = 46 s
Madison Avenue and East 43rd Street	WB: Green = 35 s NB: Green = 45 s	1) Shift 1 second of green time from WB phase to NB phase. 2) Install "No Standing Anytime" for 75-feet on the north side of the East 43rd Street receiving side.	WB: Green = 34 s NB: Green = 46 s
Madison Avenue and East 42nd Street	EB/WB: Green = 35 s NB: Green = 45 s	Unmitigated	No change from No-Action
Fifth Avenue and 44th Street	EB: Green = 35 s SB: Green = 45 s	1) Restripe EB approach from one 11-foot through lane and one 9-foot right-turn lane to one 10-foot through lane and one 10-foot right-turn lane; 2) Shift 1 second of green time from SB phase to EB phase.	EB: Green = 36 s SB: Green = 44 s
Fifth Avenue and 42nd Street	EB/WB: Green = 35 s SB: Green = 45 s	Unmitigated	No change from No-Action

Notes: EB = Eastbound; WB = Westbound; NB = Northbound; SB = Southbound; LPI = Leading Pedestrian Interval

Table 18-2D
Recommended Mitigation Measures – Saturday Peak Hour

Intersection	No-Action Signal Timing	Recommended Mitigation Measures	Recommended Signal Timing
Fifth Avenue and 42nd Street	EB/WB: Green = 35 s SB: Green = 45 s	Shift 1 second of green time from SB phase to EB/WB phase.	EB/WB: Green = 36 s SB: Green = 44 s
Sixth Avenue and West 42nd Street	EB/WB: Green = 35 s NB: Green = 45 s	Shift 4 seconds of green time from NB phase to EB/WB phase.	EB/WB: Green = 39 s NB: Green = 41 s

Notes: EB = Eastbound; WB = Westbound; NB = Northbound; SB = Southbound; LPI = Leading Pedestrian Interval

A discussion of the recommended mitigation measures is provided below. **Tables 18-3A** to **18-3D** compare the levels of service (LOS) and lane group delays for the impacted intersections under the 2021 No-Action, With-Action, and Mitigation conditions for the four analysis peak hours.

THIRD AVENUE AND EAST 42ND STREET

The significant adverse impacts at the eastbound left-turn and eastbound through lane groups of this intersection during the weekday AM peak hour could not be mitigated.

The significant adverse impacts at the eastbound left-turn, eastbound through, and westbound right-turn lane groups of this intersection during the weekday midday peak hour could not be mitigated.

The significant adverse impacts at the eastbound left-turn and eastbound through lane groups of this intersection during the weekday PM peak hour could be fully mitigated by shifting 1 second of green time from the northbound phase to the eastbound phase.

THIRD AVENUE AND EAST 41ST STREET

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

LEXINGTON AVENUE AND EAST 42ND STREET

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

The significant adverse impact at the eastbound approach 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/westbound phase.

The significant adverse impact at the southbound right-turn lane group of this intersection during the weekday PM peak hour could not be mitigated.

PARK AVENUE AND EAST 47TH STREET

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

Table 18-3A
2021 No-Action, With-Action, and Mitigation Conditions Level of Service Analysis
Weekday AM Peak Hour – Signalized Intersections

	Weekday AM											
	2021 No-Action				2021 With-Action				2021 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
Third Avenue & East 42nd Street												
EB	L	1.19	161.2	F	L	1.21	170.2	F +				
	T	1.20	129.5	F	T	1.21	136.2	F +				
WB	T	0.99	67.1	E	T	1.00	69.8	E				
	R	1.08	116.5	F	R	1.08	116.5	F	Unmitigated			
NB	LT	0.98	41.6	D	LT	0.99	42.9	D				
	R	0.33	20.3	C	R	0.33	20.3	C				
	Int.		74.4	E	Int.		77.5	E				
Lexington Avenue & East 42nd Street												
EB	T	0.82	35.9	D	T	0.83	36.7	D	T	0.86	39.8	D
	R	0.32	30.6	C	R	0.32	30.6	C	R	0.33	32.0	C
WB	T	0.85	37.4	D	T	0.86	38.5	D	T	0.89	42.0	D
SB	L	0.51	18.5	B	L	0.51	18.5	B	L	0.50	17.2	B
	T	0.73	17.5	B	T	0.73	17.5	B	T	0.71	16.4	B
	R	1.20	135.5	F	R	1.22	141.6	F +	R	1.18	126.0	F
	Int.		39.2	D	Int.		40.4	D	Int.		39.6	D
Park Avenue & East 47th Street												
WB	LT	0.73	30.5	C	LT	0.80	35.5	D	LT	0.83	38.4	D
	R	0.39	21.5	C	R	0.39	21.5	C	R	0.41	22.6	C
NB	L**	0.00	34.5	C	L**	0.00	34.6	C	L**	0.00	34.4	C
	LT	0.53	18.4	B	LT	0.53	18.4	B	LT	0.52	17.6	B
SB	T	0.57	19.2	B	T	0.58	19.4	B	T	0.57	18.5	B
	R	1.27	167.4	F	R	1.31	184.7	F +	R	1.27	166.0	F
	Int.		38.6	D	Int.		41.6	D	Int.		39.1	D
Park Avenue & East 40th Street												
EB	LT	0.75	35.9	D	LT	0.75	36.6	D	LT	0.81	41.7	D
	R	0.96	70.8	E	R	0.96	70.8	E	R	0.89	57.9	E
NB	T (Tunnel Exit)	0.93	37.5	D	T (Tunnel Exit)	0.96	42.9	D	T (Tunnel Exit)	0.94	38.5	D
	T onto Viaduct	0.61	17.9	B	T onto Viaduct	0.62	18.0	B	T onto Viaduct	0.61	17.1	B
	TR	0.74	27.2	C	TR	0.75	27.3	C	TR	0.73	25.4	C
SB	T	0.07	10.3	B	T	0.07	10.3	B	T	0.07	9.9	A
	T (Viaduct Exit)	1.05	64.2	E	T (Viaduct Exit)	1.06	68.9	E +	T (Viaduct Exit)	1.04	61.4	E
	Int.		43.5	D	Int.		46.2	D	Int.		42.0	D
Park Avenue & East 39th Street												
WB	LTR	1.68	339.0	F	LTR	1.68	342.3	F +	LTR	1.64	321.3	F
NB	L**	0.00	34.6	C	L**	0.00	34.7	C	L**	0.00	34.9	C
	LT	0.55	17.0	B	LT	0.55	17.1	B	LT	0.56	17.9	B
SB	T	0.68	19.4	B	T	0.68	19.5	B	T	0.70	20.5	C
	R	0.52	20.3	C	R	0.56	21.4	C	R	0.58	22.7	C
	Int.		115.1	F	Int.		115.8	F	Int.		110.0	F
Vanderbilt Avenue & East 46th Street												
EB	LTR	0.44	18.6	B	LTR	0.45	18.7	B	LTR	0.46	19.5	B
NB	TR	0.30	18.2	B	TR	0.28	18.0	B	TR	0.28	17.2	B
SB	LT	0.96	52.0	D	LT	0.99	61.0	E +	LT	0.97	54.1	D
	Int.		35.0-	C	Int.		39.9	D	Int.		36.7	D
Vanderbilt Avenue & East 42nd Street												
EB	T	0.65	22.3	C	T	0.66	22.5	C	T	0.64	21.5	C
WB	T	1.07	73.8	E	T	1.09	79.5	E +	T	1.06	69.6	E
	Int.		53.2	D	Int.		56.7	E	Int.		50.3	D
Madison Avenue & East 44th Street												
EB	LT	0.95	60.9	E	LT	0.97	66.4	E +	L	0.48	25.7	C
	-	-	-	-	-	-	-	-	T	0.41	23.2	C
NB	T	1.10	77.5	E	T	1.14	91.2	F +	T	1.12	80.6	F
	R	0.20	11.6	B	R	0.20	11.6	B	R	0.19	10.8	B
	Int.		72.1	E	Int.		83.7	F	Int.		66.3	E
Madison Avenue & East 43rd Street												
WB	T	0.38	21.9	C	T	0.40	22.3	C	T	0.43	24.2	C
	R	0.34	22.9	C	R	0.48	26.9	C	R	0.52	30.4	C
NB	L	0.82	42.2	D	L	0.93	62.8	E +	L	0.86	45.7	D
	T	0.88	24.6	C	T	0.89	24.9	C	T	0.85	20.4	C
	Int.		26.2	C	Int.		29.4	C	Int.		24.7	C

Table 18-3A (cont'd)
2021 No-Action, With-Action, and Mitigation Conditions Level of Service Analysis
Weekday AM Peak Hour – Signalized Intersections

Intersection	Weekday AM											
	2021 No-Action				2021 With-Action				2021 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
Madison Avenue & East 42nd Street												
EB	LT	0.74	29.4	C	LT	0.76	30.4	C	LT	0.76	30.4	C
WB	T	1.12	94.3	F	T	1.14	101.3	F +	T	1.14	101.3	F +
NB	LT	1.14	90.2	F	LT	1.16	98.4	F +	LT	1.14	89.8	F
	R	0.40	14.3	B	R	0.42	14.9	B	R	0.42	14.9	B
	Int.		76.8	E	Int.		82.9	F	Int.		79.5	E
Fifth Avenue & 47th Street												
WB	L	0.27	35.4	D	L	0.32	36.6	D	L	0.32	36.6	D
	T	0.63	25.1	C	T	0.64	25.7	C	T	0.66	27.1	C
SB	T	1.22	124.8	F	T	1.23	130.4	F +	T	1.20	116.7	F
	R	0.36	17.9	B	R	0.36	17.9	B	R	0.34	16.6	B
	Int.		106.6	F	Int.		110.8	F	Int.		99.8	F
Fifth Avenue & 46th Street												
EB	TR	0.39	21.0	C	TR	0.40	21.1	C	TR	0.41	22.0	C
SB	LT	1.11	72.6	E	LT	1.12	79.8	E +	LT	1.10	68.9	E
	Int.		65.5	E	Int.		71.6	E	Int.		62.4	E
Fifth Avenue & 44th Street												
EB	T	0.40	22.1	C	T	0.40	22.0	C	T	0.43	23.2	C
	R	0.94	65.4	E	R	0.95	66.8	E	R	0.95	67.3	E
SB	LT	1.12	80.9	F	LT	1.15	91.1	F +	LT	1.12	79.5	E
	Int.		74.2	E	Int.		82.8	F	Int.		73.5	E
Fifth Avenue & 42nd Street												
EB	T	0.63	25.2	C	T	0.64	25.5	C				
	R	0.17	21.1	C	R	0.17	21.1	C				
WB	LT	1.20	125.9	F	LT	1.21	133.5	F +				
SB	LT	1.00	36.6	D	LT	1.00	37.0	D	Unmitigated			
	R	0.00	11.3	B	R	0.00	11.3	B				
	Int.		62.5	E	Int.		65.3	E				

Notes: L = Left-turn; T = Through; R = Right-turn; LOS = Level of Service; EB = Eastbound; WB = Westbound; NB = Northbound; SB = Southbound; Int. = Intersection

** To mimic actual conditions for NB/SB left turning vehicles on Park Avenue, the sum of two delays were accounted for: (1) delay from making the left-turn; and (2) delay from waiting at the red light after the left-turn.

+ Denotes a significant adverse traffic impact

Table 18-3B
2021 No-Action, With-Action, and Mitigation Conditions Level of Service Analysis
Weekday Midday Peak Hour – Signalized Intersections

Intersection	Weekday Midday											
	2021 No-Action				2021 With-Action				2021 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
Third Avenue & East 42nd Street												
EB	L	1.19	158.0	F	L	1.20	161.3	F +				
	T	1.01	62.8	E	T	1.05	76.2	E +				
WB	T	0.90	51.5	D	T	0.86	47.4	D				
	R	1.07	117.7	F	R	1.10	125.5	F +	Unmitigated			
NB	LT	1.07	68.1	E	LT	1.10	61.8	E				
	R	0.55	27.9	C	R	0.55	27.9	C				
	Int.		72.5	E	Int.		71.9	E				
Lexington Avenue & East 42nd Street												
EB	TR	1.12	100.7	F	TR	1.13	106.3	F +	TR	1.10	91.6	F
WB	T	1.03	69.6	E	T	0.97	53.8	D	T	0.94	47.4	D
SB	L	0.48	17.6	B	L	0.54	19.4	B	L	0.56	21.0	C
	T	0.64	15.8	B	T	0.66	16.1	B	T	0.68	17.2	B
	R	1.07	88.2	F	R	0.76	31.0	C	R	0.79	34.3	C
	Int.		57.5	E	Int.		49.4	D	Int.		44.8	D

Table 18-3B (cont'd)
2021 No-Action, With-Action, and Mitigation Conditions Level of Service Analysis
Weekday Midday Peak Hour – Signalized Intersections

Intersection	Weekday Midday											
	2021 No-Action				2021 With-Action				2021 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
Madison Avenue & East 44th Street												
EB	LT	0.85	45.6	D	LT	0.90	52.2	D +	L	0.53	26.1	C
	-	-	-	-	-	-	-	-	T	0.26	20.0-	B
NB	T	0.89	24.8	C	T	0.92	27.8	C	T	0.92	27.8	C
	R	0.25	12.6	B	R	0.45	17.7	B	R	0.45	17.7	B
	Int.		28.7	C	Int.		32.4	C	Int.		26.4	C
Madison Avenue & East 42nd Street												
EB	LT	0.80	32.0	C	LT	0.82	32.8	C				
WB	T	0.96	45.9	D	T	1.06	72.8	E +				
NB	LT	1.05	55.5	E	LT	1.08	67.2	E +	Unmitigated			
	R	0.29	12.0	B	R	0.29	12.0	B				
	Int.		45.6	D	Int.		59.8	E				
Fifth Avenue & 42nd Street												
EB	T	0.68	26.4	C	T	0.69	26.7	C				
	R	0.23	22.8	C	R	0.23	22.8	C				
WB	LT	1.09	85.4	F	LT	1.21	130.3	F +	Unmitigated			
SB	LT	0.85	19.7	B	LT	0.84	19.0	B				
	R	0.00	11.3	B	R	0.00	11.3	B				
	Int.		40.6	D	Int.		56.2	E				
Sixth Avenue & West 42nd Street												
EB	T	0.63	25.6	C	T	0.65	25.9	C	T	0.58	21.7	C
WB	T	0.74	28.5	C	T	0.79	30.6	C	T	0.71	24.7	C
	R	0.94	68.4	E	R	1.13	124.2	F +	R	0.97	70.4	E
NB	LT	0.59	13.2	B	LT	0.59	13.2	B	LT	0.65	17.0	B
	R	0.42	14.6	B	R	0.42	14.6	B	R	0.47	19.4	B
	Int.		23.2	C	Int.		29.5	C	Int.		24.5	C

Notes: L = Left-turn; T = Through; R = Right-turn; LOS = Level of Service; EB = Eastbound; WB = Westbound; NB = Northbound; SB = Southbound; Int. = Intersection
+ Denotes a significant adverse traffic impact

Table 18-3C
2021 No-Action, With-Action, and Mitigation Conditions Level of Service Analysis
Weekday PM Peak Hour – Signalized Intersections

Intersection	Weekday PM											
	2021 No-Action				2021 With-Action				2021 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
Third Avenue & East 42nd Street												
EB	L	1.15	148.8	F	L	1.21	170.7	F +	L	1.13	137.6	F
	T	1.14	106.0	F	T	1.15	111.4	F +	T	1.12	99.7	F
WB	T	0.78	41.3	D	T	0.79	42.3	D	T	0.79	42.3	D
	R	1.04	123.3	F	R	1.04	123.3	F	R	1.04	123.3	F
NB	LT	0.95	35.4	D	LT	0.96	37.1	D	LT	0.99	43.5	D
	R	0.41	22.4	C	R	0.44	23.2	C	R	0.45	24.7	C
	Int.		61.2	E	Int.		65.0	E	Int.		63.6	E
Third Avenue & East 41st Street												
EB	LT	1.08	98.9	F	LT	1.13	113.4	F +	LT	1.09	101.0	F
WB	R	0.80	44.1	D	R	0.80	44.1	D	T	0.78	40.8	D
NB	T	0.60	13.4	B	T	0.61	13.5	B	T	0.62	14.4	B
	R	0.17	11.2	B	R	0.17	11.2	B	R	0.18	12.0	B
	Int.		31.9	C	Int.		35.1	D	Int.		33.1	C
Lexington Avenue & East 42nd Street												
EB	T	0.83	36.3	D	T	0.86	38.0	D				
	R	0.24	27.3	C	R	0.24	27.3	C				
WB	T	0.73	31.5	C	T	0.76	32.5	C				
SB	L	0.63	22.5	C	L	0.63	22.5	C	Unmitigated			
	T	0.65	16.0	B	T	0.65	16.0	B				
	R	1.12	104.5	F	R	1.17	123.3	F +				
	Int.		34.2	C	Int.		37.3	D				

Table 18-3C (cont'd)
2021 No-Action, With-Action, and Mitigation Conditions Level of Service Analysis
Weekday PM Peak Hour – Signalized Intersections

	Weekday PM											
	2021 No-Action				2021 With-Action				2021 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
Park Avenue & East 47th Street												
WB	LT	0.50	22.4	C	LT	0.53	23.0	C	LT	0.54	24.0	C
	R	0.59	28.0	C	R	0.59	28.0	C	R	0.61	29.7	C
NB	L**	0.00	35.4	D	L**	0.00	36.5	D	L**	0.00	36.4	D
	LT	0.55	18.6	B	LT	0.58	19.0	B	LT	0.57	18.2	B
SB	T	0.49	18.0	B	T	0.49	18.1	B	T	0.48	17.3	B
	R	1.16	122.8	F	R	1.19	133.7	F +	R	1.16	118.9	F
	Int.		33.3	C	Int.		34.8	C	Int.		32.5	C
Park Avenue & East 40th Street												
EB	LT	0.67	31.7	C	LT	0.70	33.0	C	LT	0.74	36.7	D
	R	0.73	40.2	D	R	0.73	40.2	D	R	0.69	37.2	D
NB	T (Tunnel Exit)	0.72	21.3	C	T (Tunnel Exit)	0.74	22.1	C	T (Tunnel Exit)	0.72	20.8	C
	T onto Viaduct	0.62	18.0	B	T onto Viaduct	0.64	18.5	B	T onto Viaduct	0.62	17.5	B
	TR	1.04	72.3	E	TR	1.05	76.3	E +	TR	1.03	68.0	E
SB	T	0.09	10.5	B	T	0.11	10.7	B	T	0.10	10.2	B
	T (Viaduct Exit)	1.09	78.7	E	T (Viaduct Exit)	1.12	91.3	F +	T (Viaduct Exit)	1.10	82.1	F
	Int.		48.7	D	Int.		53.5	D	Int.		49.1	D
Park Avenue & East 39th Street												
WB	LTR	1.71	355.7	F	LTR	1.78	387.1	F +	LTR	1.69	342.7	F
NB	L**	0.00	38.7	D	L**	0.00	38.9	D	L**	0.00	39.8	D
	LT	0.69	20.0	C	LT	0.70	20.2	C	LT	0.73	22.4	C
SB	T	0.58	17.4	B	T	0.60	17.8	B	T	0.63	19.5	B
	R	0.75	30.5	C	R	0.76	31.1	C	R	0.81	37.3	D
	Int.		119.1	F	Int.		129.1	F	Int.		117.3	F
Vanderbilt Avenue & East 46th Street												
EB	T	0.52	19.6	B	T	0.56	20.2	C	T	0.57	21.1	C
NB	TR	0.30	17.7	B	TR	0.35	18.6	B	TR	0.34	17.8	B
SB	LT	0.92	45.8	D	LT	0.97	55.7	E +	LT	0.95	49.6	D
	Int.		30.0	C	Int.		34.3	C	Int.		32.2	C
Vanderbilt Avenue & East 42nd Street												
EB	T	0.64	22.0	C	T	0.66	22.5	C	T	0.63	20.5	C
WB	T	1.12	90.6	F	T	1.16	108.0	F +	T	1.11	84.9	F
	Int.		63.0	E	Int.		73.8	E	Int.		59.1	E
Madison Avenue & East 44th Street												
EB	LT	0.87	48.4	D	LT	0.95	61.6	E +	L	0.61	30.0	C
	-	-	-	-	-	-	-	-	T	0.25	20.4	C
NB	T	0.98	37.8	D	T	1.01	45.6	D +	T	0.99	39.1	D
	R	0.23	12.8	B	R	0.23	12.8	B	R	0.22	11.8	B
	Int.		39.3	D	Int.		48.2	D	Int.		36.0	D
Madison Avenue & East 43rd Street												
WB	T	0.22	19.4	B	T	0.24	19.7	B	T	0.25	20.4	C
	R	0.30	22.1	C	R	0.39	24.2	C	R	0.41	25.5	C
NB	L	1.20	147.6	F	L	1.24	163.4	F +	L	1.19	140.3	F
	T	0.82	20.0-	B	T	0.83	20.6	C	T	0.81	18.9	B
	Int.		39.1	D	Int.		41.9	D	Int.		37.5	D
Madison Avenue & East 42nd Street												
EB	LT	0.78	31.0	C	LT	0.82	33.6	C	Unmitigated			
WB	T	1.02	61.6	E	T	1.07	74.4	E +				
NB	L	0.10	12.3	B	L	0.10	12.3	B				
	T	0.99	39.1	D	T	1.01	43.9	D				
	R	0.40	14.1	B	R	0.40	14.1	B				
	Int.		43.4	D	Int.		50.3	D				
Fifth Avenue & 44th Street												
EB	T	0.38	21.5	C	T	0.43	22.3	C	T	0.43	21.8	C
	R	1.12	118.9	F	R	1.20	148.5	F +	R	1.11	114.7	F
SB	LT	0.86	20.5	C	LT	0.87	20.3	C	LT	0.89	22.9	C
	Int.		33.3	C	Int.		38.2	C	Int.		35.2	D

Table 18-3C (cont'd)
2021 No-Action, With-Action, and Mitigation Conditions Level of Service Analysis
Weekday PM Peak Hour – Signalized Intersections

	Weekday PM											
	2021 No-Action				2021 With-Action				2021 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
Fifth Avenue & 42nd Street												
EB	T	0.62	24.9	C	T	0.64	25.4	C	Unmitigated			
	R	0.20	21.8	C	R	0.20	21.8	C				
WB	LT	1.21	131.0	F	LT	1.26	150.5	F +				
SB	LT	0.82	18.4	B	LT	0.83	18.8	B				
	R	0.00	11.3	B	R	0.00	11.3	B				
	Int.		58.9	E	Int.		66.6	E				

Notes: L = Left-turn; T = Through; R = Right-turn; LOS = Level of Service; EB = Eastbound; WB = Westbound; NB = Northbound; SB = Southbound; Int. = Intersection
** To mimic actual conditions for NB/SB left turning vehicles on Park Avenue, the sum of two delays were accounted for: (1) delay from making the left-turn; and (2) delay from waiting at the red light after the left-turn.
+ Denotes a significant adverse traffic impact

Table 18-3D
2021 No-Action, With-Action, and Mitigation Conditions Level of Service Analysis
Saturday – Signalized Intersections

	Saturday											
	2021 No-Action				2021 With-Action				2021 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
Fifth Avenue & 42nd Street												
EB	T	0.77	29.6	C	T	0.79	30.4	C	T	0.77	28.7	C
	R	0.21	22.0	C	R	0.21	22.0	C	R	0.20	21.0	C
WB	LT	0.85	34.0	C	LT	0.97	48.1	D +	LT	0.94	42.5	D
SB	LT	0.76	16.5	B	LT	0.74	16.2	B	LT	0.76	17.4	B
	R	0.05	12.0	B	R	0.05	12.0	B	R	0.05	12.6	B
	Int.		24.3	C	Int.		28.8	C	Int.		27.3	C
Sixth Avenue & West 42nd Street												
EB	T	0.76	29.4	C	T	0.78	30.3	C	T	0.70	24.5	C
WB	T	0.61	24.7	C	T	0.67	26.2	C	T	0.60	21.9	C
	R	0.75	41.5	D	R	0.94	68.9	E +	R	0.82	43.7	D
NB	LTR	0.55	12.5	A	LTR	0.55	12.6	B	LTR	0.60	16.2	B
	Int.		20.4	C	Int.		23.3	C	Int.		21.2	C

Notes: L = Left-turn; T = Through; R = Right-turn; LOS = Level of Service; EB = Eastbound; WB = Westbound; NB = Northbound; SB = Southbound; Int. = Intersection
+ Denotes a significant adverse traffic impact

PARK AVENUE AND EAST 40TH STREET

The significant adverse impact at the southbound through (Viaduct Exit) lane group of this intersection during the weekday AM peak hour could be fully mitigated by restriping the eastbound approach from one 12-foot parking lane, one 12-foot left-turn/through lane, and one 10-foot right-turn lane to one 10-foot parking lane, one 11-foot left-turn/through lane, and one 13-foot right-turn lane; restriping the eastbound approach shared bike lane from the center lane to the south curbside lane; and shifting 1 second of green time from the eastbound phase to the northbound/southbound phase.

The significant adverse impacts at the northbound through/right-turn and southbound through (Viaduct Exit) lane groups of this intersection during the weekday PM peak hour could be fully mitigated by restriping the eastbound approach from one 12-foot parking lane, one 12-foot left-turn/through lane, and one 10-foot right-turn lane to one 10-foot parking lane, one 11-foot left-turn/through lane, and one 13-foot right-turn lane; restriping the eastbound approach shared bike

lane from the center lane to the south curbside lane; and shifting 1 second of green time from the eastbound phase to the northbound/southbound phase.

PARK AVENUE AND EAST 39TH STREET

The significant adverse impacts at the westbound approach 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 westbound phase, respectively.

VANDERBILT AVENUE AND EAST 46TH STREET

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

VANDERBILT AVENUE AND EAST 42ND STREET

The significant adverse impacts at the westbound through lane group 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 pedestrian phase to the eastbound/westbound phase, respectively.

MADISON AVENUE AND EAST 44TH STREET

The significant adverse impacts at the eastbound approach and northbound through lane group of this intersection during the weekday AM and PM peak hours could be fully mitigated by restriping the eastbound approach (north to south) from one 9-foot parking lane, one 5-foot bike lane, one 10-foot moving lane, and one 9-foot parking lane to one 10-foot parking lane, one 5-foot bike lane, one 10-foot moving lane, and one 8-foot parking lane; by daylighting the north curbside of the eastbound approach (installing "No Standing 7 AM to 6 PM Monday to Friday") for 100 feet to create an additional left-turn lane; and by shifting 1 second of green time from the eastbound phase to the northbound phase.

The significant adverse impact at the eastbound approach of this intersection during the weekday midday peak hour could be fully mitigated restriping the eastbound approach (north to south) from one 9-foot parking lane, one 5-foot bike lane, one 10-foot moving lane, and one 9-foot parking lane to one 10-foot parking lane, one 5-foot bike lane, one 10-foot moving lane, and one 8-foot parking lane; and by daylighting the north curbside of the eastbound approach (installing "No Standing 7 AM to 6 PM Monday to Friday") for 100-feet to create an additional left-turn lane.

MADISON AVENUE AND EAST 43RD STREET

The significant adverse impacts at the northbound left-turn lane group of this intersection during the weekday AM and PM peak hours could be fully mitigated by shifting 2 and 1 seconds of green time from the westbound phase to the northbound phase, respectively. In addition, installing "No Standing Anytime" regulations for 75 feet on the north side of the East 43rd Street receiving leg would be needed; this would eliminate approximately two to three on-street parking spaces for commercial vehicle parking during weekday daytime hours and for general parking during other times.

MADISON AVENUE AND EAST 42ND STREET

The significant adverse impacts at the westbound through and northbound left-turn/through lane groups of this intersection during the weekday AM peak hour could be partially mitigated by restriping the northbound approach from one 12-foot west curbside lane, two 10.5-foot through lanes, and one 12-foot right-turn lane to one 11-foot west curbside lane, two 11-foot through lanes, and one 12-foot right-turn lane.

The significant adverse impacts at the westbound through and northbound left-turn/through lane groups of this intersection during the weekday midday peak hour and at the westbound through lane group of this intersection during the PM peak hour could not be mitigated.

FIFTH AVENUE AND 47TH STREET

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

FIFTH AVENUE AND 46TH STREET

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

FIFTH AVENUE AND 44TH STREET

The significant adverse impact at the southbound approach of this intersection during the weekday AM peak hour could be fully mitigated by restriping the eastbound approach from one 11-foot through lane and one 9-foot right-turn lane to one 10-foot through lane and one 10-foot right-turn lane; and by shifting 1 second of green time from the eastbound phase to the southbound phase.

The significant adverse impact at the eastbound right-turn lane group of this intersection during the weekday PM peak hour could be fully mitigated by restriping the eastbound approach from one 11-foot through lane and one 9-foot right-turn lane to one 10-foot through lane and one 10-foot right-turn lane; and by shifting 1 second of green time from the southbound phase to the eastbound phase.

FIFTH AVENUE AND 42ND STREET

The significant adverse impacts at the westbound approach of this intersection during the weekday AM, midday, and PM peak hours could be fully mitigated by shifting 1, 4, and 2 seconds of green time from the southbound phase to the eastbound/westbound phase, respectively. However, since these signal timing shifts would create new pedestrian impacts at the east and west crosswalks of this intersection during the weekday AM and PM peak hours and at the west crosswalk of this intersection during the weekday midday peak hour, they were deemed infeasible. Therefore, the significant adverse impacts during the weekday AM, midday, and PM peak hours could not be mitigated.

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

SIXTH AVENUE AND WEST 42ND STREET

The significant adverse impact at the westbound right-turn lane group of this intersection during the weekday midday and Saturday peak hours could be fully mitigated by shifting 4 seconds of green time from the northbound phase to the eastbound/westbound phase.

TRANSIT

For transit, the analyses showed that more streamlined pedestrian flow within the Grand Central-42nd Street station complex would be achieved with the improvements funded by the proposed One Vanderbilt development. While operations at two station elements would be expected to deteriorate to levels in exceedance of the CEQR impact threshold, these impacts, when viewed in the context of the transit station improvements as a whole that are part of the proposed One Vanderbilt development, are not considered significant. Therefore, no mitigation measures specific to transit impacts were explored.

PEDESTRIANS

As discussed in Chapter 10, "Transportation," pedestrian conditions were evaluated at 11 sidewalks, 15 corners, and 9 crosswalks for the weekday peak hours and 5 sidewalks, 5 corners, and 4 crosswalks for the Saturday peak hour. In the 2021 With-Action condition, the proposed One Vanderbilt development would result in significant adverse pedestrian impacts at 1 sidewalk during the weekday PM peak hour, 3 corners during the weekday AM and PM peak hours, and 2 corners during the weekday midday peak hour, and 4, 2, 5, and 1 crosswalks during the weekday AM, midday, and PM, and Saturday peak hours, respectively, as summarized in **Table 18-4**.

Measures to mitigate these significant adverse impacts are described below, and the mitigated conditions are summarized in **Table 18-5**. Implementation of these measures would be subject to approval by DOT prior to implementation. Measures that consist of relocation of non-fixed sidewalk/corner obstructions (i.e., newspaper boxes and trash receptacles) and widening existing crosswalks within certain guidelines are generally considered feasible. Measures that require physical changes to street geometry (i.e., sidewalk/corner extension), relocation of fixed DOT-owned sidewalk/corner obstructions (i.e., signal pole), and widening existing crosswalks beyond certain guidelines will be reviewed by DOT at the time of implementation. In the event that certain proposed mitigation measures were deemed infeasible by DOT at the time of implementation and no other alternative mitigation measures can be identified, those impacts would be unmitigated. Those mitigation measures that require physical changes to street geometry as described above will be designed and constructed at the sole cost of 317 Madison.

Table 18-4
Summary of Significant Adverse Pedestrian Impacts

Intersection	Pedestrian Element	2021 With-Action			
		Weekday AM Peak Hour	Weekday Midday Peak Hour	Weekday PM Peak Hour	Saturday Peak Hour
Fifth Avenue and 42nd Street	North Sidewalk of East 42nd Street between Madison Avenue and Fifth Avenue			X	
Madison Avenue and East 43rd Street	Northeast Corner	X	X	X	
	Southwest Corner			X	
Madison Avenue and East 42nd Street	Northwest Corner	X	X	X	
Madison Avenue and East 41st Street	Northeast Corner	X			
Fifth Avenue and 42nd Street	North Crosswalk	X	X	X	
	South Crosswalk	X		X	
Madison Avenue and East 42nd Street	North Crosswalk	X	X	X	X
	South Crosswalk			X	
	East Crosswalk			X	
Madison Avenue and East 41st Street	East Crosswalk	X			
Total Impacted Pedestrian Elements		**7**	**4**	**9**	**1**

Notes: X = Impacted

Table 18-5
2021 No-Action, With-Action, and Mitigation Conditions
Pedestrian Level of Service Analysis

Location	Mitigation Measures	2021 No-Action		2021 With-Action		2021 Mitigation	
		SFP	LOS	SFP	LOS	SFP	LOS
Weekday AM Peak Hour							
Northeast Corner of Madison Ave. and East 43rd St.	Relocate trash can and signal pole	10.3	E	9.1	E	10.5	E
Northwest Corner of Madison Ave. and East 42nd St.	Extend Madison Ave. curb by 1.0-foot	26.2	C	17.1	D	19.8	D
Northeast Corner of Madison Ave. and East 41st St.	Relocate Trash Can	12.6	E	11.3	E	12.4	E
North Crosswalk of Fifth Ave. and 42nd St.	Widen by 4 feet	22.6	D	16.2	D	19.8	D
South Crosswalk of Fifth Ave. and 42nd St.	Widen by 0.5 foot	14.0	E	12.7	E	13.0	E
North Crosswalk of Madison Ave and East 42nd St.	Widen by 5 feet	12.1	E	8.8	E	11.3	E
East Crosswalk of Madison Ave. and East 41st St.	Shift 2 seconds of green time from the EB phase to the NB phase	16.1	D	14.1	E	15.0	E
Weekday Midday Peak Hour							
Northeast Corner of Madison Ave. and East 43rd St.	Relocate trash can and signal pole	16.1	D	13.4	E	15.3	D
Northwest Corner of Madison Ave. and East 42nd St.	Extend Madison Ave. curb by 1.0-foot	23.6	D	19.0	D	21.9	D
North Crosswalk of Fifth Ave. and 42nd St.	Widen by 4 feet	18.0	D	15.6	D	19.1	D
North Crosswalk of Madison Ave. and East 42nd St.	Widen by 5 feet	15.0	D	11.8	E	15.0	D
Weekday PM Peak Hour							
North Sidewalk of East 42nd St. between Madison Ave. and Fifth Ave.	Reconstruct newsstand kiosk to narrower width (1.0-foot reduction)	25.2	D	21.5	E	23.7	D
Northeast Corner of Madison Ave. and East 43rd St.	Relocate trash can and signal pole	12.9	E	11.5	E	13.0	E
Southwest Corner of Madison Ave. and East 43rd St.	Extend East 43rd St. curb by 0.5-foot	20.5	D	18.3	D	19.6	D
Northwest Corner of Madison Ave. and East 42nd St.	Extend Madison Ave. curb by 1.0-foot	14.8	E	11.7	E	14.0	E
North Crosswalk of Fifth Ave. and 42nd St.	Widen by 4 feet	11.8	E	9.4	E	11.7	E
South Crosswalk of Fifth Ave. and 42nd St.	Widen by 0.5 foot	12.1	E	10.9	E	11.2	E
North Crosswalk of Madison Ave. and East 42nd St.	Widen by 5 feet	9.9	E	7.6	F	9.8	E
South Crosswalk of Madison Ave. and East 42nd St.	Widen by 0.5 foot	10.6	E	9.7	E	10.0	E
East Crosswalk of Madison Ave. and East 42nd St.	Widen by 1.5 feet	21.6	D	18.8	D	20.6	D
Saturday Peak Hour							
North Crosswalk of Madison Ave. and East 42nd St.	Widen by 5 feet	9.9	E	9.0	E	11.5	E

Note: SFP = square feet per pedestrian; LOS = Level of Service

MADISON AVENUE AND EAST 43RD STREET

Corners

- The significant adverse impacts at the northeast corner of this intersection during the weekday AM and PM peak hours could be fully mitigated by relocating a trash can that is obstructing pedestrian movements on this corner. To mitigate the significant adverse impact during the weekday midday peak hour, it would be necessary to also relocate the signal pole. After the issuance of the DEIS, subsurface plans from the New York City Department of Environmental Protection (DEP) were reviewed. These plans show that sewer and water main lines do not run through this corner. At the time of implementation, additional

subsurface information related to the need for relocating public utilities (i.e., electric and gas lines) and sewer and water main service connections to individual buildings will be provided by the applicant to DOT for approval. Any required relocation of these subsurface elements will be undertaken at the applicant's expense. With regard to above-ground geometry and visibility, the relocation of this signal pole to the north just beyond the pedestrian crosswalk would not change the line of sight for motorists traveling northbound on Madison Avenue. Further, the additional distance from the stop bar of the northbound approach to the relocated traffic signal would not exceed the 120-foot maximum distance, as prescribed by the Manual on Uniform Traffic Control Devices (MUTCD), and can presumably be relocated to be aligned with the signal pole on the northwest corner of this intersection, which is located outside of that corner reservoir.

- The significant adverse impact at the southwest corner of this intersection during the weekday PM peak hour could be mitigated by extending the curb line along East 43rd Street by half a foot. The adjacent lane is an 8-foot curb lane with daytime No Standing regulations. A 5-foot Class 2 bike lane separates this curb lane from the street's center travel lane. In accordance with DOT design standards, a curb extension at this location would involve creating a corner bulb-out 6 feet into the adjacent curb lane, which would provide more pedestrian space than would be necessary to mitigate the projected significant adverse corner impact. This bulb-out would not interfere with traffic flow but may eliminate one curbside parking space during non-daytime hours only.

MADISON AVENUE AND EAST 42ND STREET

Sidewalks

- A significant adverse impact was identified for the north sidewalk of East 42nd Street between Madison Avenue and Fifth Avenue during the weekday PM peak hour. The narrowest width along this sidewalk occurs adjacent to a permanent sidewalk newsstand kiosk that is approximately 6 feet wide and 11.5 feet long (69 square feet). According to the New York City Department of Consumer Affairs (NYCDCA), this type of kiosk can be no more than 72 square feet and can vary in widths (4, 5, and 6 feet) and lengths (8, 10, and 12 feet). At 317 Madison's expense, this newsstand kiosk can be reconstructed with a smaller width (i.e., 4 or 5 feet) to provide added pedestrian space on this sidewalk. With a 1-foot narrowing of the existing kiosk, which would result in a 1-foot widening of the existing sidewalk, the projected significant adverse pedestrian impact on this sidewalk would be mitigated.

Corners

- Significant adverse impacts were identified for the northwest corner of this intersection during the weekday AM, midday, and PM peak hours. These impacts could be mitigated by extending the curb line along Madison Avenue by one foot. The adjacent lane is 10 feet wide and designated for daytime commercial loading/unloading and parking at other times. In accordance with DOT design standards, a curb extension at this location would involve creating a corner bulb-out 8 feet into the adjacent curb lane, which would provide more pedestrian space than would be necessary to mitigate the projected significant adverse corner impacts. This bulb-out would not interfere with traffic flow but may eliminate one curbside space for commercial loading/unloading during daytime hours or one parking space during non-daytime hours.

Crosswalks

- Significant adverse impacts were identified for the north crosswalk of this intersection during the weekday AM, midday, and PM, and Saturday peak hours. Widening it by 5 feet would fully mitigate the projected impacts. However, because the existing stripings of this crosswalk already align with the adjacent building line at the northwest corner of Madison Avenue and East 42nd Street, DOT may deem this proposed crosswalk widening infeasible at the time of implementation as it exceeds their current guidelines for crosswalk widenings. If this widening is found to be infeasible by DOT at the time of implementation and no other alternative mitigation measures can be identified, the projected significant adverse impacts at this crosswalk would be unmitigated.
- Significant adverse impacts were identified for the south crosswalk of this intersection during the weekday PM peak hour. Widening it by 0.5 feet would fully mitigate the projected impacts. However, because the existing stripings of this crosswalk already align with the adjacent building line at the southwest corner of Madison Avenue and East 42nd Street, this proposed crosswalk widening might be considered infeasible. If this widening is found to be infeasible at the time of implementation as it exceeds DOT's current guidelines for crosswalk widenings and no other alternative mitigation measures can be identified, the projected significant adverse impacts at this crosswalk would be unmitigated.
- A significant adverse impact was identified for the east crosswalk of this intersection during the weekday PM peak hour. Widening this crosswalk by 1.5 feet would mitigate the projected impact. However, this widening would extend the existing outer striping of this crosswalk, which is already beyond the adjacent building line, to slightly beyond the building chamfer on the southeast corner. If this widening is found to be infeasible at the time of implementation as it exceeds DOT's current guidelines for crosswalk widenings and no other alternative mitigation measures can be identified, then the projected significant adverse impact at this crosswalk would be unmitigated.

MADISON AVENUE AND EAST 41ST STREET

Corners

- The significant adverse impact at the northeast corner of this intersection during the weekday AM peak hour could be fully mitigated by relocating a trash can that is obstructing pedestrian movements on this corner.

Crosswalks

- The significant adverse impact at the east crosswalk of this intersection during the weekday AM peak hour could be fully mitigated by providing 2 additional seconds of crossing time or by shifting 2 seconds from the eastbound phase to the northbound phase. Due to generally low traffic volumes on East 41st Street, this shift in signal timing is not expected to adversely affect traffic flow on East 41st Street.

FIFTH AVENUE AND 42ND STREET

Crosswalks

- Significant adverse impacts were identified for the north crosswalk of this intersection during the weekday AM, midday, and PM peak hours. Widening this crosswalk by 4 feet would mitigate the projected impacts. However, this widening would extend the existing

outer striping of this crosswalk two feet beyond the adjacent building line. If this widening is found to be infeasible at the time of implementation as it exceeds DOT's current guidelines for crosswalk widenings and no other alternative mitigation measures can be identified, then the projected significant adverse impacts at this crosswalk would be unmitigated.

- Significant adverse impacts were identified for the south crosswalk of this intersection during the weekday AM and PM peak hours. Widening this crosswalk by half a foot would mitigate the projected impacts. However, because the existing stripings of this crosswalk already align with the adjacent building line, this proposed crosswalk widening might be considered infeasible. If this widening is found to be infeasible at the time of implementation as it exceeds DOT's current guidelines for crosswalk widenings and no other alternative mitigation measures can be identified, the projected significant adverse impacts at this crosswalk would be unmitigated.

INTERSECTIONS WITH BOTH RECOMMENDED TRAFFIC AND PEDESTRIAN MITIGATION MEASURES

At three of the study area intersections, as summarized in **Table 18-6**, mitigation measures were recommended to address both traffic and pedestrian impacts. Recommended traffic mitigation measures that would have an effect on pedestrian conditions and vice versa have been accounted for in developing the overall mitigation measures for the intersections. In some cases where feasible mitigation measures cannot be identified to address all of the impacts at an intersection, others that have been deemed feasible can still be implemented to mitigate these impacts to the extent practicable.

EFFECTS OF TRAFFIC MITIGATION ON PEDESTRIAN OPERATIONS

As described above, intersection operations would improve overall with the implementation of the recommended traffic mitigation measures, which 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.

EFFECTS OF PEDESTRIAN MITIGATION ON TRAFFIC OPERATIONS

The effects of the recommended signal timing shift at the intersection of Madison Avenue and East 41st Street during the weekday AM peak hour to mitigate the projected east crosswalk impact at this intersection was also assessed for traffic operations. East 41st Street is generally a low traffic volume eastbound street that begins at its intersection with Fifth Avenue. With the proposed One Vanderbilt development, East 41st Street would also not experience additional incremental vehicle trips. Therefore, the recommended signal timing shift is not anticipated to alter the conclusions made for the traffic impact analyses, nor would it result in the potential for significant adverse traffic impacts at this intersection.

Table 18-6
Summary of Recommended Traffic and Pedestrian Mitigation Measures

Intersection	Peak Hour	Recommended Mitigation Measures [1]		Results [2]
Madison Avenue and East 43rd Street	Weekday AM	Traffic	Shift 2 seconds of green time from the WB phase to the NB phase.	Fully mitigated
		Pedestrian	Relocate trash can and signal pole.	Fully mitigated
	Weekday Midday	Traffic		Not impacted
		Pedestrian	Relocate trash can and signal pole.	Fully mitigated
	Weekday PM	Traffic	Shift 1 second of green time from the WB phase to the NB phase.	Fully mitigated
		Pedestrian	1) Relocate trash can and signal pole. 2) Extend the curb line along East 43rd Street by 0.5 feet.	Fully mitigated
	Saturday	Traffic		Not impacted
		Pedestrian		Not impacted
Madison Avenue and East 42nd Street	Weekday AM	Traffic	Restripe the NB approach from one 12-feet west curbside lane, two 10.5-feet through lanes, and one 12-feet right-turn lane to one 11-feet west curbside lane, two 11-feet through lanes, and one 12-feet right-turn lane.	Impacts cannot be fully mitigated during this time period
		Pedestrian	1) Extend the curb line along Madison Avenue by 1 foot. 2) Widen the north crosswalk by 5 feet.	Fully mitigated
	Weekday Midday	Traffic		Unmitigated
		Pedestrian	1) Extend the curb line along Madison Avenue by 1 foot. 2) Widen the north crosswalk by 5 feet.	Fully mitigated
	Weekday PM	Traffic		Unmitigated
		Pedestrian	1) Reconstruct newsstand kiosk to narrower width (one foot reduction). 2) Extend the curb line along Madison Avenue by 1 foot. 3) Widen the north crosswalk by 5 feet. 4) Widen the south crosswalk by 0.5 feet. 5) Widen the east crosswalk by 1.5 feet.	Fully mitigated
	Saturday	Traffic		Not impacted
		Pedestrian	Widen the north crosswalk by 5 feet.	Fully mitigated

Table 18-6 (cont'd)
Summary of Recommended Traffic and Pedestrian Mitigation Measures

Intersection	Peak Hour	Recommended Mitigation Measures [1]		Results [2]
Fifth Avenue and 42nd Street	Weekday AM	Traffic	-	Unmitigated
		Pedestrian	1) Widen the north crosswalk by 4 feet. 2) Widen the south crosswalk by 0.5 feet.	Fully mitigated
	Weekday Midday	Traffic	-	Unmitigated
		Pedestrian	Widen the north crosswalk by 4 feet.	Fully mitigated
	Weekday PM	Traffic	-	Unmitigated
		Pedestrian	1) Widen the north crosswalk by 4 feet. 2) Widen the south crosswalk by 0.5 feet.	Fully mitigated
	Saturday	Traffic	-	Unmitigated
		Pedestrian	-	Not impacted

Notes: EB = Eastbound; WB = Westbound; NB = Northbound; SB = Southbound
(1) Recommended physical mitigation measures such as lane restripings, corner extensions, and crosswalk widenings, while may not be needed for every analysis peak hour, would be imposed for all time periods.
(2) See detailed traffic mitigation measures and analysis results presented in Tables 18-2A to 18-3D. For detailed pedestrian mitigation measures and analysis results, see Table 18-5.

MODIFIED GROUND FLOOR ALTERNATIVE—CHANGES IN RECOMMENDED MITIGATION MEASURES

As detailed in Chapter 17, "Alternatives," the redistribution of some pedestrian trips resulting from relocating the observation deck entrance from the southeast corner to the northwest corner of the building would result in a significant adverse impact at the south crosswalk of the Madison Avenue and East 43rd Street intersection during the weekday AM peak hour. As with other crosswalk impacts identified in the DEIS and above in this FEIS, the impact at the south crosswalk of Madison Avenue and East 43rd Street can be mitigated with restriping a wider crosswalk. Specifically, a 2-foot widening would adequately mitigate this projected impact. In addition, due to the recirculation of pedestrian trips, the impacts identified at the north crosswalk of Madison Avenue and East 42nd Street would only require a 4.5-foot widening for mitigation, rather than a 5-foot widening. However, both of these widenings would exceed DOT's current guidelines for crosswalk widenings. If they are found to be infeasible at the time of implementation and no other alternative mitigation measures can be identified, the projected significant adverse impacts at these crosswalks would be unmitigated.

IMPLEMENTATION

Each of the proposed mitigation measures described above will require approval from and coordination with the respective divisions of DOT, such as Highway Design, Signals, and possibly other groups within DOT. 317 Madison will submit to DOT and the lead agency design drawings for relevant mitigation measures in accordance with DOT specifications and standards. Preliminary and final design efforts for these mitigation measures will be coordinated with DOT to ensure proper and timely implementation of the proposed measures to mitigate projected significant adverse impacts to the extent practicable. 317 Madison will be responsible for the cost of the design and construction of the relevant mitigation measures identified in this EIS. ✶