Chapter 10: Transportation

A. INTRODUCTION

As described in detail in Chapter 1, "Project Description," the New York City Department of City Planning (DCP) and a private applicant—Green 317 Madison LLC (317 Madison) are proposing a series of discretionary actions including zoning text changes to create the Vanderbilt Corridor and special permits for that area, the proposed City Map amendment to designate a public place on Vanderbilt Avenue between East 42nd and East 43rd Streets, and the proposed use of the Vanderbilt Corridor special permits to develop the proposed One Vanderbilt development.

The proposed actions would create the Vanderbilt Corridor, consisting of the five blocks along the west side of Vanderbilt Avenue between East 42nd and East 47th Streets. On the development site (the "One Vanderbilt site"), the proposed actions would allow 317 Madison to construct an approximately 1.8 million-gross-square-foot (gsf), 30.0 floor area ratio (FAR) building containing a mix of uses (including office, trading floors, retail, restaurant, transit access, an enclosed public space at ground level, and rooftop amenity space) on the portion of Block 1277 bounded by East 42nd and East 43rd Streets and Madison and Vanderbilt Avenues. This building would also incorporate new and improved connections to Grand Central Terminal and East Side Access and its development would fund other transit improvements off-site for the Grand Central-42nd Street subway station. Service vehicles for the building would be accommodated below-grade via access from the East 43rd Street side of the building via two elevators. The public place on Vanderbilt Avenue between East 42nd and East 43rd Streets would be owned by the City, under the jurisdiction of the New York City Department of Transportation (DOT), and dedicated to pedestrian uses. This section of Vanderbilt Avenue would no longer be open to vehicular traffic except for emergency vehicles and Vanderbilt Avenue between East 43rd and East 44th Streets would be, as a result, converted from two-way to one-way southbound. Relevant information on these project elements and how they were accounted for in the transportation analyses are detailed in subsequent sections of this chapter.

The proposed Vanderbilt Corridor and its potential effects are further described and assessed in Chapter 19, "Conceptual Analysis." This chapter examines the potential effects of the proposed One Vanderbilt development, related transit improvements, and the proposed public place on the study area transportation systems, and compares the future with the proposed actions (With-Action condition) with the future without the proposed actions (No-Action condition). The analyses consider the 2021 analysis year to identify potential impacts, and if warranted, determine feasible mitigation measures that would be appropriate to address those impacts (Chapter 18, "Mitigation," presents details on the proposed mitigation measures). The travel demand projections, trip assignments, and capacity analysis contained in this chapter were conducted pursuant to the methodologies outlined in the 2014 *City Environmental Quality Review (CEQR) Technical Manual*.

After the issuance of the DEIS, revisions have been made to reflect information that became available and to consider several additional No-Action projects that were recently identified.

With these revisions, one fewer impacted movement at one intersection during one time period was identified. Because the DEIS identified impacts for other movements during other time periods at that intersection, the revisions did not result in an increase or change in the number of impacted intersections.

PRINCIPAL CONCLUSIONS

TRAFFIC

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, there would be the potential for significant adverse impacts at 14 intersections during the weekday AM peak hour, 6 intersections during the weekday midday peak hour, 14 intersections during the PM peak hour, and 2 intersections during the Saturday peak hour.

Table 10-1 provides a summary of the impacted locations by lane group and analysis time period. Potential measures to mitigate the projected traffic impacts are described in Chapter 18, "Mitigation." As detailed in that chapter, all of the significant adverse traffic impacts, except potentially those identified for the 42nd Street intersections with Third, Lexington, Madison, and Fifth Avenues during various peak periods, could be fully mitigated with standard mitigation measures, including signal timing changes and approach daylighting and restriping.

Table 10-1
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

TRANSIT

Project-generated trips at two subway stations/station complexes shown below are expected to exceed the 200-trip *CEQR Technical Manual* analysis threshold during peak hours:

- Grand Central-42nd Street (4/5/6/7/S) Station
- 42nd Street-Bryant Park/Sixth Avenue (B/D/F/M) Station

For the Grand Central-42nd Street station complex, 13 control areas, 36 stairways, and 10 escalators were analyzed for the With-Action condition. For the 42nd Street-Bryant Park/Sixth Avenue station, one control area and three stairways were analyzed for the With-Action condition. Consistent with CEQR guidance and Metropolitan Transportation Authority (MTA) New York City Transit (NYCT) general practice, the weekday AM and PM commuter peak hours were analyzed for potential impacts. 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. These improvements, which focus on improving connections to the Lexington Avenue Line, would eliminate all of the substantial congestion points that will exist on the Lexington Avenue platform-to-mezzanine stairs under the 2021 No-Action condition. In addition, the reconfiguration of the stairs and flanking columns at the platform level are projected to reduce platform circulation chokepoints and as a result, enable an additional southbound train to serve the station in the AM peak hour and an additional northbound train in the PM peak hour. 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.

Analyses of the station elements at the 42nd Street-Bryant Park station and line-haul conditions of subway lines serving the two study area stations also showed that there would not be any significant adverse impacts. Therefore, overall, the proposed One Vanderbilt development would not result in any significant adverse transit impacts.

PEDESTRIANS

Weekday and Saturday peak period pedestrian conditions were evaluated at key area sidewalk, corner reservoir, and crosswalk locations. Based on the detailed assignment of pedestrian trips, 11 sidewalks, 15 corners, and 9 crosswalks were selected for detailed analysis for the weekday peak hours and 5 sidewalks, 5 corners, and 4 crosswalks were selected for detailed analysis for the Saturday peak hour. Significant adverse impacts were identified for 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. **Table 10-2** provides a summary of the impacted locations by analysis time periods.

Potential measures, including 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, as described in Chapter 18, "Mitigation."

Table 10-2
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					

VEHICULAR AND PEDESTRIAN SAFETY

Crash data for the study area intersections were obtained from the New York State Department of Transportation (NYSDOT) for the time period between December 1, 2010 and November 30, 2013. During this period, a total of 352 reportable and non-reportable accidents, zero fatalities, 316 injuries, and 140 pedestrian/bicyclist-related accidents occurred at the study area intersections. A rolling total of accident data identifies seven study area intersections as high accident locations in the 2010 to 2013 period, most of which are located along the 42nd Street corridor, all characterized by high existing volumes of vehicular and pedestrian traffic.

To address the safety at some of these locations, DOT has, in recent years, implemented a variety of pedestrian and bicycle safety improvement measures. As part of its Vision Zero initiatives, the City will explore additional measures for potential implementation at these high accident locations and others in the study area to enhance traffic and pedestrian safety. In addition, the proposed public place on Vanderbilt Avenue between East 42nd Street and East 43rd Street that would introduce a new at-grade pedestrian space adjacent to the One Vanderbilt site and several other measures were identified to further improve safety at the surrounding intersections. A summary of the identified high accident locations, prevailing trends, project-specific effects, and recommended safety measures is provided in **Table 10-3**. Additional safety measures—such as adjusting signal timings to incorporate Leading Pedestrian Interval (LPI), split LPI, split phases—may also be considered at the time the proposed One Vanderbilt development is completed.

PARKING

Accounting for the incremental parking demand generated by the proposed One Vanderbilt development, the With-Action condition off-street public parking utilization is expected to

Table 10-3
Summary of High Accident Locations

High Accident Intersections	Prevailing Trends	Peak Hour Project-Specific Effects	Recommended Safety Measures
Sixth Ave & W. 42nd St	None	Incremental trips: 70 vehicles & 200 peds	Restriping faded crosswalks
Fifth Ave & 47th St	None	Incremental trips: 60 vehicles & 200 peds	Installing countdown timers
Fifth Ave & 42nd St	None	Incremental trips: 80 vehicles & 750 peds	Restriping faded crosswalks
Madison Ave & E. 42nd St	None	Incremental trips: 85 vehicles & 1,050 peds	Restriping faded crosswalks
Vanderbilt Ave & E. 42nd St	None	Incremental trips: 60 vehicles & 560 peds	Public place for expanded pedestrian space; restriping faded crosswalks
Lexington Ave & E. 42nd St	None	Incremental trips: 60 vehicles & 200 peds	Restriping faded crosswalks
Third Ave & E. 42nd St	None	Incremental trips: 50 vehicles & 200 peds	Restriping faded crosswalks
Sources: NYSDOT crash data; December 1, 2010 to November 30, 2013.			

increase to a maximum of 95 percent during the weekday midday peak periods. The incremental parking demand generated by the proposed One Vanderbilt development would be fully accommodated by the available off-street public parking facilities in the ¼-mile study area. Therefore, the proposed One Vanderbilt development is not expected to result in the potential for a parking shortfall or any significant adverse parking impacts.

B. PRELIMINARY ANALYSIS METHODOLOGY AND SCREENING ASSESSMENT

The *CEQR Technical Manual* recommends a two-tier screening procedure for the preparation of a "preliminary analysis" to determine if quantified analyses of transportation conditions are warranted. As discussed below, the preliminary analysis begins with a trip generation analysis (Level 1) to estimate the volume of person and vehicle trips attributable to the proposed project. If the proposed project is expected to result in fewer than 50 peak hour vehicle trips and fewer than 200 peak hour transit or pedestrian trips, further quantified analyses are not warranted. When these thresholds are exceeded, detailed trip assignments (Level 2) are performed to estimate the incremental trips at specific transportation elements and to identify potential locations for further analyses. If the trip assignments show that the proposed project would result in 50 or more peak hour vehicle trips at an intersection, 200 or more peak hour subway trips at a station, 50 or more peak hour bus trips in one direction along a bus route, or 200 or more peak hour pedestrian trips traversing a pedestrian element, then further quantified analyses may be warranted to assess the potential for significant adverse impacts on traffic, transit, pedestrians, parking, and vehicular and pedestrian safety.

LEVEL 1 SCREENING ASSESSMENT

A Level 1 trip generation screening assessment was conducted to estimate the numbers of person and vehicle trips by mode expected to be generated by the proposed One Vanderbilt development during the weekday AM, midday, PM, and Saturday peak hours. These estimates

were then compared to the *CEQR Technical Manual* thresholds to determine if a Level 2 screening and/or quantified operational analyses would be warranted.

BACKGROUND

In the future without the proposed One Vanderbilt development, the No-Action building to which the proposed One Vanderbilt development will be compared would be approximately 811,100 gsf. The No-Action building would include approximately 84,000 gsf of retail use and 636,300 gsf of office use, as well as approximately 91,000 gsf of mechanical space. With the proposed One Vanderbilt development (With-Action), the One Vanderbilt site would be redeveloped with an approximately 1.8 million gsf building. The With-Action building would contain approximately 1,325,000 gsf of office space (including 246,000 gsf to be used as trading floors), 53,000 gsf of retail, 27,000 gsf of restaurant, and a 55,000-gsf rooftop amenity space that can also be used as event space. In addition, approximately 343,500 gsf would be allocated to circulation, mechanical space, mechanical, core, back-of-house, and loading uses. The building would also have an approximately 4,000-square-foot enclosed public space (the transit hall) fronting on East 43rd Street and Vanderbilt Avenue, with access via East 43rd Street. This planned public space is not expected to generate new trips to the project site. The proposed actions would also include an amendment of the City Map designating the portion of Vanderbilt Avenue between East 42nd and East 43rd Streets as public place. No accessory or public parking would be developed for either the No-Action or the With-Action buildings. The proposed One Vanderbilt development and the proposed public place are expected to be completed by 2021. **Table 10-4** provides a comparison of the future without and with the proposed One Vanderbilt development.

Table 10-4
Comparison of the Future Without and With the One Vanderbilt Development

Components	No-Action	With-Action	Increment
Office (gsf)	636,312	1,079,000	442,688
Event Space (guests/event) [(1)]	N/A	1,225	1,225
Observation Deck (trips/hour) [(2)]	N/A	1,400	1,400
Restaurant (gsf)	N/A	27,000	27,000
Destination Retail (gsf)	62,736	40,000	-22,736
Local Retail (gsf)	20,912	13,000	-7,912
Trading Floor (gsf)	N/A	246,000	246,000

Notes: N/A = Not Applicable
[(1)] Based on average occupancy of approximately 45 gsf per guest (see *Domino Sugar Rezoning FEIS*).
[(2)] Based on estimates provided by Green 317 Madison LLC (5,355 visitors/day; 10 hours/day), adjusted per DOT.
Source: Green 317 Madison LLC, 2013

TRANSPORTATION PLANNING ASSUMPTIONS

Trip generation factors for the proposed One Vanderbilt development were developed based on information from the *CEQR Technical Manual*, 2013 *East Midtown Rezoning and Related Actions FEIS*, U.S. Census Data, and other approved EASs and EISs—as summarized in **Table 10-5**.

Table 10-5
Travel Demand Assumptions

Use	Office				Destination Retail				Observation Deck			
	[442,688 gsf]				[-22,736 gsf]				[5,355 daily visits]			
	Weekday			Saturday	Weekday			Saturday	Weekday			Saturday
Daily	(1)			(1)	(1)			(1)	(4)(13)			(4)
Person Trip	18.0			3.9	78.2			92.5	1,400			0
Generation Rate	Trips/KSF				Trips/KSF				Trips/Hour			
Link Credit	N/A				N/A				N/A			
Final Trip Rate	18.0			3.9	78.2			92.5	1,400			0
Person Trip	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)				
Temporal	AM	MD	PM	Sat	AM	MD	PM	Sat	AM	MD	PM	Sat
Distribution	12%	15%	14%	17%	3%	9%	9%	11%	N/A	N/A	N/A	N/A
Directional Distribution	(2)	(2)	(2)	(3)	(2)	(2)	(2)	(3)	(5)	(5)	(5)	(5)
In	96%	48%	5%	57%	61%	55%	47%	52%	55.0%	50.0%	0.0%	0.0%
Out	4%	52%	95%	43%	39%	45%	53%	48%	45.0%	50.0%	0.0%	0.0%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%
Modal Split	(11)	(2)	(11)	(2)(3)	(2)	(2)	(2)	(3)	(12)	(12)	(12)	(12)
Auto	7.2%	2.0%	7.2%	2.0%	9.0%	9.0%	9.0%	9.0%	0.8%	0.8%	0.8%	0.8%
Taxi	2.4%	3.0%	2.0%	3.0%	4.0%	4.0%	4.0%	4.0%	3.3%	3.3%	3.3%	3.3%
Subway	49.3%	6.0%	49.3%	6.0%	26.5%	20.0%	26.5%	20.0%	19.6%	19.6%	19.6%	19.6%
City Bus	15.0%	6.0%	15.0%	6.0%	8.0%	8.0%	8.0%	8.0%	10.8%	10.8%	10.8%	10.8%
Tour Bus	-	-	-	-	-	-	-	-	28.3%	28.3%	28.3%	28.3%
Walk	6.4%	83.0%	6.5%	83.0%	50.5%	59.0%	50.5%	59.0%	33.0%	33.0%	33.0%	33.0%
Railroad	19.7%	0.0%	19.7%	1.5%	2.0%	0.0%	2.0%	0.0%	4.2%	4.2%	4.2%	4.2%
Total	100%	100%	99.7%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Vehicle Occupancy	(2)(3)(11)				(14)				(12)			
Auto	1.15				1.40		1.72		2.00			
Taxi	1.40				1.65		1.75		2.29			
Daily	(1)			(1)	(2)			(3)	(5)			
Delivery Trip	0.32			0.01	0.35			0.02	0.00			
Generation Rate	Delivery Trips / KSF				Delivery Trips / KSF				Delivery Trips			
Delivery Trip	(1)	(1)	(1)	(1)	(2)	(2)	(2)	(3)	(5)	(5)	(5)	(5)
Temporal	AM	MD	PM	Sat	AM	MD	PM	Sat	AM	MD	PM	Sat
Distribution	10%	11%	2%	11%	8.0%	11%	2%	11%	0.0%	0.0%	0.0%	0.0%
Directional Distribution	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(5)	(5)	(5)	(5)
In	50%	50%	50%	50%	50%	50%	50%	50%	0%	0%	0%	0%
Out	50%	50%	50%	50%	50%	50%	50%	50%	0%	0%	0%	0%
Total	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%

Use	Event Space				Trading Floor (Traders)				Trading Floor (Visitors)			
	[1,225 Guests]				[2,734 Traders]				[246,000 gsf]			
	Weekday			Saturday	Weekday			Saturday	Weekday			Saturday
Daily	(6)			(6)	(8)			(8)	(8)			(8)
Person Trip	2.68			2.68	2.0			0.0	3.0			0.0
Generation Rate	Trips/Guest				Trips/Trader				Trips/KSF			
Link Credit	N/A				N/A				N/A			
Final Trip Rate	2.68			2.68	2.0			0.0	3.0			0.0
Person Trip	(6)	(6)	(6)	(6)	(15)	(13)	(15)	(15)	(8)	(8)	(8)	(8)
Temporal	AM	MD	PM	Sat	AM	MD	PM	Sat	AM	MD	PM	Sat
Distribution	0.0%	0.0%	32.0%	32.0%	37.5%	5.0%	37.5.0%	0.0%	14.7%	20.0%	12.9%	0.0%
Directional Distribution	(6)	(6)	(6)	(6)	(15)	(15)	(15)	(15)	(8)	(8)	(8)	(8)
In	0.0%	50.0%	75.0%	75.0%	100.0%	50.0%	0.0%	50.0%	96.0%	55.0%	5.0%	50.0%
Out	0.0%	50.0%	25.0%	25.0%	0.0%	50.0%	100.0%	50.0%	4.0%	45.0%	95.0%	50.0%
Total	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Modal Split	(7)	(7)	(7)	(7)	(3)	(13)	(3)	(3)	(8)	(8)	(8)	(8)
Auto	25.0%	25.0%	25.0%	25.0%	10.2%	0.0%	10.2%	2.0%	3.5%	3.5%	3.5%	3.5%
Taxi	25.0%	25.0%	25.0%	25.0%	1.3%	0.0%	1.3%	3.0%	3.5%	3.5%	3.5%	3.5%
Subway	20.0%	20.0%	20.0%	20.0%	47.3%	0.0%	47.3%	6.0%	17.8%	17.8%	17.8%	17.8%
City Bus	5.0%	5.0%	5.0%	5.0%	12.9%	0.0%	12.9%	6.0%	2.5%	2.5%	2.5%	2.5%
Tour Bus	-	-	-	-	-	-	-	-	-	-	-	-
Walk	15.0%	15.0%	15.0%	15.0%	3.2%	100.0%	3.2%	83.0%	69.9%	69.9%	69.9%	69.9%
Railroad	10.0%	10.0%	10.0%	10.0%	25.1%	0.0%	25.1%	0.0%	2.8%	2.8%	2.8%	2.8%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Vehicle Occupancy	(6)				(2)(3)(11)				(8)			
Auto	2.90				1.15				1.25			
Taxi	2.30				1.40				1.40			
Daily	(6)				(3)			(3)				
Delivery Trip	0.01				0.16			0.01				
Generation Rate	Delivery Trips / Guest				Delivery Trips / KSF							
Delivery Trip	(6)	(6)	(6)	(6)	(3)	(3)	(3)	(3)				
Temporal	AM	MD	PM	Sat	AM	MD	PM	Sat				
Distribution	0.0%	6.0%	1.0%	0.0%	7.0%	7.0%	3.0%	11.0%				
Directional Distribution	(6)	(6)	(6)	(6)	(8)	(8)	(8)	(8)				
In	50%	50%	50%	50%	50%	50%	50%	50%				
Out	50%	50%	50%	50%	50%	50%	50%	50%				
Total	100%	100%	100%	100%	100%	100%	100%	100%				

Table 10-5 (cont'd)
Travel Demand Assumptions

Use	Local Retail				Restaurant			
	[-7,912 gsf]				[27,000 gsf]			
	Weekday		Saturday		Weekday		Saturday	
Daily	(1)		(1)		(9)		(9)	
Person Trip	205.0		240.0		173.0		181.0	
Generation Rate	Trips / KSF				Trips / KSF			
					(13)			
					AM	MD	PM	SAT
Link Credit	25%				0%	25%	15%	15%
Final Trip Rate	153.8			180.0	173.0	129.8	147.1	153.9
Person Trip	(1)	(1)	(1)	(1)	(9)	(9)	(9)	(9)
Temporal	AM	MD	PM	Sat	AM	MD	PM	Sat
Distribution	3%	19%	10%	10%	0.0%	6.2%	8.3%	11.0%
Directional Distribution	(2)	(2)	(2)	(2)	(9)	(9)	(9)	(9)
In	50%	50%	50%	50%	50%	50%	67%	50%
Out	50%	50%	50%	50%	50%	50%	33%	50%
Total	100%	100%	100%	100%	100%	100%	100%	100%
Modal Split	(2)	(2)	(2)	(3)	(10)(13)	(10)(13)	(10)(13)	(10)(13)
Auto	2.0%	2.0%	2.0%	2.0%	10.0%	10.0%	10.0%	10.0%
Taxi	3.0%	3.0%	3.0%	3.0%	15.0%	15.0%	15.0%	15.0%
Subway	6.0%	6.0%	6.0%	6.0%	26.5%	26.5%	26.5%	26.5%
City Bus	6.0%	6.0%	6.0%	6.0%	2.0%	2.0%	2.0%	2.0%
Tour Bus	-	-	-	-	-	-	-	-
Walk	83.0%	83.0%	83.0%	83.0%	44.5%	44.5%	44.5%	44.5%
Railroad	0.0%	0.0%	0.0%	0.0%	2.0%	2.0%	2.0%	2.0%
Total	100%	100%	100%	100%	100%	100%	100%	100%
Vehicle Occupancy	(2)				(9)			
Auto	1.65				2.20			
Taxi	1.40				2.30			
Daily	(1)				(9)			
Delivery Trip	0.35			0.04	3.60			
Generation Rate	Delivery Trip / KSF				Delivery Trips / KSF			
Delivery Trip	(1)	(1)	(1)	(1)	(9)	(9)	(9)	(9)
Temporal	AM	MD	PM	Sat	AM	MD	PM	Sat
Distribution	8%	11%	2%	11%	0%	6%	1%	6%
Directional Distribution	(1)	(1)	(1)	(1)	(9)	(9)	(9)	(9)
In	50%	50%	50%	50%	50%	50%	50%	50%
Out	50%	50%	50%	50%	50%	50%	50%	50%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Sources:
(1) 2014 *CEQR Technical Manual*
(2) *East Midtown Rezoning and Related Actions FEIS* (2013).
(3) *15 Penn Plaza FEIS* (2010). Midday modal split was applied to Saturday for the office component.
(4) Roof top amenity space trip estimates from Hines. Observation Deck and Event Space occupy the same space (the "amenity space"). For analysis purposes, the amenity space is assumed to be used as an observation deck during the AM and midday peaks and as an event space during the PM and Saturday peaks.
(5) *Special West Chelsea District Rezoning and High Line Open Space FEIS* (2005), based on High Line Open Space use.
(6) *Pier 57 Redevelopment FEIS* (2013) - PM and Saturday assumed to be the same as Pier 57 Park Evening and Saturday Evening.
(7) Event Space modal splits developed to account for local travel patterns.
(8) *Sixth Supplemental Battery Park City Site 26 FEIS* (2004). Assumed 1 trader per 90 gsf of trading floor space per Hines. Modal splits adjusted to account for local travel patterns.
(9) *Pier 57 Redevelopment FEIS* (2013)
(10) Restaurant modal splits similar to Destination Retail Use, with adjustments based on local travel patterns.
(11) 2006-10 U.S. Census American Community Survey (ACS) Reverse Journey-to-Work (RJTW) modal splits and auto occupancy for AM peak period (7:30-10:00 AM).
(12) Travel survey of Empire State Building observation deck patrons, conducted on Wednesday, May 7, 2014, by AKRF, Inc.; the City Bus mode includes approximately 8.4 percent of travel by "hop-on, hop-off" City tour buses.
(13) DOT assumption.
(14) *Gateway Estate II FEIS* (2009)
(15) *New York Stock Exchange New Facility FEIS* (1999)

Office

The daily person trip rate and temporal distribution are from the *CEQR Technical Manual*. Peak period (7:30 AM to 10:00 AM) Reverse-Journey-to-Work (RJTW) data for the 2006-2010 U.S. Census Bureau American Community Survey (ACS) for Manhattan census tracts 80, 82, 84, 92, 94, and 96 were used for the weekday AM and PM peak period modal splits. The directional distribution for all peak periods and modal splits for the weekday midday and Saturday peak periods are from the 2013 *East Midtown Rezoning and Related Actions FEIS* and the 2010 *15 Penn Plaza FEIS*. The vehicle occupancies are from the 2006-2010 U.S. Census ACS for autos and from the 2013 *East Midtown Rezoning and Related Actions FEIS* for taxis. The daily delivery trip rate and temporal and directional distributions are from the *CEQR Technical Manual*.

Destination Retail

For a reasonable worst case analysis, approximately 75 percent of the total retail space in both the No-Action and the With-Action buildings was assumed to be destination retail which generates a higher auto/taxi share compared to local retail. It should be noted that in all likelihood, the retail space in both buildings would contain either a mix of destination and local retail uses or all local retail. The daily person trip rate and temporal distribution for destination retail are from the *CEQR Technical Manual*. The directional distribution and modal split are from the 2013 *East Midtown Rezoning and Related Actions FEIS* and the 2010 *15 Penn Plaza FEIS*. The vehicle occupancies are from the 2009 *Gateway Estate II FEIS*. The daily delivery trip rate and temporal distribution are from the 2013 *East Midtown Rezoning and Related Actions FEIS* and the *15 Penn Plaza FEIS*. The delivery directional distribution is from the *CEQR Technical Manual*.

Local Retail

The daily trip generation and delivery vehicle trip generation rates for the project's local neighborhood retail component were obtained from the *CEQR Technical Manual*. In line with accepted City practice, a 25-percent linked trip credit was applied to the local retail trip generation estimates. The modal splits and vehicle occupancies were obtained from the 2013 *East Midtown Rezoning and Related Actions FEIS*. The temporal and directional distributions for all peak periods were obtained from the *CEQR Technical Manual* and the 2013 *East Midtown Rezoning and Related Actions FEIS*, respectively. The temporal distributions for the delivery trips were obtained from the *CEQR Technical Manual*.

Restaurant

The travel demand factors for the proposed restaurant component were obtained from the 2013 *Pier 57 Redevelopment FEIS*. Modal split factors were assumed to be similar to those of destination retail's. Based on discussions with DOT, auto and taxi shares were adjusted to account for local travel characteristics. Also per DOT's recommendation, a 25-percent, 15-percent, and 15-percent linked trip credit was applied to the restaurant trip generation estimates for the weekday midday, weekday PM, and Saturday peak hours, respectively.

Rooftop Amenity Space (Observation Deck/Event Space)

Observation deck

Based on information provided by 317 Madison, a total of approximately 5,355 patrons are expected to visit the rooftop amenity space on a daily basis. This estimate is based on the 75 percent design capacity of two elevators (design capacity is 357 persons/elevator/hour) for a 10-hour daily operation. This level of daily visitation would amount to nearly 2 million visits annually. In comparison, the Empire State Building's observation deck has been visited by approximately 4 million people annually. With competition in New York City expected to increase for observation deck attractions (increasing from two currently to five, including One Vanderbilt, in the next few years), achieving approximately half of Empire State Building's visitation levels can be considered reasonably optimistic from a business perspective and conservative from a travel demand projections standpoint. While there could be peaking in visitation arrivals (departures are capped by the elevator capacity of 714 people per hour), it would typically be coupled with lower demand during the shoulder hours. Furthermore, peak visitation for a recreational/tourist destination, such as One Vanderbilt's observation deck, would typically occur during off-peak travel hours. In the event that One Vanderbilt's

observation deck is opened for more than 10 hours per day (those at the Empire State Building and Top of the Rock are open 18 and 16 hours per day, respectively), there could be a further distribution of visitor arrival and departure. However, because this space is expected to also accommodate some private functions, this EIS has made a reasonable assumption for analysis purposes that this space would be used on average 10 hours a day but for fewer hours on days when private functions would be held as an observation deck. In consultation with DOT, the transportation analysis assumed a conservative travel demand of 1,400 visitation trips (representing approximately 95-percent capacity elevator usage) to and from One Vanderbilt's observation deck during the analysis peak hour. The directional distribution, temporal distribution, and directional distribution for the observation deck patrons were developed based on guidance from the 2005 *Special West Chelsea District Rezoning and High Line Open Space FEIS*. A survey of visitors to the Empire State Building was conducted on Wednesday, May 7, 2014 to inform on modal splits and vehicle occupancies for future observation deck patrons at the project site.

Event Space

During the weekday evening and Saturday hours, the rooftop amenity space could be used to host formal events. Travel demand assumptions for various projects with banquet halls or catering halls, as well as the metrics used in developing the trip generation factors for the 2013 *Pier 57 Redevelopment FEIS*, were reviewed. This review concluded that the Pier 57 trip generation factors would be the most appropriate for providing best coverage of event types that may take place at the project site. Given the proximity of the project site to Grand Central Terminal (GCT), the modal splits were refined to account for a higher transit share, as compared to the metrics presented in the 2013 *Pier 57 Redevelopment FEIS*.

In comparison, events on the rooftop space would yield greater trip-making than observation deck visitation. Hence, for a conservative transportation analysis, the rooftop amenity space is assumed to accommodate observation deck visitation during the weekday AM and midday peak periods and events during the weekday PM and Saturday peak periods.

Trading Floor

Travel demand estimates for the trading floor component were developed separately for the traders and visitors. For the traders, 317 Madison has indicated a building occupancy of 90 square feet per trader. The travel demand assumptions were taken from the 2010 *15 Penn Plaza FEIS* (modal splits, taxi occupancy, delivery trips) and the 1999 *New York Stock Exchange FEIS* (temporal distribution and in/out distribution), adjusted per DOT guidance (weekday midday trader trips). The auto vehicle occupancy was derived from the 2006-2010 U.S. Census ACS RJTW data. Travel demand assumptions for the visitors are from the *Sixth Supplemental Battery Park City Site 26 FEIS*, prepared as part of the Environmental Assessment for the Goldman Sachs headquarters in Lower Manhattan.

TRAVEL DEMAND PROJECTION SUMMARY

As summarized in **Table 10-6**, in the future without the proposed One Vanderbilt development, with the development of a 15 FAR building, a total of 1,617, 2,770, 2,368, and 1,437 person trips would be generated during the weekday AM, midday, PM, and Saturday peak hours, respectively. Approximately 172, 165, 212, and 82 vehicle trips would be generated during the same respective peak hours.

Table 10-6

Trip Generation Summary: Future Without the Proposed One Vanderbilt Development

Person Trips									Vehicle Trips				
Peak Hour	In/Out	Auto	Taxi	Subway	City Bus	Walk	Railroad	Total	In/Out	Auto	Taxi	Delivery	Total
AM	In	104	37	677	208	169	262	1,457	In	90	26	11	127
	Out	10	4	45	16	73	12	160	Out	8	26	11	45
	Total	114	41	722	224	242	274	1,617	Total	98	52	22	172
Midday	In	44	44	116	86	1,081	0	1,371	In	34	37	12	83
	Out	42	44	112	88	1,113	0	1,399	Out	33	37	12	82
	Total	86	88	228	174	2,194	0	2,770	Total	67	74	24	165
PM	In	28	15	105	39	243	20	450	In	21	37	2	60
	Out	134	51	823	257	348	305	1,918	Out	113	37	2	152
	Total	162	66	928	296	591	325	2,368	Total	134	74	4	212
Saturday	In	39	26	91	52	552	0	760	In	23	19	0	42
	Out	36	23	83	47	488	0	677	Out	21	19	0	40
	Total	75	49	174	99	1,040	0	1,437	Total	44	38	0	82

As summarized in **Table 10-7,** in the future with the proposed One Vanderbilt development, with the development of a 30 FAR building, a total of 6,046, 5,610, 6,725, and 2,864 person trips would be generated during the weekday AM, midday, PM, and Saturday peak hours, respectively. Approximately 541, 292, 757, and 390 vehicle trips would be generated during the same respective time periods.

Table 10-7

Trip Generation Summary: Future With the Proposed One Vanderbilt Development

Person Trips										Vehicle Trips					
Peak Hour	In/Out	Auto	Taxi	Subway	City Bus	Tour Bus	Walk	Railroad	Total	In/Out	Auto	Taxi	Tour Bus	Delivery	Total
AM	In	386	113	2,260	694	218	590	992	5,253	In	333	74	5	19	431
	Out	16	25	182	87	178	260	45	793	Out	12	74	5	19	110
	Total	402	138	2,442	781	396	850	1,037	6,046	Total	345	148	10	38	541
Midday	In	66	96	306	187	198	1,883	33	2,769	In	46	71	5	24	146
	Out	64	97	305	192	198	1,952	33	2,841	Out	46	71	5	24	146
	Total	130	193	611	379	396	3,835	66	5,610	Total	92	142	10	48	292
PM	In	243	241	326	80	0	378	113	1,381	In	97	134	0	4	235
	Out	490	183	2,387	687	0	539	1,058	5,344	Out	384	134	0	4	522
	Total	733	424	2,713	767	0	917	1,171	6,725	Total	481	268	0	8	757
Saturday	In	249	255	292	92	0	780	84	1,752	In	97	118	0	4	219
	Out	115	121	178	59	0	608	31	1,112	Out	49	118	0	4	171
	Total	364	376	470	151	0	1,388	115	2,864	Total	146	236	0	8	390

The net incremental trips generated in the future without and with the proposed One Vanderbilt development are shown in **Table 10-8**.

Traffic

As shown in **Table 10-8**, the net incremental trips attributed to the proposed One Vanderbilt development would be 369, 127, 545, and 308 vehicle trips during the weekday AM, midday, PM, and Saturday peak hours, respectively. Since the incremental vehicle trips would be greater than 50 vehicles, a Level 2 screening assessment (presented in the section below) was conducted to determine if there is a need for additional quantified traffic analyses.

Table 10-8
Trip Generation Summary: Net Incremental Trips

Person Trips									Vehicle Trips					
Weekday AM Peak Hour														
In/Out	**Auto**	**Taxi**	**Subway**	**City Bus**	**Tour Bus**	**Walk**	**Railroad**	**Total**	**In/Out**	**Auto**	**Taxi**	**Tour Bus**	**Delivery**	**Total**
In	282	76	1,583	486	218	421	730	3,796	In	243	48	5	8	304
Out	6	21	137	71	178	187	33	633	Out	4	48	5	8	65
Total	288	97	1,720	557	396	608	763	4,429	Total	247	96	10	16	369
Weekday Midday Peak Hour														
In/Out	**Auto**	**Taxi**	**Subway**	**City Bus**	**Tour Bus**	**Walk**	**Railroad**	**Total**	**In/Out**	**Auto**	**Taxi**	**Tour Bus**	**Delivery**	**Total**
In	22	52	190	101	198	802	33	1,398	In	12	34	5	12	63
Out	22	53	193	104	198	839	33	1,442	Out	13	34	5	12	64
Total	44	105	383	205	396	1,641	66	2,840	Total	25	68	10	24	127
Weekday PM Peak Hour														
In/Out	**Auto**	**Taxi**	**Subway**	**City Bus**	**Tour Bus**	**Walk**	**Railroad**	**Total**	**In/Out**	**Auto**	**Taxi**	**Tour Bus**	**Delivery**	**Total**
In	215	226	221	41	0	135	93	931	In	76	97	0	2	175
Out	356	132	1,564	430	0	191	753	3,426	Out	271	97	0	2	370
Total	571	358	1,785	471	0	326	846	4,357	Total	347	194	0	4	545
Saturday Peak Hour														
In/Out	**Auto**	**Taxi**	**Subway**	**City Bus**	**Tour Bus**	**Walk**	**Railroad**	**Total**	**In/Out**	**Auto**	**Taxi**	**Tour Bus**	**Delivery**	**Total**
In	210	229	201	40	0	228	84	992	In	74	99	0	4	177
Out	79	98	95	12	0	120	31	435	Out	28	99	0	4	131
Total	289	327	296	52	0	348	115	1,427	Total	102	198	0	8	308

Transit

As detailed in **Table 10-8**, the net incremental transit trips attributed to the proposed One Vanderbilt development would be 1,720, 383, 1,785, and 296 person trips by subway, 557, 205, 471, and 52 person trips by bus, and 763, 66, 846, and 115 person trips by railroad during the weekday AM, midday, PM, and Saturday peak hours, respectively. Since the incremental subway and bus trips would be greater than 200 during the commuter peak hours, a Level 2 screening assessment (presented in the section below) was conducted to determine if there is a need for additional quantified subway and bus analyses. Regarding the increment railroad trips, which would be distributed to the Metro-North Railroad (MNR), Long Island Rail Road (LIRR), New Jersey Transit (NJT), and Amtrak, no additional analyses would be prepared as part of this EIS.

Pedestrian

All person trips generated by the proposed One Vanderbilt development would traverse the pedestrian elements surrounding the project site. As shown in **Table 10-8**, the net incremental pedestrian trips would be greater than 200 during all peak hours. A Level 2 screening assessment (presented in the section below) was conducted to determine if there is a need for additional quantified pedestrian analyses.

LEVEL 2 SCREENING ASSESSMENT

A Level 2 screening assessment involves the distribution and assignment of projected trips to the transportation network and the determination of whether specific locations are expected to experience incremental trips exceeding *CEQR Technical Manual* thresholds. If the results of this analysis show that the proposed project would result in 50 or more peak hour vehicle trips

through an intersection, 50 or more peak hour bus riders on a bus route in a single direction, 200 or more peak hour subway passengers per station, or 200 or more peak hour pedestrian trips per pedestrian element, further quantified analyses may be warranted to evaluate the potential for significant adverse traffic, transit, pedestrian, and parking impacts.

SITE ACCESS AND EGRESS

For the proposed One Vanderbilt development, the main entrance to the office component would be on the Vanderbilt Avenue public place, with an additional entrance to the office lobby from Madison Avenue. Most of the new retail space would be located along Madison Avenue at grade, with possible additional retail space on the second floor and on the first below-grade level. The entrance to the restaurant component would be located on East 42nd Street near Vanderbilt Avenue. The building would have two levels below grade. The first level would have connections to the pedestrian circulation network serving GCT and the subway, as well as queuing and display space accessory to a proposed rooftop observation deck.

In addition, the second level below grade would accommodate a loading dock accessible via two truck elevators from East 43rd Street. The below-grade level, as currently contemplated, would accommodate seven loading bays for trucks and delivery vans. The two elevators that would transport these vehicles to/from street level are expected to be each approximately 16-foot wide and 40-foot long. Head-in/head-out turns to/from adjacent East 43rd Street would be accommodated via an approximately 50-foot wide curb cut that is being sought through zoning waivers. This curb cut would be located in the middle of the block at more than 50 feet from adjacent intersections. The largest size truck expected to service the One Vanderbilt building is a 35-foot long, 8-foot wide box truck. Turning analyses were prepared to confirm the ability of these vehicles to turn in and out of the elevators at grade-level. The travel demand estimates detailed above show that up to 24 deliveries would be expected during the weekday midday peak hour. Based on a delivery vehicle study conducted by the design team, about 30 percent of the building's service vehicles, or up to 7 to 8 during peak hours, could require access to the loading docks. Of these, about 40 percent or 3 of the 7 to 8 peak hour service vehicles would be the larger box trucks while the rest would be smaller vans and passenger cars. With average dwell time typically at approximately 50 minutes to an hour, the projected delivery demand could be readily accommodated below-grade; and with the ability to turn head-in and head-out, the 7 to 8 service vehicles during peak hours would be expected to result in minimal vehicular-pedestrian conflicts at the adjacent sidewalk.

CHANGES TO PEDESTRIAN CIRCULATION AND VANDERBILT AVENUE

The proposed One Vanderbilt development would further the Midtown Special District goal of improving pedestrian circulation in the Midtown area, in particular around connections to mass transit. The proposed One Vanderbilt development would include a below-grade level connecting to the pedestrian circulation network serving GCT and the subway; this connection would relieve pedestrian congestion within the GCT hub. In addition, the proposed One Vanderbilt development would create a public place on Vanderbilt Avenue between East 42nd Street and East 43rd Street to provide additional pedestrian circulation space at-grade and furthering the city's goal of creating public open space resources within the right-of-way. Currently, this segment of Vanderbilt Avenue serves limited northbound traffic, which would be diverted to other area roadways. Since East 43rd Street serves westbound traffic and dead-ends at Vanderbilt Avenue, there would also no longer be any northbound traffic on Vanderbilt Avenue between East 43rd and East 44th Streets. It is assumed that this roadway segment would

be converted from two-way to one-way southbound operations with the proposed One Vanderbilt development. The changes in roadway configurations for this block of Vanderbilt Avenue would be subject to DOT review and approval. The western half of the block would be expected to continue serving southbound traffic and a taxi stand. Since MTA police currently uses the east curb of northbound Vanderbilt Avenue between East 42nd and East 43rd Streets for parking/staging, it is assumed that the eastern half of Vanderbilt Avenue between East 43rd and East 44th Streets would be used to serve a similar purpose, but in the southbound direction, after Vanderbilt Avenue between East 42nd and East 43rd Streets have been converted to a public place.

TRAFFIC

As shown in **Table 10-8**, incremental vehicle trips resulting from the proposed One Vanderbilt development would exceed the *CEQR* Level-1 screening threshold during all peak hours. These vehicle trips were assigned to area intersections based on the most likely travel routes to and from the project site, prevailing travel patterns, commuter origin-destination (O-D) summaries from the census data, the configuration of the roadway network, and the anticipated locations of site access and egress. Auto trips were assigned to public garages in the study area. Taxi trips were assigned to the block faces along Madison Avenue, East 42nd Street and East 43rd Street. All delivery trips were assigned to the project site via DOT-designated truck routes. The proposed remapping would close Vanderbilt Avenue between East 42nd and East 43rd Streets to vehicular traffic to create a public place. This segment currently runs one-way northbound, and there are turn restrictions onto Vanderbilt Avenue from both eastbound and westbound East 42nd Street. Therefore, no vehicular trips generated by the proposed One Vanderbilt development were assigned to this roadway segment. Traffic assignments for autos, taxis, and deliveries for individual components are discussed below.

Office

The assignments of auto trips generated by the office use were based on the 2006-2010 U.S. Census ACS RJTW origin-destination estimates. Many of the office trips would originate from New Jersey (25 percent), from Queens (15 percent), and from Long Island (15 percent). The remaining trips would originate from the Bronx (6 percent), Brooklyn (10 percent), within Manhattan (9 percent), Staten Island (3 percent), and from counties in Upstate New York (12 percent), Connecticut (4 percent), and Pennsylvania (1 percent). The majority of trips from the Bronx were assigned to public garages in the proximity of the One Vanderbilt site via Harlem River crossings, and subsequently along the FDR Drive and area roadways. Some Bronx trips were assigned to the West Side Highway to area roadways. Trips from Brooklyn are expected to use East River crossings to enter Manhattan and will then approach the study area garages via the most direct routes available, primarily along the FDR Drive, Third Avenue, and Park Avenue. Of the trips within Manhattan, approximately 70 percent were assigned from points north of the One Vanderbilt site, and the remaining 30 percent were assigned from points south of the One Vanderbilt site, approaching the study area garages via the most direct routes available. Trips from Queens were assigned to the Queensboro Bridge and the Queens-Midtown Tunnel, and subsequently along area roadways. Trips from Staten Island were assigned through New Jersey to the Lincoln Tunnel and subsequently along area roadways to garages near the One Vanderbilt site, or through Brooklyn and subsequently across the Brooklyn Bridge to the FDR Drive and to area garages. Long Island-based trips would arrive at garages near the One Vanderbilt site via the Queens-Midtown Tunnel and area roadways. Trips traveling from Upstate New York and Connecticut were assigned to the garages via area roadways connecting to the

West Side Highway or the FDR Drive. Trips from New Jersey and Pennsylvania were assigned through New Jersey to the Lincoln Tunnel or over the George Washington Bridge to the West Side Highway and to area garages.

Destination Retail

The destination retail component is expected to draw customers from within a three-mile radius of the One Vanderbilt site; therefore, a majority of the auto trips are expected to come from within Manhattan (65 percent) with some trips expected to come from Queens (25 percent) and Brooklyn (10 percent). Overall, the vehicle trips generated by the destination retail component were distributed to the study area roadways in the following manner: approximately 50 percent of project-generated trips were assumed to approach the One Vanderbilt site from the north, northeast, and northwest, and 50 percent from the south, southeast, and southwest. Departing trips were assigned along the same routes as arrivals.

Rooftop Amenity Space

The rooftop amenity space component is expected to draw visitors primarily from within Manhattan, from other tourist destinations or from area hotels. Of these trips, approximately 50 percent were assigned to points north of the One Vanderbilt site, and 50 percent were assigned to points south of the site. Trips traveling within Manhattan from north of the One Vanderbilt site were assigned to various major roadways leading to garages near the site, including Fifth Avenue, Park Avenue, Lexington Avenue, and across 42nd, 46th, and 47th Streets. Trips traveling within Manhattan from south of the One Vanderbilt site were also assigned to various major roadways leading to public garages near the site, including Madison Avenue, Park Avenue, Third Avenue, and across 39th, 40th, and 42nd Streets.

Event Space

The event space is expected to have travel patterns similar to the destination retail component, with trips originating mostly from within Manhattan residential areas, and some from neighboring boroughs within New York City.

Trading Floor

Overall, trips to the trading floor are expected to have travel patterns similar to the office component, with the traders' trip origins developed using the 2006-2010 U.S. Census ACS RJTW origin-destination estimates, and those of visitors assumed to be from areas within New York City and the region with a similar concentration of office and commercial uses as the proposed One Vanderbilt development study area.

Local Retail

The local retail uses are expected to serve the immediate surrounding area. Therefore, auto trips were generally assigned from local origins within the neighborhood and adjacent residential areas. Overall, the vehicle trips generated by the local retail component were distributed to the study area roadways in the following manner: approximately 50 percent were assigned to points north of the One Vanderbilt site, and 50 percent were assigned to points south of the site. Trips traveling within Manhattan from north of the One Vanderbilt site were assigned to various major roadways leading to garages near the site, including Fifth Avenue, Park Avenue, Lexington Avenue, and across 42nd, 46th, and 47th Streets. Trips traveling within Manhattan from south of the One Vanderbilt site were also assigned to various major roadways leading to public garages near the site, including Madison Avenue, Park Avenue, Third Avenue, and across 39th, 40th, and 42nd Streets.

Restaurant

The restaurant component is expected to draw customers from within a three-mile radius of the project site; therefore, a majority of the auto trips are expected to come from within Manhattan (65 percent) with some trips expected to come from Queens (25 percent) and Brooklyn (10 percent). Overall, the vehicle trips generated by the restaurant component were distributed to the study area roadways in the following manner: approximately 50 percent of project-generated trips were assumed to approach the One Vanderbilt site from the north, northeast, and northwest, and 50 percent from the south, southeast, and southwest. Departing trips were assigned along the same routes as arrivals.

Taxis

Taxi pick-ups and drop-offs for all project components were assigned to pick up and drop off along the project site frontages on East 42nd Street, East 43rd Street, and Madison Avenue.

Tour Buses

Tour buses to the One Vanderbilt site (pertaining only to transporting the observation deck visitors), some of which may already be circulating in the study area, were conservatively assumed to be new trips routed to potential drop-off locations along the south side of East 41st Street between Madison Avenue and Park Avenue, the south side of East 41st Street between Park Avenue and Lexington Avenue, and the south side of East 41st Street between Lexington Avenue and Third Avenue. As the proposed project is further developed and the programming of the rooftop space and its anticipated visitation become more certain, the applicant and operator of that space will coordinate with DOT, as warranted, to identify feasible locations where tour bus pick-up/drop-off activities can best be accommodated. If it was determined then that formal stop locations are to be established, their installation and related changes that may be required along the corresponding roadways and curbsides will be reviewed with DOT for approval.

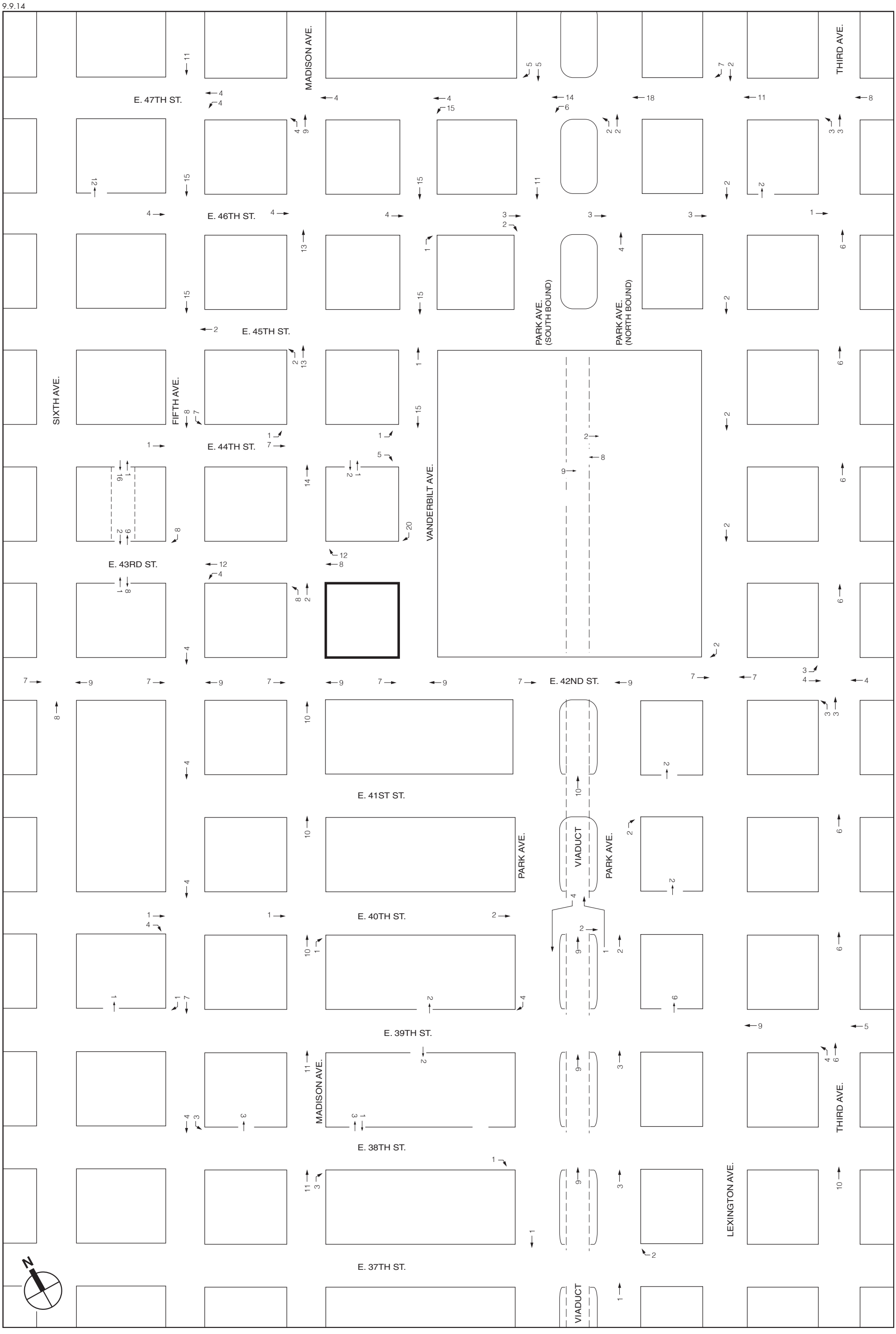
Deliveries

Truck delivery trips for all land uses were assigned to DOT-designated truck routes. Trucks were assigned to the study area from regional origins via Eighth Avenue, 42nd Street, 57th Street, Lexington Avenue, Third Avenue, and Second Avenue. Trucks were assigned along regional and local truck routes as long as possible until reaching the One Vanderbilt site's loading area along East 43rd Street between Vanderbilt and Madison Avenues.

Summary

Figures 10-1 to 10-4 show the No-Action building project-generated vehicle trips for the weekday AM, midday, PM, and Saturday peak hours. **Figures 10-5 to 10-8** show the proposed One Vanderbilt development project-generated vehicle trips for the weekday AM, midday, PM, and Saturday peak hours. And **Figures 10-9 to 10-12** show the incremental vehicle trips between the proposed One Vanderbilt development and the No-Action building for the weekday AM, midday, PM, and Saturday peak hours. According to the *CEQR Technical Manual*, intersections expected to incur 50 or more incremental peak hour vehicle trips as a result of a proposed action would have the potential for significant adverse traffic impacts and should be assessed in a quantified traffic impact analysis. As shown in **Figures 10-9 to 10-12** and presented in **Table 10-9 and Figure 10-13**, 31 intersections, comprising the study area, have been selected for analysis.

9.9.14



One Vanderbilt Development Site

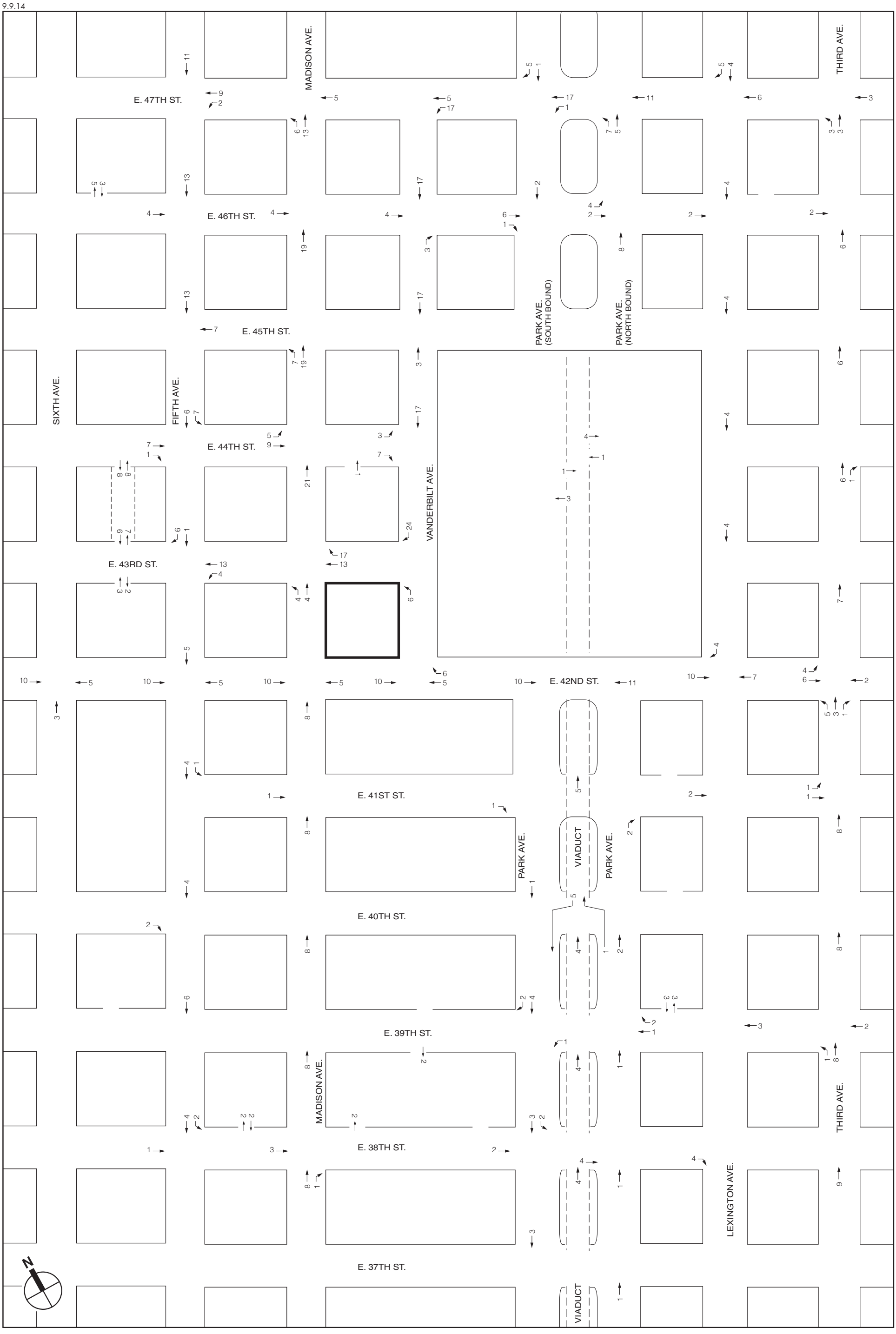
NOT TO SCALE

2021 No-Action Project Generated Vehicle Trips
Weekday AM Peak Hour

Vanderbilt Corridor and One Vanderbilt

Figure 10-1

9.9.14



One Vanderbilt Development Site

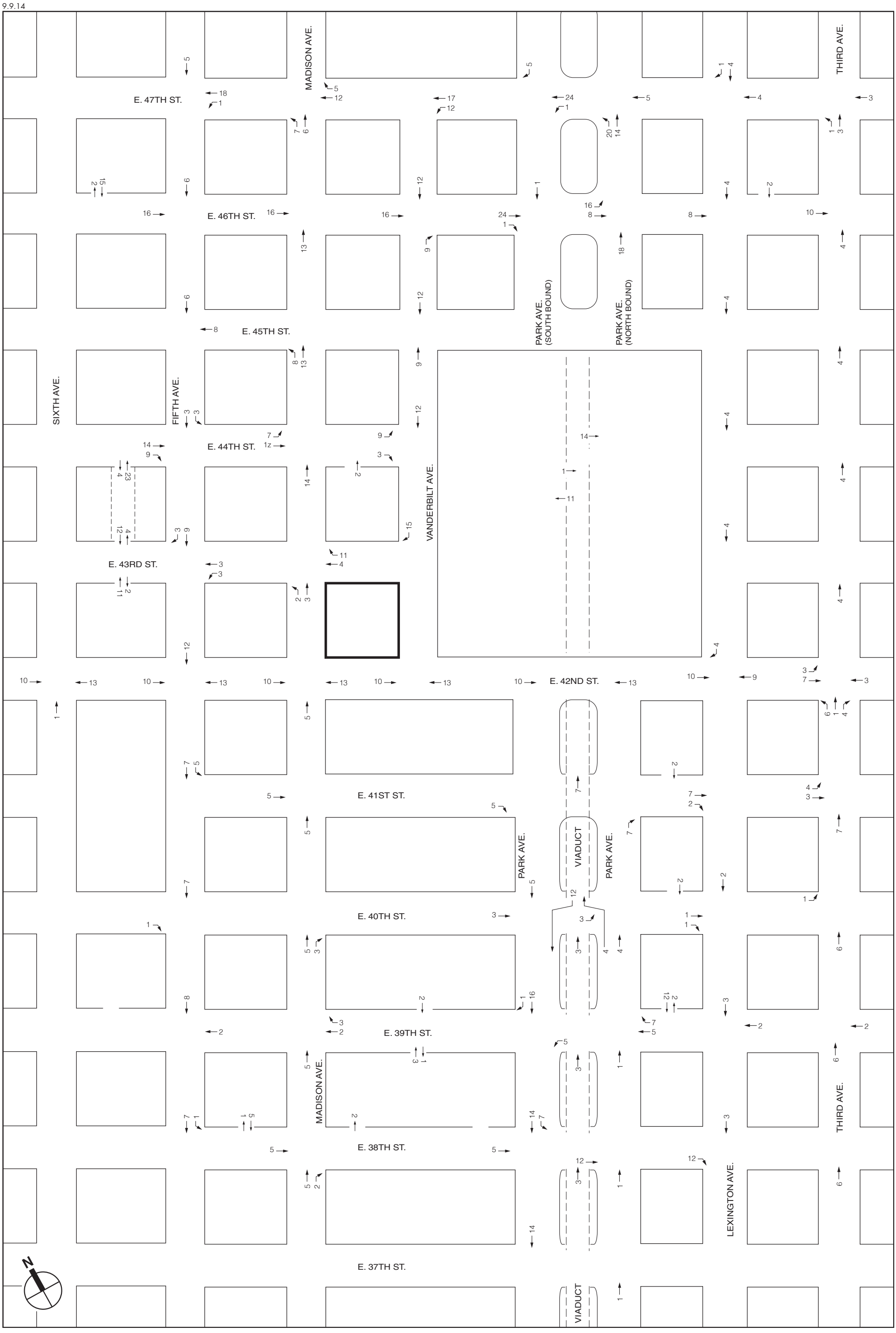
NOT TO SCALE

2021 No-Action Project Generated Vehicle Trips
Weekday Midday Peak Hour

Vanderbilt Corridor and One Vanderbilt

Figure 10-2

9.9.14



One Vanderbilt Development Site

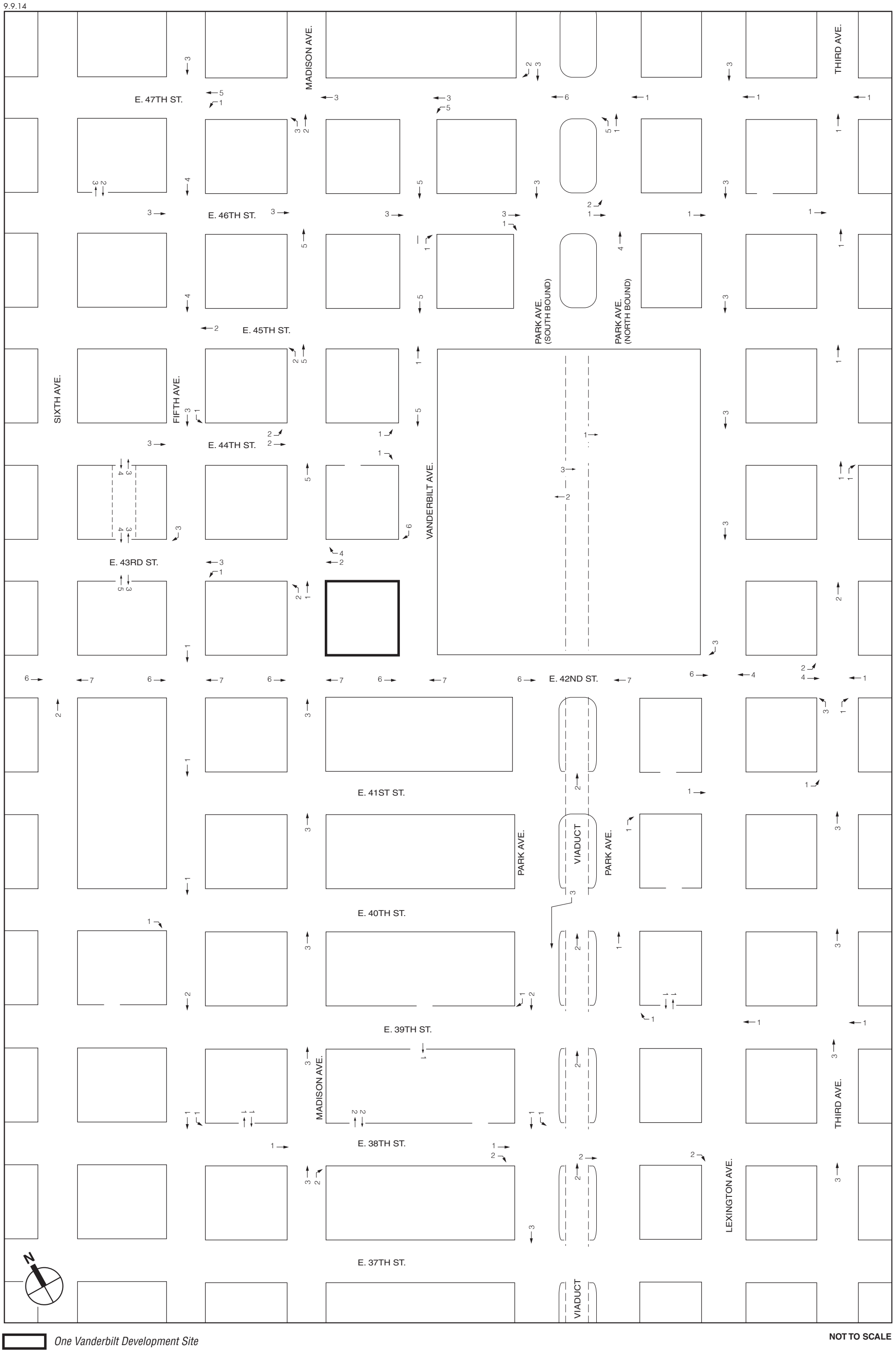
NOT TO SCALE

2021 No-Action Project Generated Vehicle Trips
Weekday PM Peak Hour

Vanderbilt Corridor and One Vanderbilt

Figure 10-3

9.9.14



One Vanderbilt Development Site

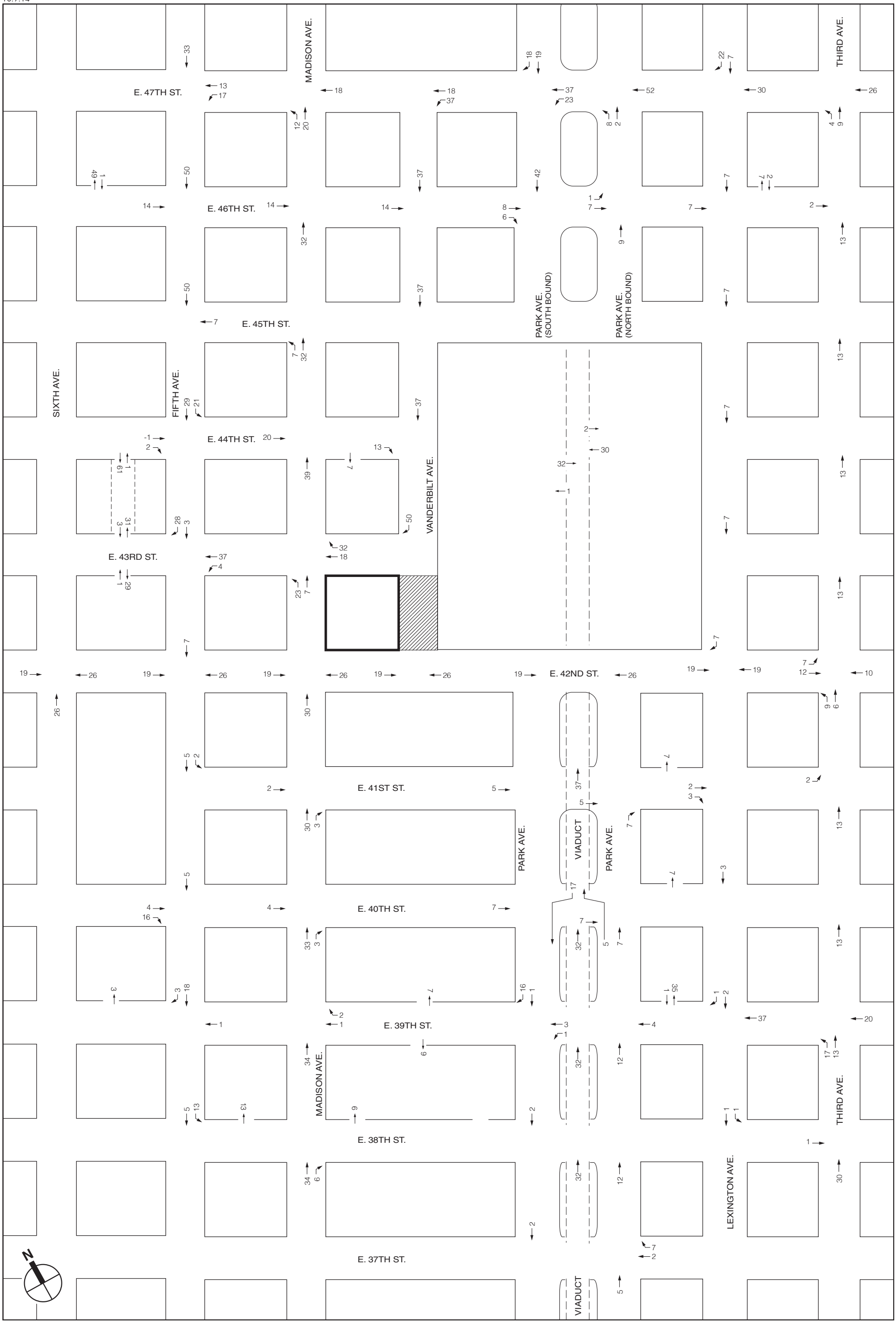
NOT TO SCALE

2021 No-Action Project Generated Vehicle Trips
Saturday Peak Hour

Vanderbilt Corridor and One Vanderbilt

Figure 10-4

10.9.14



One Vanderbilt Development Site

Proposed Public Place

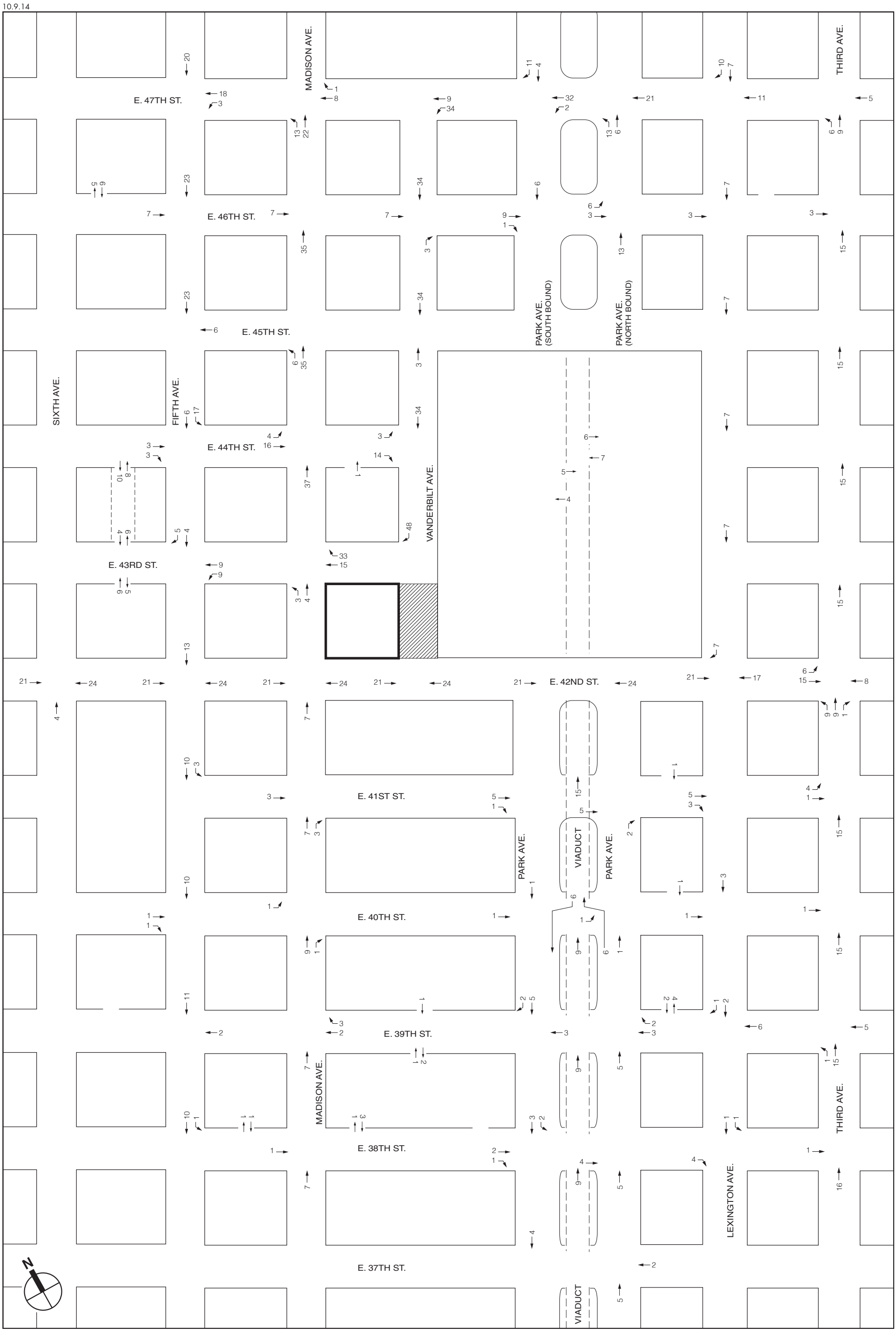
NOT TO SCALE

2021 With-Action Project Generated Vehicle Trips
Weekday AM Peak Hour

Figure 10-5

Vanderbilt Corridor and One Vanderbilt

10.9.14



One Vanderbilt Development Site

Proposed Public Place

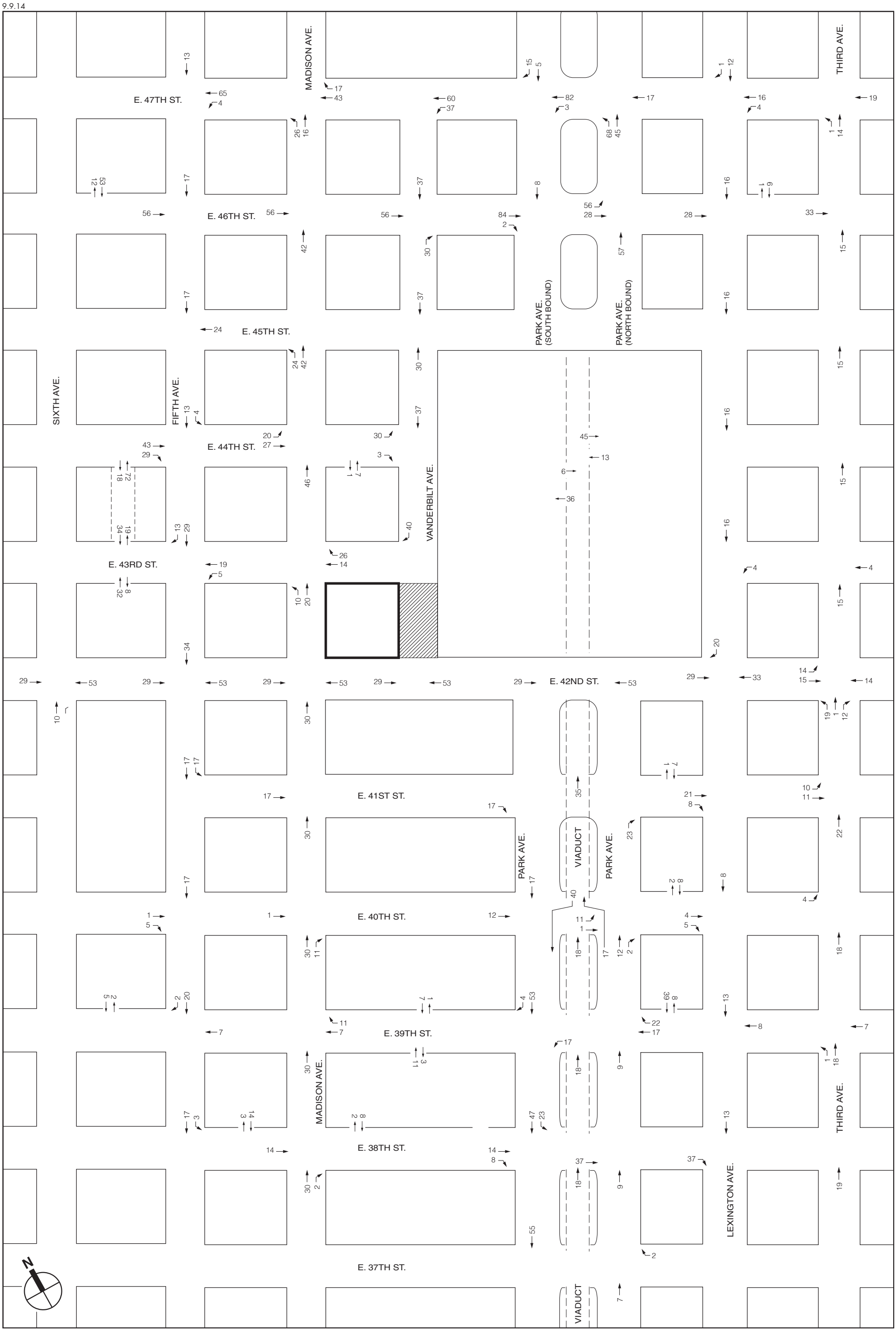
NOT TO SCALE

2021 With-Action Project Generated Vehicle Trips
Weekday Midday Peak Hour

Vanderbilt Corridor and One Vanderbilt

Figure 10-6

9.9.14



One Vanderbilt Development Site

Proposed Public Place

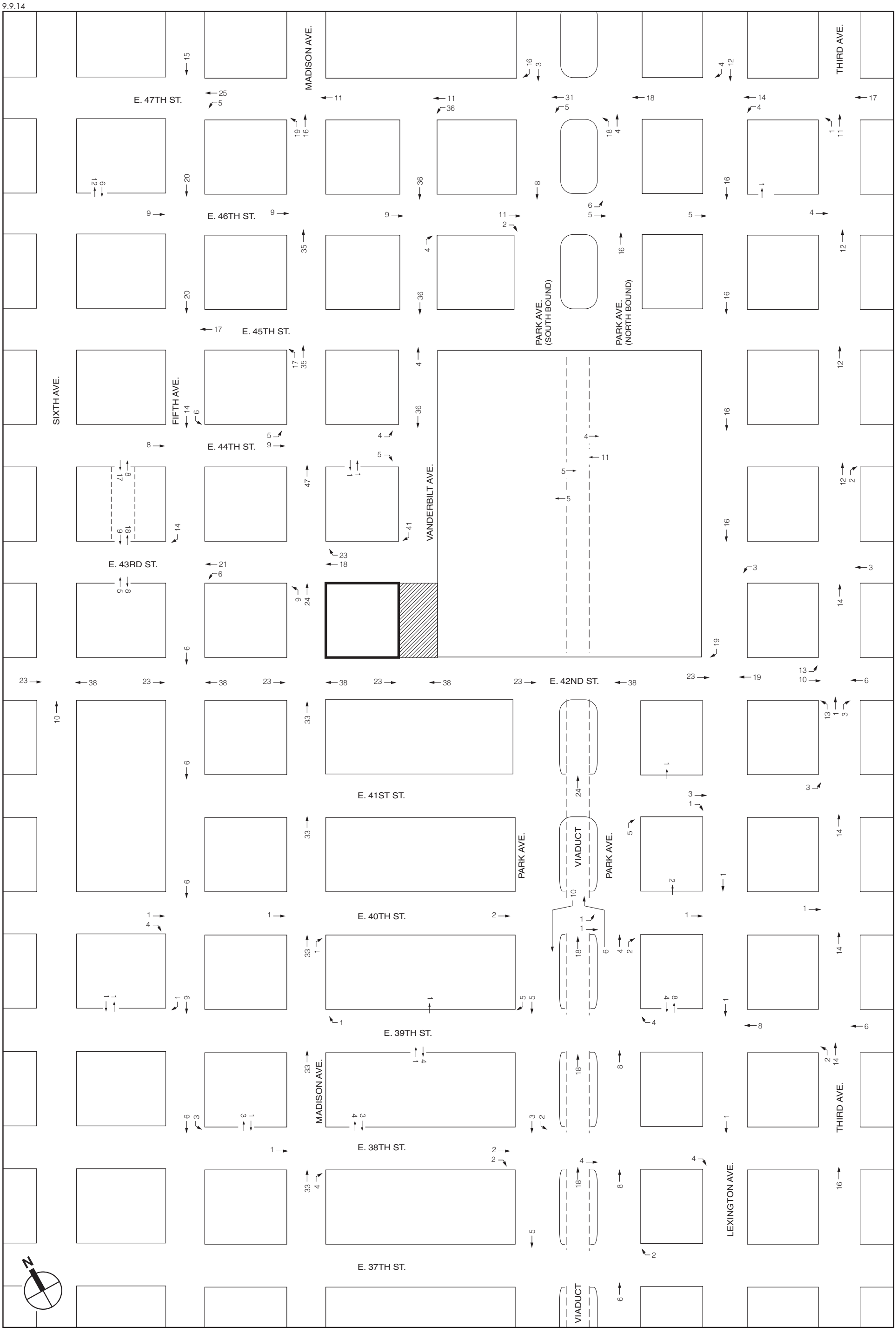
NOT TO SCALE

2021 With-Action Project Generated Vehicle Trips
Weekday PM Peak Hour

Figure 10-7

Vanderbilt Corridor and One Vanderbilt

9.9.14



One Vanderbilt Development Site

Proposed Public Place

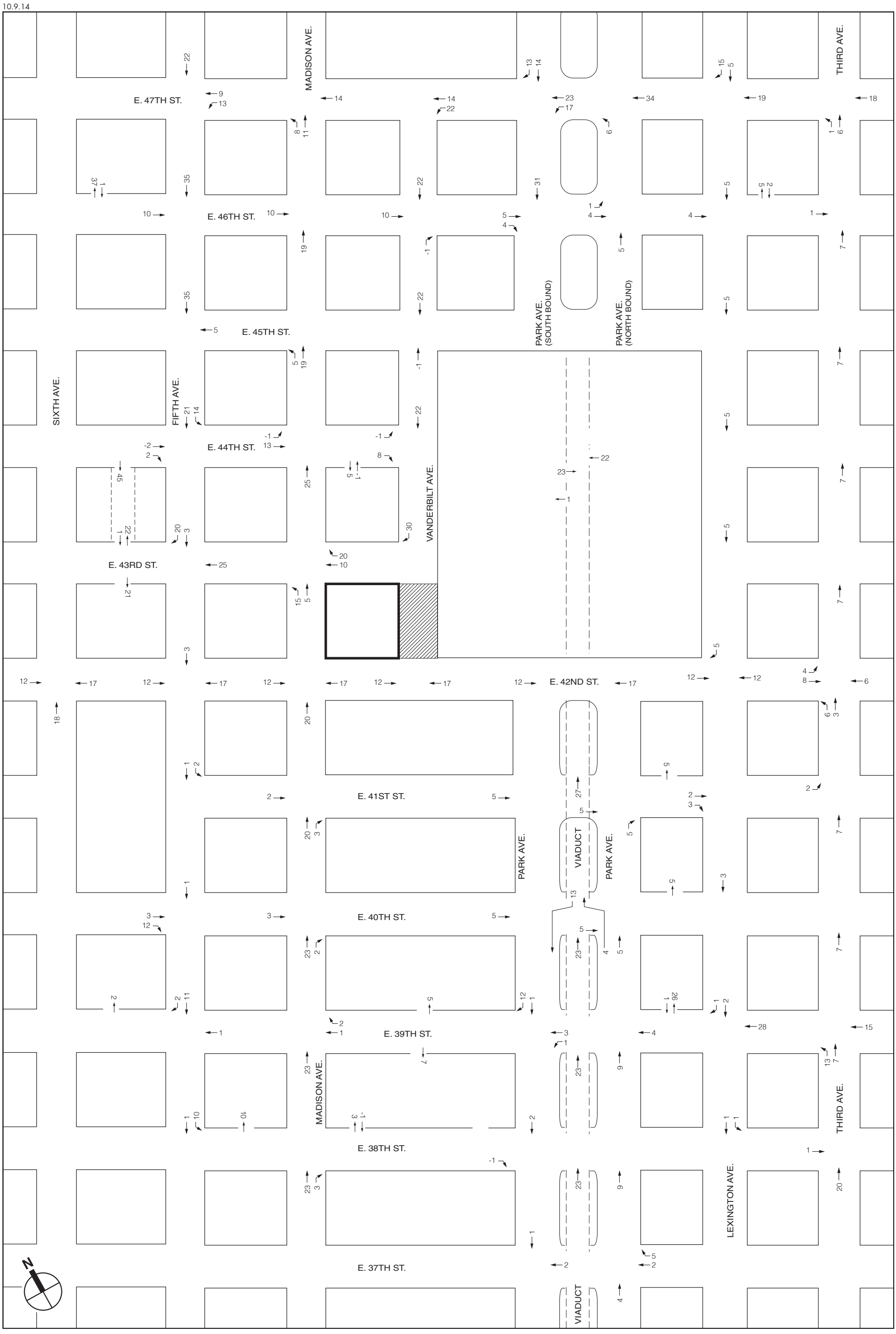
NOT TO SCALE

2021 With-Action Project Generated Vehicle Trips
Saturday Peak Hour

Figure 10-8

Vanderbilt Corridor and One Vanderbilt

10.9.14



One Vanderbilt Development Site

Proposed Public Place

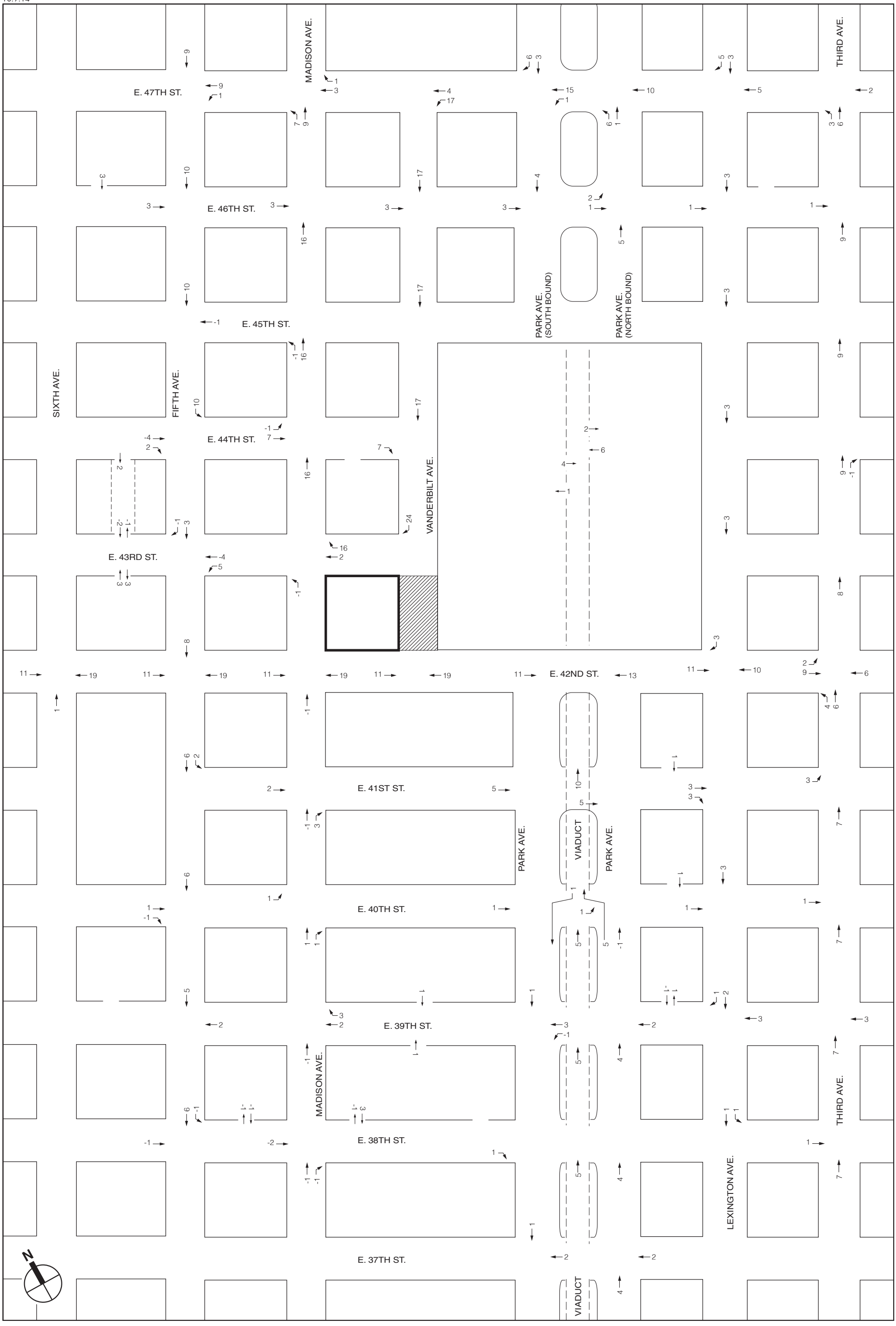
NOT TO SCALE

2021 With-Action Incremental Vehicle Trips
Weekday AM Peak Hour

Figure 10-9

Vanderbilt Corridor and One Vanderbilt

10.9.14



One Vanderbilt Development Site

Proposed Public Place

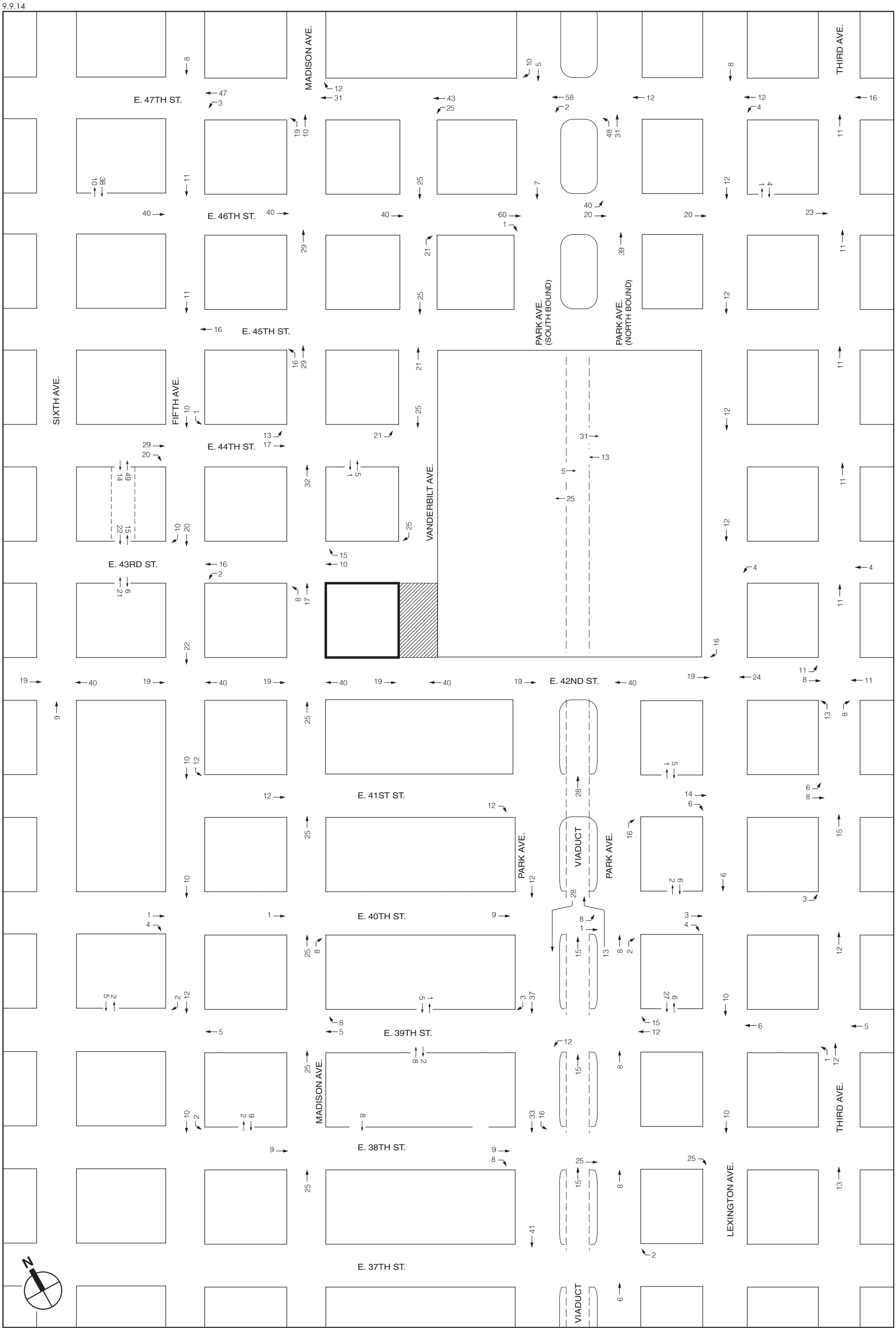
NOT TO SCALE

2021 With-Action Incremental Vehicle Trips
Weekday Midday Peak Hour

Figure 10-10

Vanderbilt Corridor and One Vanderbilt

9.9.14



One Vanderbilt Development Site

Proposed Public Place

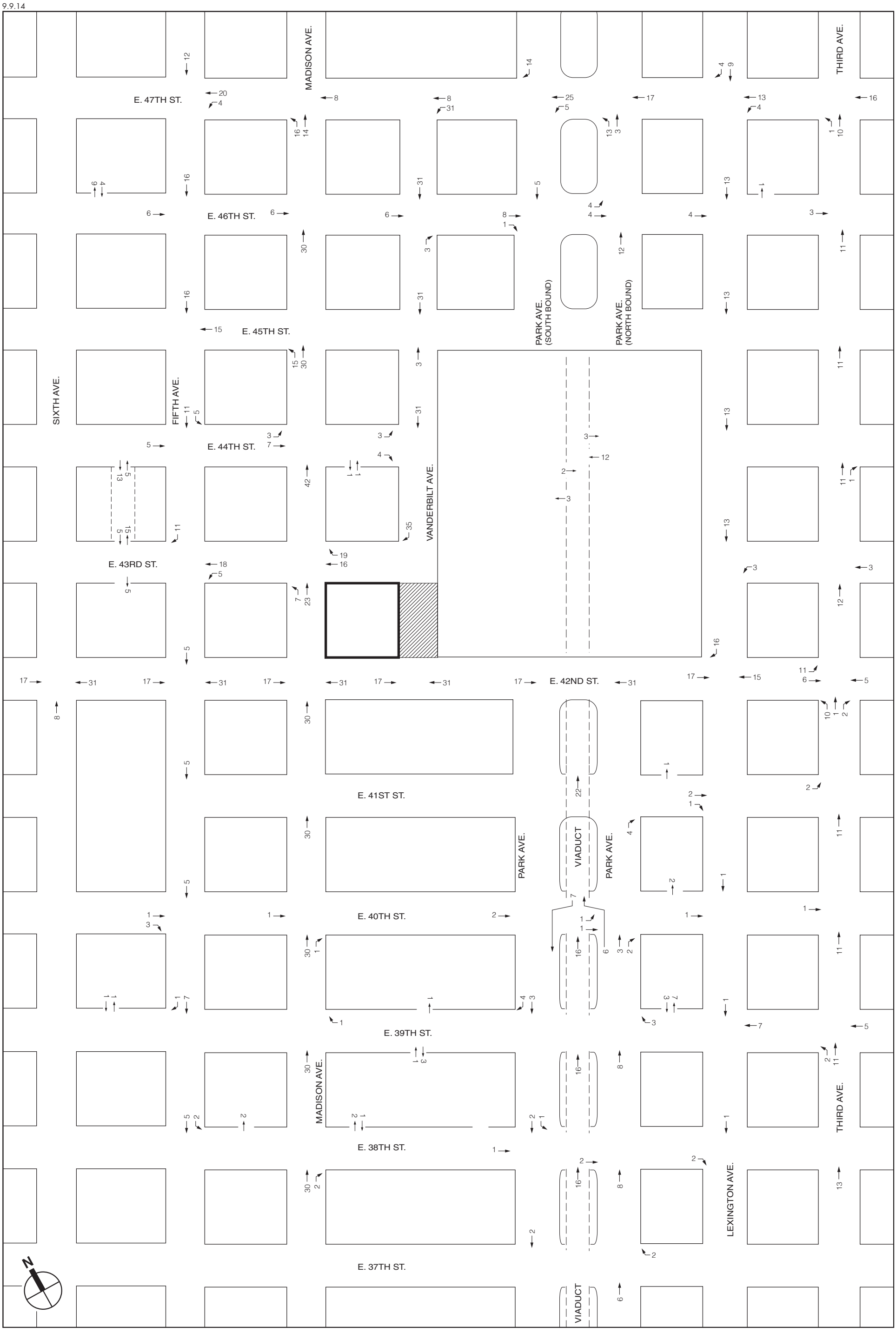
NOT TO SCALE

2021 With-Action Incremental Vehicle Trips
Weekday PM Peak Hour

Vanderbilt Corridor and One Vanderbilt

Figure 10-11

9.9.14



One Vanderbilt Development Site

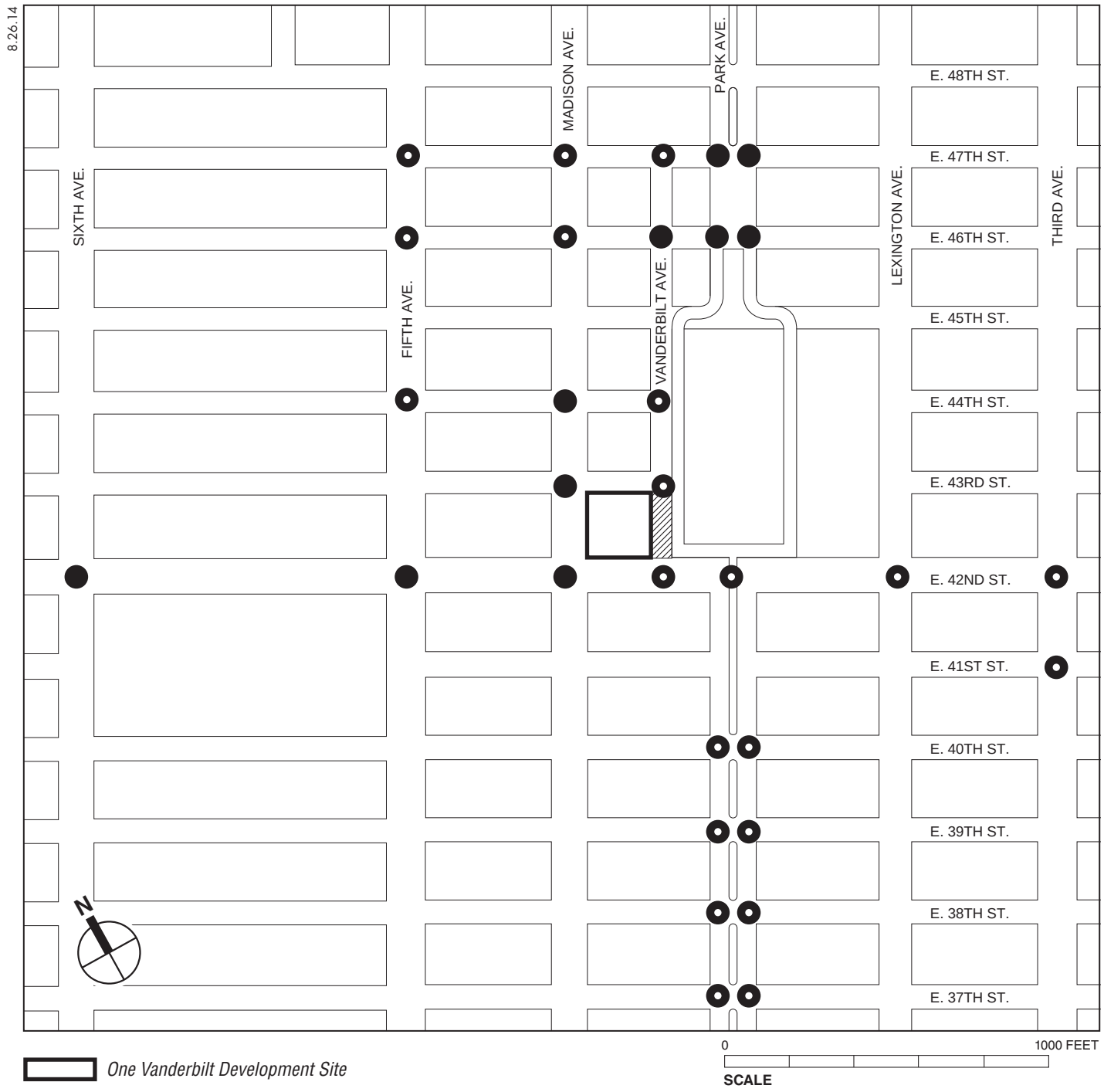
Proposed Public Place

NOT TO SCALE

2021 With-Action Incremental Vehicle Trips
Saturday Peak Hour

Figure 10-12

Vanderbilt Corridor and One Vanderbilt



Traffic Analysis Locations

Vanderbilt Corridor and One Vanderbilt

Figure 10-13

Table 10-9
Traffic Level 2 Screening Analysis Results—Selected Analysis Locations

Intersection	Incremental Vehicle Trips (Weekday) AM	Midday	PM	Selected Analysis Locations Weekday	Incremental Vehicle Trips (Saturday)	Selected Analysis Locations Saturday
Third Avenue and East 47th Street	25	11	27		27	
Third Avenue and East 46th Street	8	10	34		14	
Third Avenue and East 45th Street	7	9	11		11	
Third Avenue and East 44th Street	7	8	11		12	
Third Avenue and East 43rd Street	7	8	15		15	
Third Avenue and East 42nd Street	27	27	**51**	✓	35	
Third Avenue and East 41st Street	10	11	29	✓	13	
Third Avenue and East 40th Street	7	8	15		12	
Third Avenue and East 39th Street	35	10	18		18	
Third Avenue and East 38th Street	21	8	13		13	
Lexington Avenue and East 47th Street	39	13	24		30	
Lexington Avenue and East 46th Street	9	4	32		17	
Lexington Avenue and East 45th Street	5	3	12		13	
Lexington Avenue and East 44th Street	5	3	12		13	
Lexington Avenue and East 43rd Street	5	3	16		16	
Lexington Avenue and East 42nd Street	29	24	**59**	✓	48	
Lexington Avenue and East 41st Street	5	6	20		3	
Lexington Avenue and East 40th Street	3	4	13		2	
Lexington Avenue and East 39th Street	31	6	16		8	
Lexington Avenue and East 38th Street	2	2	35		3	
Park Avenue (NB) and East 47th Street	40	17	**91**	✓	33	✓
Park Avenue (SB) and East 47th Street	**67**	25	**75**	✓	44	✓
Park Avenue (NB) and East 46th Street	10	8	**99**	✓	20	✓
Park Avenue (SB) and East 46th Street	40	7	**68**	✓	14	✓
Park Avenue and East 42nd Street	29	24	**59**	✓	48	
Park Avenue (NB) and East 41st Street	9	4	16		4	
Park Avenue (SB) and East 41st Street	4	4	12		0	
Park Avenue (NB) and East 40th Street	14	5	32	✓	13	
Park Avenue (SB) and East 40th Street	18	2	49	✓	9	
Park Avenue (NB) and East 39th Street	13	6	35	✓	11	
Park Avenue (SB) and East 39th Street	17	3	**52**	✓	7	
Park Avenue (NB) and East 38th Street	9	4	33	✓	10	
Park Avenue (SB) and East 38th Street	1	1	**66**	✓	4	
Park Avenue (NB) and East 37th Street	11	6	8	✓	8	
Park Avenue (SB) and East 37th Street	3	3	41	✓	2	
Vanderbilt Avenue and East 47th Street	36	21	**68**	✓	39	
Vanderbilt Avenue and East 46th Street	31	20	**86**	✓	40	✓
Vanderbilt Avenue and East 45th Street	21	17	46		34	
Vanderbilt Avenue and East 44th Street	29	24	46	✓	38	
Vanderbilt Avenue and East 43rd Street	30	18	25	✓	35	
Vanderbilt Avenue and East 42nd Street	29	30	**59**	✓	48	
Madison Avenue and East 47th Street	33	20	**72**	✓	38	
Madison Avenue and East 46th Street	29	19	**69**	✓	36	
Madison Avenue and East 45th Street	24	15	45		45	
Madison Avenue and East 44th Street	37	22	**62**	✓	**52**	✓
Madison Avenue and East 43rd Street	**50**	17	**50**	✓	**65**	✓
Madison Avenue and East 42nd Street	49	29	**84**	✓	**78**	✓
Madison Avenue and East 41st Street	25	4	37		30	
Madison Avenue and East 40th Street	28	3	34		32	
Madison Avenue and East 39th Street	26	4	38		31	
Madison Avenue and East 38th Street	26	-4	34		32	
Fifth Avenue and 47th Street	44	19	**58**	✓	36	
Fifth Avenue and 46th Street	45	13	**51**	✓	22	
Fifth Avenue and 45th Street	40	9	27		31	
Fifth Avenue and 44th Street	35	8	**60**	✓	21	
Fifth Avenue and 43rd Street	48	3	48		34	

Notes:

✓ denotes intersection selected for the detailed traffic analysis.

Table 10-9 (cont'd)
Traffic Level 2 Screening Analysis Results—Selected Analysis Locations

Intersection	Incremental Vehicle Trips (Weekday) AM	Midday	PM	Selected Analysis Locations Weekday	Incremental Vehicle Trips (Saturday)	Selected Analysis Locations Saturday
Fifth Avenue and 42nd Street	32	38	**81**	✓	**53**	✓
Fifth Avenue and 41st Street	3	8	22		5	
Fifth Avenue and 40th Street	16	6	15		9	
Fifth Avenue and 39th Street	14	7	19		8	
Fifth Avenue and 38th Street	11	4	12		7	
Sixth Avenue and West 42nd Street	47	31	**68**	✓	**56**	✓

Notes:
✓ denotes intersection selected for the detailed traffic analysis.

These intersections include those expected to incur 50 or more project-generated vehicle trips during the weekday AM, midday, PM, and/or Saturday peak hours, as well as several other intersections determined for analysis per consultation with DOT. Among these, all 31 intersections were analyzed for the weekday peak hours while 10 intersections were analyzed for the Saturday peak hour.

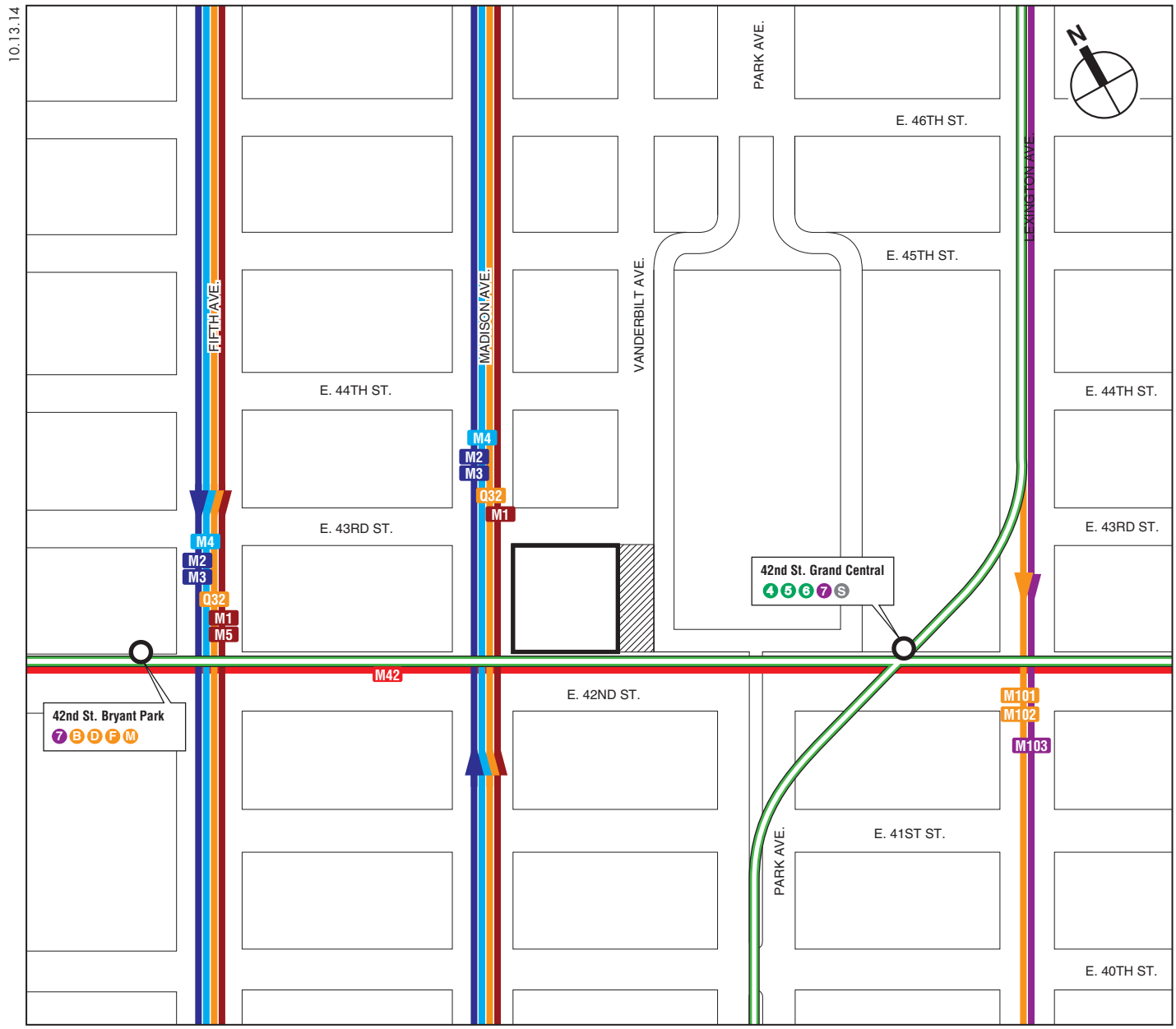
TRANSIT

The One Vanderbilt site is located near two NYCT subway stations: (1) GCT (Nos. 4, 5, 6, 7 Lines and Shuttle service); and (2) 42nd Street and Bryant Park Station (B, D, F, and M Lines). Subway services at these stations provide convenient connections to other subway lines. As summarized in **Table 10-8**, the proposed One Vanderbilt development is expected to generate 1,720, 383, 1,785, and 296 peak-hour net incremental subway trips during the weekday AM, midday, and PM, and the Saturday peak hours, respectively. Based on the trip distribution results, it is expected that quantified analyses of affected subway elements at the GCT and 42nd Street and Bryant Park subway stations for the weekday AM and PM peak hours, as well as line-haul conditions on the nine subway lines (4/5/6/7/B/D/F/M/S), would be warranted.

There are numerous bus routes with stops adjacent to or near the One Vanderbilt site, including the M1, M2, M3, M4, M5, M15, M15 SBS, M42, M101, M102, M103, and Q32 local bus routes see **Figure 10-14**), as well as express bus routes from the Bronx, Brooklyn, Queens, and Staten Island, and Port Authority Bus Terminal buses. The local bus routes operate standard buses with a guideline capacity of 54 passengers per bus, except for the M15 and M15 SBS, which operate articulated buses with a guideline capacity of 85 passengers per bus. **Table 10-10** provides a summary of these routes and their peak period schedules. As summarized in **Table 10-8**, the proposed One Vanderbilt development is expected to generate 557, 205, 471, and 52 net incremental bus trips during the weekday AM, midday, and PM, and Saturday peak hours, respectively. Based on detailed distribution of the projected bus trips, including transfers, it was determined that none of the bus routes serving the study area would incur 50 or more peak hour riders in a single direction, as summarized in **Table 10-11**. Therefore, a quantified bus line-haul analysis is not warranted and the proposed One Vanderbilt development is not expected to result in any significant adverse bus line-haul impacts in the study area.

Off-Site Transit Improvements

317 Madison is also undertaking ongoing consultation with MTA-NYCT regarding the potential provision of off-site pedestrian circulation improvements to the Grand Central subway station. The potential off-site improvements under consideration include:



Vanderbilt Corridor and One Vanderbilt

Study Area Transit Map
Figure 10-14

Table 10-10
NYCT Local Bus Routes Serving The Study Area

Bus Route	Start Point	End Point	Routing in Study Area	Freq. of Bus Service (Headway in Minutes)	
				(8 AM - 9 AM)	(4 PM - 5 PM)
M1 (NB/SB)	East Village	Harlem	Madison Avenue and Fifth Avenue	(8/8)	(6/5)
M2 (NB/SB)	East Village	Washington Heights	Madison Avenue and Fifth Avenue	(10/9)	(9/10)
M3 (NB/SB)	East Village	Fort George	Madison Avenue and Fifth Avenue	(15/12)	(10/10)
M4 (NB/SB)	Penn Station	Washington Heights/Fort Tyron Park	Madison Avenue and Fifth Avenue	(6/6)	(6/10)
M5 (NB/SB)	Staten Island Ferry Terminal	Washington Heights	Fifth Avenue and Sixth Avenue	(10/9)	(12/12)
M15 (NB/SB)	South Ferry/ Cherry Street	East Harlem	First and Second Avenue	(9/9)	(8/10)
M15 SBS (NB/SB)	South Ferry/ East 14th Street	East Harlem	First and Second Avenue	(3/5)	(6/5)
M42 (EB/WB)	Circle Line Pier	East Side	42nd Street	(5/3)	(5/4)
M101 (NB/SB)	East Village	Washington Heights	Third Avenue and Lexington Avenue	(10/12)	(8/8)
M102 (NB/SB)	East Village	Harlem	Third Avenue and Lexington Avenue	(20/12)	(15/15)
M103 (NB/SB)	City Hall	East Harlem	Third Avenue and Lexington Avenue	(20/10)	(15/15)
Q32 (NB/SB)	Penn Station, Manhattan	Jackson Heights, Queens	Madison Avenue and Fifth Avenue	(12/7)	(12/10)

Source: NYCT Timetables (2014).

Table 10-11
Bus Ridership Level 2 Screening Analysis Results

Bus Routes	AM Peak Hour			Midday Peak Hour			PM Peak Hour			Saturday Peak Hour		
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
Total Projected Ridership	***486***	***71***	***557***	***101***	***104***	***205***	***41***	***430***	***471***	***40***	***12***	***52***
Total With Transfers	***500***	***73***	***573***	***105***	***107***	***212***	***45***	***445***	***490***	***42***	***14***	***56***
Local Bus Route Totals	**110**	**15**	**125**	**22**	**18**	**40**	**39**	**106**	**145**	**33**	**9**	**42**
M1/M2/M3/M4/M5 SB	*21*	*2*	*23*	*4*	*1*	*5*	*9*	*14*	*23*	*10*	*3*	*13*
M1/M2/M3/M4 NB	*15*	*3*	*18*	*4*	*5*	*9*	*8*	*16*	*24*	*7*	*1*	*8*
M101/M102/M103 SB	*9*	*1*	*10*	*0*	*1*	*1*	*6*	*6*	*12*	*5*	*0*	*5*
M101/M102/M103 NB	*5*	*2*	*7*	*2*	*1*	*3*	*2*	*9*	*11*	*1*	*1*	*2*
M15/M15 SBS SB	*5*	*1*	*6*	*2*	*1*	*3*	*2*	*6*	*8*	*1*	*1*	*2*
M15/M15 SBS NB	*9*	*1*	*10*	*2*	*2*	*4*	*2*	*9*	*11*	*1*	*1*	*2*
M42 WB (Incl. Transfers)	*20*	*1*	*21*	*5*	*1*	*6*	*7*	*5*	*12*	*5*	*0*	*5*
M42 EB (Incl. Transfers)	*6*	*3*	*9*	*1*	*4*	*5*	*3*	*20*	*23*	*3*	*2*	*5*
Q32 Inbound/Outbound	*20*	*1*	*21*	*2*	*2*	*4*	*0*	*21*	*21*	*0*	*0*	*0*
Express/Commuter Bus Totals	**326**	**4**	**330**	**26**	**32**	**58**	**6**	**339**	**345**	**9**	**5**	**14**
The Bronx	*16*	*1*	*17*	*1*	*2*	*3*	*1*	*17*	*18*	*0*	*1*	*1*
Queens	*24*	*1*	*25*	*4*	*2*	*6*	*2*	*25*	*27*	*2*	*0*	*2*
Staten Island	*44*	*1*	*45*	*4*	*4*	*8*	*1*	*47*	*48*	*1*	*1*	*2*
Brooklyn	*24*	*1*	*25*	*2*	*2*	*4*	*0*	*25*	*25*	*0*	*0*	*0*
Port Authority Bus Terminal	*218*	*0*	*218*	*15*	*22*	*37*	*2*	*225*	*227*	*6*	*3*	*9*
Sightseeing Bus Totals	**64**	**54**	**118**	**57**	**57**	**114**	**0**	**0**	**0**	**0**	**0**	**0**

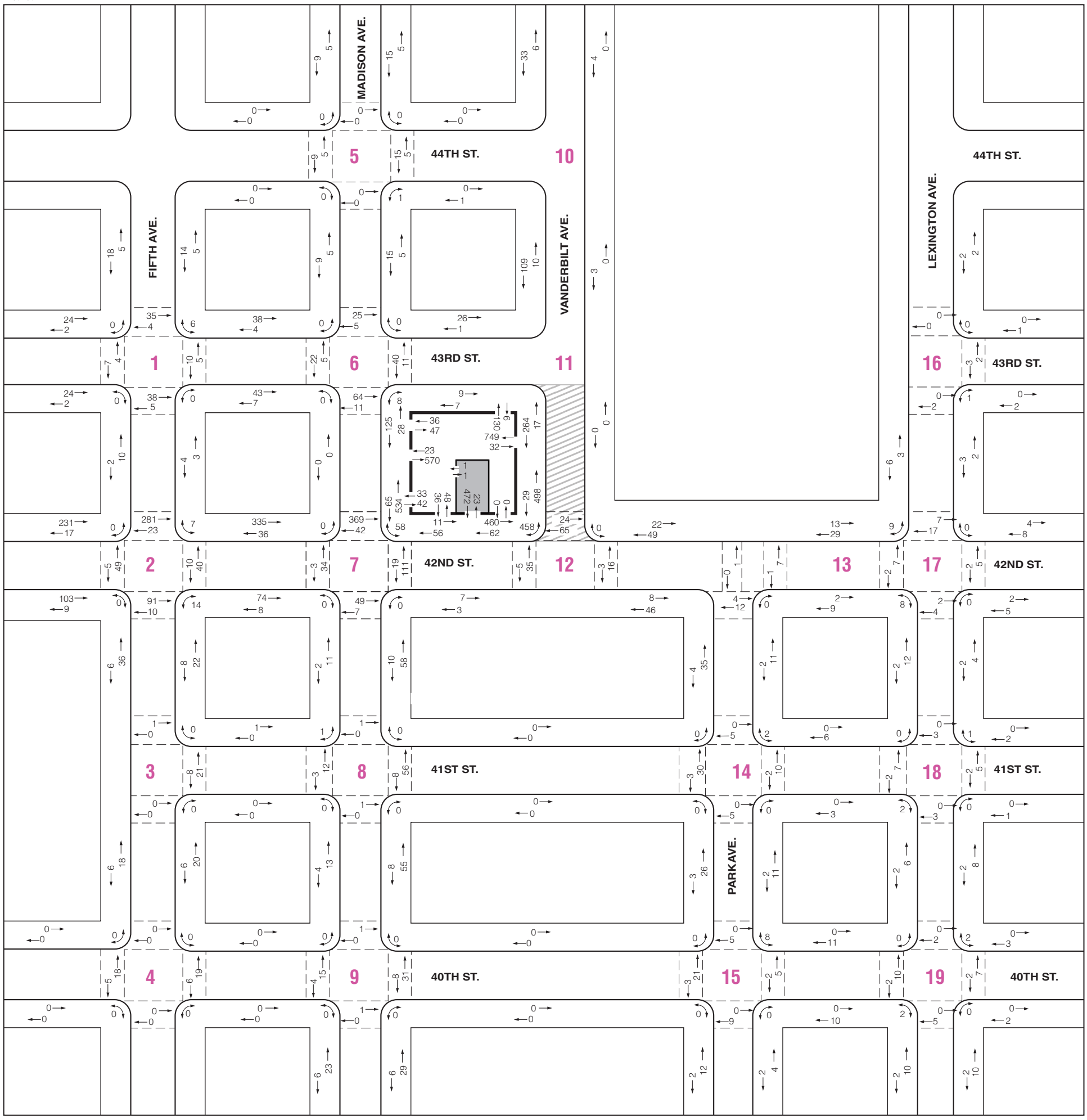
1. A new stair in the basement of the Pershing Building (located at the southeast corner of Park Avenue and East 42nd Street) that would connect the IRT Lexington Avenue subway mezzanine to the platform;
2. A new street-level subway entrance, with two flanked stairs, in the sidewalk at the southeast corner of Lexington Avenue and East 42nd Street that would connect to an existing below-grade passageway;
3. Narrowing of stairs and columns between the IRT Lexington Avenue subway mezzanine paid area and platform level to provide more platform area and improved pedestrian flow;
4. Replacement of an existing street-level subway entrance at the northwest corner of Lexington Avenue and East 42nd Street with new stairs and an elevator;
5. Creation of a new IRT Lexington Avenue subway mezzanine paid area in the basement of the Grand Hyatt Hotel with two new stairs to the subway platform; and
6. Conversion of existing enclosed spaces into new circulation areas in the mezzanine level of the IRT Lexington Avenue subway station.

These improvements would improve overall access and circulation to and within the station but are not expected to affect travel patterns of future users to the proposed One Vanderbilt development. All of these improvements, with the exception of #2 above, would also not be expected to affect how transit riders would access the station from street level. For potential improvement #2, the new street-level subway stairs would provide new connections on the south side of East 42nd Street east of Lexington Avenue and eliminate the need for some commuters to cross Lexington Avenue. The potential effects on pedestrian flow have been studied by MTA-NYCT and are being reviewed by DOT. Since the above project-funded improvements would not require new analyses of pedestrian conditions, the pedestrian study area described below considers only the incremental trips associated with components of the proposed One Vanderbilt development.

PEDESTRIANS

As shown in **Table 10-8**, the projected peak hour pedestrian trips would exceed the CEQR analysis threshold of 200 pedestrians during all peak hours. Level 2 pedestrian trip assignments were individually developed for all the proposed development components. **Figures 10-15 to 10-18** show the No-Action building project-generated pedestrian trips for the weekday AM, midday, PM, and Saturday peak hours. **Figures 10-19 to 10-22** show the proposed One Vanderbilt development project-generated pedestrian trips for the weekday AM, midday, PM, and Saturday peak hours. And **Figures 10-23 to 10-26** show the incremental pedestrian trips between the proposed One Vanderbilt development and the No-Action building for the weekday AM, midday, PM, and Saturday peak hours. Based on the detailed assignment of pedestrian trips, 11 sidewalks, 15 corners[1], and 9 crosswalks were selected for detailed analysis for the weekday peak hours and 5 sidewalks, 5 corners, and 4 crosswalks were selected for detailed analysis for the Saturday peak hour, as shown in **Table 10-12 and Figure 10-27**.

[1] Under the No-Action condition, Pershing Square West (Park Avenue southbound between East 41st and East 42nd Streets) will be converted to a pedestrian mall. Hence, while exceeding the 200-trip pedestrian analysis threshold, the southwest corner of Park Avenue and East 42nd Street was not included for analysis.



One Vanderbilt Development Site

MTA Access Area

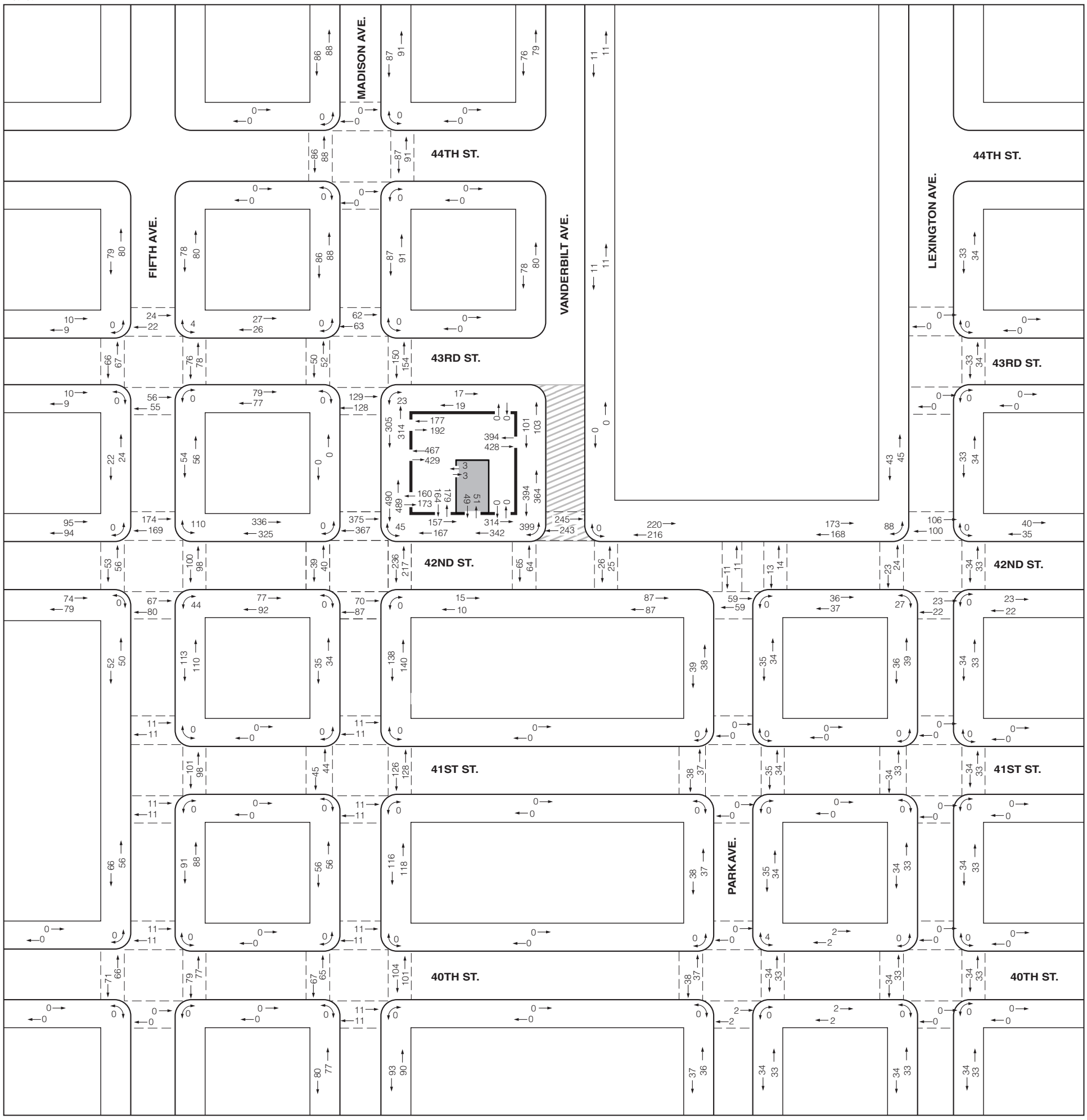
Proposed Public Place

NOT TO SCALE

2021 No-Action Project Generated Pedestrian Trips
Weekday AM Peak Hour

Vanderbilt Corridor and One Vanderbilt

Figure 10-15



NOT TO SCALE

One Vanderbilt Development Site

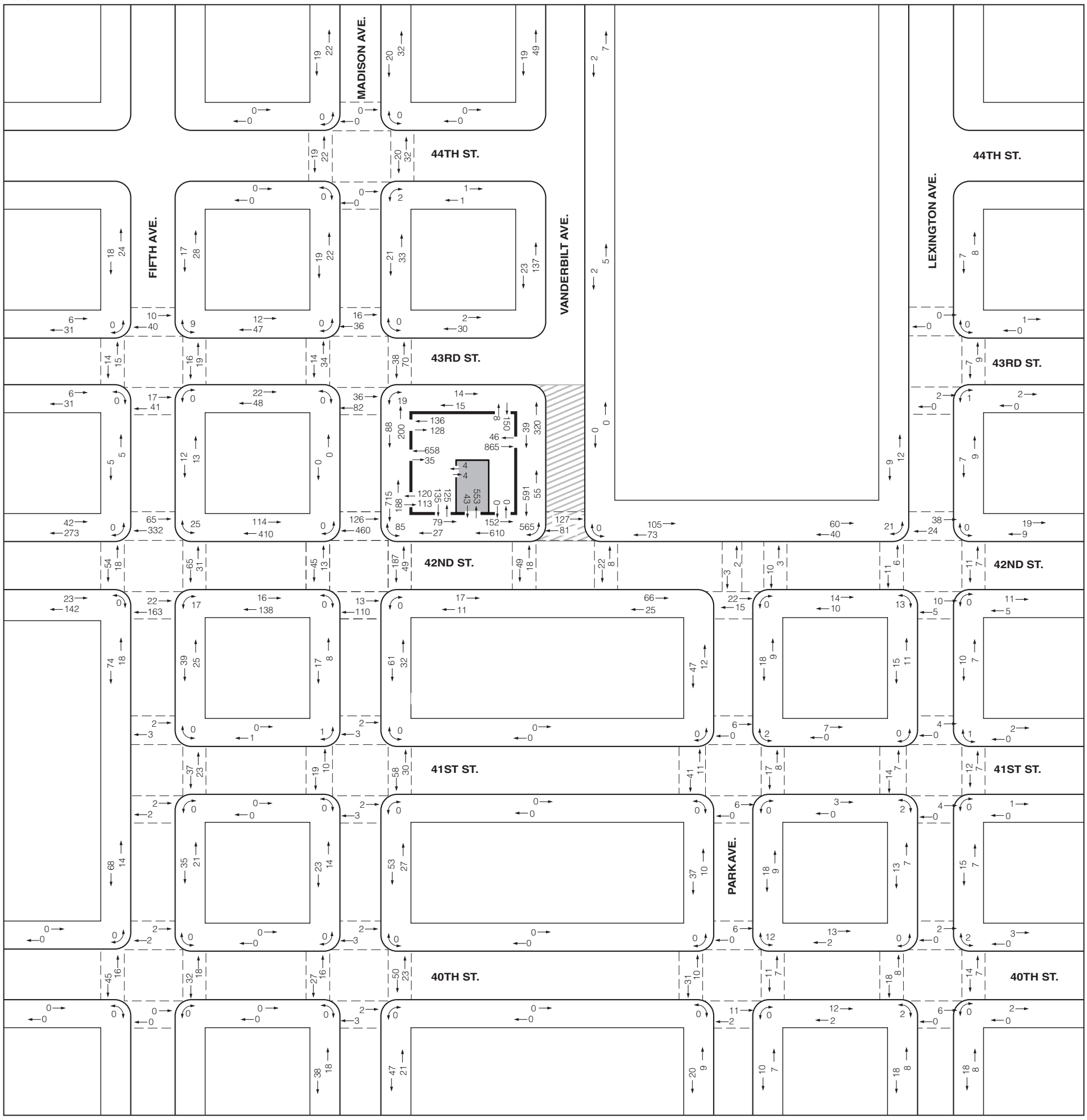
MTA Access Area

Proposed Public Place

2021 No-Action Project Generated Pedestrian Trips
Weekday Midday Peak Hour

Vanderbilt Corridor and One Vanderbilt

Figure 10-16



One Vanderbilt Development Site

MTA Access Area

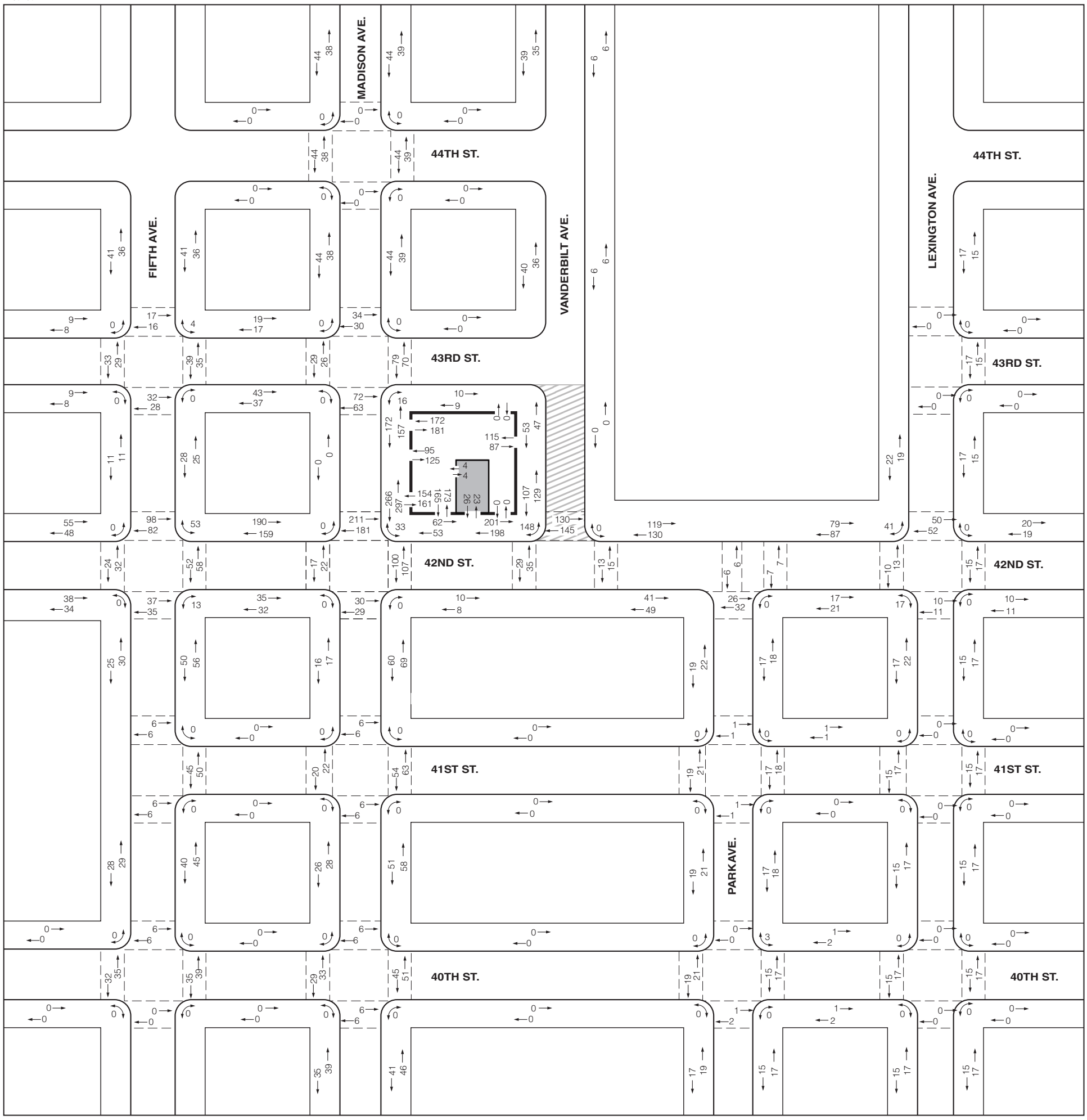
Proposed Public Place

NOT TO SCALE

2021 No-Action Project Generated Pedestrian Trips
Weekday PM Peak Hour

Vanderbilt Corridor and One Vanderbilt

Figure 10-17



One Vanderbilt Development Site

MTA Access Area

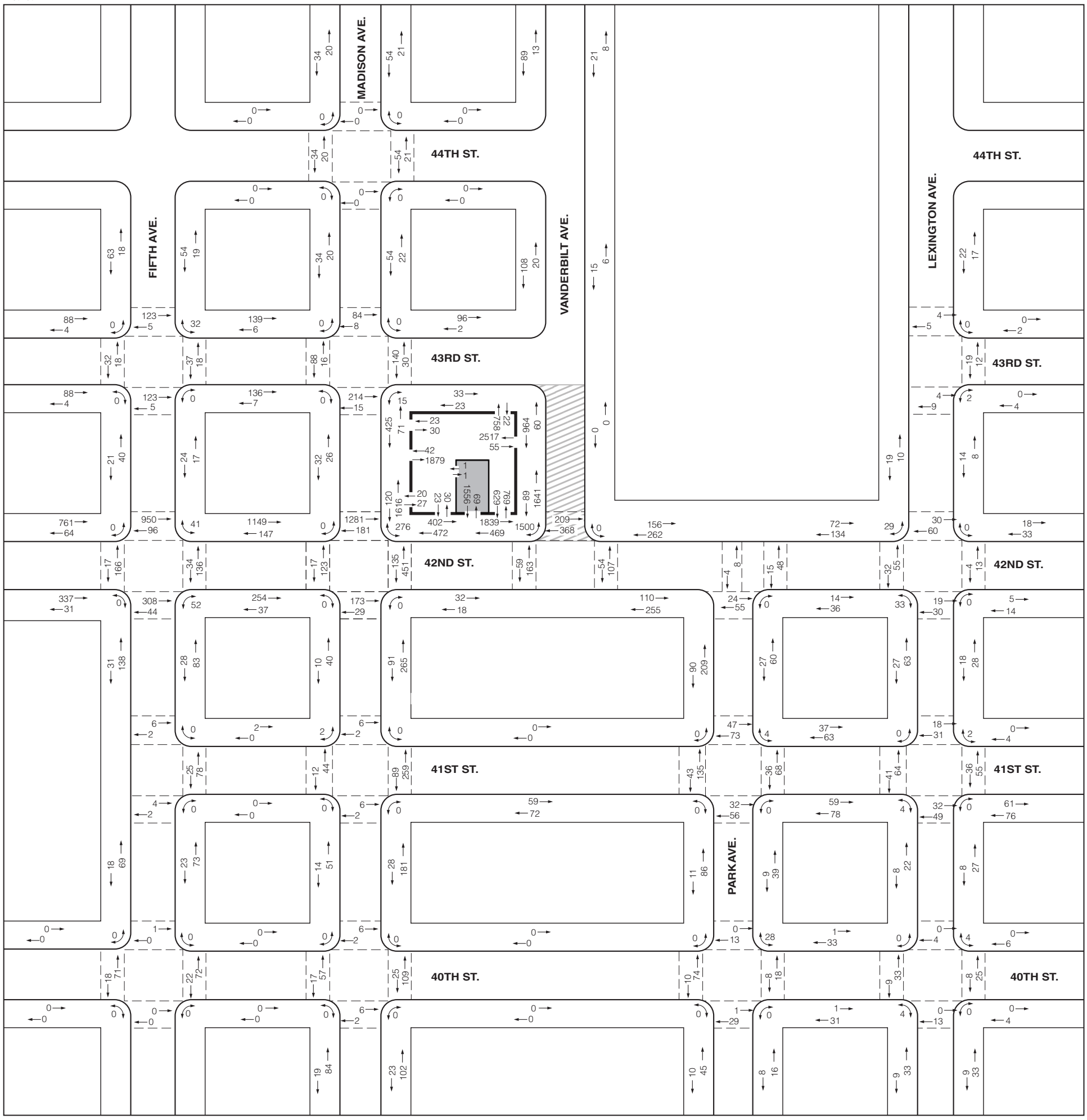
Proposed Public Place

NOT TO SCALE

Vanderbilt Corridor and One Vanderbilt

2021 No-Action Project Generated Pedestrian Trips
Saturday Peak Hour

Figure 10-18



One Vanderbilt Development Site

MTA Access Area

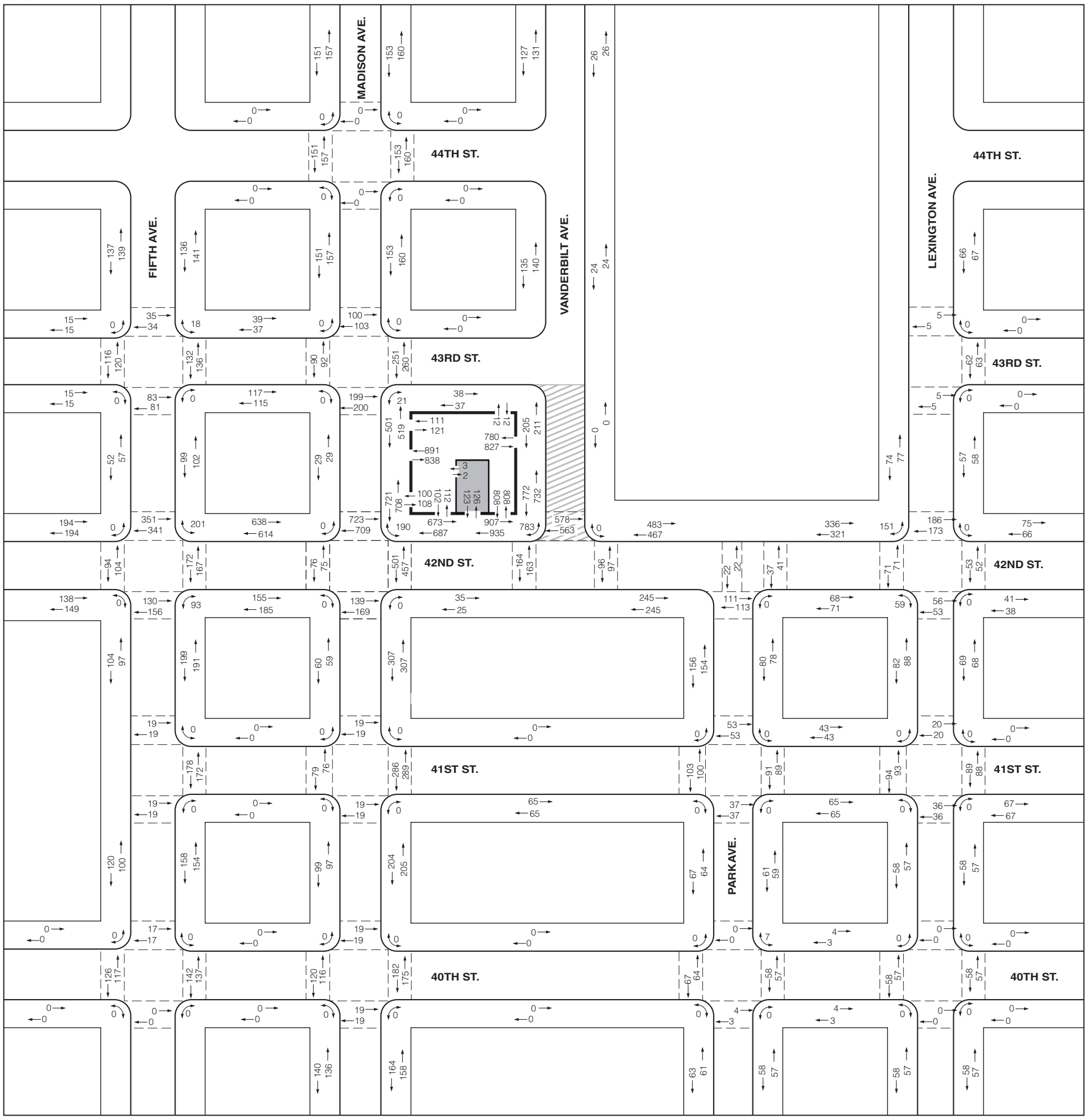
Proposed Public Place

NOT TO SCALE

2021 With-Action Project Generated Pedestrian Trips
Weekday AM Peak Hour

Vanderbilt Corridor and One Vanderbilt

Figure 10-19



One Vanderbilt Development Site

MTA Access Area

Proposed Public Place

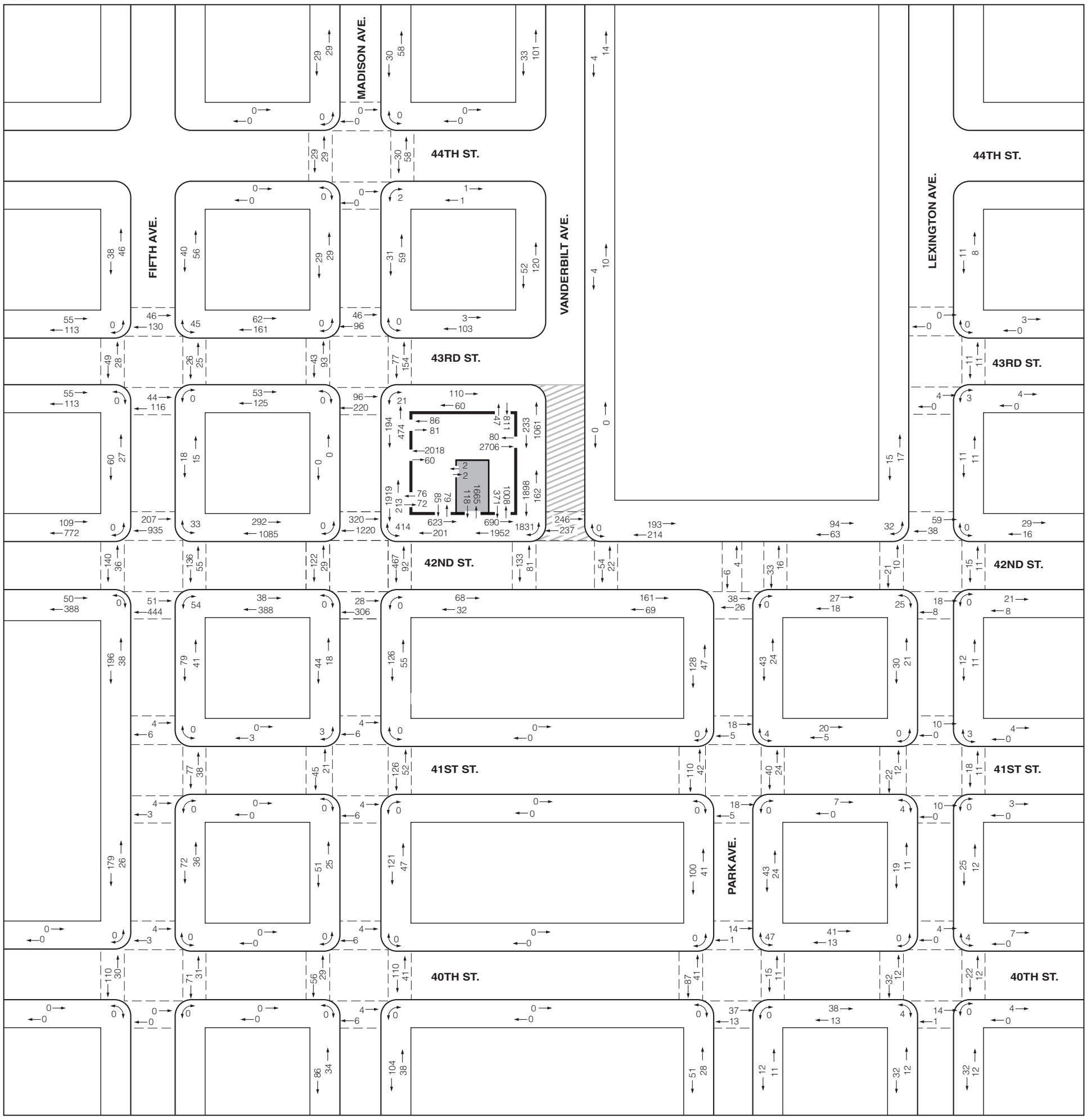
NOT TO SCALE

2021 With-Action Project Generated Pedestrian Trips
Weekday Midday Peak Hour

Vanderbilt Corridor and One Vanderbilt

Figure 10-20

10.13.14



NOT TO SCALE

One Vanderbilt Development Site

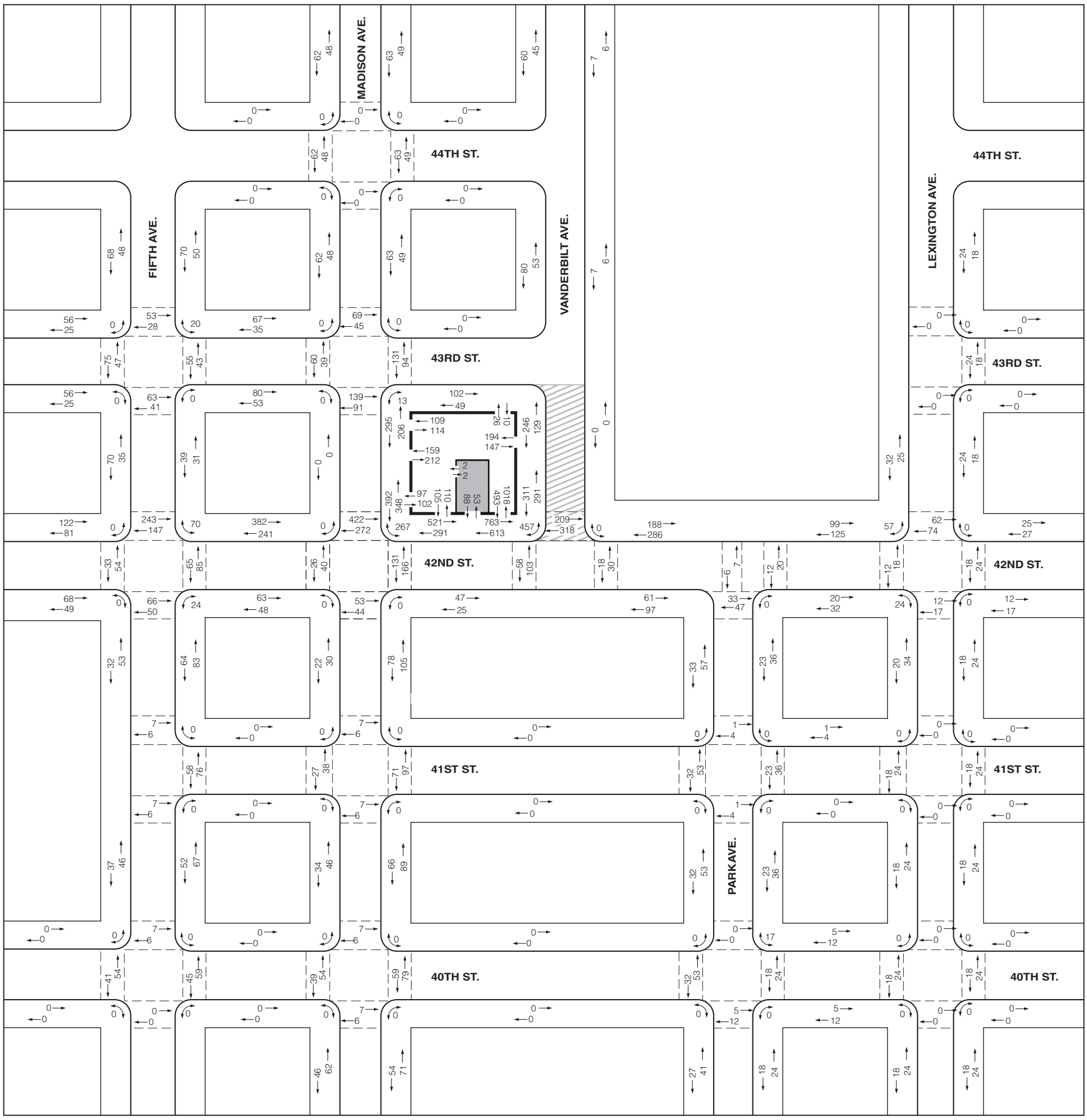
MTA Access Area

Proposed Public Place

2021 With-Action Project Generated Pedestrian Trips
Weekday PM Peak Hour

Vanderbilt Corridor and One Vanderbilt

Figure 10-21



NOT TO SCALE

One Vanderbilt Development Site

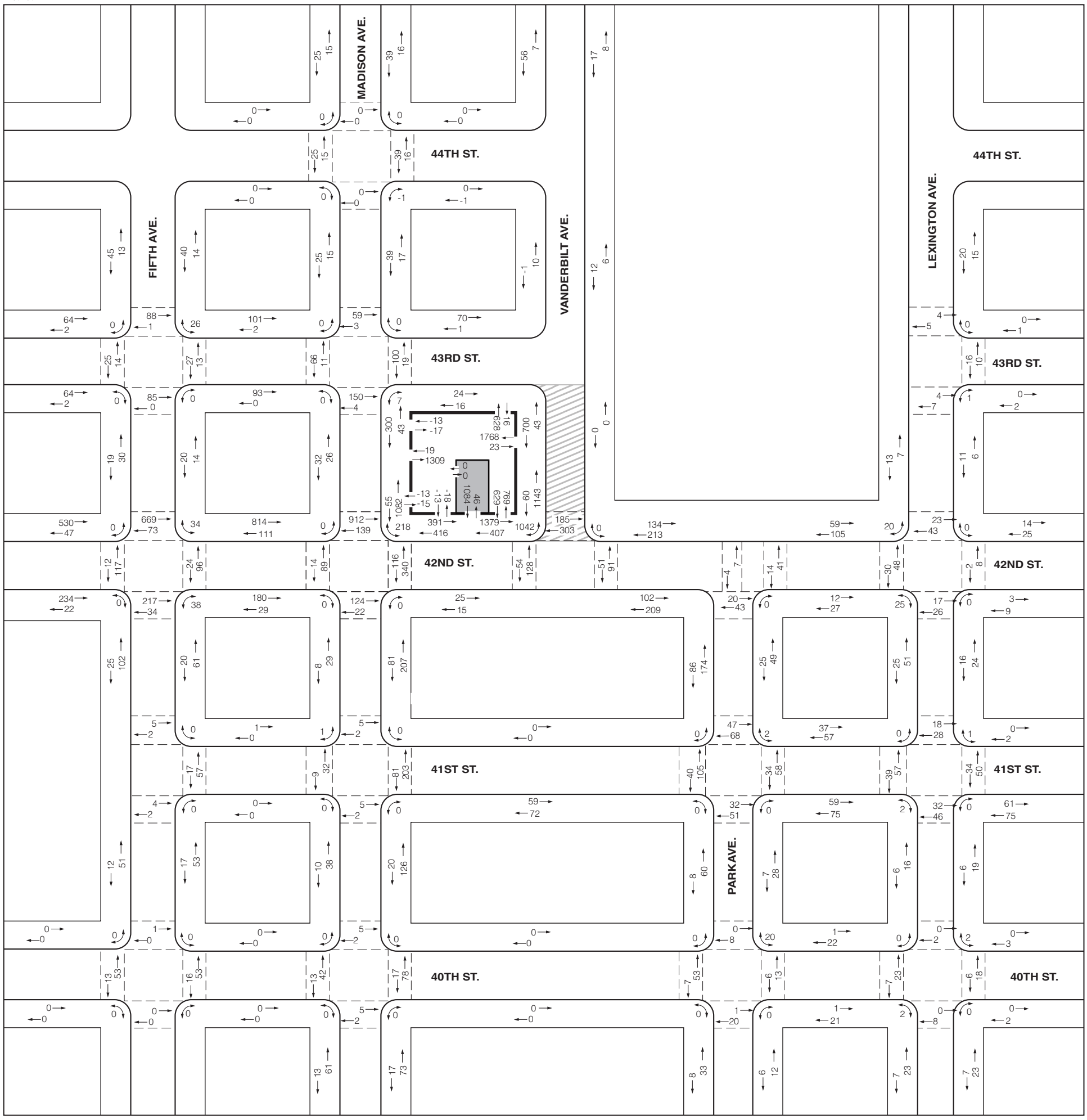
MTA Access Area

Proposed Public Place

2021 With-Action Project Generated Pedestrian Trips
Saturday Peak Hour

Vanderbilt Corridor and One Vanderbilt

Figure 10-22



One Vanderbilt Development Site

MTA Access Area

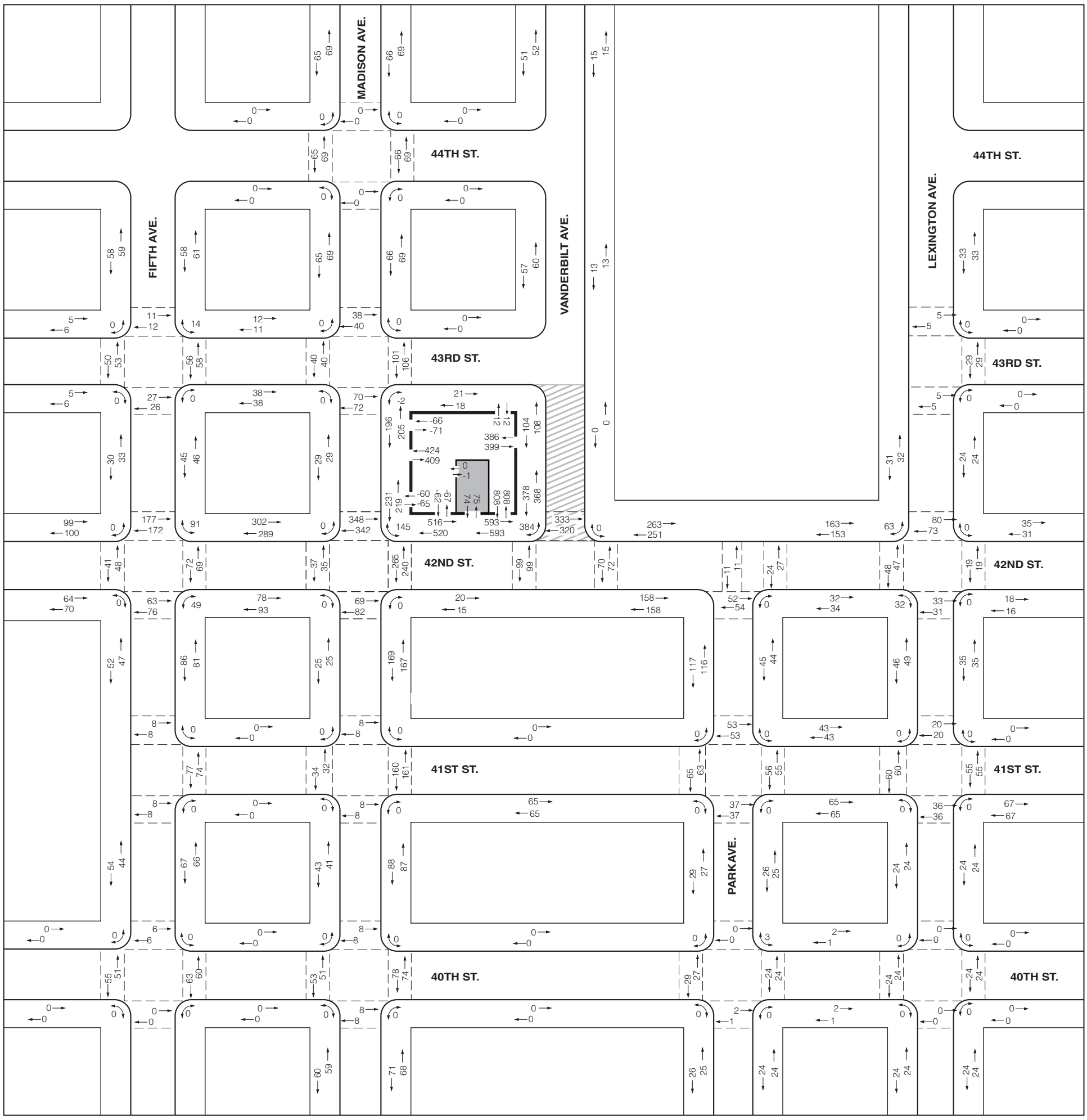
Proposed Public Place

NOT TO SCALE

2021 With-Action Incremental Pedestrian Trips
Weekday AM Peak Hour

Vanderbilt Corridor and One Vanderbilt

Figure 10-23



One Vanderbilt Development Site

MTA Access Area

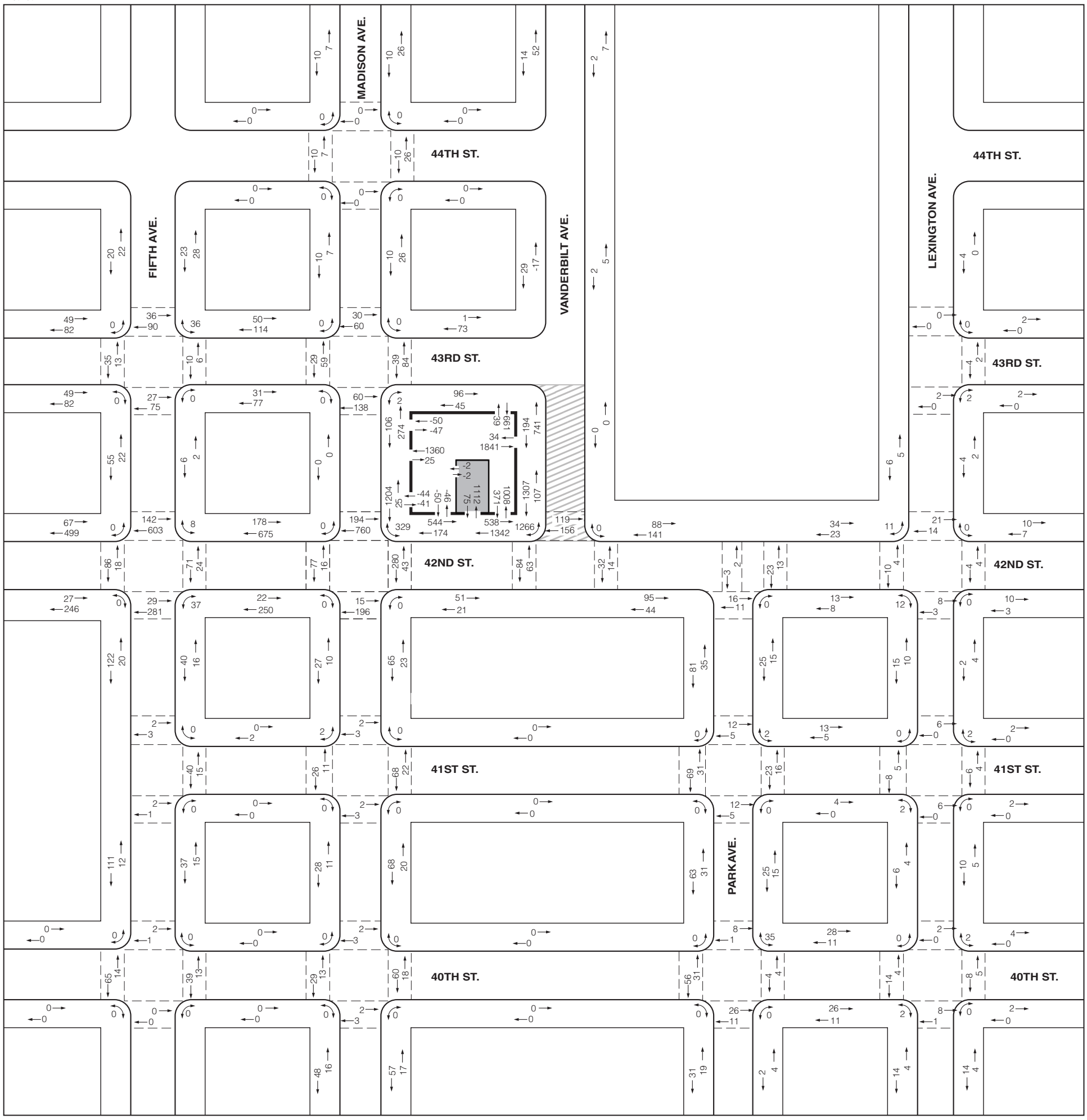
Proposed Public Place

NOT TO SCALE

2021 With-Action Incremental Pedestrian Trips
Weekday Midday Peak Hour

Vanderbilt Corridor and One Vanderbilt

Figure 10-24



One Vanderbilt Development Site

MTA Access Area

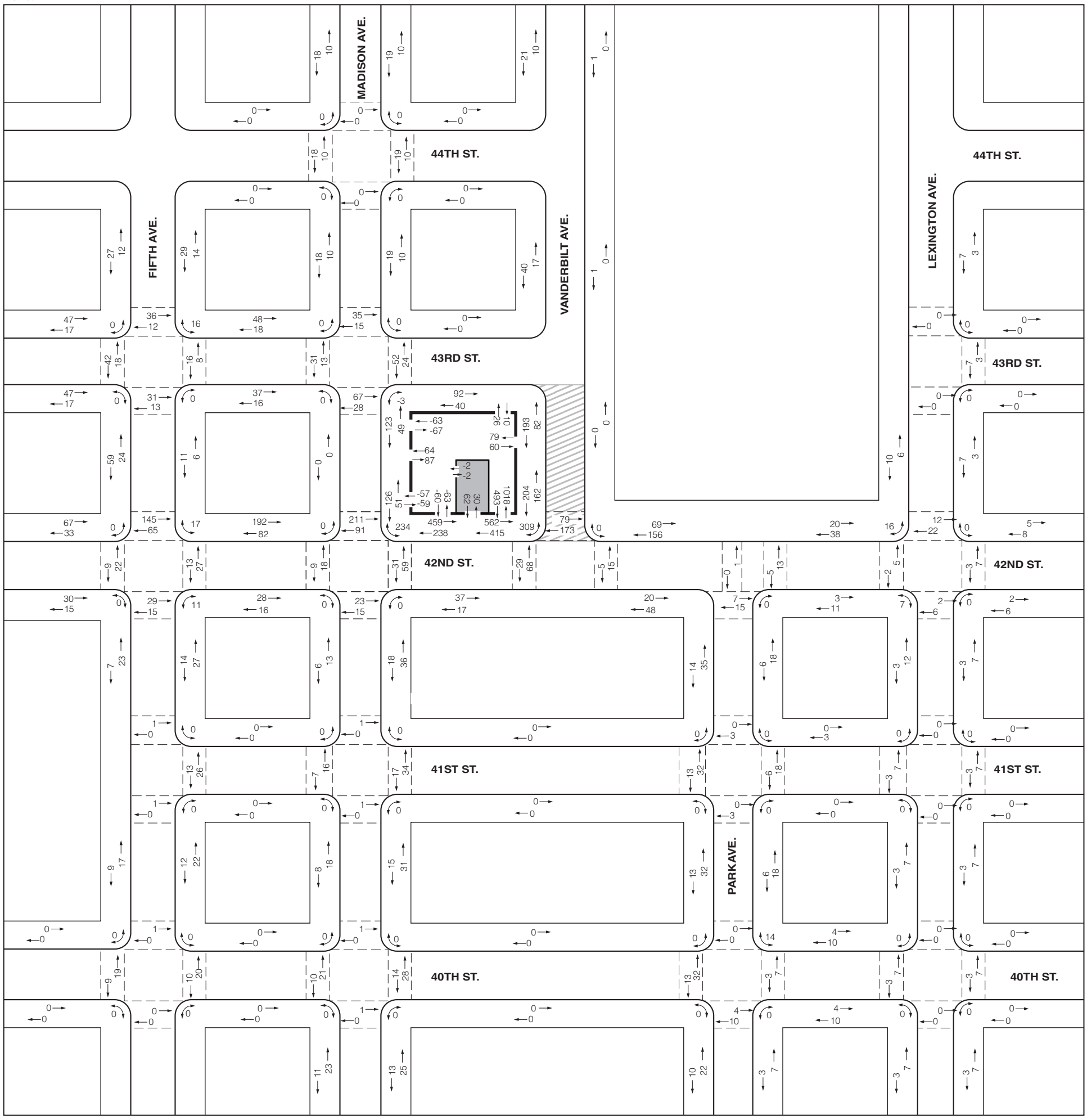
Proposed Public Place

NOT TO SCALE

2021 With-Action Incremental Pedestrian Trips
Weekday PM Peak Hour

Vanderbilt Corridor and One Vanderbilt

Figure 10-25



One Vanderbilt Development Site

MTA Access Area

Proposed Public Place

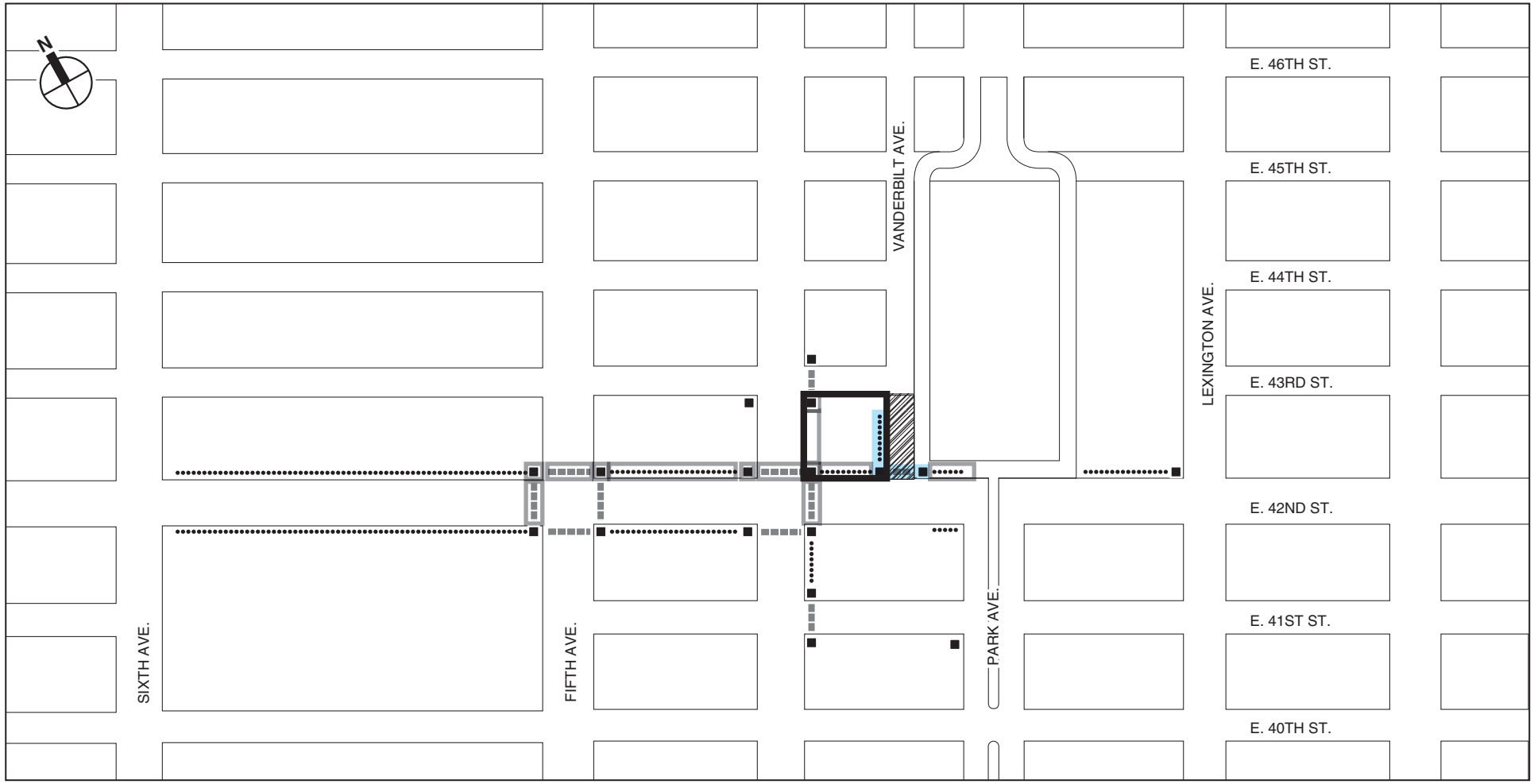
NOT TO SCALE

Vanderbilt Corridor and One Vanderbilt

2021 With-Action Incremental Pedestrian Trips
Saturday Peak Hour

Figure 10-26

10.13.14



One Vanderbilt Development Site

Proposed Public Place

Crosswalk (weekday)

Corner (weekday)

Sidewalk (weekday)

Crosswalk (weekday/Saturday)

Corner (weekday/Saturday)

Sidewalk (weekday/Saturday)

>200 Net-Incremental Pedestrian Trips in at Least One Peak Hour. Not Included in Analysis Locations Due to Proposed Public Place

Vanderbilt Corridor and One Vanderbilt

Pedestrian Analysis Locations

Figure 10-27

Table 10-12
Pedestrian Level 2 Screening Analysis Results—Selected Analysis Locations

Pedestrian Elements	Weekday AM	Weekday Midday	Weekday PM	Selected Analysis Location Weekday	Saturday	Selected Analysis Location Saturday
Fifth Avenue and 42nd Street						
South Sidewalk between Sixth and Fifth Avenues (on 42nd Street)	**256**	134	**273**	✓	45	
North Sidewalk between Sixth and Fifth Avenues (on 42nd Street)	**577**	199	**566**	✓	110	
Northeast Corner	**896**	**581**	**848**	✓	**267**	✓
Southeast Corner	**409**	**329**	**442**	✓	95	
Southwest Corner	**380**	**228**	**414**	✓	75	
Northwest Corner	**871**	**438**	**849**	✓	**241**	✓
East Crosswalk	120	141	95	✓	40	
West Crosswalk	129	89	104	✓	31	
South Crosswalk	**251**	139	**310**	✓	44	
North Crosswalk	**742**	**349**	**745**	✓	**210**	✓
Madison Avenue and East 43rd Street						
Northeast Corner	181	**285**	**213**	✓	126	
Southeast Corner	**280**	**347**	**447**	✓	**301**	✓
Southwest Corner	**231**	**222**	**286**	✓	139	
East Crosswalk	119	**207**	123	✓	76	
East Sidewalk between East 43rd and East 42nd Streets (on Madison Avenue)	**343**	**401**	**551**	✓	**353**	✓
Madison Avenue and East 42nd Street						
North Crosswalk	**1,051**	**690**	**954**	✓	**302**	✓
East Crosswalk	**456**	**510**	**368**	✓	138	
South Crosswalk	146	151	**211**	✓	38	
Northeast Corner	**1,725**	**1,340**	**1,606**	✓	**626**	✓
Southeast Corner	**602**	**656**	**579**	✓	176	
Northwest Corner	**1,154**	**762**	**1,047**	✓	**329**	✓
Southwest Corner	**249**	**223**	**304**	✓	65	
East Sidewalk between East 43rd and East 42nd Streets (on Madison Avenue)	**1,137**	**450**	**1,229**	✓	177	✓
North Sidewalk between Madison and Vanderbilt Avenues (on East 42nd Street)	**807**	**1,036**	**718**	✓	**697**	✓
South Sidewalk between Fifth and Madison Avenues (on East 42nd Street)	**209**	171	**272**	✓	44	
North Sidewalk between Fifth and Madison Avenues (on East 42nd Street)	**925**	**591**	**853**	✓	**274**	✓
East Sidewalk between East 42nd and East 41st Streets (on Madison Avenue)	**288**	**336**	88	✓	54	
Madison Avenue and East 41st Street						
East Crosswalk	**284**	**321**	90	✓	51	
Northeast Corner	**291**	**337**	95	✓	52	
Southeast Corner	**291**	**337**	95	✓	52	
Vanderbilt Avenue and East 42nd Street						
North Crosswalk*	**488**	**653**	**275**		**252**	
Northeast Corner*	**630**	**795**	**321**		**272**	
Northwest Corner*	**1,712**	**1,235**	**1,688**		**658**	
West Sidewalk between East 42nd and East 43rd Streets (on Vanderbilt Avenue)*	**1,203**	**746**	**1,414**		**366**	
South Sidewalk between Vanderbilt and Park Avenues (on East 42nd Street)	**311**	**316**	139	✓	68	
North Sidewalk between Vanderbilt and Park Avenues (on East 42nd Street)	**347**	**514**	**229**	✓	**225**	✓
North Sidewalk between Madison and Vanderbilt Avenues (on East 42nd Street)	**1,786**	**1,186**	**1,880**	✓	**977**	✓
Park Avenue and East 41st Street						
Southwest Corner	**228**	**202**	117	✓	48	

Notes: ✓ denotes pedestrian elements selected for the detailed analysis.
* Future Vanderbilt Public Place

Table 10-12 (cont'd)
Pedestrian Level 2 Screening Analysis Results—Selected Analysis Locations

Pedestrian Elements	Weekday AM	Weekday Midday	Weekday PM	Selected Analysis Location Weekday	Saturday	Selected Analysis Location Saturday
Lexington Avenue and East 42nd Street						
Northwest Corner	164	**311**	60	✓	57	
North Sidewalk between Park and Lexington Avenues (on East 42nd Street)	164	**316**	57	✓	58	

Notes: ✓ denotes pedestrian elements selected for the detailed analysis.
* Future Vanderbilt Public Place

- Auto Trips – Motorists would park at off-street parking facilities within ¼-mile of the One Vanderbilt site and walk to/from the site.
- Taxi Trips – Taxi patrons would get dropped off and picked up along East 42nd Street, East 43rd Street, and Madison Avenue.
- City Bus Trips – City bus riders would use buses stopping on East 42nd Street, Madison Avenue, Fifth Avenue, Lexington Avenue, Third Avenue, Second Avenue, and First Avenue, and would get off at bus stops nearest to the One Vanderbilt site. Bus riders traveling from outside New York City would get on/off at the Port Authority Bus Terminal (PABT) and would either walk to the One Vanderbilt site or transfer to the subway. "Hop-on, hop-off" City tour bus riders traveling to the observation deck would walk from stops on or near East 42nd Street to the One Vanderbilt site.
- Tour Bus Trips – Tour bus passengers have been assumed to board/alight at the south side of East 41st Street between Madison Avenue and Park Avenue, the south side of East 41st Street between Lexington Avenue and Park Avenue, and the south side of East 41st Street between Lexington Avenue and Third Avenue.
- Subway Trips – Subway riders were assigned to GCT (Nos. 4, 5, 6, 7, and Shuttle trains), the 42nd Street-Bryant Park Station (7, B, D, F, and M trains), and the 33rd Street PATH station. Based on NYCT's modeling results, approximately 64 percent of the riders were assigned to GCT, 34 percent were assigned to the 42nd Street-Bryant Park Station, and the remaining 2 percent were assigned to the 33rd Street PATH Station.
- Rail Trips – Rail riders would travel to GCT and Penn Station. All rail riders to/from GCT would walk to/from the One Vanderbilt site. Based on NYCT's modeling results, it was determined that 65 percent of the rail riders to/from Penn Station would transfer to subway lines and the remaining riders would walk to/from the One Vanderbilt site.
- PATH Trips – PATH riders would travel to/from the 33rd Street PATH station. Based on NYCT's modeling results, 85 percent of PATH riders were assumed to walk to/from the One Vanderbilt site and the remaining 15 percent were assigned to the 34th Street-Herald Square Station for subway transfer trips. These PATH riders were accounted for in the subway assignments.
- Walk-Only Trips – Pedestrian walk-only trips were developed by distributing project-generated person trips to surrounding pedestrian facilities (i.e., sidewalks, corner reservoirs, and crosswalks) based on population data as well as the land use characteristics of the surrounding neighborhood.

As stated above, the segment of Vanderbilt Avenue between East 42nd and East 43rd Streets would be converted into a public place, providing substantially added pedestrian circulation space between GCT and the One Vanderbilt development. Hence, the existing sidewalks, corners, and crosswalks that would be replaced by this pedestrian circulation enhancement were not included in the above pedestrian analysis locations. Similarly, because Pershing Square West (Park Avenue southbound between East 41st and East 42nd Streets) will be converted to a pedestrian plaza under the future No Action, the corresponding existing pedestrian elements were also not included for analysis.

C. TRANSPORTATION ANALYSIS METHODOLOGIES

TRAFFIC OPERATIONS

The operation of all of the signalized intersections and unsignalized intersection in the study area were assessed using methodologies presented in the *2000 Highway Capacity Manual (HCM)* using the *Highway Capacity Software (HCS+ 5.5)*. The *HCM* procedure evaluates the levels of service (LOS) for signalized and unsignalized intersections using average stop control delay, in seconds per vehicle, as described below.

SIGNALIZED INTERSECTIONS

The average control delay per vehicle is the basis for LOS determination for individual lane groups (grouping of movements in one or more travel lanes), the approaches, and the overall intersection. The levels of service are defined in **Table 10-13**.

Table 10-13
Level of Service Criteria for Signalized Intersections

LOS	Average Control Delay
A	≤ 10.0 seconds
B	>10.0 and ≤ 20.0 seconds
C	>20.0 and ≤ 35.0 seconds
D	>35.0 and ≤ 55.0 seconds
E	>55.0 and ≤ 80.0 seconds
F	>80.0 seconds

Source: Transportation Research Board. *Highway Capacity Manual*, 2000.

Although the HCM methodology calculates a volume-to-capacity (v/c) ratio, there is no strict relationship between v/c ratios and LOS as defined in the *HCM*. A high v/c ratio indicates substantial traffic passing through an intersection, but a high v/c ratio combined with low average delay actually represents the most efficient condition in terms of traffic engineering standards, where an approach or the whole intersection processes traffic close to its theoretical maximum capacity with minimal delay. However, very high v/c ratios—especially those approaching or greater than 1.0—are often correlated with a deteriorated LOS. Other important variables affecting delay include cycle length, progression, and green time. LOS A and B indicate good operating conditions with minimal delay. At LOS C, the number of vehicles stopping is higher, but congestion is still fairly light. LOS D describes a condition where congestion levels are more noticeable and individual cycle failures (a condition where motorists may have to wait for more than one green phase to clear the intersection) can occur. Conditions at LOS E and F reflect poor service levels, and cycle breakdowns are frequent. The *HCM*

methodology also provides for a summary of the total intersection operating conditions. The analysis chooses the two critical movements (the worst case from each roadway) and calculates a summary critical v/c ratio. The overall intersection delay, which determines the intersection's LOS, is based on a weighted average of control delays of the individual lane groups. Within New York City, the midpoint of LOS D (45 seconds of delay) is generally considered as the threshold between acceptable and unacceptable operations.

Significant Impact Criteria

According to the criteria presented in the *CEQR Technical Manual*, impacts are considered significant and require examination of mitigation if they result in an increase in the With-Action condition of 5 or more seconds of delay in a lane group over No-Action levels beyond mid-LOS D. For No Action LOS E, a 4-second increase in delay is considered significant. For No-Action LOS F, a 3-second increase in delay is considered significant. In addition, impacts are considered significant if levels of service deteriorate from acceptable A, B, or C in the No-Action condition to marginally unacceptable LOS D (a delay in excess of 45 seconds, the midpoint of LOS D), or unacceptable LOS E or F in the With-Action condition.

UNSIGNALIZED INTERSECTIONS

For unsignalized intersections, the average control delay is defined as the total elapsed time from which a vehicle stops at the end of the queue until the vehicle departs from the stop line. This includes the time required for the vehicle to travel from the last-in-queue to the first-in-queue position. The average control delay for any particular minor movement is a function of the service rate or capacity of the approach and the degree of saturation. The LOS criteria for unsignalized intersections are summarized in **Table 10-14**.

Table 10-14
Level of Service Criteria for Unsignalized Intersections

LOS	Average Control Delay
A	≤ 10.0 seconds
B	> 10.0 and ≤ 15.0 seconds
C	> 15.0 and ≤ 25.0 seconds
D	> 25.0 and ≤ 35.0 seconds
E	> 35.0 and ≤ 50.0 seconds
F	> 50.0 seconds

Source: Transportation Research Board. *Highway Capacity Manual*, 2000.

The LOS thresholds for unsignalized intersections are different from those for signalized intersections. The primary reason is that drivers expect different levels of performance from different types of transportation facilities. The expectation is that a signalized intersection is designed to carry higher traffic volumes than an unsignalized intersection; hence, the corresponding control delays are higher at a signalized intersection than at an unsignalized intersection for the same LOS. In addition, certain driver behavioral considerations combine to make delays at signalized intersections less onerous than at unsignalized intersections. For example, drivers at signalized intersections are able to relax during the red interval, whereas drivers on minor approaches to unsignalized intersections must remain attentive to the task of identifying acceptable gaps and vehicle conflicts. Also, there is often much more variability in the amount of delay experienced by individual drivers at unsignalized intersections. For these reasons, the corresponding delay thresholds for unsignalized intersections are lower than those

of signalized intersections. As with signalized intersections, within New York City, the midpoint of LOS D (30 seconds of delay) is generally perceived as the threshold between acceptable and unacceptable operations.

Significant Impact Criteria

The same sliding scale of significant delays described for signalized intersections applies for unsignalized intersections. For the minor street to trigger significant impacts, at least 90 passenger car equivalents (PCE) must be identified in the With-Action condition in any peak hour.

TRANSIT OPERATIONS

SUBWAY STATION ELEMENTS

The methodology for assessing station circulation (stairs, escalators, and passageways) and fare control (regular turnstiles, high entry/exit turnstiles, and high exit turnstiles) elements compares the user volume with the analyzed element's design capacity, resulting in a v/c ratio. For stairs, the design capacity considers the effective width of a tread, which accounts for railings or other obstructions, the friction or counter-flow between upward and downward pedestrians (up to 10 percent capacity reduction is applied to account for counter-flow friction), surging of entering and exiting pedestrians (up to 25 percent capacity reduction is applied to account for surged flows off of platforms and onto platforms), and the average area required for circulation. For passageways, similar considerations are made. For escalators and turnstiles, capacities are measured by the number and width of an element and the NYCT optimum capacity per element, also account for the potential for surging of entering and exiting pedestrians. In the analysis for each of these elements, volumes and capacities are presented for 15-minute intervals. The estimated v/c ratio is compared with NYCT criteria to determine a LOS for the operation of an element, as summarized in **Table 10-15**.

Table 10-15
Level of Service Criteria for Subway Station Elements

LOS	V/C Ratio
A	0.00 to 0.45
B	0.45 to 0.70
C	0.70 to 1.00
D	1.00 to 1.33
E	1.33 to 1.67
F	Above 1.67

Source: New York City Mayor's Office of Environmental Coordination, *CEQR Technical Manual.*

At LOS A ("free flow") and B ("fluid flow"), there is sufficient area to allow pedestrians to freely select their walking speed and bypass slower pedestrians. When cross and reverse flow movement exists, only minor conflicts may occur. At LOS C ("fluid, somewhat restricted"), movement is fluid although somewhat restricted. While there is sufficient room for standing without personal contact, circulation through queuing areas may require adjustments to walking speed. At LOS D ("crowded, walking speed restricted"), walking speed is restricted and reduced. Reverse and cross flow movement is severely restricted because of congestion and the difficult passage of slower moving pedestrians. At LOS E ("congested, some shuffling and queuing") and F ("severely congested, queued"), walking speed is restricted. There is also insufficient area to

bypass others, and opposing movement is difficult. Often, forward progress is achievable only through shuffling, with queues forming.

Significant Impact Criteria

The determination of significant impacts for station elements varies based on their type and use. For stairs and passageways, significant impacts are defined in term of width increment threshold (WIT) based on the minimum amount of additional capacity that would be required either to mitigate the location to its service conditions (LOS) under the No-Action levels, or to bring it to a v/c ratio of 1.00 (LOS C/D), whichever is greater. Significant impacts are typically considered to occur once the WITs in **Table 10-16** are reached or exceeded.

Table 10-16
Significant Impact Guidance for Stairs and Passageways

With-Action V/C Ratio	WIT for Significant Impact (inches)	
	Stairway	Passageway
1.00 to 1.09	8.0	13.0
1.10 to 1.19	7.0	11.5
1.20 to 1.29	6.0	10.0
1.30 to 1.39	5.0	8.5
1.40 to 1.49	4.0	6.0
1.50 to 1.59	3.0	4.5
1.60 and up	2.0	3.0

Notes: WIT = Width Increment Threshold
Sources: New York City Mayor's Office of Environmental Coordination, *CEQR Technical Manual*.

For escalators and control area elements, impacts are significant if the proposed project causes a v/c ratio to increase from below 1.00 to 1.00 or greater. Where a facility is already at or above its capacity (a v/c of 1.00 or greater) in the No-Action condition, a 0.01 increase in v/c ratio is also significant.

SUBWAY AND BUS LINE-HAUL CAPACITIES

As per the *CEQR Technical Manual*, line-haul capacities are evaluated when a proposed project is anticipated to generate a perceptible number of passengers on particular subway and bus routes. For subways, if a subway line is expected to incur 200 or more passengers in one direction of travel during the commuter peak hours, a detailed review of ridership level at its maximum load point and/or other project-specific load points would be required to determine if the route's guideline (or practical) capacity would be exceeded. NYCT operates six different types of subway cars with different seating and guideline capacities. The peak period guideline capacity of a subway car, which ranges from 110 to 175 passengers, is compared with ridership levels to determine the acceptability of conditions.

Bus line-haul capacities are evaluated when a proposed project is anticipated to generate 50 or more bus passengers to a single bus line in one direction. The assessment of bus line-haul conditions involves analyzing bus routes at their peak load points and, if necessary, also their bus stops closest to the project site to identify the potential for the analyzed routes to exceed their guideline (or practical) capacities. NYCT and the MTA Bus Company operate three types of buses: standard and articulated buses, and over-the-road coaches. During peak hours, standard buses operate with up to 54 passengers per bus, articulated buses operate with up to 85 passengers per bus, and over-the-road coaches operate with up to 55 passengers per bus.

Significant Impact Criteria

For subways, projected increases from the No-Action condition within guideline capacity to a With-Action condition that exceeds guideline capacity may be considered a significant adverse impact, if a subway car for a particular route is expected to incur five or more riders from a proposed project. Since there are constraints on what service improvements are available to NYCT, significant line-haul capacity impacts on subway routes are generally disclosed but would usually remain unmitigated. For buses, an increase in bus load levels greater than the maximum capacity at any load point is defined as a significant adverse impact. While subject to operational and fiscal constraints, bus impacts can typically be mitigated by increasing service frequency. Therefore, mitigation of bus line-haul capacity impacts, where appropriate, would be recommended for NYCT's approval.

PEDESTRIAN OPERATIONS

The adequacy of the study area's sidewalks, crosswalks, and corner reservoir capacities in relation to the demand imposed on them is evaluated based on the methodologies presented in the 2010 *HCM*, pursuant to procedures detailed in the *CEQR Technical Manual*.

The primary performance measure for sidewalks and walkways is pedestrian space, expressed as square feet per pedestrian (SFP), which is an indicator of the quality of pedestrian movement and comfort. The calculation of the sidewalk SFP is based on the pedestrian volumes by direction, the effective sidewalk or walkway width, and average walking speed. The SFP forms the basis for a sidewalk LOS analysis. The determination of sidewalk LOS is also dependent on whether the pedestrian flow being analyzed is best described as "non-platoon" or "platoon." Non-platoon flow occurs when pedestrian volume within the peak 15-minute period is relatively uniform, whereas, platoon flow occurs when pedestrian volumes vary significantly with the peak 15-minute period. Such variation typically occurs near bus stops, subway stations, and/or where adjacent crosswalks account for much of the walkway's pedestrian volume.

Crosswalks and street corners are not easily measured in terms of free pedestrian flow, as they are influenced by the effects of traffic signals. Street corners must be able to provide sufficient space for a mix of standing pedestrians (queued to cross a street) and circulating pedestrians (crossing the street or moving around the corner). The *HCM* methodologies apply a measure of time and space availability based on the area of the corner, the timing of the intersection signal, and the estimated space used by circulating pedestrians.

The total "time-space" available for these activities, expressed in square feet-second, is calculated by multiplying the net area of the corner (in square feet) by the signal's cycle length. The analysis then determines the total circulation time for all pedestrian movements at the corner per signal cycle (expressed as pedestrians per second). The ratio of net time-space divided by the total pedestrian circulation volume per signal cycle provides the LOS measurement of square feet per pedestrian (SFP).

Crosswalk LOS is also a function of time and space. Similar to the street corner analysis, crosswalk conditions are first expressed as a measurement of the available area (the crosswalk width multiplied by the width of the street) and the permitted crossing time. This measure is expressed in square feet-second. The average time required for a pedestrian to cross the street is calculated based on the width of the street and an assumed walking speed. The ratio of time-space available in the crosswalk to the total crosswalk pedestrian occupancy time is the LOS measurement of available square feet per pedestrian. The LOS analysis also accounts for

vehicular turning movements that traverse the crosswalk. The LOS standards for sidewalks, corner reservoirs, and crosswalks are summarized in **Table 10-17**. The *CEQR Technical Manual* specifies acceptable LOS in Central Business District (CBD) areas is mid-LOS D or better.

Table 10-17
Level of Service Criteria for Pedestrian Elements

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

Notes: SFP = square feet per pedestrian.
Source: New York City Mayor's Office of Environmental Coordination, *CEQR Technical Manual*.

SIGNIFICANT IMPACT CRITERIA

The determination of significant pedestrian impacts considers the level of predicted decrease in pedestrian space between the No-Action and With-Action conditions. For different pedestrian elements, flow conditions, and area types, the CEQR procedure for impact determination corresponds with various sliding-scale formulas, as further detailed below.

Sidewalks

There are two sliding-scale formulas for determining significant sidewalk impacts. For non-platoon flow, the determination of significant sidewalk impacts is based on the sliding scale using the following formula: $Y \geq X/9.0 - 0.31$, where Y is the decrease in pedestrian space in SFP and X is the No-Action pedestrian space in SFP. For platoon flow, the sliding-scale formula is $Y \geq X/(9.5 - 0.321)$. Since a decrease in pedestrian space within acceptable levels would not constitute a significant impact, these formulas would apply only if the With-Action pedestrian space falls short of LOS C in non-CBD areas or mid-LOS D in CBD areas. **Table 10-18** summarizes the sliding scale guidance provided by the *CEQR Technical Manual* for determining potential significant sidewalk impacts.

Corner Reservoirs and Crosswalks

The determination of significant corner and crosswalk impacts is also based on a sliding scale using the following formula: $Y \geq X/9.0 - 0.31$, where Y is the decrease in pedestrian space in SFP and X is the No-Action pedestrian space in SFP. Since a decrease in pedestrian space within acceptable levels would not constitute a significant impact, this formula would apply only if the With-Action pedestrian space falls short of LOS C in non-CBD areas or mid-LOS D in CBD areas. **Table 10-19** summarizes the sliding scale guidance provided by the *CEQR Technical Manual* for determining potential significant corner reservoir and crosswalk impacts.

Table 10-18
Significant Impact Guidance for Sidewalks

Non-Platoon Flow				Platoon Flow			
Sliding Scale Formula: *Y ≥ X/9.0 – 0.31*				Sliding Scale Formula: *Y ≥ X/(9.5 – 0.321)*			
Non-CBD Areas		CBD Areas		Non-CBD Areas		CBD Areas	
No-Action Ped. Space (X, SFP)	With-Action Ped. Space Reduc. (Y, SFP)	No-Action Ped. Space (X, SFP)	With-Action Ped. Space Reduc. (Y, SFP)	No-Action Ped. Space (X, SFP)	With-Action Ped. Space Reduc. (Y, SFP)	No-Action Ped. Space (X, SFP)	With-Action Ped. Space Reduc. (Y, SFP)
–	–	–	–	43.5 to 44.3	≥ 4.3	–	–
–	–	–	–	42.5 to 43.4	≥ 4.2	–	–
–	–	–	–	41.6 to 42.4	≥ 4.1	–	–
–	–	–	–	40.6 to 41.5	≥ 4.0	–	–
–	–	–	–	39.7 to 40.5	≥ 3.9	–	–
–	–	–	–	38.7 to 39.6	≥ 3.8	38.7 to 39.2	≥ 3.8
–	–	–	–	37.8 to 38.6	≥ 3.7	37.8 to 38.6	≥ 3.7
–	–	–	–	36.8 to 37.7	≥ 3.6	36.8 to 37.7	≥ 3.6
–	–	–	–	35.9 to 36.7	≥ 3.5	35.9 to 36.7	≥ 3.5
–	–	–	–	34.9 to 35.8	≥ 3.4	34.9 to 35.8	≥ 3.4
–	–	–	–	34.0 to 34.8	≥ 3.3	34.0 to 34.8	≥ 3.3
–	–	–	–	33.0 to 33.9	≥ 3.2	33.0 to 33.9	≥ 3.2
–	–	–	–	32.1 to 32.9	≥ 3.1	32.1 to 32.9	≥ 3.1
–	–	–	–	31.1 to 32.0	≥ 3.0	31.1 to 32.0	≥ 3.0
–	–	–	–	30.2 to 31.0	≥ 2.9	30.2 to 31.0	≥ 2.9
–	–	–	–	29.2 to 30.1	≥ 2.8	29.2 to 30.1	≥ 2.8
25.8 to 26.6	≥ 2.6	–	–	28.3 to 29.1	≥ 2.7	28.3 to 29.1	≥ 2.7
24.9 to 25.7	≥ 2.5	–	–	27.3 to 28.2	≥ 2.6	27.3 to 28.2	≥ 2.6
24.0 to 24.8	≥ 2.4	–	–	26.4 to 27.2	≥ 2.5	26.4 to 27.2	≥ 2.5
23.1 to 23.9	≥ 2.3	–	–	25.4 to 26.3	≥ 2.4	25.4 to 26.3	≥ 2.4
22.2 to 23.0	≥ 2.2	–	–	24.5 to 25.3	≥ 2.3	24.5 to 25.3	≥ 2.3
21.3 to 22.1	≥ 2.1	21.3 to 21.5	≥ 2.1	23.5 to 24.4	≥ 2.2	23.5 to 24.4	≥ 2.2
20.4 to 21.2	≥ 2.0	20.4 to 21.2	≥ 2.0	22.6 to 23.4	≥ 2.1	22.6 to 23.4	≥ 2.1
19.5 to 20.3	≥ 1.9	19.5 to 20.3	≥ 1.9	21.6 to 22.5	≥ 2.0	21.6 to 22.5	≥ 2.0
18.6 to 19.4	≥ 1.8	18.6 to 19.4	≥ 1.8	20.7 to 21.5	≥ 1.9	20.7 to 21.5	≥ 1.9
17.7 to 18.5	≥ 1.7	17.7 to 18.5	≥ 1.7	19.7 to 20.6	≥ 1.8	19.7 to 20.6	≥ 1.8
16.8 to 17.6	≥ 1.6	16.8 to 17.6	≥ 1.6	18.8 to 19.6	≥ 1.7	18.8 to 19.6	≥ 1.7
15.9 to 16.7	≥ 1.5	15.9 to 16.7	≥ 1.5	17.8 to 18.7	≥ 1.6	17.8 to 18.7	≥ 1.6
15.0 to 15.8	≥ 1.4	15.0 to 15.8	≥ 1.4	16.9 to 17.7	≥ 1.5	16.9 to 17.7	≥ 1.5
14.1 to 14.9	≥ 1.3	14.1 to 14.9	≥ 1.3	15.9 to 16.8	≥ 1.4	15.9 to 16.8	≥ 1.4
13.2 to 14.0	≥ 1.2	13.2 to 14.0	≥ 1.2	15.0 to 15.8	≥ 1.3	15.0 to 15.8	≥ 1.3
12.3 to 13.1	≥ 1.1	12.3 to 13.1	≥ 1.1	14.0 to 14.9	≥ 1.2	14.0 to 14.9	≥ 1.2
11.4 to 12.2	≥ 1.0	11.4 to 12.2	≥ 1.0	13.1 to 13.9	≥ 1.1	13.1 to 13.9	≥ 1.1
10.5 to 11.3	≥ 0.9	10.5 to 11.3	≥ 0.9	12.1 to 13.0	≥ 1.0	12.1 to 13.0	≥ 1.0
9.6 to 10.4	≥ 0.8	9.6 to 10.4	≥ 0.8	11.2 to 12.0	≥ 0.9	11.2 to 12.0	≥ 0.9
8.7 to 9.5	≥ 0.7	8.7 to 9.5	≥ 0.7	10.2 to 11.1	≥ 0.8	10.2 to 11.1	≥ 0.8
7.8 to 8.6	≥ 0.6	7.8 to 8.6	≥ 0.6	9.3 to 10.1	≥ 0.7	9.3 to 10.1	≥ 0.7
6.9 to 7.7	≥ 0.5	6.9 to 7.7	≥ 0.5	8.3 to 9.2	≥ 0.6	8.3 to 9.2	≥ 0.6
6.0 to 6.8	≥ 0.4	6.0 to 6.8	≥ 0.4	7.4 to 8.2	≥ 0.5	7.4 to 8.2	≥ 0.5
5.1 to 5.9	≥ 0.3	5.1 to 5.9	≥ 0.3	6.4 to 7.3	≥ 0.4	6.4 to 7.3	≥ 0.4
< 5.1	≥ 0.2	< 5.1	≥ 0.2	< 6.4	≥ 0.3	< 6.4	≥ 0.3

Notes: SFP = square feet per pedestrian; Y = decrease in pedestrian space in SFP; X = No-Action pedestrian space in SFP.
Sources: New York City Mayor's Office of Environmental Coordination, *CEQR Technical Manual*.

Table 10-19
Significant Impact Guidance for Corners and Crosswalks

Sliding Scale Formula: *Y ≥ X/9.0 – 0.31*			
Non-CBD Areas		**CBD Areas**	
No-Action Pedestrian Space (X, SFP)	**With-Action Pedestrian Space Reduction (Y, SFP)**	**No-Action Pedestrian Space (X, SFP)**	**With-Action Pedestrian Space Reduction (Y, SFP)**
25.8 to 26.6	≥ 2.6	–	–
24.9 to 25.7	≥ 2.5	–	–
24.0 to 24.8	≥ 2.4	–	–
23.1 to 23.9	≥ 2.3	–	–
22.2 to 23.0	≥ 2.2	–	–
21.3 to 22.1	≥ 2.1	21.3 to 21.5	≥ 2.1
20.4 to 21.2	≥ 2.0	20.4 to 21.2	≥ 2.0
19.5 to 20.3	≥ 1.9	19.5 to 20.3	≥ 1.9
18.6 to 19.4	≥ 1.8	18.6 to 19.4	≥ 1.8
17.7 to 18.5	≥ 1.7	17.7 to 18.5	≥ 1.7
16.8 to 17.6	≥ 1.6	16.8 to 17.6	≥ 1.6
15.9 to 16.7	≥ 1.5	15.9 to 16.7	≥ 1.5
15.0 to 15.8	≥ 1.4	15.0 to 15.8	≥ 1.4
14.1 to 14.9	≥ 1.3	14.1 to 14.9	≥ 1.3
13.2 to 14.0	≥ 1.2	13.2 to 14.0	≥ 1.2
12.3 to 13.1	≥ 1.1	12.3 to 13.1	≥ 1.1
11.4 to 12.2	≥ 1.0	11.4 to 12.2	≥ 1.0
10.5 to 11.3	≥ 0.9	10.5 to 11.3	≥ 0.9
9.6 to 10.4	≥ 0.8	9.6 to 10.4	≥ 0.8
8.7 to 9.5	≥ 0.7	8.7 to 9.5	≥ 0.7
7.8 to 8.6	≥ 0.6	7.8 to 8.6	≥ 0.6
6.9 to 7.7	≥ 0.5	6.9 to 7.7	≥ 0.5
6.0 to 6.8	≥ 0.4	6.0 to 6.8	≥ 0.4
5.1 to 5.9	≥ 0.3	5.1 to 5.9	≥ 0.3
< 5.1	≥ 0.2	< 5.1	≥ 0.2
Notes: SFP = square feet per pedestrian; Y = decrease in pedestrian space in SFP; X = No-Action pedestrian space in SFP.			
Sources: New York City Mayor's Office of Environmental Coordination, *CEQR Technical Manual*.			

VEHICULAR AND PEDESTRIAN SAFETY EVALUATION

An evaluation of vehicular and pedestrian safety is necessary for locations within the traffic and pedestrian study areas that have been identified as high accident locations, where 48 or more total reportable and non-reportable crashes or five or more pedestrian/bicyclist injury crashes occurred in any consecutive 12 months of the most recent 3-year period for which data are available. For these locations, accident trends are identified to determine whether projected vehicular and pedestrian traffic would further impact safety at these locations. The determination of potential significant safety impacts depends on the type of area where the project site is located, traffic volumes, accident types and severity, and other contributing factors. Where appropriate, measures to improve traffic and pedestrian safety are identified and coordinated with DOT for their approval.

PARKING CONDITIONS ASSESSMENT

The parking analysis identifies the extent to which off-street parking is available and utilized under existing and future conditions. It takes into consideration anticipated changes in area parking supply and provides a comparison of parking needs versus availability to determine if a parking shortfall is likely to result from parking displacement attributable to or additional demand generated by a proposed project. Typically, this analysis encompasses a study area within a ¼-mile of the project site. If the analysis concludes a shortfall in parking within the ¼-mile study area, the study area could sometimes be extended to a ½-mile to identify additional parking supply.

For proposed projects located in Manhattan or other CBD areas, the inability of the proposed project or the surrounding area to accommodate the project's future parking demand is considered a parking shortfall, but is generally not considered significant due to the magnitude of available alternative modes of transportation. For other areas in New York City, a parking shortfall that exceeds more than half the available on-street and off-street parking spaces within a ¼-mile of the project site may be considered significant. Additional factors, such as the availability and extent of transit in the area, proximity of the project to such transit, and patterns of automobile usage by area residents, could be considered to determine the significance of the identified parking shortfall. In some cases, if there is adequate parking supply within a ½-mile of the project site, the projected parking shortfall may also not necessarily be considered significant.

D. DETAILED TRAFFIC ANALYSIS

As described above in Section B, "Preliminary Analysis Methodology and Screening Assessment," the Level 1 and Level 2 screening analyses indicated a need for a detailed analysis of 31 traffic analysis locations in the weekday AM, midday, and PM peak periods and 10 traffic analysis locations in the Saturday peak period. For capacity analysis purposes, the separated northbound and southbound Park Avenue intersections were treated as single intersections. Lastly, all analysis intersections are signalized except for the Vanderbilt Avenue intersections at East 47th, East 44th, and East 43rd Streets.

2014 EXISTING CONDITIONS

ROADWAY NETWORK AND TRAFFIC STUDY AREA

The traffic study area characterizes the East Midtown grid pattern, with major north-south one-way flows on Third, Lexington, Madison, Fifth, and Sixth Avenues; major two-way north-south flows on Park Avenue; major two-way east-west crosstown movements on 42nd Street; local north-south circulation on Vanderbilt Avenue; and local east-west circulation on narrower one-way cross-streets. The traffic study area is generally bounded by 47th Street to the north, 37th Street to the south, Third Avenue to the east, and Sixth Avenue to the west.

Major avenues in the study area generally operate one-way, northbound or southbound. Third, Madison, and Sixth Avenues operate northbound; while, Lexington and Fifth Avenues operate southbound. Most of these avenues operate with two to five general traffic moving lanes with dedicated bus lanes during peak periods. In particular, Madison Avenue has two dedicated bus lanes along the east side of the avenue; general traffic is permitted on these lanes only for right-turn movements.

Park Avenue is a major two-way northbound and southbound avenue. The northbound and southbound roadways are separated by a physical median. It generally operates with two moving lanes and commercial vehicle curbside parking during peak periods. Park Avenue also has a one-way tunnel from East 33rd to East 40th Streets, allowing northbound through traffic to bypass the intersections from East 34th to East 39th Streets, and a two-way viaduct running between East 40th and East 46th Streets, allowing through traffic to bypass intersections in the GCT area. Vanderbilt Avenue is a local two-way north-south avenue within the study area from East 42nd Street to East 47th Street (except for the segment between East 42nd and 43rd Streets, which is one-way northbound). It generally operates with one moving lane during peak periods.

The only major two-way east-west cross street within the study area is 42nd Street. It generally operates with two to three moving lanes in each direction with dedicated bus lanes during peak periods. Other local one-way cross-streets in the study area generally operate with one to two moving lanes with commercial vehicle curbside parking during peak periods. Even numbered cross-streets generally operate in the eastbound direction; while odd numbered cross-streets generally operate in the westbound direction.

TRAFFIC CONDITIONS

Traffic data were collected in June 2013 and June 2014 for the weekday AM, midday, and PM, and Saturday peak periods via a combination of manual intersection counts and 24-hour Automatic Traffic Recorder (ATR) machine counts. Existing (2014) peak period traffic volumes were developed based on these counts and supplemented, as needed, by baseline traffic volumes and analyses developed as part of the 2013 *East Midtown Rezoning and Related Actions FEIS*. The standard peak hours in Manhattan south of 110th Street generally occur from 8:00 to 9:00 AM, 12:00 PM to 1:00 PM, and 5:00 PM to 6:00 PM on weekdays. For the Saturday condition, 3:00 PM to 4:00 PM was determined to be the analysis peak hour based on the collected data.

Inventories of roadway geometry, traffic controls, bus stops, and parking regulations/activities were recorded to provide appropriate inputs for the operational analyses. Official signal timings were also obtained from DOT for use in the analysis of the study area signalized intersections. **Figures 10-28 to 10-31** show the 2014 existing traffic volumes for the weekday AM, midday, PM, and Saturday peak hours, respectively. During the 2014 traffic data collection, the southbound approach at the Vanderbilt Avenue and East 44th Street intersection was closed during the weekday period due to construction. The southbound approach was analyzed without traffic volumes in the existing conditions and restored in the analysis of No-Action and With-Action conditions. Construction activities also eliminated the use of the south curb lane of westbound East 47th Street at Madison Avenue. This approach was analyzed without curbside parking maneuvers but was restored in the analysis of No-Action and With-Action conditions.

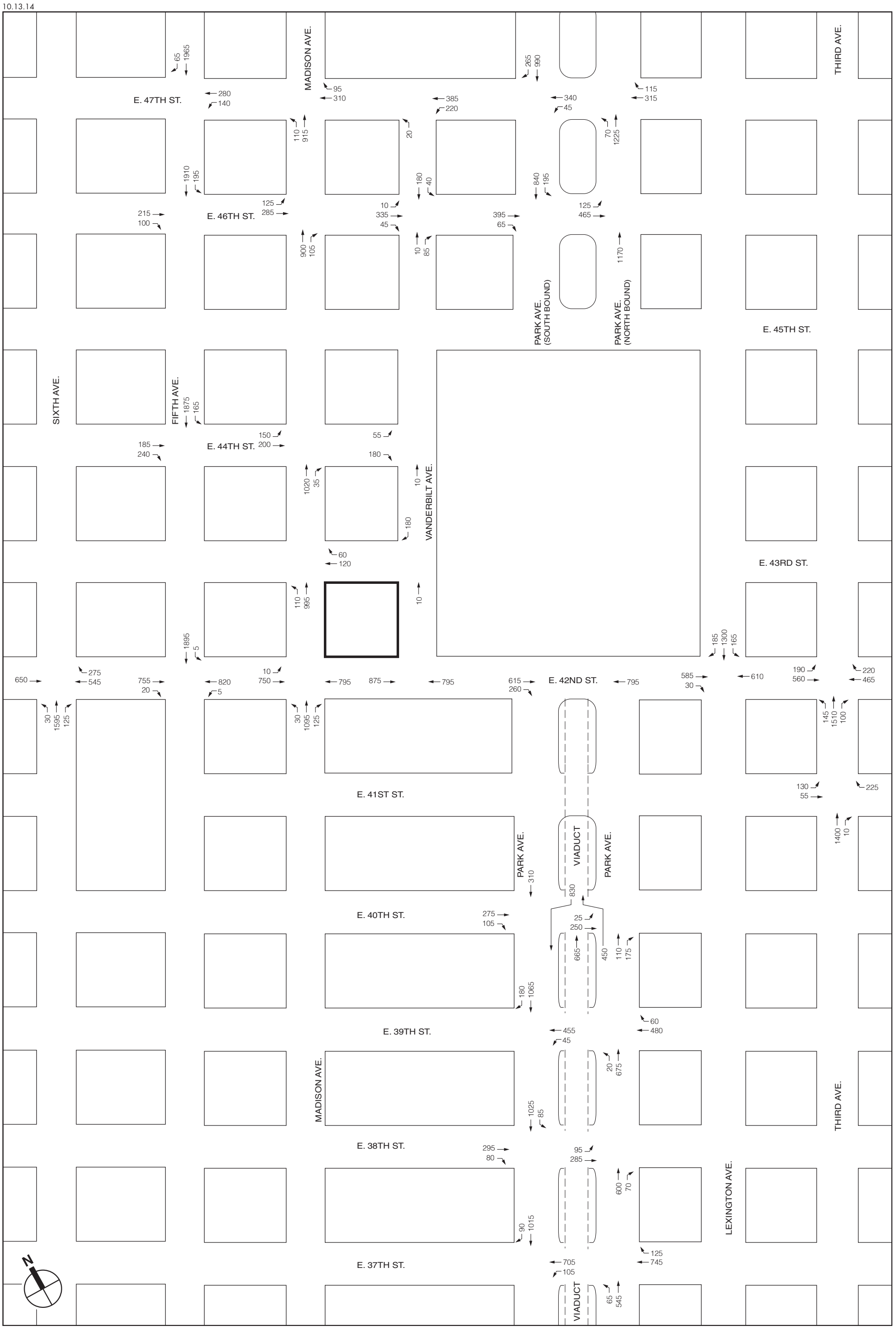
LEVELS OF SERVICE

A summary of the 2014 existing conditions traffic analysis results is presented in **Table 10-20**. Details on level-of-service, v/c ratios, and average delays are presented in **Tables 10-21 and 10-22**. Overall, the capacity analysis indicates that most of the study area's intersection approaches/lane groups operate acceptably—at mid-LOS D or better (delays of 45 seconds or less per vehicle for signalized intersections and 30 seconds or less per vehicle for unsignalized intersections) for the peak hours. Approaches/lane groups operating beyond mid-LOS D and those with v/c ratios of 0.90 or greater are listed below.

Third Avenue

- Eastbound left-turn at the Third Avenue and East 42nd Street intersection (LOS F with a v/c ratio of 1.05 and a delay of 115.8 spv during the weekday AM peak hour; LOS F with a v/c ratio of 1.05 and a delay of 112.1 spv during the weekday midday peak hour; and LOS F with a v/c ratio of 0.99 and a delay of 101.0 spv during the weekday PM peak hour);
- Eastbound through at the Third Avenue and East 42nd Street intersection (LOS E with a v/c ratio of 1.05 and a delay of 75.8 spv during the weekday AM peak hour; and LOS E with a v/c ratio of 0.98 a delay of 55.9 spv during the weekday PM peak hour);

10.13.14



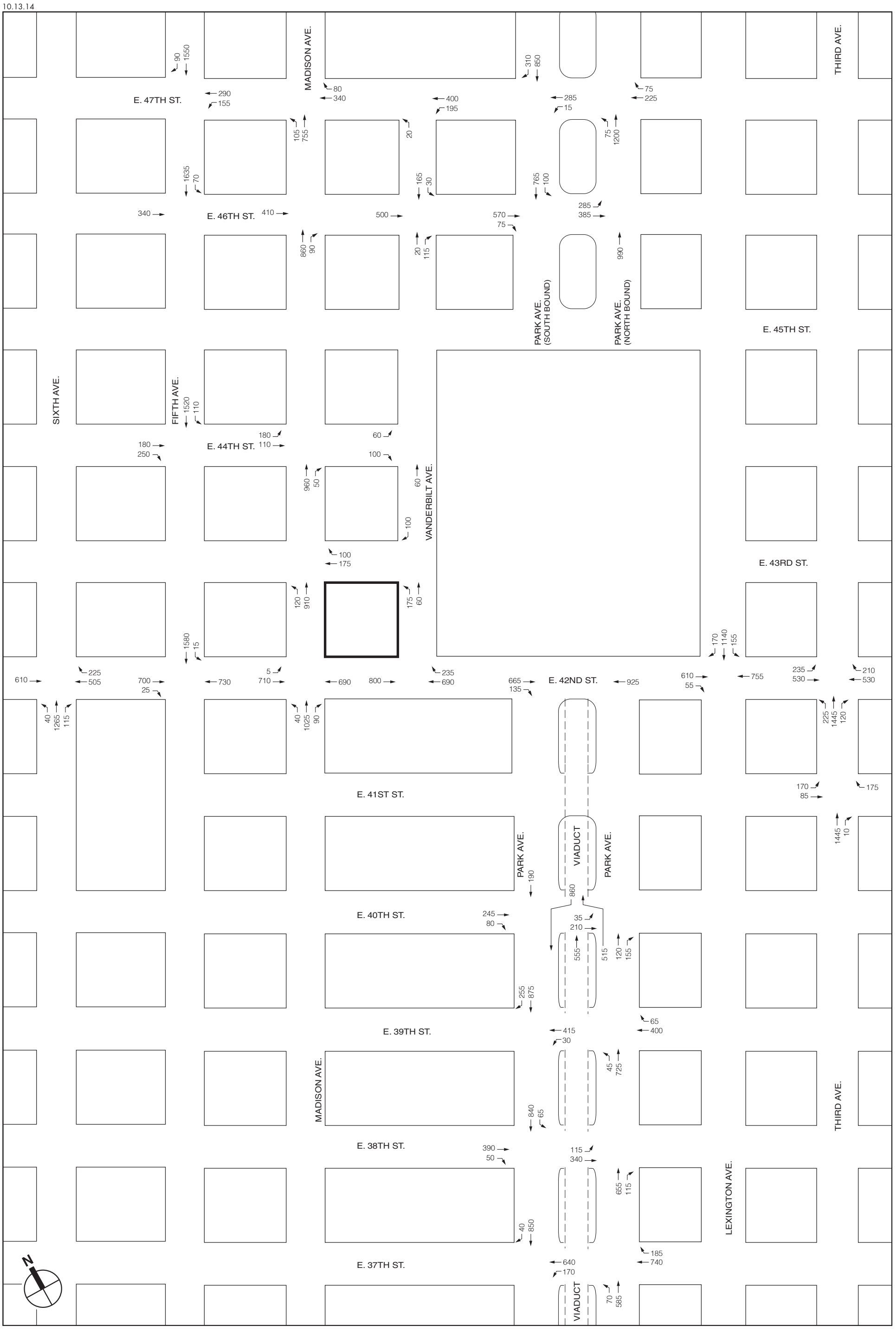
One Vanderbilt Development Site

NOT TO SCALE

2014 Existing Traffic Volumes
Weekday AM Peak Hour

Figure 10-28

10.13.14

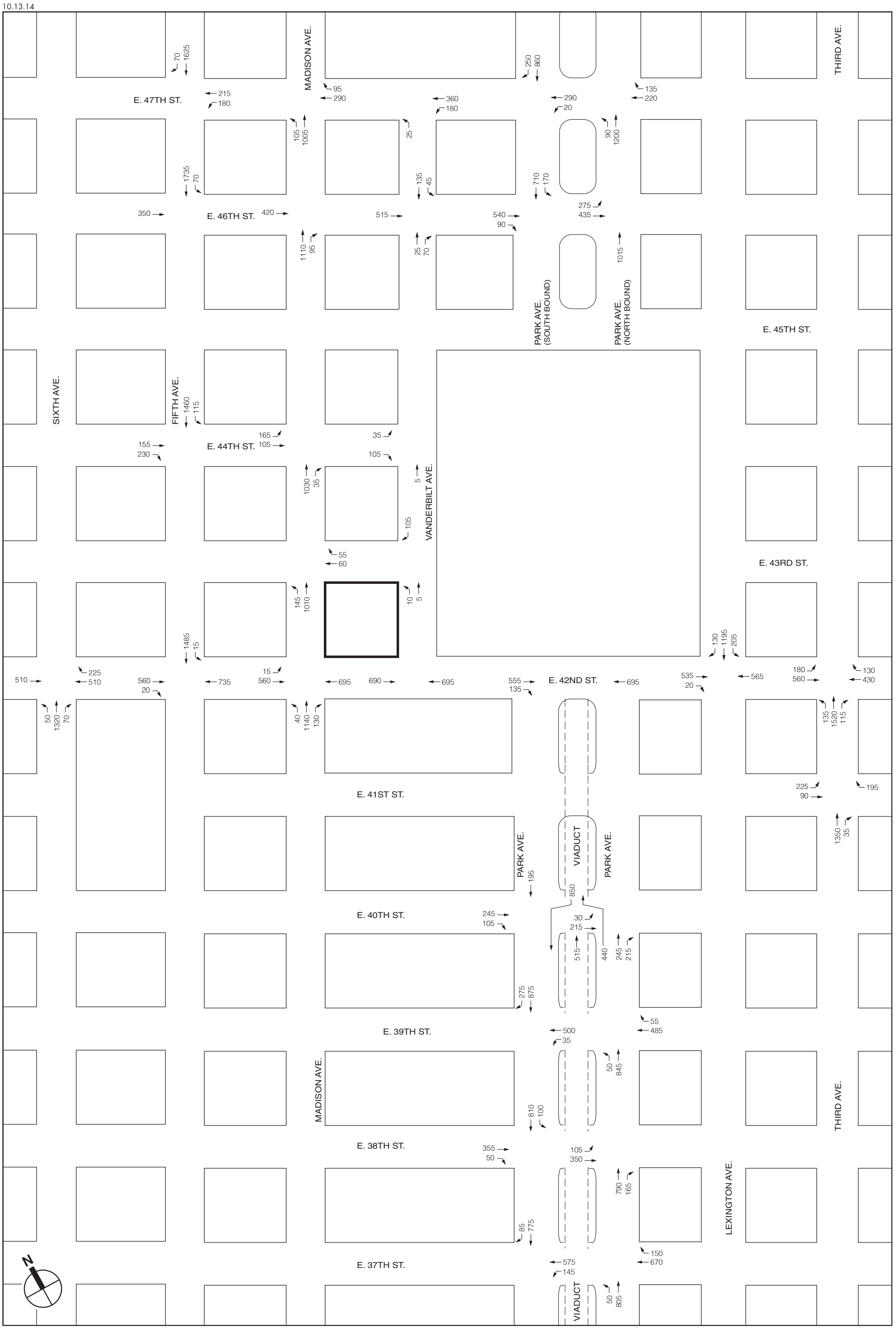


2014 Existing Traffic Volumes
Weekday Midday Peak Hour

Figure 10-29

Vanderbilt Corridor and One Vanderbilt

10.13.14



One Vanderbilt Development Site

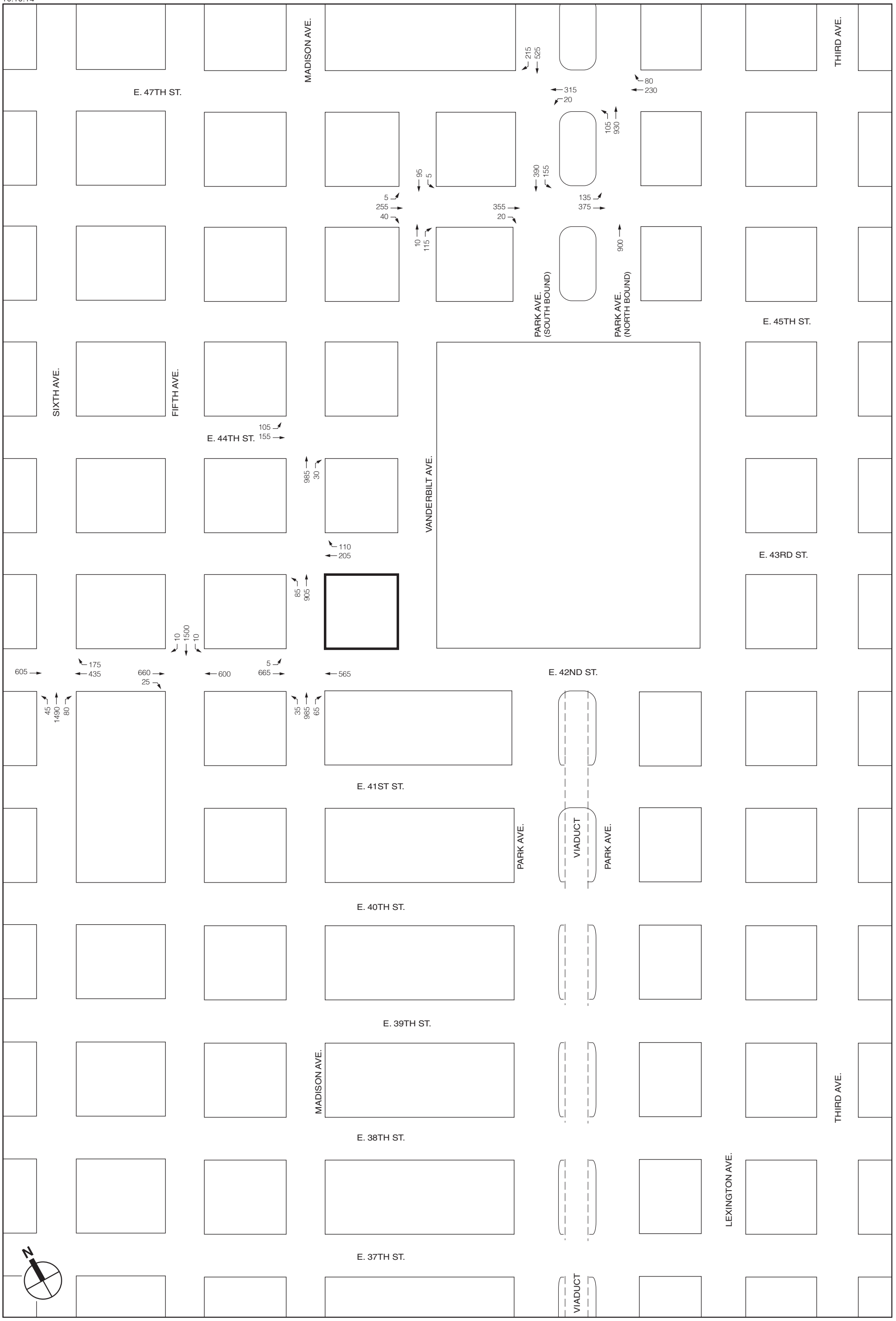
NOT TO SCALE

2014 Existing Traffic Volumes
Weekday PM Peak Hour

Figure 10-30

Vanderbilt Corridor and One Vanderbilt

10.13.14



One Vanderbilt Development Site

NOT TO SCALE

2014 Existing Traffic Volumes
Saturday Peak Hour
Figure 10-31

Vanderbilt Corridor and One Vanderbilt

Table 10-20
Summary of 2014 Existing Traffic Analysis Results

Level of Service	Analysis Peak Hours			
	Weekday AM	Weekday Midday	Weekday PM	Saturday
Signalized Intersections				
Lane Groups at LOS A/B/C	74	71	75	31
Lane Groups at LOS D	11	12	11	2
Lane Groups at LOS E	3	3	3	1
Lane Groups at LOS F	5	4	4	0
Total	93	90	93	34
Lane Groups with v/c ≥ 0.90	12	10	11	0
Unsignalized Intersections				
Lane Groups at LOS A/B/C	8	8	8	0
Lane Groups at LOS D	0	0	0	0
Lane Groups at LOS E	0	0	0	0
Lane Groups at LOS F	0	0	0	0
Total	8	8	8	0
Lane Groups with v/c ≥ 0.90	0	0	0	0

Notes: LOS = Level-of-Service; v/c = volume-to-capacity ratio

Table 10-21
2014 Existing Conditions Level of Service Analysis
Signalized Intersections

Intersection	Weekday AM				Weekday Midday				Weekday PM				Saturday			
	Lane Group	v/c Ratio	Delay (sec)	LOS	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	1.05	115.8	F	L	1.05	112.1	F	L	0.99	101.0	F				
	T	1.05	75.8	E	T	0.88	39.4	D	T	0.98	55.9	E				
WB	T	0.88	49.5	D	T	0.85	45.9	D	T	0.69	37.7	D				
	R	1.05	109.4	F	R	1.05	111.7	F	R	1.01	114.9	F				
NB	LT	0.73	23.3	C	LT	0.80	25.2	C	LT	0.70	22.6	C				
	R	0.32	19.9	B	R	0.52	26.4	C	R	0.40	21.9	C				
	Int.		48.3	D	Int.		41.8	D	Int.		39.8	D				
Third Avenue & East 41st Street																
EB	LT	0.44	20.5	C	LT	0.75	32.4	C	LT	0.92	51.1	D				
WB	R	0.68	29.3	C	R	0.64	29.0	C	R	0.67	29.4	C				
NB	T	0.52	16.0	B	T	0.52	16.0	B	T	0.50	15.6	B				
	R	0.04	12.2	B	R	0.06	12.7	B	R	0.20	15.3	B				
	Int.		18.1	B	Int.		19.8	B	Int.		23.8	C				
Lexington Avenue & East 42nd Street																
EB	T	0.70	30.6	C	-	-	-	-	T	0.68	30.0	C				
	R	0.32	30.6	C	-	-	-	-	R	0.24	27.3	C				
	-	-	-	-	TR	0.98	58.0	E	-	-	-	-				
WB	T	0.74	32.0	C	T	0.96	52.6	D	T	0.64	28.8	C				
SB	L	0.50	18.2	B	L	0.47	17.4	B	L	0.61	22.0	C				
	T	0.70	17.0	B	T	0.62	15.4	B	T	0.63	15.7	B				
	R	0.59	21.3	C	R	0.54	19.5	B	R	0.41	15.9	B				
	Int.		23.6	C	Int.		35.7	D	Int.		22.2	C				
Park Avenue & East 47th Street																
WB	LT	0.65	26.9	C	LT	0.46	21.5	C	LT	0.48	21.8	C	LT	0.49	22.1	C
	R	0.36	20.8	C	R	0.25	18.7	B	R	0.51	24.8	C	R	0.21	17.7	B
NB	L**	0.00	34.0	C	L**	0.00	33.9	C	L**	0.00	34.3	C	L**	0.00	35.5	D
	LT	0.51	18.1	B	LT	0.70	21.7	C	LT	0.51	18.1	B	LT	0.56	19.1	B
SB	T	0.55	18.8	B	-	-	-	-	T	0.46	17.6	B	-	-	-	-
	R	0.82	40.0	D	-	-	-	-	R	0.70	29.4	C	-	-	-	-
	-	-	-	-	TR	0.80	25.1	C	-	-	-	-	TR	0.44	17.4	B
	Int.		21.6	C	Int.		22.3	C	Int.		20.1	C	Int.		20.7	C

Table 10-21 (cont'd)
2014 Existing Conditions Level of Service Analysis
Signalized Intersections

Intersection	Weekday AM				Weekday Midday				Weekday PM				Saturday			
	Lane Group	v/c Ratio	Delay (sec)	LOS	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 46th Street																
EB	LT	0.38	18.3	B	LT	0.56	21.1	C	LT	0.57	21.2	C	LT	0.83	36.1	D
	R	0.17	16.5	B	R	0.21	17.1	B	R	0.27	18.0	B	R	0.05	15.0	B
NB	T	0.82	26.9	C	T	0.70	22.9	C	T	0.72	23.4	C	T	0.67	22.1	C
SB	L**	0.00	35.1	D	L**	0.00	31.5	C	L**	0.00	33.5	C	L**	0.00	32.9	C
	T	0.78	26.0	C	T	0.71	23.7	C	T	0.60	21.2	C	T	0.32	16.8	B
	Int.		25.7	C	Int.		22.9	C	Int.		22.7	C	Int.		23.9	C
Park Avenue & East 42nd Street																
EB	T	0.48	15.5	B	T	0.51	15.9	B	T	0.44	14.9	B				
	R	0.48	17.0	B	R	0.24	13.1	B	R	0.25	13.3	B				
WB	T	0.59	17.3	B	T	0.79	22.9	C	T	0.60	17.5	B				
	Int.		16.6	B	Int.		19.6	B	Int.		16.1	B				
Park Avenue & East 40th Street																
EB	LT	0.69	33.0	C	LT	0.61	29.8	C	LT	0.59	28.9	C				
	R	0.41	26.2	C	R	0.32	24.1	C	R	0.42	26.5	C				
NB	T (Tunnel Exit)	0.89	32.6	C	T (Tunnel Exit)	0.71	21.0	C	T (Tunnel Exit)	0.68	20.0	B				
	T onto Viaduct	0.58	17.1	B	T onto Viaduct	0.64	18.5	B	T onto Viaduct	0.56	16.7	B				
	TR	0.72	26.1	C	TR	0.63	21.3	C	TR	1.02	67.5	E				
SB	T	0.41	14.1	B	T	0.25	12.1	B	T	0.26	12.2	B				
	T (Viaduct Exit)	0.98	46.5	D	T (Viaduct Exit)	1.01	52.7	D	T (Viaduct Exit)	1.00	52.1	D				
	Int.		31.4	C	Int.		30.8	C	Int.		37.4	D				
Park Avenue & East 39th Street																
WB	LTR	1.05	81.2	F	LTR	1.05	82.6	F	LTR	1.05	81.0	F				
NB	L**	0.00	34.8	C	L**	0.00	36.1	D	L**	0.00	38.0	D				
	LT	0.56	17.2	B	LT	0.58	17.6	B	LT	0.66	19.3	B				
SB	T	0.73	20.7	C	T	0.57	17.2	B	T	0.57	17.2	B				
	R	0.51	19.8	B	R	0.57	20.7	C	R	0.72	28.7	C				
	Int.		32.8	C	Int.		30.7	C	Int.		32.6	C				
Park Avenue & East 38th Street																
EB	LTR	0.47	22.3	C	LTR	0.55	23.7	C	LTR	0.47	22.1	C				
NB	TR	0.56	17.2	B	TR	0.63	18.5	B	TR	0.75	21.7	C				
SB	L**	0.00	41.0	D	L**	0.00	38.6	D	L**	0.00	38.2	D				
	LT	0.79	22.9	C	LT	0.72	20.7	C	LT	0.69	19.8	B				
	Int.		21.8	C	Int.		21.1	C	Int.		21.7	C				
Park Avenue & East 37th Street																
WB	L	0.20	17.3	B	-	-	-	-	-	-	-	-				
	TR	0.70	25.0	C	-	-	-	-	-	-	-	-				
	-	-	-	-	LTR	1.05	70.3	E	LTR	0.90	38.4	D				
NB	L**	0.00	34.1	C	L**	0.00	34.4	C	L**	0.00	36.3	D				
	LT	0.51	18.2	B	LT	0.52	16.5	B	LT	0.64	18.7	B				
SB	TR	0.88	30.1	C	TR	0.63	18.6	B	TR	0.70	20.1	C				
	Int.		25.5	C	Int.		37.3	D	Int.		25.8	C				
Vanderbilt Avenue & East 46th Street																
EB	LTR	0.40	18.1	B	-	-	-	-	-	-	-	-	LTR	0.62	23.9	C
	-	-	-	-	T	0.47	18.9	B	T	0.46	18.7	B	-	-	-	-
NB	TR	0.29	18.0	B	TR	0.35	18.6	B	TR	0.24	16.8	B	TR	0.32	17.9	B
SB	LT	0.48	20.6	C	LT	0.43	19.6	B	LT	0.42	19.6	B	LT	0.21	16.2	B
	Int.		18.9	B	Int.		19.0	B	Int.		18.7	B	Int.		21.0	C
Vanderbilt Avenue & East 42nd Street																
EB	T	0.79	27.0	C	T	0.60	15.6	B	T	0.66	22.5	C				
WB	T	0.79	27.6	C	TR	0.79	21.6	C	T	0.77	26.7	C				
	Int.		27.2	C	Int.		18.8	B	Int.		24.6	C				
Madison Avenue & East 47th Street																
WB	T	0.59	24.9	C	T	0.67	27.4	C	T	0.48	22.1	C				
	R	0.56	46.7	D	R	0.49	43.4	D	R	0.49	43.1	D				
NB	L	0.54	21.9	C	L	0.69	35.5	D	L	0.53	22.5	C				
	T	0.85	24.4	C	T	0.63	16.3	B	T	0.79	20.5	C				
	Int.		25.8	C	Int.		22.7	C	Int.		22.4	C				
Madison Avenue & East 46th Street																
EB	LT	0.48	22.6	C	T	0.44	21.6	C	T	0.46	21.9	C				
NB	T	0.86	23.8	C	T	0.71	16.7	B	T	0.89	25.5	C				
	R	0.31	12.3	B	R	0.25	11.5	B	R	0.27	11.7	B				
	Int.		22.6	C	Int.		18.0	B	Int.		23.7	C				

Table 10-21 (cont'd)
2014 Existing Conditions Level of Service Analysis
Signalized Intersections

Intersection	Weekday AM				Weekday Midday				Weekday PM				Saturday			
	Lane Group	v/c Ratio	Delay (sec)	LOS	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	1.05	85.2	F	LT	0.84	45.0	D	LT	0.81	41.9	D	LT	0.68	30.9	C
NB	T	1.04	56.2	E	T	0.82	20.8	C	T	0.91	27.3	C	T	0.74	17.5	B
	R	0.19	11.5	B	R	0.24	12.4	B	R	0.22	12.5	B	R	0.10	9.7	A
	Int.		62.5	E	Int.		25.9	C	Int.		29.9	C	Int.		20.3	C
Madison Avenue & East 43rd Street																
WB	T	0.26	20.0+	C	T	0.37	21.7	C	T	0.13	18.2	B	T	0.43	22.7	C
	R	0.25	21.0	C	R	0.35	22.5	C	R	0.23	20.6	C	R	0.30	21.0	C
NB	L	0.51	19.4	B	L	0.66	29.6	C	L	0.80	42.5	D	L	0.21	10.8	B
	T	0.85	22.2	C	T	0.67	15.6	B	T	0.77	18.2	B	T	0.64	14.7	B
	Int.		21.7	C	Int.		18.3	B	Int.		21.1	C	Int.		16.3	B
Madison Avenue & East 42nd Street																
EB	LT	0.87	36.4	D	LT	0.84	34.2	C	LT	0.75	29.5	C	LT	0.78	30.3	C
WB	T	0.83	32.3	C	T	0.73	27.8	C	T	0.71	27.2	C	T	0.59	24.1	C
NB	LT	1.04	56.2	E	LT	0.94	30.4	C	L	0.10	12.2	B	L	0.07	11.9	B
	R	0.38	13.9	B	R	0.28	11.9	B	T	0.89	24.2	C	T	0.73	16.9	B
	-	-	-	-	-	-	-	-	R	0.39	13.8	B	R	0.16	10.1	B
	Int.		42.1	D	Int.		30.1	C	Int.		25.6	C	Int.		22.3	C
Fifth Avenue & 47th Street																
WB	L	0.66	48.6	D	L	0.67	49.2	D	L	0.74	52.6	D				
	T	0.57	23.3	C	T	0.54	22.6	C	T	0.38	19.1	B				
SB	T	0.86	22.6	C	T	0.68	17.5	B	T	0.69	17.7	B				
	R	0.32	17.0	B	R	0.69	39.7	D	R	0.54	29.2	C				
	Int.		24.1	C	Int.		21.4	C	Int.		21.3	C				
Fifth Avenue & 46th Street																
EB	TR	0.40	21.3	C	T	0.36	20.5	C	T	0.35	20.3	C				
SB	LT	0.92	22.5	C	LT	0.66	14.2	B	LT	0.74	15.5	B				
	Int.		22.3	C	Int.		15.3	B	Int.		16.3	B				
Fifth Avenue & 44th Street																
EB	T	0.34	21.0	C	T	0.32	20.6	C	T	0.27	19.8	B				
	R	0.86	51.8	D	R	0.90	58.3	E	R	0.94	69.4	E				
SB	LT	0.87	19.8	B	LT	0.66	14.2	B	LT	0.66	14.2	B				
	Int.		23.0	C	Int.		20.1	C	Int.		21.1	C				
Fifth Avenue & 42nd Street																
EB	T	0.80	31.2	C	T	0.71	27.4	C	T	0.64	25.5	C	T	0.70	27.1	C
	R	0.17	21.1	C	R	0.23	22.8	C	R	0.20	21.8	C	R	0.21	22.0	C
WB	LT	0.90	38.3	D	LT	0.84	33.8	C	LT	0.85	33.9	C	LT	0.68	26.6	C
SB	LT	0.72	15.3	B	LT	0.61	13.4	B	LT	0.58	13.1	B	LT	0.55	12.7	B
	R	0.00	11.3	B	R	0.00	11.3	B	R	0.00	11.3	B	R	0.05	12.0	B
	Int.		24.4	C	Int.		21.8	C	Int.		21.6	C	Int.		19.5	B
Sixth Avenue & West 42nd Street																
EB	T	0.91	44.2	D	T	0.78	33.5	C	T	0.68	29.6	C	T	0.78	33.3	C
WB	T	0.64	28.4	C	T	0.60	27.2	C	T	0.59	27.1	C	T	0.52	25.7	C
	R	1.05	96.8	F	R	1.05	104.1	F	R	1.05	103.1	F	R	0.84	56.9	E
NB	LT	0.63	10.9	B	LT	0.50	9.5	A	LT	0.56	10.1	B	-	-	-	-
	R	0.38	11.2	B	R	0.32	10.0+	B	R	0.21	8.6	A	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	LTR	0.48	9.2	A
	Int.		28.2	C	Int.		25.4	C	Int.		24.3	C	Int.		20.2	C

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

** 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.

Table 10-22
2014 Existing Conditions Level of Service Analysis
Unsignalized Intersections

Intersection	Weekday AM				Weekday Midday				Weekday PM				Saturday			
	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS
Vanderbilt Avenue & East 47th Street																
WB	L	0.29	9.0	A	L	0.26	8.8	A	L	0.24	8.6	A				
	T	0.48	10.8	B	T	0.51	11.2	B	T	0.46	10.4	B				
NB	L	0.03	8.7	A	L	0.04	8.6	A	L	0.05	8.6	A				
Vanderbilt Avenue & East 44th Street																
EB	LR	0.27	8.1	A	LR	0.19	7.8	A	LR	0.16	7.3	A				
NB	T	0.02	7.7	A	T	0.09	7.8	A	T	0.01	7.3	A				
SB	T	0.00	7.5	A	T	0.00	7.4	A	T	0.00	7.3	A				
Vanderbilt Avenue & East 43rd Street																
NB	LT	0.01	9.1	A	LT	0.31	11.1	B	LT	0.02	9.4	A				
SB	R	0.18	9.1	A	R	0.11	8.8	A	R	0.12	8.8	A				

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

- Westbound through at the Third Avenue and East 42nd Street intersection (LOS D with a delay of 49.5 spv during the weekday AM peak hour; and LOS D with a delay of 45.9 spv during the weekday midday peak hour);
- Westbound right-turn at the Third Avenue and East 42nd Street intersection (LOS F with a v/c ratio of 1.05 and a delay of 109.4 spv during the weekday AM peak hour; LOS F with a v/c ratio of 1.05 and a delay of 111.7 spv during the weekday midday peak hour; and LOS F with a v/c ratio of 1.01 and a delay of 114.9 spv during the weekday PM peak hour); and
- Eastbound approach at the Third Avenue and East 41st Street intersection (LOS D with a v/c ratio of 0.92 and a delay of 51.1 spv during the weekday PM peak hour).

Lexington Avenue

- Eastbound approach at the Lexington Avenue and East 42nd Street intersection (LOS E with a v/c ratio of 0.98 and a delay of 58.0 spv during the weekday midday peak hour); and
- Westbound through at the Lexington Avenue and East 42nd Street intersection (LOS D with a v/c ratio of 0.96 and a delay of 52.6 spv during the weekday midday peak hour).

Park Avenue

- Northbound through/right-turn at the Park Avenue and East 40th Street intersection (LOS E with a v/c ratio of 1.02 and a delay of 67.5 spv during the weekday PM peak hour);
- Southbound through (viaduct exit) at the Park Avenue and East 40th Street intersection (LOS D with a v/c ratio of 0.98 and a delay of 46.5 spv during the weekday AM peak hour; LOS D with a v/c ratio of 1.01 and a delay of 52.7 spv during the weekday midday peak hour; and LOS D with a v/c ratio of 1.00 and a delay of 52.1 spv during the weekday PM peak hour);
- Westbound approach at the Park Avenue and East 39th Street intersection (LOS F with a v/c ratio of 1.05 and a delay of 81.2 spv during the weekday AM peak hour; LOS F with a v/c ratio of 1.05 and a delay of 82.6 spv during the weekday midday peak hour; and LOS F with a v/c ratio of 1.05 and a delay of 81.0 spv during the weekday PM peak hour); and

- Westbound approach at the Park Avenue and East 37th Street intersection (LOS E with a v/c ratio of 1.05 and a delay of 70.3 spv during the weekday midday peak hour; and LOS D with a v/c ratio of 0.90 during the weekday PM peak hour).

Madison Avenue

- Westbound right-turn at the Madison Avenue and East 47th Street intersection (LOS D with a delay of 46.7 spv during the weekday AM peak hour);
- Eastbound approach at the Madison Avenue and East 44th Street intersection (LOS F with a v/c ratio of 1.05 and a delay of 85.2 spv during the weekday AM peak hour);
- Northbound through at the Madison Avenue and East 44th Street intersection (LOS E with a v/c ratio of 1.04 and a delay of 56.2 spv during the weekday AM peak hour; and LOS C with a v/c ratio of 0.91 during the weekday PM peak hour); and
- Northbound left-turn/through at the Madison Avenue and East 42nd Street intersection (LOS E with a v/c ratio of 1.04 and a delay of 56.2 spv during the weekday AM peak hour; and LOS C with a v/c ratio of 0.94 during the weekday midday peak hour).

Fifth Avenue

- Westbound left-turn at the Fifth Avenue and 47th Street intersection (LOS D with a delay of 48.6 spv during the weekday AM peak hour; LOS D with a delay of 49.2 spv during the weekday midday peak hour; and LOS D with a delay of 52.6 spv during the weekday PM peak hour);
- Eastbound right-turn at the Fifth Avenue and 44th Street intersection (LOS D with a delay of 51.8 spv during the weekday AM peak hour; LOS E with a v/c ratio of 0.90 and a delay of 58.3 spv during the weekday midday peak hour; and LOS E with a v/c ratio of 0.94 and a delay of 69.4 spv during the weekday PM peak hour); and
- Westbound approach at the Fifth Avenue and 42nd Street intersection (LOS C with a v/c ratio of 0.90 during the weekday AM peak hour). It should be noted that this approach was analyzed with a left-through lane group to account for left turns permitted for buses only. Baseline traffic data show that a small number of left turns took place during the weekday AM peak hour and none was recorded during the other analysis peak hours.

Sixth Avenue

- Eastbound through at the Sixth Avenue and West 42nd Street intersection (LOS D with a v/c ratio of 0.91); and
- Westbound right-turn at the Sixth Avenue and West 42nd Street intersection (LOS F with a v/c ratio of 1.05 and a delay of 96.8 spv during the weekday AM peak hour; LOS F with a v/c ratio of 1.05 and a delay of 104.1 spv during the weekday midday peak hour; LOS F with a v/c ratio of 1.05 and a delay of 103.1 spv during the weekday PM peak hour; and LOS E with a delay of 56.9 spv during the Saturday peak hour).

THE FUTURE WITHOUT THE PROPOSED ACTIONS

The No-Action condition was developed by increasing existing (2014) traffic levels by the expected growth in overall travel through and within the study area. As per *CEQR Technical Manual* guidelines, an annual background growth rate of 0.25 percent was assumed for the first five years (year 2014 to year 2019) and then 0.125 percent for the remaining years (year 2019 to

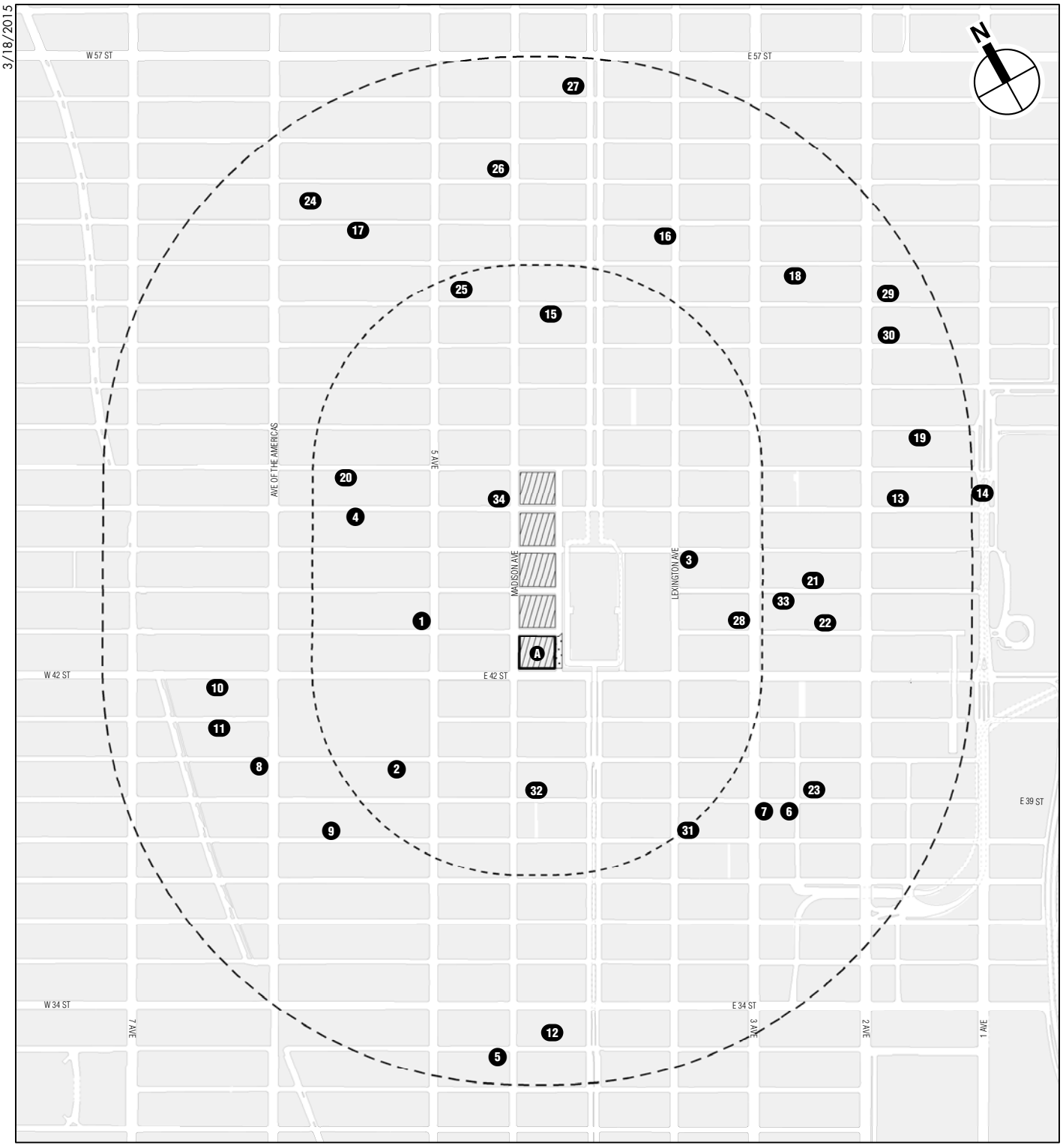
year 2021). A total of 34 development projects expected to occur in the No-Action condition (No Build projects) were identified as being planned for the ½-mile study area (see **Figure 10-32**). However, some of these planned projects are modest in size and would be very modest traffic generators. After reviewing the development programs for each of the planned projects, it was determined that background growth will address the increase in traffic and pedestrian levels for 7 of the small- to moderate-sized projects in the study area. For the other No Build projects, including development components that are anticipated to be completed by 2021 for the First Avenue Properties and Hudson Yards Rezoning projects, person and vehicle trips were determined and incorporated into the No-Action analyses. **Table 10-23** and **Figure 10-32** summarize the projects that were accounted for in this future 2021 baseline, including those that were considered as part of the study area background growth. In addition, as discussed above in the "Level 1 Screening Assessment" section of Section B, "Preliminary Analysis Methodology and Screening Assessment," absent the proposed One Vanderbilt development, the No-Action building would be redeveloped with a mix of office and retail uses. The No-Action building project-generated vehicle trips are shown in **Figures 10-1 to 10-4**. The No-Action building would replace existing uses on the One Vanderbilt site. Incremental trips generated by the No-Action building have also been incorporated into the No-Action traffic analysis.

CHANGES TO THE STUDY AREA STREET NETWORK

In addition to the development projects noted above, below are the anticipated modifications to the traffic study area's street network in the No-Action condition.

- Pershing Square Pedestrian Plaza project: The western portion of Park Avenue between East 41st and East 42nd Streets will be converted into a public plaza. The eastern portion of Park Avenue is already closed under existing conditions. The western portion of Park Avenue would be closed under the No-Action condition. Vehicles that currently turn right from the East 42nd Street eastbound approach onto the western portion of Park Avenue were rerouted to other roadways in the study area.
- Fifth Avenue Bus Lane Improvements: This project will expand the number of bus lanes from one to two along the west side of Fifth Avenue. These bus lanes were assumed to be in effect during all peak periods.
- Third Avenue Bus Lane Improvements: This project will shift the current east curbside bus lane on Third Avenue one lane to the west. The east curbside lane along Third Avenue would be converted to additional space for pedestrians.

By 2021, there are also other transportation projects that would result in changes in access to the study area. The Number 7 train extension to the far west side is expected to open for service in late 2014 or early 2015, bringing rapid transit service to a fast-growing area stemmed from Hudson Yards Rezoning. Phase I of the Second Avenue Subway Project from East 96th Street to East 63rd Street is anticipated to be completed by 2016 and would have a connection to the Broadway Line. This new service would provide needed relief to the Lexington Avenue subway lines but is not expected to have material effects on traffic volumes and patterns in the study area. For the East Side Access project, which involves construction of new tunnels and platforms/concourses to connect the LIRR to GCT, completion is currently scheduled for 2023. The *East Side Access FEIS* projected an overall reduction in travel by car, but an increase in travel by taxis, in the GCT area. Although the currently anticipated completion year for East Side Access is beyond the One Vanderbilt development's future analysis year of 2021, it would



Proposed Vanderbilt Corridor

One Vanderbilt Development Site

Proposed Public Place

Vanderbilt Corridor Study Area Boundary (1/2-Mile Perimeter)

Vanderbilt Corridor Study Area Boundary (1/4-Mile Perimeter)

❶ *No Build Project Location*

2021 No Build Projects

Figure 10-32

Vanderbilt Corridor and One Vanderbilt

This figure has been updated for the FEIS

Table 10-23
No Build Projects Expected to be Complete by 2021

Map Ref. No.[1]	Project Name/ Address	Development Program	Transportation Assumptions	Status/ Build Year[2]
One Vanderbilt Development Site				
A	Block 1277 (One Vanderbilt)	Commercial: 636,312 gsf office and 83,648 retail	Replacing existing uses	2021
Development Projects Within ½-Mile				
1	516-520 Fifth Avenue	Mixed commercial/residential: 35,000 gsf retail, hotel (234 rooms) and residential (145 rooms/units)	Transportation assumptions from *CEQR Technical Manual* and *East Midtown Rezoning and Related Actions FEIS* (2013), and 2008-2012 U.S. Census ACS JTW estimates	2015
2	14-20 West 40th Street	Mixed commercial/residential: 4,500 gsf restaurant/retail, residential (91 units) and hotel (215 rooms)	Transportation assumptions from *CEQR Technical Manual*, *East Midtown Rezoning and Related Actions FEIS* (2013), and 2008-2012 U.S. Census ACS JTW estimates	2021
3	451 Lexington Avenue	Commercial: 119,449 gsf hotel (284 rooms), 7,500 gsf retail	Transportation assumptions from *CEQR Technical Manual* and *East Midtown Rezoning and Related Actions FEIS* (2013)	2015
4	30 West 46th Street	Commercial: 72,191 gsf hotel (196 rooms)	See project site 3, above	2021
5	160 Madison Avenue	Mixed commercial/residential: 13,422 gsf retail and residential (319 units)	See project site 2, above	2015
6	210 East 39th Street	Mixed commercial/residential: 7,929 gsf retail and residential (57 units)	Included in background growth	2021
7	200 East 39th Street	Mixed commercial/residential: 3,754 gsf retail and residential (91 units)	Included in background growth	2015
8	7 Bryant Park	Commercial: 471,000 gsf office and 651 parking spaces	Transportation assumptions from *CEQR Technical Manual*, *East Midtown Rezoning and Related Actions FEIS* (2013), and 2006-2010 U.S. Census ACS RJTW estimates	2015
9	Archer NY Hotel, 45 West 38th Street	Commercial: hotel (180 rooms)	See project site 3, above	2014
10	Hilton Garden Inn, 136 West 42nd Street	Commercial: hotel (282 rooms)	See project site 3, above	2014
11	Stanford Hotels, 120 West 41st Street	Commercial: hotel (130 rooms)	See project site 3, above	2015
12	Hilton Garden Inn, 45 East 33rd Street	Commercial: hotel (208 rooms)	See project site 3, above	2021
13	313-317 East 46th Street	Residential: 75 units	Included in background growth	2021
14	10 U.N. Plaza, 345 East 46th Street	Residential: 90 units	Included in background growth	2014
15	36 East 51st Street	Commercial: 65,276 gsf office, 4,000 gsf retail	See project site 8, above	2015
16	614 Lexington Avenue	Mixed commercial/residential: 225,504 gsf hotel (347 rooms) and residential (48 units)	See project site 2, above	2021
17	Baccarat Hotel and Residences, 18-20 West 53rd Street	Mixed commercial/residential: hotel (114 rooms) and residential (70 units)	See project site 2, above	2014
18	Hilton Garden Inn, 208-210 East 52nd Street	Commercial: hotel (225 rooms)	See project site 3, above	2014

Table 10-23, cont'd
No Build Projects Expected to be Complete by 2021

Map Ref. No.[1]	Project Name/ Address	Development Program	Transportation Assumptions	Status/ Build Year[2]
Development Projects Within ½-Mile				
19	318 East 48th Street	Commercial: 33,320 gsf office	Included in background growth	2021
20	International Gem Tower, 50 West 47th Street	Commercial: 748,000 gsf office	See project site 8, above	2014[3]
21	227-235 East 44th Street	Commercial: hotel (130 rooms)	See project site 3, above	2021
22	231 East 43rd Street	Commercial: hotel (90 rooms)	See project site 3, above	2021
23	225 East 39th Street	Residential: 374,490 gsf (372 units) and 74 parking spaces	See project site 2, above	2021
24	53 West 53rd Street (Tower Verre)	Mixed commercial/residential: 125,679 gsf hotel (167 rooms) and 314,236 gsf residential (300 units)	See project site 2, above	2021
25	John Pierce Residences, 11 East 51st Street	Mixed commercial/residential: 19,322 gsf retail, 268,148 gsf residential (269 units)	See project site 2, above	2021
26	19 East 54th Street	Commercial: 11,166 gsf retail and 164,699 gsf hotel (253 rooms)	See project site 3, above	2021
27	434 Park Avenue	Mixed commercial/residential: 75,000 gsf retail and 467,899 gsf residential (144 units)	See project site 2, above	2021
28	686-700 Third Avenue	Commercial: 7,500 gsf retail, 234,348 gsf hotel (361 rooms)	See project site 3, above	2021
29	303 East 51st Street	Mixed commercial/residential: 8,036 gsf retail and 210,039 gsf residential (112 units)	Included in background growth	2021
30	301 East 50th Street	Mixed commercial/residential: 6,200 gsf retail and 111,429 gsf residential (54 units)	Included in background growth	2021
31	325 Lexington Avenue	Mixed commercial/residential: 2,370 gsf retail and 125 residential units	Included in background growth	2014[4]
32	23 East 39th Street	Commercial: 32,871 gsf hotel (98 rooms)	See project site 3, above	2021
33	212-214 East 44th Street	Mixed commercial/residential: 2,300 gsf retail and 297,700 gsf residential (429 units)	See project site 2, above	2021
34	380 Madison Avenue	Commercial: reconstruction and remassing of building with 900,000 gsf office and 15,000 gsf retail, no increase in floor area	No change in use and floor area	2021
Development Projects Outside ½-Mile				
	616 First Avenue	Mixed commercial/residential: 2,071 gsf retail, 748,574 gsf residential (833 units), and 294 parking spaces	See project site 2, above	2021
	Hudson Yards	Mixed commercial/residential: 49,383 gsf of local retail; 3,965 hotel rooms; 6,460 residential units; 1,432,000 gsf office; 775,872 gsf destination retail; and 254,495 gsf community facility	Transportation assumptions from *CEQR Technical Manual*, *Western Rail Yard FEIS* (2009), and *No. 7 Subway Extension – Hudson Yards Rezoning and Development Program FGEIS* (2004)	2021

Table 10-23, cont'd
No Build Projects Expected to be Complete by 2021

Map Ref. No.[1]	Project Name/ Address	Development Program	Transportation Assumptions	Status/ Build Year[2]
Transportation Projects				
	East Side Access	Construction of new tunnels and platforms/concourses to connect the LIRR to GCT	Assumed complete by 2021	2021
	Pershing Square Pedestrian Plaza	Conversion of portion of Park Avenue between East 42nd Street and East 41st Street into public plaza (0.37 acres)	Assumed complete by 2021	2021
	Second Avenue Subway Phase I	East 96th Street to East 63rd Street and connection to Broadway Line	Assumed complete by 2016	2016
	No. 7 Train Extension	Extension of No. 7 Line to Eleventh Avenue and West 34th Street	Assumed complete by 2014/5	2014/5

Notes:
1. See **Figure 10-32.**
2. Projects that are currently under construction are assumed to be complete by 2015; projects for which an expected date of completion date is not available are assumed to be complete by the proposed One Vanderbilt development's Build year of 2021.
3. Construction of the International Gem Tower is substantially complete and the building is currently operating under a Temporary Certificate of Occupancy (TCO), but has yet to be fully occupied.
4. Construction of 325 Lexington Avenue is substantially complete and the building is currently operating under a TCO, but has yet to be fully occupied.

Sources: *East Midtown Rezoning and Related Actions FEIS* (2013); DCP; NYC Dept. of Buildings; *New York Times*

have long-term permanent effects on the area's traffic patterns. To reflect these patterns while providing a reasonably conservative traffic impact analysis, East Side Access's projected reduction in travel by car in the GCT area was assumed to not materialize; however, the increase in taxi trips has been incorporated into the No-Action traffic volumes.

TRAFFIC OPERATIONS

The No-Action condition traffic volumes are shown in **Figures 10-33 to 10-36** for the weekday AM, midday, PM, and Saturday peak hours. The No-Action condition traffic volumes were projected by layering on top of the existing traffic volumes the following: background growth, trips generated by the discrete No Build projects in the area, traffic diversions due to changes in the street network, and incremental trips from the No-Action building. A summary of the 2021 No-Action condition traffic analysis results is presented in **Table 10-24**. Details on level-of-service, v/c ratios, and average delays are presented in **Tables 10-25 and 10-26**.

In addition, as mentioned above in the "2014 Existing Conditions" section, there were construction activities along southbound Vanderbilt Avenue at East 44th Street and westbound East 47th Street at Madison Avenue during the 2014 traffic data collection. These temporary conditions were assumed to be restored and the necessary traffic diversions and adjustments were made in the 2021 No-Action condition analyses. Between the Draft and Final of this EIS, DOT implemented signal timing changes at two study area intersections. At Third Avenue and East 41st Street, generally 5 seconds of green time were reallocated from East 41st Street to Third Avenue, and at Sixth Avenue and West 42nd Street, 4 seconds of green time were reallocated from Sixth Avenue to West 42nd Street. These signal timing changes have been

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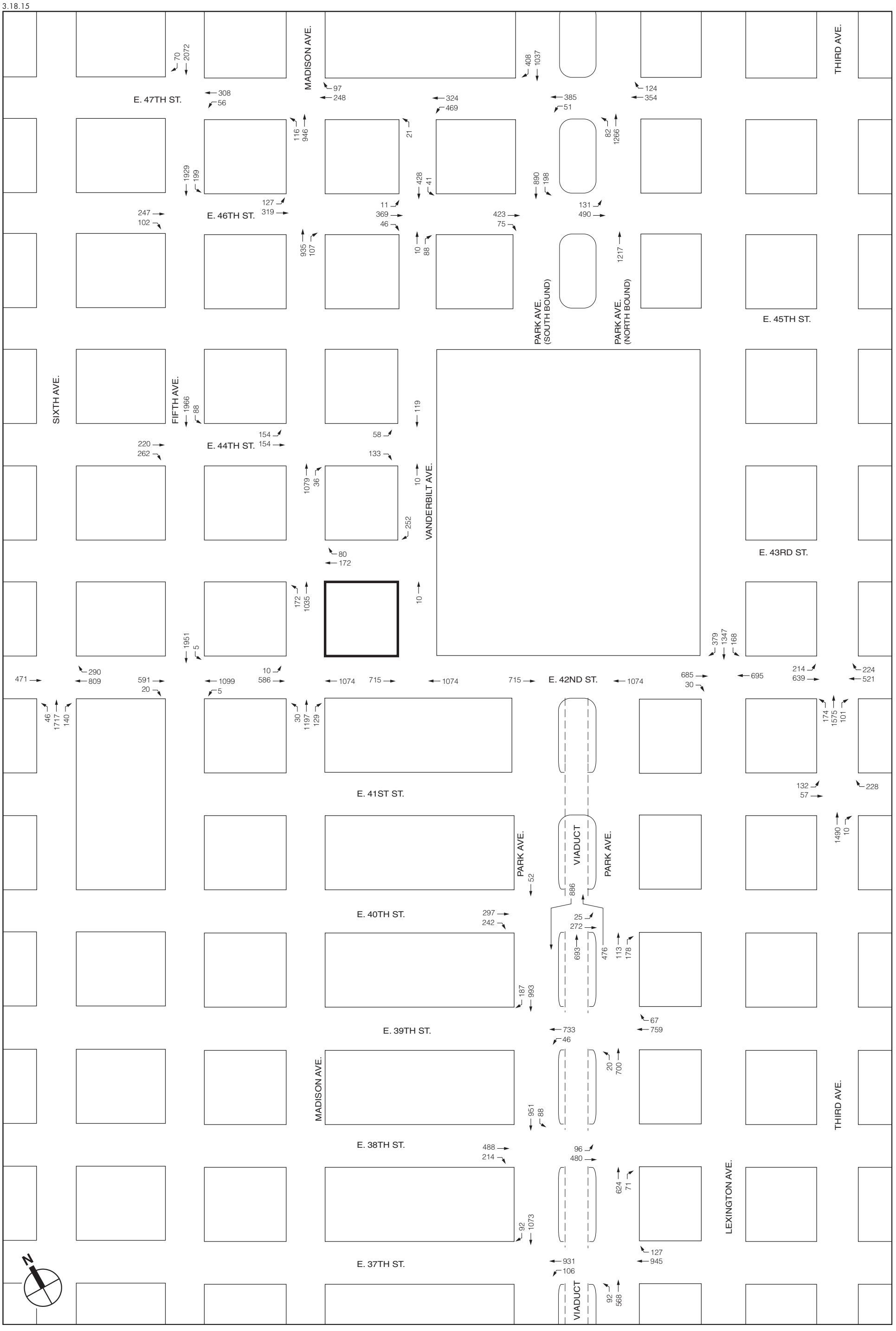

2021 No-Action Traffic Volumes
Weekday AM Peak Hour

Figure 10-33

Vanderbilt Corridor and One Vanderbilt

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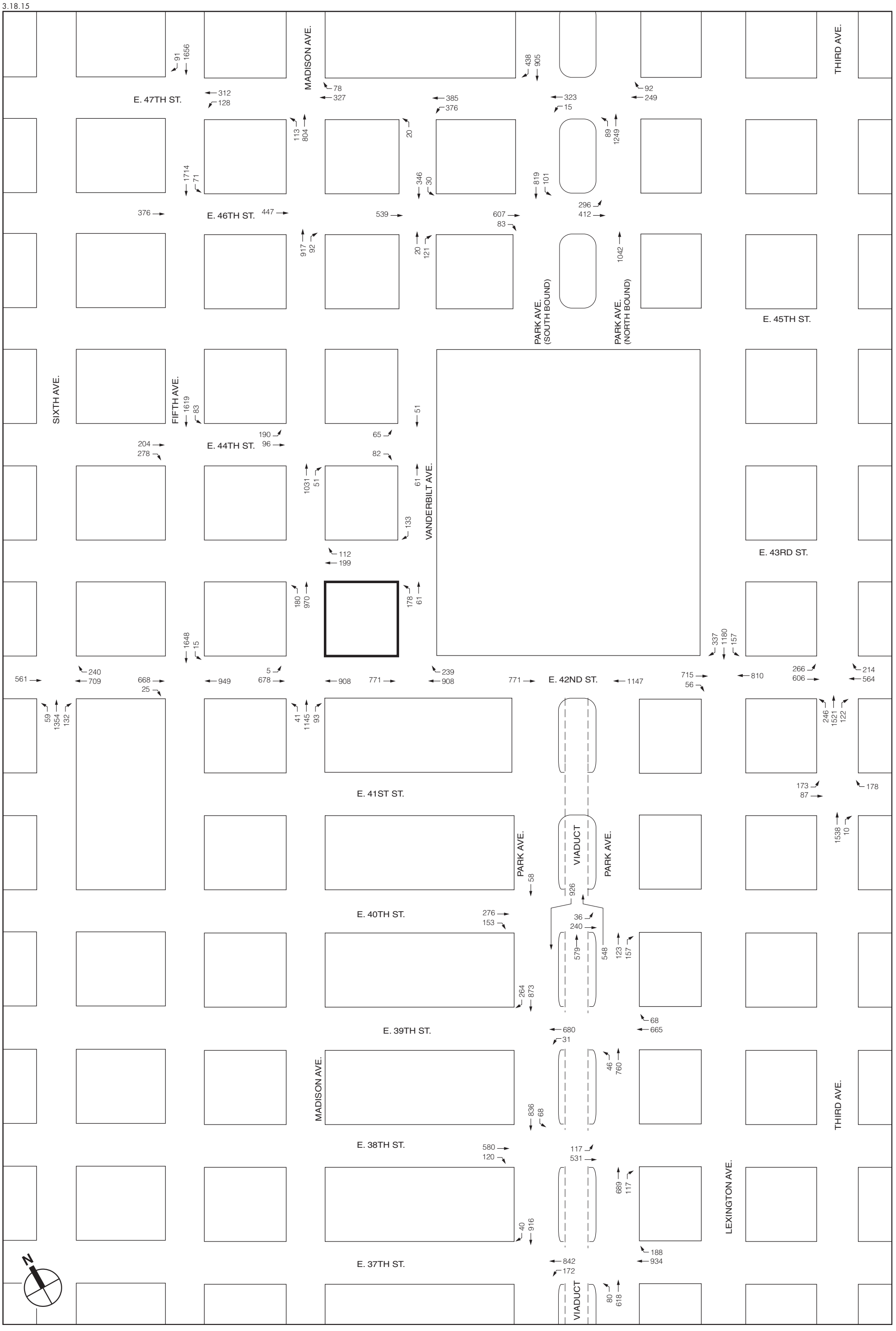


One Vanderbilt Development Site

NOT TO SCALE

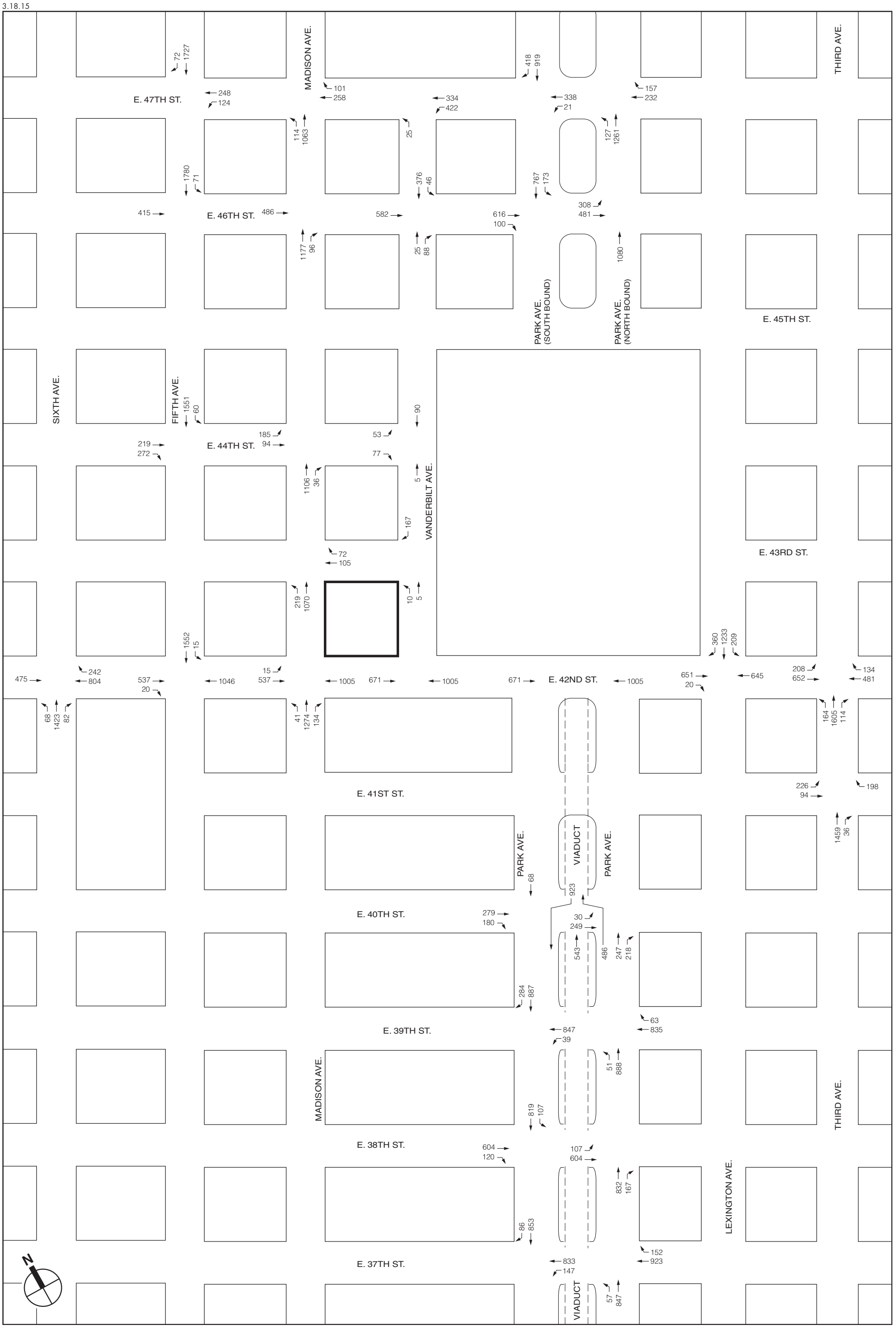
2021 No-Action Traffic Volumes
Weekday Midday Peak Hour

Figure 10-34

Vanderbilt Corridor and One Vanderbilt

This figure has been updated for the FEIS

3.18.15



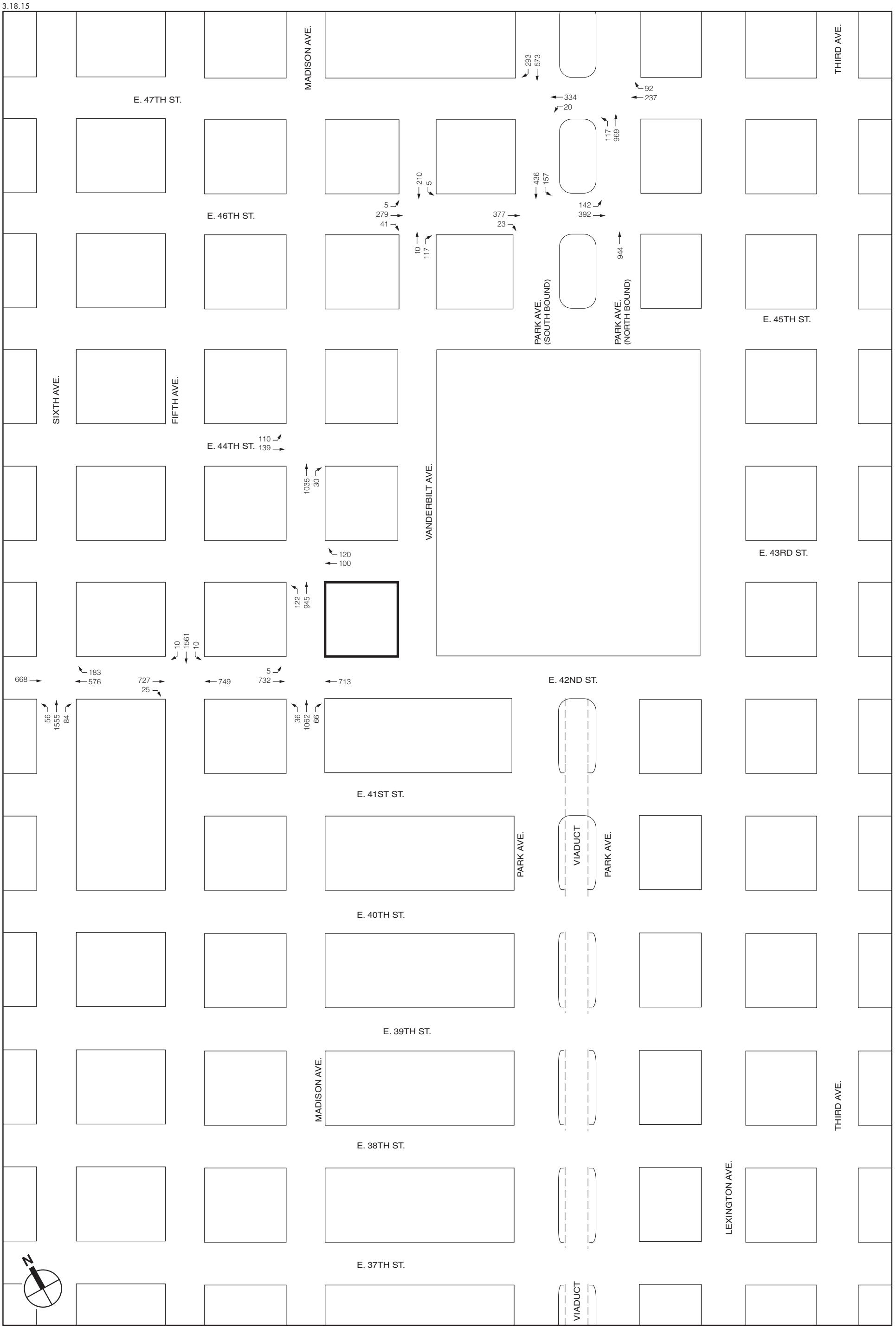
One Vanderbilt Development Site

NOT TO SCALE

2021 No-Action Traffic Volumes
Weekday PM Peak Hour
Figure 10-35

Vanderbilt Corridor and One Vanderbilt
This figure has been updated for the FEIS

3.18.15



One Vanderbilt Development Site

NOT TO SCALE

2021 No-Action Traffic Volumes
Saturday Peak Hour

Figure 10-36

Vanderbilt Corridor and One Vanderbilt

This figure has been updated for the FEIS

Table 10-24
Summary of 2021 No-Action Traffic Analysis Results

Level of Service	Analysis Peak Hours			
	Weekday AM	Weekday Midday	Weekday PM	Saturday
Signalized Intersections				
Lane Groups at LOS A/B/C	57	56	59	31
Lane Groups at LOS D	15	18	17	3
Lane Groups at LOS E	9	6	4	0
Lane Groups at LOS F	11	9	12	0
Total	92	89	92	34
Lane Groups with v/c ≥ 0.90	25	22	23	0
Unsignalized Intersections				
Lane Groups at LOS A/B/C	8	8	8	0
Lane Groups at LOS D	0	0	0	0
Lane Groups at LOS E	0	0	0	0
Lane Groups at LOS F	0	0	0	0
Total	8	8	8	0
Lane Groups with v/c ≥ 0.90	0	0	0	0

Notes: LOS = Level-of-Service; v/c = volume-to-capacity ratio

Table 10-25
2014 Existing and 2021 No-Action Conditions Level of Service Analysis
Signalized Intersections

	Weekday AM								Weekday Midday								Weekday PM								Saturday							
	2014 Existing				2021 No-Action				2014 Existing				2021 No-Action				2014 Existing				2021 No-Action				2014 Existing				2021 No-Action			
Int.	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	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	1.05	115.8	F	L	1.19	161.2	F	L	1.05	112.1	F	L	1.19	158.0	F	L	0.99	101.0	F	L	1.15	148.8	F								
	T	1.05	75.8	E	T	1.20	129.5	F	T	0.88	39.4	D	T	1.01	62.8	E	T	0.98	55.9	E	T	1.14	106.0	F								
WB	T	0.88	49.5	D	T	0.99	67.1	E	T	0.85	45.9	D	T	0.90	51.5	D	T	0.69	37.7	D	T	0.78	41.3	D								
	R	1.05	109.4	F	R	1.08	116.5	F	R	1.05	111.7	F	R	1.07	117.7	F	R	1.01	114.9	F	R	1.04	123.3	F								
NB	LT	0.73	23.3	C	LT	0.98	41.6	D	LT	0.80	25.2	C	LT	1.07	68.1	E	LT	0.70	22.6	C	LT	0.95	35.4	C								
	R	0.32	19.9	B	R	0.33	20.3	C	R	0.52	26.4	C	R	0.55	27.9	C	R	0.40	21.9	C	R	0.41	22.4	C								
	Int.		48.3	D	Int.		74.4	E	Int.		41.8	D	Int.		72.5	E	Int.		39.8	D	Int.		61.2	E								
Third Avenue & East 41st Street																																
EB	LT	0.44	20.5	C	LT	0.53	26.4	C	LT	0.75	32.4	C	LT	0.88	51.1	D	LT	0.92	51.1	D	LT	1.08	98.9	F								
WB	R	0.68	29.3	C	R	0.82	45.0	D	R	0.64	29.0	C	R	0.76	41.7	D	R	0.67	29.4	C	R	0.80	44.1	D								
NB	T	0.52	16.0	B	T	0.63	13.7	B	T	0.52	16.0	B	T	0.63	13.7	B	T	0.50	15.6	B	T	0.60	13.4	B								
	R	0.04	12.2	B	R	0.04	9.0	A	R	0.06	12.7	B	R	0.05	9.0	A	R	0.20	15.3	B	R	0.17	11.2	B								
	Int.		18.1	B	Int.		18.9	B	Int.		19.8	B	Int.		22.0	C	Int.		23.8	C	Int.		34.2	C								
Lexington Avenue & East 42nd Street																																
EB	T	0.70	30.6	C	T	0.82	35.9	D	-	-	-	-	-	-	-	-	T	0.68	30.0	C	T	0.83	36.3	D								
	R	0.32	30.6	C	R	0.32	30.6	C	-	-	-	-	-	-	-	-	R	0.24	27.3	C	R	0.24	27.3	C								
	-	-	-	-	-	-	-	-	TR	0.98	58.0	E	TR	1.12	100.7	F	-	-	-	-	-	-	-	-								
WB	T	0.74	32.0	C	T	0.85	37.4	D	T	0.96	52.6	D	T	1.03	69.6	E	T	0.64	28.8	C	T	0.73	31.5	C								
SB	L	0.50	18.2	B	L	0.51	18.5	B	L	0.47	17.4	B	L	0.48	17.6	B	L	0.61	22.0	C	L	0.63	22.5	C								
	T	0.70	17.0	B	T	0.73	17.5	B	T	0.62	15.4	B	T	0.64	15.8	B	T	0.63	15.7	B	T	0.65	16.0	B								
	R	0.59	21.3	C	R	1.20	135.5	F	R	0.54	19.5	B	R	1.07	88.2	F	R	0.41	15.9	B	R	1.12	104.5	F								
	Int.		23.6	C	Int.		39.2	D	Int.		35.7	D	Int.		57.5	E	Int.		22.2	C	Int.		34.2	C								
Park Avenue & East 47th Street																																
WB	LT	0.65	26.9	C	LT	0.73	30.5	C	LT	0.46	21.5	C	LT	0.50	22.5	C	LT	0.48	21.8	C	LT	0.50	22.4	C	LT	0.49	22.1	C	LT	0.50	22.5	C
	R	0.36	20.8	C	R	0.39	21.5	C	R	0.25	18.7	B	R	0.31	19.8	B	R	0.51	24.8	C	R	0.59	28.0	C	R	0.21	17.7	B	R	0.25	18.2	B
NB	L**	0.00	34.0	C	L**	0.00	34.5	C	L**	0.00	33.9	C	L**	0.00	34.4	C	L**	0.00	34.3	C	L**	0.00	35.4	D	L**	0.00	35.5	D	L**	0.00	36.2	D
	LT	0.51	18.1	B	LT	0.53	18.4	B	LT	0.70	21.7	C	LT	0.73	22.5	C	LT	0.51	18.1	B	LT	0.55	18.6	B	LT	0.56	19.1	B	LT	0.59	19.6	B
SB	T	0.55	18.8	B	T	0.57	19.2	B	-	-	-	-	-	-	-	-	T	0.46	17.6	B	T	0.49	18.0	B	-	-	-	-	-	-	-	-
	R	0.82	40.0	D	R	1.27	167.4	F	-	-	-	-	-	-	-	-	R	0.70	29.4	C	R	1.16	122.8	F	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	TR	0.80	25.1	C	TR	0.96	38.1	D	-	-	-	-	-	-	-	-	TR	0.44	17.4	B	TR	0.52	18.6	B
	Int.		21.6	C	Int.		38.6	D	Int.		22.3	C	Int.		29.6	C	Int.		20.1	C	Int.		33.3	C	Int.		20.7	C	Int.		20.3	C
Park Avenue & East 46th Street																																
EB	LT	0.38	18.3	B	LT	0.40	18.6	B	LT	0.56	21.1	C	LT	0.59	21.8	C	LT	0.57	21.2	C	LT	0.64	22.9	C	LT	0.83	36.1	D	LT	0.88	41.3	D
	R	0.17	16.5	B	R	0.20	16.9	B	R	0.21	17.1	B	R	0.23	17.4	B	R	0.27	18.0	B	R	0.30	18.5	B	R	0.05	15.0	B	R	0.06	15.1	B
NB	T	0.82	26.9	C	T	0.85	28.6	C	T	0.70	22.9	C	T	0.74	23.9	C	T	0.72	23.4	C	T	0.76	24.8	C	T	0.67	22.1	C	T	0.70	22.9	C
SB	L**	0.00	35.1	D	L**	0.00	35.3	D	L**	0.00	31.5	C	L**	0.00	31.5	C	L**	0.00	33.5	C	L**	0.00	33.7	C	L**	0.00	32.9	C	L**	0.00	33.0	C
	LT	0.78	26.0	C	LT	0.83	28.2	C	LT	0.71	23.7	C	LT	0.76	25.3	C	LT	0.60	21.2	C	LT	0.65	22.1	C	LT	0.31	16.8	B	LT	0.35	17.3	B
	Int.		25.7	C	Int.		27.2	C	Int.		22.9	C	Int.		24.0	C	Int.		22.7	C	Int.		23.8	C	Int.		23.9	C	Int.		25.3	C
Park Avenue & East 42nd Street																																
EB	T	0.48	15.5	B	T	0.56	16.8	B	T	0.51	15.9	B	T	0.59	17.2	B	T	0.44	14.9	B	T	0.54	16.3	B								
	R	0.48	17.0	B	-	-	-	-	R	0.24	13.1	B	-	-	-	-	R	0.25	13.3	B	-	-	-	-								
WB	T	0.59	17.3	B	T	0.80	23.1	C	T	0.79	22.9	C	T	0.98	42.6	D	T	0.60	17.5	B	T	0.87	27.0	C								
	Int.		16.6	B	Int.		20.5	C	Int.		19.6	B	Int.		32.9	C	Int.		16.1	B	Int.		22.8	C								

Table 10-25 (cont'd)
2014 Existing and 2021 No-Action Conditions Level of Service Analysis
Signalized Intersections

		Weekday AM								Weekday Midday								Weekday PM								Saturday							
		2014 Existing				2021 No-Action				2014 Existing				2021 No-Action				2014 Existing				2021 No-Action				2014 Existing				2021 No-Action			
Int.		Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	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 40th Street																															
EB		LT	0.69	33.0	C	LT	0.75	35.9	D	LT	0.61	29.8	C	LT	0.68	32.6	C	LT	0.59	28.9	C	LT	0.67	31.7	C								
		R	0.41	26.2	C	R	0.96	70.8	E	R	0.32	24.1	C	R	0.62	33.8	C	R	0.42	26.5	C	R	0.73	40.2	D								
		T (Tunnel				T (Tunnel				T (Tunnel				T (Tunnel				T (Tunnel				T (Tunnel											
NB		Exit)	0.89	32.6	C	Exit)	0.93	37.5	D	Exit)	0.71	21.0	C	Exit)	0.74	22.2	C	Exit)	0.68	20.0	B	Exit)	0.72	21.3	C								
		T onto				T onto				T onto				T onto				T onto				T onto											
		Viaduct	0.58	17.1	B	Viaduct	0.61	17.9	B	Viaduct	0.64	18.5	B	Viaduct	0.68	19.7	B	Viaduct	0.56	16.7	B	Viaduct	0.62	18.0	B								
		TR	0.72	26.1	C	TR	0.74	27.2	C	TR	0.63	21.3	C	TR	0.64	21.7	C	TR	1.02	67.5	E	TR	1.04	72.3	E								
SB		T	0.41	14.1	B	T	0.07	10.3	B	T	0.25	12.1	B	T	0.08	10.4	B	T	0.26	12.2	B	T	0.09	10.5	B								
		T (Viaduct				T (Viaduct				T (Viaduct				T (Viaduct				T (Viaduct				T (Viaduct											
		Exit)	0.98	46.5	D	Exit)	1.05	64.2	E	Exit)	1.01	52.7	D	Exit)	1.08	75.8	E	Exit)	1.00	52.1	D	Exit)	1.09	78.7	E								
		Int.		31.4	C	Int.		43.5	D	Int.		30.8	C	Int.		40.7	D	Int.		37.4	D	Int.		48.7	D								
Park Avenue & East 39th Street																															
WB		LTR	1.05	81.2	F	LTR	1.68	339.0	F	LTR	1.05	82.6	F	LTR	1.62	313.4	F	LTR	1.05	81.0	F	LTR	1.71	355.7	F								
NB		L**	0.00	34.8	C	L**	0.00	34.6	C	L**	0.00	36.1	D	L**	0.00	36.6	D	L**	0.00	38.0	D	L**	0.00	38.7	D								
		LT	0.56	17.2	B	LT	0.55	17.0	B	LT	0.58	17.6	B	LT	0.61	18.1	B	LT	0.66	19.3	B	LT	0.69	20.0+	C								
SB		T	0.73	20.7	C	T	0.68	19.4	B	T	0.57	17.2	B	T	0.57	17.2	B	T	0.57	17.2	B	T	0.58	17.4	B								
		R	0.51	19.8	B	R	0.52	20.1	C	R	0.57	20.7	C	R	0.59	21.4	C	R	0.72	28.7	C	R	0.75	30.5	C								
		Int.		32.8	C	Int.		115.1	F	Int.		30.7	C	Int.		98.0	F	Int.		32.6	C	Int.		119.1	F								
Park Avenue & East 38th Street																															
EB		LTR	0.47	22.3	C	LTR	0.89	39.5	D	LTR	0.55	23.7	C	LTR	0.88	37.3	D	LTR	0.47	22.1	C	LTR	0.82	32.4	C								
NB		TR	0.56	17.2	B	TR	0.58	17.5	B	TR	0.63	18.5	B	TR	0.65	19.2	B	TR	0.75	21.7	C	TR	0.78	22.9	C								
SB		L**	0.00	41.0	D	L**	0.00	39.2	D	L**	0.00	38.6	D	L**	0.00	38.6	D	L**	0.00	38.2	D	L**	0.00	38.6	D								
		LT	0.79	22.9	C	LT	0.74	21.1	C	LT	0.72	20.7	C	LT	0.72	20.7	C	LT	0.69	19.8	B	LT	0.70	20.1	C								
		Int.		21.8	C	Int.		25.9	C	Int.		21.1	C	Int.		25.4	C	Int.		21.7	C	Int.		25.1	C								
Park Avenue & East 37th Street																															
WB		L	0.20	17.3	B	L	0.21	17.4	B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-								
		TR	0.70	25.0	C	TR	0.87	33.4	C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-								
		-	-	-	-	-	-	-	-	LTR	1.05	70.3	E	LTR	1.26	151.5	F	LTR	0.90	38.4	D	LTR	1.15	106.4	F								
NB		L**	0.00	34.1	C	L**	0.00	35.3	D	L**	0.00	34.4	C	L**	0.00	35.2	D	L**	0.00	36.3	D	L**	0.00	37.2	D								
		LT	0.51	18.2	B	LT	0.55	18.9	B	LT	0.52	16.5	B	LT	0.55	17.1	B	LT	0.64	18.7	B	LT	0.68	19.5	B								
SB		TR	0.88	30.1	C	TR	0.92	34.6	C	TR	0.63	18.6	B	TR	0.68	19.6	B	TR	0.70	20.1	C	TR	0.76	21.9	C								
		Int.		25.5	C	Int.		30.2	C	Int.		37.3	D	Int.		71.2	E	Int.		25.8	C	Int.		52.0	D								
Vanderbilt Avenue & East 46th Street																															
EB		LTR	0.40	18.1	B	LTR	0.44	18.6	B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	LTR	0.62	23.9	C	LTR	0.67	25.5	C
		-	-	-	-	-	-	-	-	T	0.47	18.9	B	T	0.51	19.4	B	T	0.46	18.7	B	T	0.52	19.6	B	-	-	-	-	-	-	-	-
NB		TR	0.29	18.0	B	TR	0.30	18.2	B	TR	0.35	18.6	B	TR	0.36	18.9	B	TR	0.24	16.8	B	TR	0.30	17.7	B	TR	0.32	17.9	B	TR	0.32	18.0	B
SB		LT	0.48	20.6	C	LT	0.96	52.0	D	LT	0.43	19.6	B	LT	0.80	32.6	C	LT	0.42	19.6	B	LT	0.92	45.8	D	LT	0.21	16.2	B	LT	0.45	19.9	B
		Int.		18.9	B	Int.		35.0	C	Int.		19.0	B	Int.		24.3	C	Int.		18.7	B	Int.		30.0	C	Int.		21.0	C	Int.		22.3	C
Vanderbilt Avenue & East 42nd Street																															
EB		T	0.79	27.0	C	T	0.65	22.3	C	T	0.60	15.6	B	T	0.58	15.2	B	T	0.66	22.5	C	T	0.64	22.0	C								
WB		T	0.79	27.6	C	T	1.07	73.8	E	TR	0.79	21.6	C	TR	0.97	39.8	D	T	0.77	26.7	C	T	1.12	90.6	F								
		Int.		27.2	C	Int.		53.2	D	Int.		18.8	B	Int.		29.7	C	Int.		24.6	C	Int.		63.0	E								
Madison Avenue & East 47th Street																															
WB		T	0.59	24.9	C	T	0.56	24.6	C	T	0.67	27.4	C	T	0.76	32.9	C	T	0.48	22.1	C	T	0.51	23.1	C								
		R	0.56	46.7	D	R	0.57	47.2	D	R	0.49	43.4	D	R	0.48	43.0	D	R	0.49	43.1	D	R	0.52	44.2	D								
NB		L	0.54	21.9	C	L	0.57	23.6	C	L	0.69	35.5	D	L	0.75	40.8	D	L	0.53	22.5	C	L	0.58	25.4	C								
		T	0.85	24.4	C	T	0.88	26.4	C	T	0.63	16.3	B	T	0.67	17.1	B	T	0.79	20.5	C	T	0.83	22.5	C								
		Int.		25.8	C	Int.		27.3	C	Int.		22.7	C	Int.		24.8	C	Int.		22.4	C	Int.		24.2	C								
Madison Avenue & East 46th Street																															
EB		LT	0.48	22.6	C	LT	0.52	23.3	C	T	0.44	21.6	C	T	0.48	22.2	C	T	0.46	21.9	C	T	0.53	23.1	C								
NB		T	0.86	23.8	C	T	0.89	26.5	C	T	0.71	16.7	B	T	0.75	18.0	B	T	0.89	25.5	C	T	0.95	32.0	C								
		R	0.31	12.3	B	R	0.31	12.4	B	R	0.25	11.5	B	R	0.26	11.6	B	R	0.27	11.7	B	R	0.27	11.8	B								
		Int.		22.6	C	Int.		24.5	C	Int.		18.0	B	Int.		19.0	B	Int.		23.7	C	Int.		28.1	C								
Madison Avenue & East 44th Street																															
EB		LT	1.05	85.2	F	LT	0.95	60.9	E	LT	0.84	45.0	D	LT	0.85	45.6	D	LT	0.81	41.9	D	LT	0.87	48.4	D	LT	0.68	30.9	C	LT	0.66	30.2	C
NB		T	1.04	56.2	E	T	1.10	77.5	E	T	0.82	20.8	C	T	0.89	24.8	C	T	0.91	27.3	C	T	0.98	37.8	D	T	0.74	17.5	B	T	0.78	18.7	B
		R	0.19	11.5	B	R	0.20	11.6	B	R	0.24	12.4	B	R	0.25	12.6	B	R	0.22	12.5	B	R	0.23	12.8	B	R	0.10	9.7	A	R	0.10	9.7	A
		Int.		62.5	E	Int.		72.1	E	Int.		25.9	C	Int.		28.7	C	Int.		29.9	C	Int.		39.3	D	Int.		20.3	C	Int.		21.0	C
Madison Avenue & East 43rd Street																															
WB		T	0.26	20.0+	C	T	0.38	21.9	C	T	0.37	21.7	C	T	0.42	22.6	C	T	0.13	18.2	B	T	0.22	19.4	B	T	0.43	22.7	C	T	0.21	19.2	B
		R	0.25	21.0	C	R	0.34	22.9	C	R	0.35	22.5	C	R	0.40	23.6	C	R	0.23	20.6	C	R	0.30	22.1	C	R	0.30	21.0	C	R	0.33	21.5	C
NB		L	0.51	19.4	B	L	0.82	42.2	D	L	0.66	29.6	C	L	0.99	80.0+	F	L	0.80	42.5	D	L	1.20	147.6	F	L	0.21	10.8	B	L	0.36	13.2	B
		T	0.85	22.2	C	T	0.88	24.6	C	T	0.67	15.6	B	T	0.72	16.7	B	T	0.77	18.2	B	T	0.82	20.0	B	T	0.64	14.7	B	T	0.66	15.2	B
		Int.		21.7	C	Int.		26.2	C	Int.		18.3	B	Int.		25.8	C	Int.		21.1	C	Int.		39.1	D	Int.		16.3	B	Int.		16.0	B
Madison Avenue & East 42nd Street																															
EB		LT	0.87	36.4	D	LT	0.74	29.4	C	LT	0.84	34.2	C	LT	0.80	32.0	C	LT	0.75	29.5	C	LT	0.78	31.0	C	LT	0.78	30.3	C	LT	0.85	34.9	C
WB		T	0.83	32.3	C	T	1.12	94.3	F	T	0.73	27.8	C	T	0.96	45.9	D	T	0.71	27.2	C	T	1.02	61.6	E	T	0.59	24.1	C	T	0.75	28.7	C
NB		LT	1.04	56.2	E	LT	1.14	90.2	F	LT	0.94	30.4	C	LT	1.05	55.5	F	L	0.10	12.2	B	L	0.10	12.3	B	L	0.07	11.9	B	L	0.07	11.9	B
		R	0.38	13.9	B	R	0.40	14.3	B	R	0.28	11.9	B	R	0.29	12.0	B	T	0.89	24.2	C	T	0.99	39.1	D	T	0.73	16.9	B	T	0.79	18.7	B
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	0.39	13.8	B	R	0.40	14.1	B	R	0.16	10.1	B	R	0.16	10.1	B
		Int.		42.1	D	Int.		76.8	E	Int.		30.1	C	Int.		45.6	D	Int.		25.6	C	Int.		43.4	D	Int.		22.3	C	Int.		25.6	C
Fifth Avenue & 47th Street																															
WB		L	0.66	48.6	D	L	0.27	35.4	D	L	0.67	49.2	D	L	0.56	43.4	D	L	0.74	52.6	D	L	0.51	41.2	D								
		T	0.57	23.3	C	T	0.63	25.1	C	T	0.54	22.6	C	T	0.58	23.7	C	T	0.38	19.1	B	T	0.44	20.1	C								
SB		T	0.86	22.6	C	T	1.22	124.8	F	T	0.68	17.5	B	T	0.97	35.1	D	T	0.69	17.7	B	T	0.98	36.4	D								
		R	0.32	17.0	B	R	0.36	17.9	B	R	0.69	39.7	D	R	0.69	40.3	D	R	0.54	29.2	C	R	0.55	30.2	C								
		Int.		24.1	C	Int.		106.6	F	Int.		21.4	C	Int.		34.3	C	Int.		21.3	C	Int.		34.6	C								
Fifth Avenue & 46th Street																															
EB		TR	0.40	21.3	C	TR	0.39	21.0	C	T	0.36	20.5	C	T	0.39	21.0	C	T	0.35	20.3	C	T	0.41	21.1	C								
SB		LT	0.92	22.5	C	LT	1.11	72.6	E	LT	0.66	14.2	B	LT	0.93	25.3	C	LT	0.74	15.5	B	LT	1.01	40.5	D								
		Int.		22.3	C	Int.		65.5	E	Int.		15.3	B	Int.		24.5	C	Int.		16.3	B	Int.		37.0	D								
Fifth Avenue & 44th Street																															
EB		T	0.34	21.0	C	T	0.40	22.1	C	T	0.32	20.6	C	T	0.36	21.3	C	T	0.27	19.8	B	T	0.38	21.5	C								
		R	0.86	51.8	D	R	0.94	65.4	E	R	0.90	58.3	E	R	1.01	82.0	F	R	0.94	69.4	E	R	1.12	118.5	F								
SB		LT	0.87	19.8	B	LT	1.12	80.9	F	LT	0.66	14.2	B	LT	0.89	22.3	C	LT	0.66	14.2	B	LT	0.86	20.5	C								
		Int.		23.0	C	Int.		74.2	E	Int.		20.1	C	Int.		29.8	C	Int.		21.1	C	Int.		33.3	C								

Table 10-25 (cont'd)
2014 Existing and 2021 No-Action Conditions Level of Service Analysis
Signalized Intersections

		Weekday AM								Weekday Midday								Weekday PM								Saturday							
		2014 Existing				2021 No-Action				2014 Existing				2021 No-Action				2014 Existing				2021 No-Action				2014 Existing				2021 No-Action			
Int.		Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	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	0.80	31.2	C	T	0.63	25.2	C	T	0.71	27.4	C	T	0.68	26.4	C	T	0.64	25.5	C	T	0.62	24.9	C	T	0.70	27.1	C	T	0.77	29.6	C
	R	0.17	21.1	C	R	0.17	21.1	C	R	0.23	22.8	C	R	0.23	22.8	C	R	0.20	21.8	C	R	0.20	21.8	C	R	0.21	22.0	C	R	0.21	22.0	C
WB	LT	0.90	38.3	D	LT	1.20	125.9	F	LT	0.84	33.8	C	LT	1.09	85.4	F	LT	0.85	33.9	C	LT	1.21	131.0	F	LT	0.68	26.6	C	LT	0.85	34.0	C
SB	LT	0.72	15.3	B	LT	1.00	36.6	D	LT	0.61	13.4	B	LT	0.85	19.7	B	LT	0.58	13.1	B	LT	0.82	18.4	B	LT	0.55	12.7	B	LT	0.76	16.5	B
	R	0.00	11.3	B	R	0.00	11.3	B	R	0.00	11.3	B	R	0.00	11.3	B	R	0.00	11.3	B	R	0.00	11.3	B	R	0.05	12.0	B	R	0.05	12.0	B
	Int.		24.4	C	Int.		62.5	E	Int.		21.8	C	Int.		40.6	D	Int.		21.6	C	Int.		58.9	E	Int.		19.5	B	Int.		24.3	C
Sixth Avenue & West 42nd Street																															
EB	T	0.91	44.2	D	T	0.59	24.4	C	T	0.78	33.5	C	T	0.63	25.6	C	T	0.68	29.6	C	T	0.56	23.8	C	T	0.78	33.3	C	T	0.76	29.4	C
WB	T	0.64	28.4	C	T	0.85	33.7	C	T	0.60	27.2	C	T	0.74	28.5	C	T	0.59	27.1	C	T	0.82	32.3	C	T	0.52	25.7	C	T	0.61	24.7	C
	R	1.05	96.8	F	R	0.99	75.0	E	R	1.05	104.1	F	R	0.94	68.4	E	R	1.05	103.1	F	R	0.94	66.4	E	R	0.84	56.9	E	R	0.75	41.5	D
NB	LT	0.63	10.9	B	LT	0.75	15.8	B	LT	0.50	9.5	A	LT	0.59	13.2	B	LT	0.56	10.1	B	LT	0.66	14.3	B	-	-	-	-	-	-	-	-
	R	0.38	11.2	B	R	0.47	16.4	B	R	0.32	10.0+	B	R	0.42	14.6	B	R	0.21	8.6	A	R	0.28	12.1	B	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	LTR	0.48	9.2	A	LTR	0.55	12.5	A
	Int.		28.2	C	Int.		26.0	C	Int.		25.4	C	Int.		23.2	C	Int.		24.3	C	Int.		24.0	C	Int.		20.2	C	Int.		20.4	C

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.

Table 10-26
2014 Existing and 2021 No-Action Conditions Level of Service Analysis
Unsignalized Intersections

		Weekday AM								Weekday Midday								Weekday PM								Saturday							
		2014 Existing				2021 No-Action				2014 Existing				2021 No-Action				2014 Existing				2021 No-Action				2014 Existing				2021 No-Action			
Int.		Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS
Vanderbilt Avenue & East 47th Street																															
WB	L	0.29	9.0	A	L	0.61	13.9	B	L	0.26	8.8	A	L	0.50	11.5	B	L	0.24	8.6	A	L	0.56	12.5	B								
	T	0.48	10.8	B	T	0.40	9.8	A	T	0.51	11.2	B	T	0.49	11.0	B	T	0.46	10.4	B	T	0.42	10.0	A								
NB	L	0.03	8.7	A	L	0.04	9.0	A	L	0.04	8.6	A	L	0.04	8.8	A	L	0.05	8.6	A	L	0.05	8.9	A								
Vanderbilt Avenue & East 44th Street																															
EB	LR	0.27	8.1	A	LR	0.25	8.5	A	LR	0.19	7.8	A	LR	0.18	8.0	A	LR	0.16	7.3	A	LR	0.17	7.8	A								
NB	T	0.02	7.7	A	T	0.02	7.8	A	T	0.09	7.8	A	T	0.09	7.9	A	T	0.01	7.3	A	T	0.01	7.5	A								
SB	T	0.00	7.5	A	T	0.18	8.4	A	T	0.00	7.4	A	T	0.08	7.8	A	T	0.00	7.3	A	T	0.13	7.9	A								
Vanderbilt Avenue & East 43rd Street																															
NB	LT	0.01	9.1	A	LT	0.01	9.1	A	LT	0.31	11.1	B	LT	0.34	11.7	B	LT	0.02	9.4	A	LT	0.02	9.9	A								
SB	R	0.18	9.1	A	R	0.26	9.5	A	R	0.11	8.8	A	R	0.15	8.9	A	R	0.12	8.8	A	R	0.19	9.1	A								

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

accounted for in the analysis of the No-Action condition. Based on the analysis results presented in **Tables 10-25 and 10-26**, the majority of the approaches/lane-groups will operate at the same LOS as in the existing conditions. The following approaches/lane-groups are expected to operate at deteriorated LOS when compared to the existing conditions:

Third Avenue

- Eastbound through at the Third Avenue and East 42nd Street intersection will deteriorate to LOS F with a v/c ratio of 1.20 and a delay of 129.5 spv during the weekday AM peak hour, to LOS E with a v/c ratio of 1.01 and a delay of 62.8 spv during the weekday midday peak hour, and to LOS F with a v/c ratio of 1.14 and a delay of 106.0 spv during the weekday PM peak hour;
- Westbound through at the Third Avenue and East 42nd Street intersection will deteriorate to LOS E with a v/c ratio of 0.99 and a delay of 67.1 spv during the weekday AM peak hour;
- Northbound left-turn/through at the Third Avenue and East 42nd Street intersection will deteriorate to LOS E with a v/c ratio of 1.07 and a delay of 68.1 spv during the weekday midday peak hour;
- Eastbound left-turn/through at the Third Avenue and East 41st Street intersection will deteriorate to LOS F with a v/c ratio of 1.08 and a delay of 98.9 spv during the weekday PM peak hour.

Lexington Avenue

- Eastbound approach at the Lexington Avenue and East 42nd Street intersection will deteriorate to LOS F with a v/c ratio of 1.12 and a delay of 100.7 spv during the weekday midday peak hour;
- Westbound through at the Lexington Avenue and East 42nd Street intersection will deteriorate to LOS E with a v/c ratio of 1.03 and a delay of 69.6 spv during the weekday midday peak hour; and
- Southbound right-turn at the Lexington Avenue and East 42nd Street intersection will deteriorate to LOS F with a v/c ratio of 1.20 and a delay of 135.5 spv during the weekday AM peak hour, to LOS F with a v/c ratio of 1.07 and a delay of 88.2 spv during the weekday midday peak hour, and to LOS F with a v/c ratio of 1.12 and a delay of 104.5 spv during the weekday PM peak hour.

Park Avenue

- Southbound right-turn at the Park Avenue and East 47th Street intersection will deteriorate to LOS F with a v/c ratio of 1.27 and a delay of 167.4 spv during the weekday AM peak hour and to LOS F with a v/c ratio of 1.16 and a delay of 122.8 spv during the weekday PM peak hour;
- Eastbound right-turn at the Park Avenue and East 40th Street intersection will deteriorate to LOS E with a v/c ratio of 0.96 and a delay of 70.8 spv during the weekday AM peak hour;
- Southbound through (Viaduct Exit) at the Park Avenue and East 40th Street intersection will deteriorate to LOS E with a v/c ratio of 1.05 and a delay of 64.2 spv during the weekday AM peak hour, to LOS E with a v/c ratio of 1.08 and a delay of 75.8 spv during the weekday midday peak hour, and to LOS E with a v/c ratio of 1.09 and a delay of 78.7 spv during the weekday PM peak hour; and
- Westbound approach at the Park Avenue and East 37th Street intersection will deteriorate to LOS F with a v/c ratio of 1.26 and a delay of 151.5 spv during the weekday midday peak hour and to LOS F with a v/c ratio of 1.15 and a delay of 106.4 spv during the weekday PM peak hour.

Vanderbilt Avenue

- Southbound approach at the Vanderbilt Avenue and East 46th Street intersection will deteriorate to LOS D with a v/c ratio of 0.96 and a delay of 52.0 spv during the weekday AM peak hour and to LOS D with a v/c ratio of 0.92 and a delay of 45.8 spv during the weekday PM peak hour; and
- Westbound through at the Vanderbilt Avenue and East 42nd Street intersection will deteriorate to LOS E with a v/c ratio of 1.07 and a delay of 73.8 spv during the weekday AM peak hour and to LOS F with a v/c ratio of 1.12 and a delay of 90.6 spv during the weekday PM peak hour.

Madison Avenue

- Eastbound approach at the Madison Avenue and East 44th Street intersection will deteriorate within LOS D with a v/c ratio of 0.85 and a delay of 45.6 spv during the weekday midday peak hour and within LOS D with a v/c ratio of 0.87 and a delay of 48.4 spv during the weekday PM peak hour;

- Northbound left-turn at the Madison Avenue and East 43rd Street intersection will deteriorate to LOS F with a v/c ratio of 0.99 and a delay of 80.0 spv during the weekday midday peak hour and to LOS F with a v/c ratio of 1.20 and a delay of 147.6 spv during the weekday PM peak hour;
- Westbound through at the Madison Avenue and East 42nd Street intersection will deteriorate to LOS F with a v/c ratio of 1.12 and a delay of 94.3 spv during the weekday AM peak hour, to LOS D with a v/c ratio of 0.96 and a delay of 45.9 spv during the weekday midday peak hour, and to LOS E with a v/c ratio of 1.02 and a delay of 61.6 spv during the weekday PM peak hour; and
- Northbound left-turn/through at the Madison Avenue and East 42nd Street intersection will deteriorate to LOS F with a v/c ratio of 1.14 and a delay of 90.2 spv during the weekday AM peak hour and to LOS E with a v/c ratio of 1.05 and a delay of 55.5 spv during the weekday midday peak hour.

Fifth Avenue

- Southbound through at the Fifth Avenue and 47th Street intersection will deteriorate to LOS F with a v/c ratio of 1.22 and a delay of 124.8 spv during the weekday AM peak hour;
- Southbound approach at the Fifth Avenue and 46th Street intersection will deteriorate to LOS E with a v/c ratio of 1.11 and a delay of 72.6 spv during the weekday AM peak hour;
- Eastbound right-turn at the Fifth Avenue and 44th Street intersection will deteriorate to LOS E with a v/c ratio of 0.94 and a delay of 65.4 spv during the weekday AM peak hour and to LOS F with a v/c ratio of 1.12 and a delay of 118.9 spv during the weekday PM peak hour;
- Southbound approach at the Fifth Avenue and 44th Street intersection will deteriorate to LOS F with a v/c ratio of 1.12 and a delay of 80.9 spv during the weekday AM peak hour; and
- Westbound approach at the Fifth Avenue and 42nd Street intersection will deteriorate to LOS F with a v/c ratio of 1.20 and a delay of 125.9 spv during the weekday AM peak hour, to LOS F with a v/c ratio of 1.09 and a delay of 85.4 spv during the weekday midday peak hour, and to LOS F with a v/c ratio of 1.21 and a delay of 131.0 spv during the weekday PM peak hour.

THE FUTURE WITH THE PROPOSED ACTIONS

As discussed above in Section B, "Preliminary Analysis Methodology and Screening Assessment," in the future with the proposed actions, the One Vanderbilt site would be redeveloped with an approximately 1.8 million gsf building. Overall, the proposed One Vanderbilt development would result in approximately 369, 127, 545, and 308 incremental vehicle trips during the weekday AM, midday, PM, and Saturday peak hours, respectively. The incremental auto trips were assigned to public garages in the study area. Taxi trips were assigned to the block faces along Madison Avenue, East 42nd Street, and East 43rd Street. All delivery trips were assigned to the One Vanderbilt site via DOT designated truck routes. The incremental vehicle trips are shown in **Figures 10-9 to 10-12**.

TRAFFIC OPERATIONS

The proposed One Vanderbilt development would also create a public place on Vanderbilt Avenue between East 42nd and East 43rd Streets to provide additional pedestrian circulation

space at-grade. Currently, this segment of Vanderbilt Avenue serves limited northbound traffic, which would divert to other area roadways; this diversion was accounted for in the development of future With-Action traffic networks. Since East 43rd Street serves westbound traffic and dead-ends at Vanderbilt Avenue, there would also no longer be any northbound traffic on Vanderbilt Avenue between East 43rd and East 44th Streets. It is assumed that this roadway segment would be converted from two-way to one-way southbound operations with the proposed One Vanderbilt development. As discussed earlier in Section B, "Preliminary Analysis Methodology and Screening" under "Level 2 Screening Assessment," since MTA police currently uses the east curb of northbound Vanderbilt Avenue between East 42nd and East 43rd Streets for parking/staging, the eastern half of Vanderbilt Avenue between East 43rd and East 44th Streets could serve a similar purpose, but in the southbound direction, after Vanderbilt Avenue between East 42nd and East 43rd Streets have been converted to a public place.

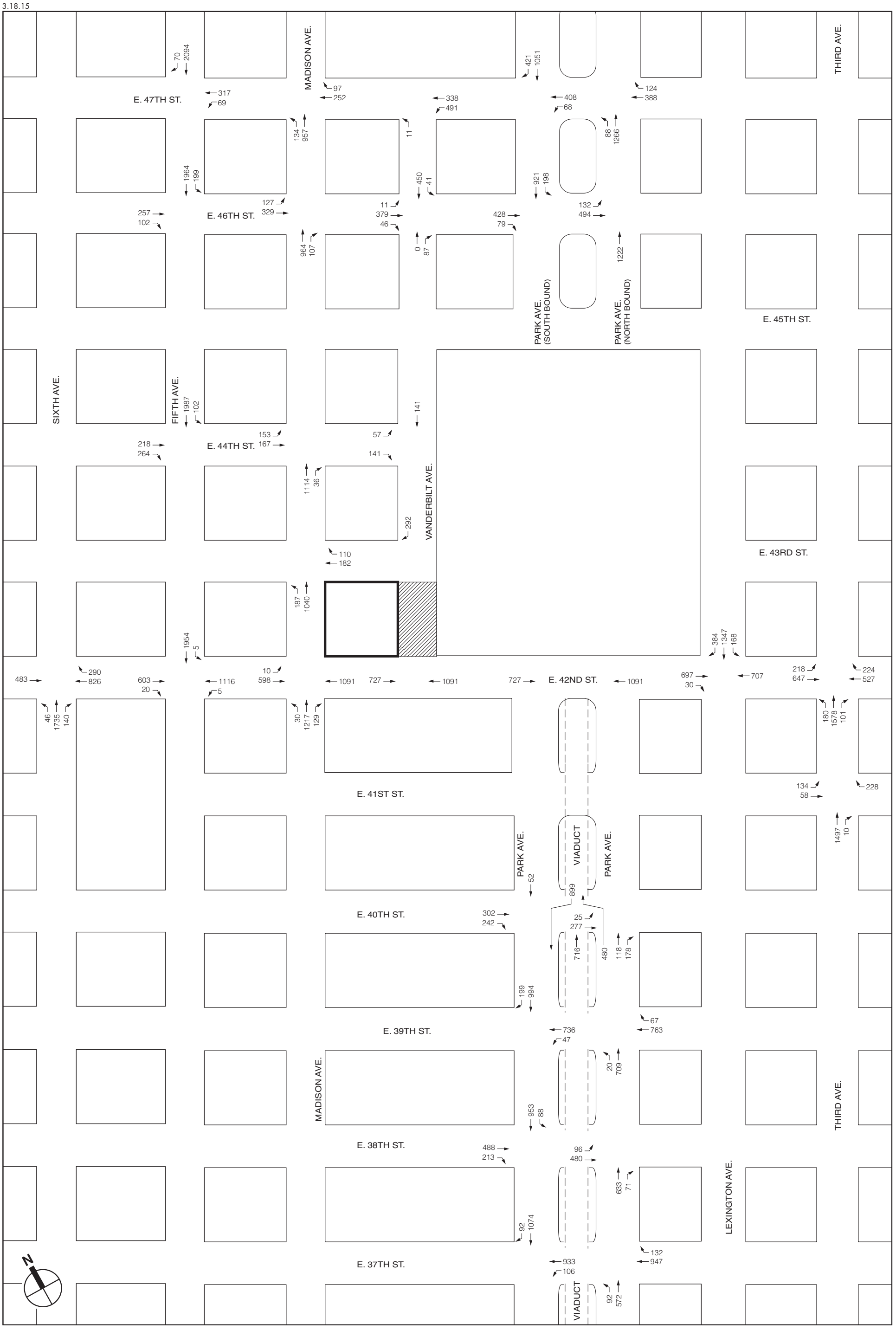
Under existing and future No-Action conditions, no turns (except for authorized/emergency vehicles) are permitted from East 42nd Street onto northbound Vanderbilt Avenue during the weekday AM and PM peak periods. At other times, westbound right-turns from East 42nd Street are permitted for general traffic. As described above, the transformation of Vanderbilt Avenue between East 42nd and East 43rd Streets into a pedestrian-only public place would result in the diversion of existing traffic to other area roadways. The authorized/emergency vehicles—primarily MTA police cars—would instead access Vanderbilt Avenue from Madison Avenue via East 44th Street or from Park Avenue via East 47th Street. For general traffic, most of which would be taxi cabs, approximately one-third is expected to remain on East 42nd Street and continue west; a portion of this traffic would be expected to head north on Sixth Avenue. Due to turn restrictions along 42nd Street at numerous north-south avenues, the remainder of the westbound 42nd Street right-turn traffic to Vanderbilt Avenue is expected to take other routes to access Vanderbilt Avenue from the north via East 44th to East 47th Streets or to be distributed to other parallel routes, such as Madison, Park, and Lexington Avenues.

The With-Action condition traffic volumes are shown in **Figures 10-37 to 10-40** for the weekday AM, midday, PM, and Saturday peak hours. The With-Action traffic volumes were constructed by layering on top of the No-Action condition traffic volumes the incremental vehicle trips shown in **Figures 10-9 to 10-12** and the traffic diversions associated with the closure of Vanderbilt Avenue between East 42nd and East 43rd Streets, as well as the conversion of Vanderbilt Avenue between East 43rd and East 44th Streets from two-way to one-way southbound operations. A summary of the 2021 With-Action condition traffic analysis results is presented in **Table 10-27**.

SIGNIFICANT ADVERSE IMPACTS

Details on level-of-service, volume-to-capacity (v/c) ratios, and average delays are presented in **Tables 10-28 and 10-29**. As discussed below, significant adverse traffic impacts were identified at 24 approaches/lane groups (of 17 different intersections). Potential measures that can be implemented to mitigate these significant adverse traffic impacts are discussed in Chapter 18, "Mitigation."

3.18.15



One Vanderbilt Development Site

Proposed Public Place

NOT TO SCALE

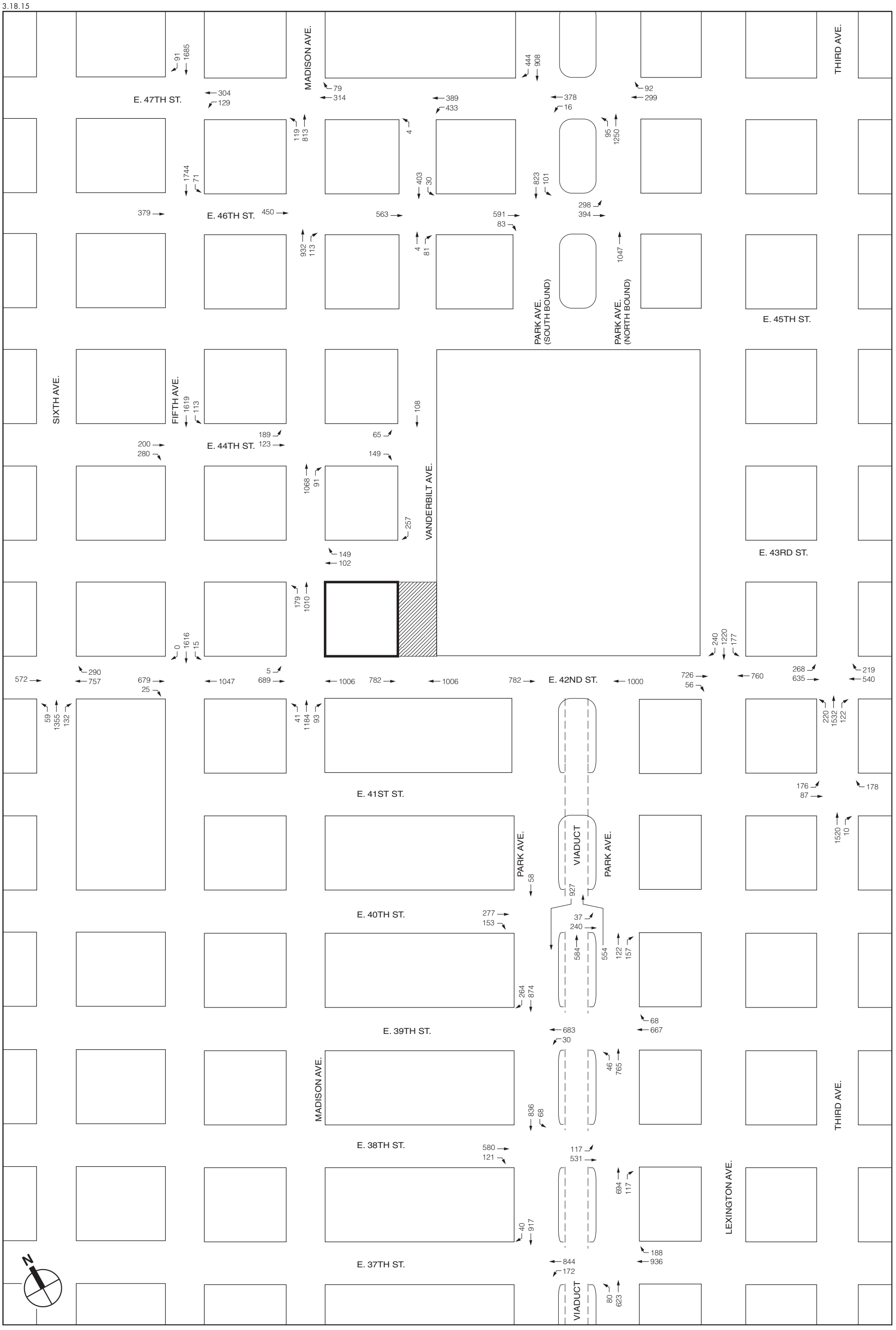
2021 With-Action Traffic Volumes
Weekday AM Peak Hour

Figure 10-37

Vanderbilt Corridor and One Vanderbilt

This figure has been updated for the FEIS

3.18.15



One Vanderbilt Development Site

Proposed Public Place

NOT TO SCALE

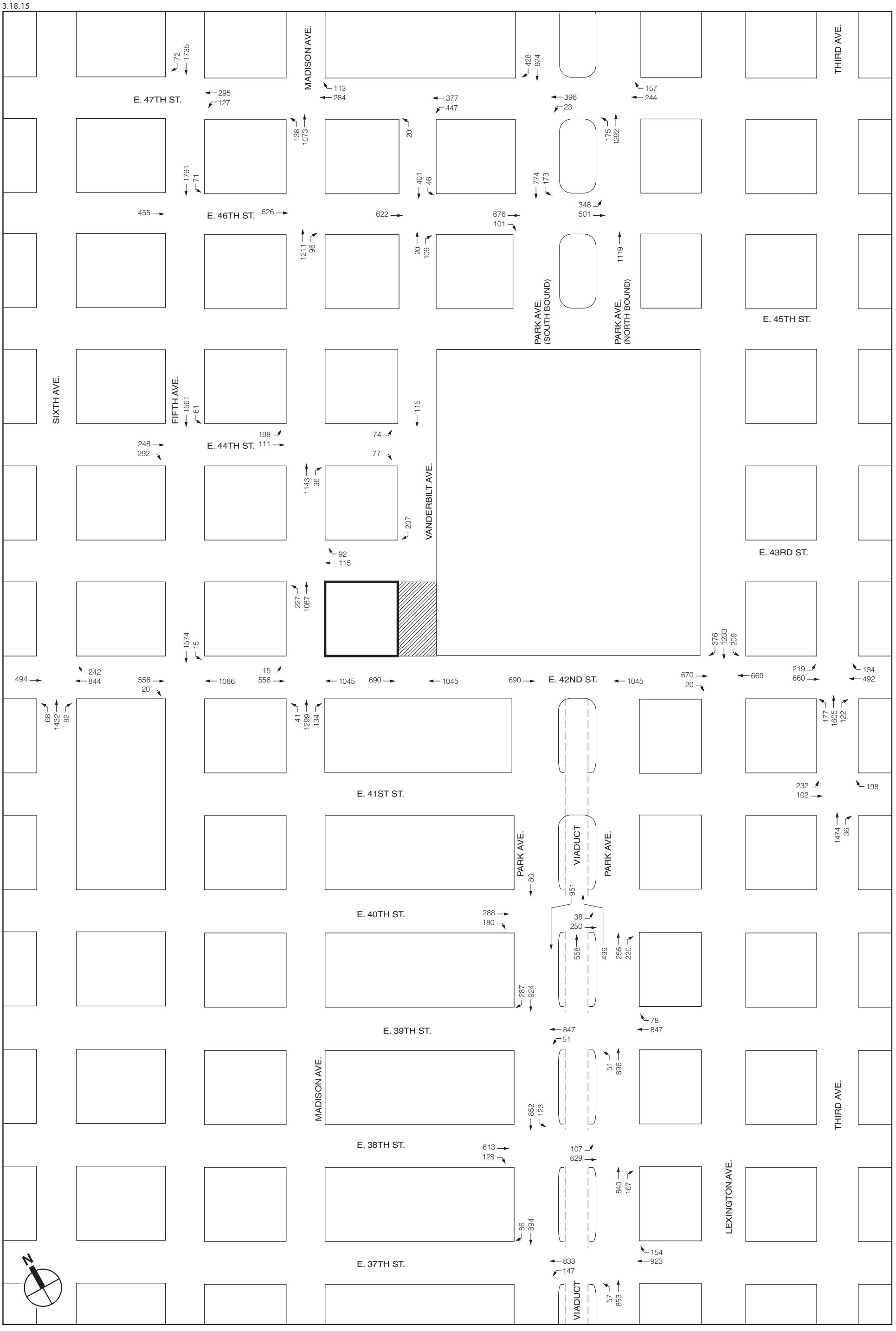
2021 With-Action Traffic Volumes
Weekday Midday Peak Hour

Figure 10-38

Vanderbilt Corridor and One Vanderbilt

This figure has been updated for the FEIS

3.18.15



One Vanderbilt Development Site

Proposed Public Place

NOT TO SCALE

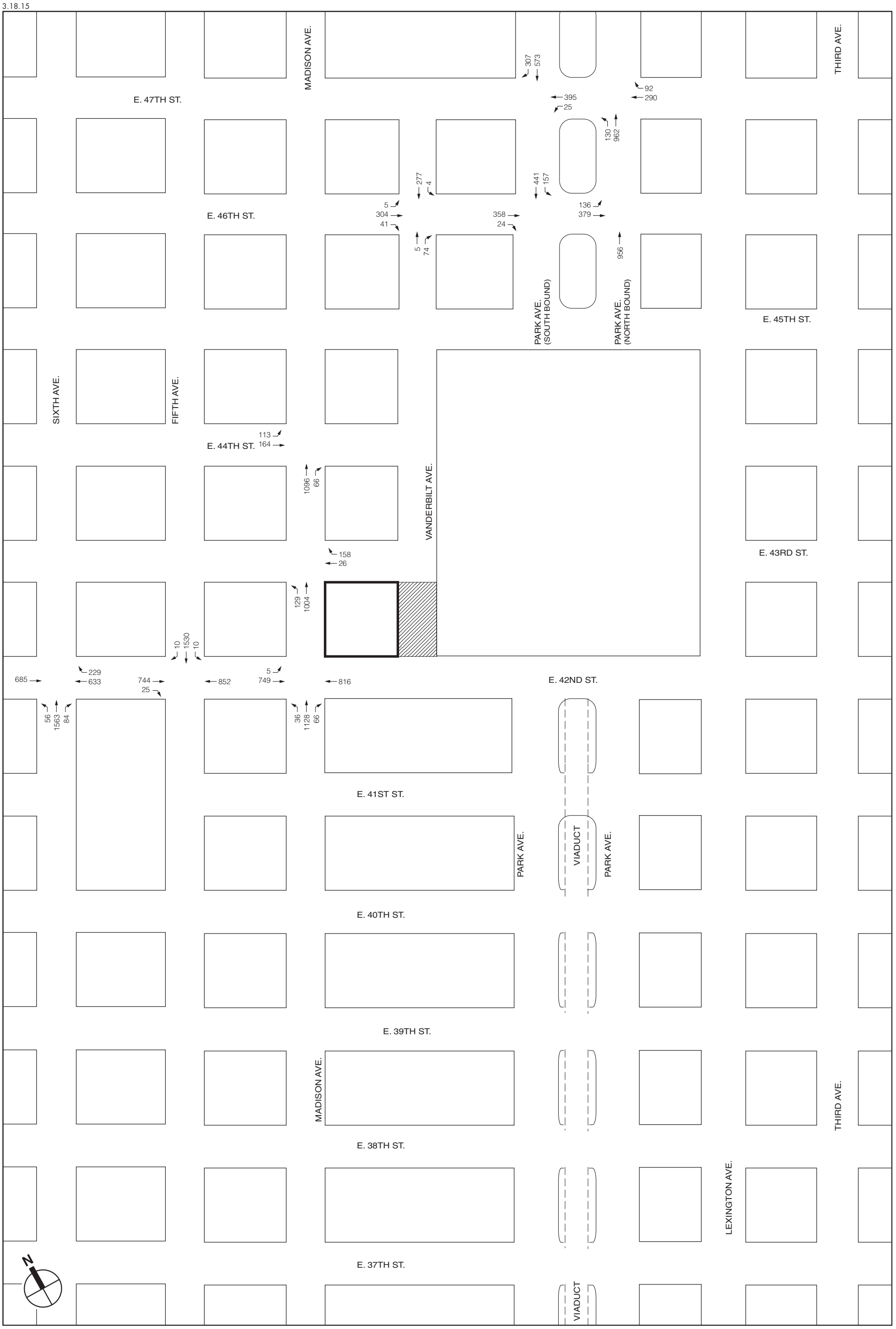
2021 With-Action Traffic Volumes
Weekday PM Peak Hour

Figure 10-39

Vanderbilt Corridor and One Vanderbilt

This figure has been updated for the FEIS

3.18.15



One Vanderbilt Development Site

Proposed Public Place

NOT TO SCALE

2021 With-Action Traffic Volumes
Saturday Peak Hour
Figure 10-40

Vanderbilt Corridor and One Vanderbilt
This figure has been updated for the FEIS

Table 10-27
Summary of 2021 With-Action Traffic Analysis Results

Level of Service	Analysis Peak Hours			
	Weekday AM	Weekday Midday	Weekday PM	Saturday
Signalized Intersections				
Lane Groups at LOS A/B/C	56	58	57	29
Lane Groups at LOS D	14	17	17	4
Lane Groups at LOS E	10	6	5	1
Lane Groups at LOS F	12	8	13	0
Total	92	89	92	34
Lane Groups with v/c ≥ 0.90	27	22	25	2
Number of intersections with significant impacts	14	6	14	2
Unsignalized Intersections (1)				
Lane Groups at LOS A/B/C	6	6	6	0
Lane Groups at LOS D	0	0	0	0
Lane Groups at LOS E	0	0	0	0
Lane Groups at LOS F	0	0	0	0
Total	6	6	6	0
Lane Groups with v/c ≥ 0.90	0	0	0	0
Number of intersections with significant impacts	0	0	0	0

Notes: LOS = Level-of-Service; v/c = volume-to-capacity ratio
(1) As described above, due to the proposed configuration changes along Vanderbilt Avenue under the With-Action condition, the overall number of lane groups at the analyzed unsignalized intersections would be reduced (from 8 under the No-Action to 6 under the With-Action).

Table 10-28
2021 No-Action and 2021 With-Action Conditions Level of Service Analysis
Signalized Intersections

		Weekday AM								Weekday Midday								Weekday PM								Saturday							
		2021 No-Action				2021 With-Action				2021 No-Action				2021 With-Action				2021 No-Action				2021 With-Action				2021 No-Action				2021 With-Action			
Int.		Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	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 +	L	1.19	158.0	F	L	1.20	161.3	F +	L	1.15	148.8	F	L	1.21	170.7	F +								
		T	1.20	129.5	F	T	1.21	136.2	F +	T	1.01	62.8	E	T	1.05	76.2	E +	T	1.14	106.0	F	T	1.15	111.4	F +								
	WB	T	0.99	67.1	E	T	1.00	69.8	E	T	0.90	51.5	D	T	0.86	47.4	D	T	0.78	41.3	D	T	0.79	42.3	D								
		R	1.08	116.5	F	R	1.08	116.5	F	R	1.07	117.7	F	R	1.10	125.5	F +	R	1.04	123.3	F	R	1.04	123.3	F								
	NB	LT	0.98	41.6	D	LT	0.98	42.9	D	LT	1.07	68.1	E	LT	1.10	61.8	E	LT	0.95	35.4	C	LT	0.96	37.1	D								
		R	0.33	20.3	C	R	0.33	20.3	C	R	0.55	27.9	C	R	0.55	27.9	C	R	0.41	22.4	C	R	0.44	23.2	C								
		Int.		74.4	E			77.5	E	Int.		72.5	E	Int.		71.9	E	Int.		61.2	E	Int.		65.0	E								
Third Avenue & East 41st Street																															
	EB	LT	0.53	26.4	C	LT	0.54	26.7	C	LT	0.88	51.1	D	LT	0.89	52.8	D	LT	1.08	98.9	F	LT	1.13	113.4	F +								
	WB	R	0.82	45.0	D	R	0.82	45.0	D	R	0.76	41.7	D	R	0.76	41.7	D	R	0.80	44.1	D	R	0.80	44.1	D								
	NB	T	0.63	13.7	B	T	0.63	13.8	B	T	0.63	13.7	B	T	0.62	13.6	B	T	0.60	13.4	B	T	0.61	13.5	B								
		R	0.04	9.0	A	R	0.04	9.0	A	R	0.05	9.3	A	R	0.05	9.3	A	R	0.17	11.2	B	R	0.17	11.2	B								
		Int.		18.9	B			18.9	B	Int.		22.0	C	Int.		22.2	C	Int.		31.9	C	Int.		35.1	D								
Lexington Avenue & East 42nd Street																															
	EB	T	0.82	35.9	D	T	0.83	36.7	D	-	-	-	-	-	-	-	-	T	0.83	36.3	D	T	0.86	38.0	D								
		R	0.32	30.6	C	R	0.32	30.6	C	-	-	-	-	-	-	-	-	R	0.24	27.3	C	R	0.24	27.3	C								
		-	-	-	-	-	-	-	-	TR	1.12	100.7	F	TR	1.13	106.3	F +	-	-	-	-	-	-	-	-								
	WB	T	0.85	37.4	D	T	0.86	38.5	D	T	1.03	69.6	E	T	0.97	53.8	D	T	0.73	31.5	C	T	0.76	32.5	C								
	SB	L	0.51	18.5	B	L	0.51	18.5	B	L	0.48	17.6	B	L	0.54	19.4	B	L	0.63	22.5	C	L	0.63	22.5	C								
		T	0.73	17.5	B	T	0.73	17.5	B	T	0.64	15.8	B	T	0.66	16.1	B	T	0.65	16.0	B	T	0.65	16.0	B								
		R	1.20	135.5	F	R	1.22	141.6	F +	R	1.07	88.2	F	R	0.76	31.0	C	R	1.12	104.5	F	R	1.17	123.3	F +								
		Int.		39.2	D			40.4	D	Int.		57.5	E	Int.		49.4	D	Int.		34.2	C	Int.		37.3	D								
Park Avenue & East 47th Street																															
	WB	LT	0.73	30.5	C	LT	0.80	35.5	D	LT	0.50	22.5	C	LT	0.60	25.3	C	LT	0.50	22.4	C	LT	0.53	23.0	C	LT	0.50	22.5	C	LT	0.61	25.6	C
		R	0.39	21.5	C	R	0.39	21.5	C	R	0.31	19.8	B	R	0.31	19.8	B	R	0.59	28.0	C	R	0.59	28.0	C	R	0.25	18.2	B	R	0.25	18.2	B
	NB	L**	0.00	34.5	C	L**	0.00	34.6	C	L**	0.00	34.4	C	L**	0.00	34.6	C	L**	0.00	35.4	D	L**	0.00	36.5	D	L**	0.00	36.2	D	L**	0.00	36.3	D
		LT	0.53	18.4	B	LT	0.53	18.4	B	LT	0.73	22.5	C	LT	0.74	22.6	C	LT	0.55	18.6	B	LT	0.58	19.0	B	LT	0.59	19.6	B	LT	0.59	19.6	B
	SB	T	0.57	19.2	B	T	0.58	19.4	B	-	-	-	-	-	-	-	-	T	0.49	18.0	B	T	0.49	18.1	B	-	-	-	-	-	-	-	-
		R	1.27	167.4	F	R	1.31	184.7	F +	-	-	-	-	-	-	-	-	R	1.16	122.8	F	R	1.19	133.7	F +	-	-	-	-	-	-	-	-
		-	-	-	-	-	-	-	-	TR	0.96	38.1	D	TR	0.97	39.5	D	-	-	-	-	-	-	-	-	TR	0.52	18.6	B	TR	0.53	18.7	B
		Int.		38.6	D			41.6	D	Int.		29.6	C	Int.		30.4	C	Int.		33.3	C	Int.		34.8	C	Int.		20.3	C	Int.		20.8	C
Park Avenue & East 46th Street																															
	EB	LT	0.40	18.6	B	LT	0.41	18.7	B	LT	0.59	21.8	C	LT	0.58	21.5	C	LT	0.64	22.9	C	LT	0.71	24.7	C	LT	0.88	41.3	D	LT	0.83	36.6	D
		R	0.20	16.9	B	R	0.21	17.0	B	R	0.23	17.4	B	R	0.23	17.4	B	R	0.30	18.5	B	R	0.30	18.5	B	R	0.06	15.1	B	R	0.06	15.1	B
	NB	T	0.85	28.6	C	T	0.85	28.8	C	T	0.74	23.9	C	T	0.74	24.0	C	T	0.76	24.8	C	T	0.79	25.8	C	T	0.70	22.9	C	T	0.71	23.1	C
	SB	L**	0.00	35.3	D	L**	0.00	35.3	D	L**	0.00	31.5	C	L**	0.00	31.5	C	L**	0.00	33.7	C	L**	0.00	33.7	C	L**	0.00	33.0	C	L**	0.00	33.0	C
		LT	0.83	28.2	C	LT	0.85	29.9	C	LT	0.76	25.3	C	LT	0.76	25.4	C	LT	0.65	22.1	C	LT	0.66	22.3	C	LT	0.35	17.3	B	LT	0.36	17.3	B
		Int.		27.2	C			27.9	C	Int.		24.0	C	Int.		24.0	C	Int.		23.8	C	Int.		24.7	C	Int.		25.3	C	Int.		24.4	C
Park Avenue & East 42nd Street																															
	EB	T	0.56	16.8	B	T	0.57	17.0	B	T	0.59	17.2	B	T	0.60	17.4	B	T	0.54	16.3	B	T	0.55	16.5	B								
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-								
	WB	T	0.80	23.1	C	T	0.81	23.6	C	T	0.98	42.6	D	T	0.86	26.3	C	T	0.87	27.0	C	T	0.90	29.9	C								
		Int.		20.5	C			20.9	C	Int.		32.9	C	Int.		22.6	C	Int.		22.8	C	Int.		24.7	C								
Park Avenue & East 40th Street																															
	EB	LT	0.75	35.9	D	LT	0.75	36.6	D	LT	0.68	32.6	C	LT	0.68	32.8	C	LT	0.67	31.7	C	LT	0.70	33.0	C								
		R	0.96	70.8	E	R	0.96	70.8	E	R	0.62	33.8	C	R	0.62	33.8	C	R	0.73	40.2	D	R	0.73	40.2	D								
		T (Tunnel				T (Tunnel				T (Tunnel				T (Tunnel				T (Tunnel				T (Tunnel										
	NB	Exit)	0.93	37.5	D	Exit)	0.96	42.9	D	Exit)	0.74	22.2	C	Exit)	0.75	22.5	C	Exit)	0.72	21.3	C	Exit)	0.74	22.1	C								
		T onto				T onto				T onto				T onto				T onto				T onto										
		Viaduct	0.61	17.9	B	Viaduct	0.62	18.0	B	Viaduct	0.68	19.7	B	Viaduct	0.69	19.9	B	Viaduct	0.62	18.0	B	Viaduct	0.64	18.5	B								
		TR	0.74	27.2	C	TR	0.75	27.3	C	TR	0.64	21.7	C	TR	0.64	21.8	C	TR	1.04	72.3	E	TR	1.05	76.3	E +								
	SB	T	0.07	10.3	B	T	0.07	10.3	B	T	0.08	10.4	B	T	0.08	10.4	B	T	0.09	10.5	B	T	0.11	10.7	B								
		T (Viaduct				T (Viaduct				T (Viaduct				T (Viaduct				T (Viaduct				T (Viaduct										
		Exit)	1.05	64.2	E	Exit)	1.06	68.9	E +	Exit)	1.08	75.8	E	Exit)	1.08	76.6	E	Exit)	1.09	78.7	E	Exit)	1.12	91.3	F +								
		Int.		43.5	D			46.2	D	Int.		40.7	D	Int.		41.0	D	Int.		48.7	D	Int.		53.5	D								
Park Avenue & East 39th Street																															
	WB	LTR	1.68	339.0	F	LTR	1.68	342.3	F +	LTR	1.62	313.4	F	LTR	1.62	316.0	F	LTR	1.71	355.7	F	LTR	1.78	387.1	F +								
	NB	L**	0.00	34.6	C	L**	0.00	34.7	C	L**	0.00	36.6	D	L**	0.00	36.7	D	L**	0.00	38.7	D	L**	0.00	38.9	D								
		LT	0.55	17.0	B	LT	0.55	17.1	B	LT	0.61	18.1	B	LT	0.61	18.2	B	LT	0.69	20.0+	C	LT	0.70	20.2	C								
	SB	T	0.68	19.4	B	T	0.68	19.5	B	T	0.57	17.2	B	T	0.57	17.2	B	T	0.58	17.4	B	T	0.60	17.8	B								
		R	0.52	20.1	C	R	0.56	21.4	C	R	0.59	21.4	C	R	0.59	21.4	C	R	0.75	30.5	C	R	0.76	31.1	C								
		Int.		115.1	F			115.8	F	Int.		98.0	F	Int.		98.7	F	Int.		119.1	F	Int.		129.1	F								
Park Avenue & East 38th Street																															
	EB	LTR	0.89	39.5	D	LTR	0.89	39.2	D	LTR	0.88	37.3	D	LTR	0.88	37.4	D	LTR	0.82	32.4	C	LTR	0.84	33.6	C								
	NB	TR	0.58	17.5	B	TR	0.58	17.7	B	TR	0.65	19.2	B	TR	0.66	19.2	B	TR	0.78	22.9	C	TR	0.79	23.1	C								
	SB	L**	0.00	39.2	D	L**	0.00	39.2	D	L**	0.00	38.6	D	L**	0.00	38.6	D	L**	0.00	38.6	D	L**	0.00	40.0	D								
		LT	0.74	21.1	C	LT	0.74	21.1	C	LT	0.72	20.7	C	LT	0.72	20.7	C	LT	0.70	20.1	C	LT	0.74	21.2	C								
		Int.		25.9	C			25.8	C	Int.		25.4	C	Int.		25.4	C	Int.		25.1	C	Int.		25.9	C								
Park Avenue & East 37th Street																															
	WB	L	0.21	17.4	B	L	0.21	17.4	B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-								
		TR	0.87	33.4	C	TR	0.88	34.0	C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-								
		-	-	-	-	-	-	-	-	LTR	1.26	151.5	F	LTR	1.26	152.8	F	LTR	1.15	106.4	F	LTR	1.15	108.1	F								
	NB	L**	0.00	35.3	D	L**	0.00	35.3	D	L**	0.00	35.2	D	L**	0.00	35.2	D	L**	0.00	37.2	D	L**	0.00	37.3	D								
		LT	0.55	18.9	B	LT	0.56	18.9	B	LT	0.55	17.1	B	LT	0.56	17.1	B	LT	0.68	19.5	B	LT	0.68	19.6	B								
	SB	TR	0.92	34.6	C	TR	0.92	34.7	C	TR	0.68	19.6	B	TR	0.68	19.7	B	TR	0.76	21.9	C	TR	0.79	23.1	C								
		Int.		30.2	C			30.4	C	Int.		71.3	E	Int.		71.7	E	Int.		52.0	D	Int.		52.6	D								
Vanderbilt Avenue & East 46th Street																															
	EB	LTR	0.44	18.6	B	LTR	0.45	18.7	B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	LTR	0.67	25.5	C	LTR	0.72	27.4	C
		-	-	-	-	-	-	-	-	T	0.51	19.4	B	T	0.53	19.8	B	T	0.52	19.6	B	T	0.56	20.2	C	-	-	-	-	-	-	-	-
	NB	TR	0.30	18.2	B	TR	0.28	18.0	B	TR	0.36	18.9	B	TR	0.23	16.7	B	TR	0.30	17.7	B	TR	0.35	18.6	B	TR	0.32	18.0	B	TR	0.20	16.2	B
	SB	LT	0.96	52.0	D	LT	0.99	61.0	E +	LT	0.80	32.6	C	LT	0.91	44.1	D	LT	0.92	45.8	D	LT	0.97	55.7	E +	LT	0.45	19.9	B	LT	0.59	23.1	C
		Int.		35.0	C			39.9	D	Int.		24.3	C	Int.		29.7	C	Int.		30.0	C	Int.		34.3	C	Int.		22.3	C	Int.		24.5	C
Vanderbilt Avenue & East 42nd Street																															
	EB	T	0.65	22.3	C	T	0.66	22.5	C	T	0.58	15.2	B	T	0.58	15.4	B	T	0.64	22.0	C	T	0.66	22.5	C								
	WB	T	1.07	73.8	E	T	1.09	79.5	E +	TR	0.97	39.8	D	T	0.83	23.2	C	T	1.12	90.6	F	T	1.16	108.0	F +								
		Int.		53.2	D			56.7	E	Int.		29.7	C	Int.		19.7	B	Int.		63.0	E	Int.		73.8	E								

Table 10-28 (cont'd)
2021 No-Action and 2021 With-Action Conditions Level of Service Analysis
Signalized Intersections

Int.	Weekday AM								Weekday Midday								Weekday PM								Saturday							
	2021 No-Action				2021 With-Action				2021 No-Action				2021 With-Action				2021 No-Action				2021 With-Action				2021 No-Action				2021 With-Action			
	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	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 47th Street																																
WB	T	0.55	24.5	C	T	0.56	24.8	C	T	0.76	32.9	C	T	0.73	31.1	C	T	0.51	23.1	C	T	0.56	24.4	C								
	R	0.57	47.2	D	R	0.57	47.2	D	R	0.48	43.0	D	R	0.48	43.2	D	R	0.52	44.2	D	R	0.59	47.1	D								
NB	L	0.57	23.6	C	L	0.66	28.4	C	L	0.75	40.8	D	L	0.78	44.9	D	L	0.58	25.4	C	L	0.70	32.9	C								
	T	0.88	26.4	C	T	0.89	27.3	C	T	0.67	17.1	B	T	0.68	17.3	B	T	0.83	22.5	C	T	0.84	22.9	C								
	Int.		27.3	C	Int.		28.3	C	Int.		24.8	C	Int.		24.8	C	Int.		24.2	C	Int.		25.7	C								
Madison Avenue & East 46th Street																																
EB	LT	0.52	23.3	C	LT	0.54	23.5	C	T	0.48	22.2	C	T	0.48	22.3	C	T	0.53	23.1	C	T	0.58	23.9	C								
NB	T	0.89	26.5	C	T	0.92	29.6	C	T	0.75	18.0	B	T	0.77	18.5	B	T	0.95	32.0	C	T	0.97	36.8	D								
	R	0.31	12.4	B	R	0.31	12.4	B	R	0.26	11.6	B	R	0.32	12.6	B	R	0.27	11.8	B	R	0.27	11.8	B								
	Int.		24.5	C			26.6	C	Int.		19.0	B	Int.		19.3	B	Int.		28.1	C	Int.		31.4	C								
Madison Avenue & East 44th Street																																
EB	LT	0.95	60.9	E	LT	0.97	66.4	E +	LT	0.85	45.6	D	LT	0.90	52.2	D +	LT	0.87	48.4	D	LT	0.95	61.6	E +	LT	0.66	30.2	C	LT	0.73	33.4	C
NB	T	1.10	77.5	E	T	1.14	91.2	F +	T	0.89	24.8	C	T	0.92	27.8	C	T	0.98	37.8	D	T	1.01	45.6	D +	T	0.78	18.7	B	T	0.83	20.7	C
	R	0.20	11.6	B	R	0.20	11.6	B	R	0.25	12.6	B	R	0.45	17.7	B	R	0.23	12.8	B	R	0.23	12.8	B	R	0.10	9.7	A	R	0.22	11.2	B
	Int.		72.1	E	Int.		83.7	F	Int.		28.7	C	Int.		32.4	C	Int.		39.3	D	Int.		48.2	D	Int.		21.0	C	Int.		23.0	C
Madison Avenue & East 43rd Street																																
WB	T	0.38	21.9	C	T	0.40	22.3	C	T	0.42	22.6	C	T	0.22	19.3	B	T	0.22	19.4	B	T	0.24	19.7	B	T	0.21	19.2	B	T	0.05	17.4	B
	R	0.34	22.9	C	R	0.48	26.9	C	R	0.40	23.6	C	R	0.54	28.0	C	R	0.30	22.1	C	R	0.39	24.2	C	R	0.33	21.5	C	R	0.47	24.9	C
NB	L	0.82	42.2	D	L	0.93	62.8	D +	L	0.99	80.0+	F	L	0.95	78.6	E	L	1.20	147.6	F	L	1.24	163.4	F +	L	0.36	13.2	B	L	0.39	13.9	B
	T	0.88	24.6	C	T	0.89	24.9	C	T	0.72	16.7	B	T	0.75	17.5	B	T	0.82	20.0	B	T	0.83	20.6	C	T	0.66	15.2	B	T	0.70	16.1	B
	Int.		26.2	C			29.4	C	Int.		25.8	C	Int.		26.3	C	Int.		39.1	D	Int.		41.9	D	Int.		16.0	B	Int.		17.0	B
Madison Avenue & East 42nd Street																																
EB	LT	0.74	29.4	C	LT	0.76	30.4	C	LT	0.80	32.0	C	LT	0.82	32.8	C	LT	0.78	31.0	C	LT	0.82	33.6	C	LT	0.85	34.9	C	LT	0.87	36.5	D
WB	T	1.12	94.3	F	T	1.14	101.3	F +	T	0.96	45.9	D	T	1.06	72.8	E +	T	1.02	61.6	E	T	1.07	74.4	E +	T	0.75	28.2	C	T	0.85	33.4	C
NB	LT	1.14	90.2	F	LT	1.16	98.4	F +	LT	1.05	55.5	E	LT	1.08	67.2	E +	L	0.10	12.3	B	L	0.10	12.3	B	L	0.07	11.9	B	L	0.07	11.9	B
	R	0.40	14.3	B	R	0.42	14.9	B	R	0.29	12.0	B	R	0.29	12.0	B	T	0.99	39.1	D	T	1.01	43.9	D	T	0.79	18.7	B	T	0.84	20.9	C
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	0.40	14.1	B	R	0.40	14.1	B	R	0.16	10.1	B	R	0.16	10.2	B
	Int.		76.8	E			82.9	F	Int.		45.6	D	Int.		59.8	E	Int.		43.4	D	Int.		50.3	D	Int.		25.6	C	Int.		28.5	C
Fifth Avenue & 47th Street																																
WB	L	0.27	35.4	D	L	0.32	36.6	D	L	0.56	43.4	D	L	0.56	43.6	D	L	0.51	41.2	D	L	0.52	41.6	D								
	T	0.63	25.1	C	T	0.64	25.7	C	T	0.58	23.7	C	T	0.57	23.3	C	T	0.44	20.1	C	T	0.52	21.9	C								
SB	T	1.22	124.8	F	T	1.23	130.4	F +	T	0.97	35.1	D	T	0.99	38.7	D	T	0.98	36.4	D	T	0.98	37.5	D								
	R	0.36	17.9	B	R	0.36	17.9	B	R	0.69	40.3	D	R	0.69	40.3	D	R	0.55	30.2	C	R	0.55	30.2	C								
	Int.		106.6	F			110.8	F	Int.		34.3	C	Int.		37.0	D	Int.		34.6	C	Int.		35.4	C								
Fifth Avenue & 46th Street																																
EB	TR	0.39	21.0	C	TR	0.40	21.1	C	T	0.39	21.0	C	T	0.40	21.0	C	T	0.41	21.1	C	T	0.45	21.7	C								
SB	LT	1.11	72.6	E	LT	1.12	79.8	E +	LT	0.93	25.3	C	LT	0.95	27.0	C	LT	1.01	40.5	D	LT	1.02	42.1	D								
	Int.		65.5	E			71.6	E	Int.		24.5	C	Int.		26.0	C	Int.		37.0	D	Int.		38.2	D								
Fifth Avenue & 44th Street																																
EB	T	0.40	22.1	C	T	0.40	22.0	C	T	0.36	21.3	C	T	0.35	21.1	C	T	0.38	21.5	C	T	0.43	22.3	C								
	R	0.94	65.4	E	R	0.95	66.8	E	R	1.01	82.0	F	R	1.01	83.8	F	R	1.12	118.5	F	R	1.20	148.5	F +								
SB	LT	1.12	80.9	F	LT	1.15	91.1	F +	LT	0.89	22.3	C	LT	0.92	24.7	C	LT	0.86	20.5	C	LT	0.87	20.3	C								
	Int.		74.2	E			82.8	E	Int.		29.8	C	Int.		31.9	C	Int.		33.3	C	Int.		38.2	C								
Fifth Avenue & 42nd Street																																
EB	T	0.63	25.2	C	T	0.64	25.5	C	T	0.68	26.4	C	T	0.69	26.7	C	T	0.62	24.9	C	T	0.64	25.4	C	T	0.77	29.6	C	T	0.79	30.4	C
	R	0.17	21.1	C	R	0.17	21.1	C	R	0.23	22.8	C	R	0.23	22.8	C	R	0.20	21.8	C	R	0.20	21.8	C	R	0.21	22.0	C	R	0.21	22.0	C
WB	LT	1.20	125.9	F	LT	1.21	133.5	F +	LT	1.09	85.4	F	LT	1.21	130.3	F +	LT	1.21	131.0	F	LT	1.26	150.5	F +	LT	0.85	34.0	C	LT	0.97	48.1	D +
SB	LT	1.00	36.6	D	LT	1.00	37.0	D	LT	0.85	19.7	B	LT	0.84	19.0	B	LT	0.82	18.4	B	LT	0.83	18.8	B	LT	0.76	16.5	B	LT	0.74	16.2	B
	R	0.00	11.3	B	R	0.00	11.3	B	R	0.00	11.3	B	R	0.00	11.3	B	R	0.00	11.3	B	R	0.00	11.3	B	R	0.05	12.0	B	R	0.05	12.0	B
	Int.		62.5	E			65.3	E	Int.		40.6	D	Int.		56.2	E	Int.		58.9	E	Int.		66.6	E	Int.		24.3	C	Int.		28.8	C
Sixth Avenue & West 42nd Street																																
EB	T	0.59	24.4	C	T	0.60	24.7	C	T	0.63	25.6	C	T	0.65	25.9	C	T	0.56	23.8	C	T	0.59	24.3	C	T	0.76	29.4	C	T	0.78	30.3	C
WB	T	0.85	33.7	C	T	0.86	35.0	C	T	0.74	26.5	C	T	0.79	30.6	C	T	0.82	32.3	C	T	0.86	35.0	D	T	0.61	24.7	C	T	0.67	26.2	C
	R	0.99	75.0	E	R	0.99	75.0	E	R	0.94	68.4	E	R	1.13	124.2	F +	R	0.94	66.4	E	R	0.94	66.4	E	R	0.75	41.5	D	R	0.94	68.9	E +
NB	LT	0.75	15.8	B	LT	0.75	16.0	B	LT	0.59	13.2	B	LT	0.59	13.2	B	LT	0.66	14.3	B	LT	0.67	14.3	B	-	-	-	-	-	-	-	-
	R	0.47	16.4	B	R	0.47	16.4	B	R	0.42	14.6	B	R	0.42	14.6	B	R	0.28	12.1	B	R	0.28	12.1	B	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	LTR	0.55	12.5	A	LTR	0.55	12.6	B
	Int.		26.0	C	Int.		26.4	C	Int.		23.2	C	Int.		29.5	C	Int.		24.0	C	Int.		24.9	C	Int.		20.4	C	Int.		23.3	C

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 10-29
2021 No-Action and 2021 With-Action Conditions Level of Service Analysis
Unsignalized Intersections

	Weekday AM								Weekday Midday								Weekday PM								Saturday							
	2021 No-Action				2021 With-Action				2021 No-Action				2021 With-Action				2021 No-Action				2021 With-Action				2021 No-Action				2021 With-Action			
Int.	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS
Vanderbilt Avenue & East 47th Street																																
WB	L	0.61	13.9	B	L	0.64	14.5	B	L	0.50	11.5	B	L	0.57	12.7	B	L	0.56	12.5	B	L	0.59	13.1	B								
	T	0.40	9.8	A	T	0.42	10.0	A	T	0.49	11.0	B	T	0.49	10.8	B	T	0.42	10.0	A	T	0.48	10.6	B								
NB	L	0.04	9.0	A	L	0.02	8.9	A	L	0.04	8.8	A	L	0.01	8.7	A	L	0.05	8.9	A	L	0.04	8.9	A								
Vanderbilt Avenue & East 44th Street																																
EB	LR	0.25	8.5	A	LR	0.26	8.6	A	LR	0.18	8.0	A	LR	0.26	8.4	A	LR	0.13	7.7	A	LR	0.20	8.1	A								
NB [1]	T	0.02	7.8	A	-	-	-	-	T	0.09	7.9	A	-	-	-	-	T	0.01	7.4	A	-	-	-	-								
SB	T	0.18	8.4	A	T	0.22	8.7	A	T	0.08	7.8	A	T	0.17	8.4	A	T	0.15	8.0	A	T	0.17	8.2	A								
Vanderbilt Avenue & East 43rd Street																																
NB [1]	LT	0.01	9.1	A	-	-	-	-	LT	0.34	11.7	B	-	-	-	-	LT	0.02	9.7	A	-	-	-	-								
SB	R	0.26	9.5	A	R	0.30	9.7	A	R	0.15	8.9	A	R	0.29	9.7	A	R	0.17	9.0	A	R	0.24	9.3	A								

Notes: L = Left-turn; T = Through; R = Right-turn; LOS = Level of Service
(1) In the With-Action condition, Vanderbilt Avenue between East 42nd and East 43rd Streets would be converted to public space and would be closed to vehicular traffic. Also, Vanderbilt Avenue between East 43rd and East 44th Streets would be converted from two-way to one-way southbound.

Third Avenue

- The eastbound left-turn at the Third Avenue and East 42nd Street intersection would deteriorate within LOS F (from a v/c ratio of 1.19 and 161.2 spv of delay to a v/c ratio of 1.21 and 170.2 spv od delay), within LOS F (from a v/c ratio of 1.19 and 158.0 spv of delay to a v/c ratio of 1.20 and 161.3 spv of delay), and within LOS F (from a v/c ratio of 1.15 and 148.8 spv of delay to a v/c ratio of 1.21 and 170.7 spv of delay), increases in delay of more than three seconds, during the weekday AM, midday, and PM peak hours, respectively. These projected increases in delay constitute significant adverse impacts.
- The eastbound through at the Third Avenue and East 42nd Street intersection would deteriorate within LOS F (from a v/c ratio of 1.20 and 129.5 spv of delay to a v/c ratio of 1.21 and 136.2 spv of delay), within LOS E (from a v/c ratio of 1.01 and 62.8 spv of delay to a v/c ratio of 1.05 and 76.2 spv of delay), and within LOS F (from a v/c ratio of 1.14 and 106.0 spv of delay to a v/c ratio of 1.15 and 111.4 spv of delay), increases in delay of more than three seconds, four seconds, and three seconds, during the weekday AM, midday, and PM peak hours, respectively. These projected increases in delay constitute significant adverse impacts.
- The westbound right-turn at the Third Avenue and East 42nd Street intersection would deteriorate within LOS F (from a v/c ratio of 1.07 and 117.7 spv of delay to a v/c ratio of 1.10 and 125.5 spv of delay), an increase in delay of more than three seconds, during the weekday midday peak hour. This projected increase in delay constitutes a significant adverse impact.
- The eastbound approach at the Third Avenue and East 41st Street intersection would deteriorate within LOS F (from a v/c ratio of 1.08 and 98.9 spv of delay to a v/c ratio of 1.13 and 113.4 spv of delay), an increase in delay of more than three seconds, during the weekday PM peak hour. This projected increase in delay constitutes a significant adverse impact.

Lexington Avenue

- The eastbound approach at the Lexington Avenue and East 42nd Street intersection would deteriorate within LOS F (from a v/c ratio of 1.12 and 100.7 spv of delay to a v/c ratio of 1.13 and 106.3 spv of delay), an increase in delay of more than three seconds, during the weekday midday peak hour. This projected increase in delay constitutes a significant adverse impact.

- The southbound right-turn at the Lexington Avenue and East 42nd Street intersection would deteriorate within LOS F (from a v/c ratio of 1.20 and 135.5 spv of delay to a v/c ratio of 1.22 and 141.6 spv of delay) and within LOS F (from a v/c ratio of 1.12 and 104.5 spv of delay to a v/c ratio of 1.17 and 123.3 spv of delay), increases in delay of more than three seconds, during the weekday AM and PM peak hours, respectively. These projected increases in delay constitute significant adverse impacts.

Park Avenue

- The southbound right-turn at the Park Avenue and East 47th Street intersection would deteriorate within LOS F (from a v/c ratio of 1.27 and 167.4 spv of delay to a v/c ratio of 1.31 and 184.7 spv of delay) and within LOS F (from a v/c ratio of 1.16 and 122.8 spv of delay to a v/c ratio of 1.19 and 133.7 spv of delay), increases in delay of more than three seconds, during the weekday AM and PM peak hours, respectively. These projected increases in delay constitute significant adverse impacts.
- The northbound through/right-turn at the Park Avenue and East 40th Street intersection would deteriorate within LOS E (from a v/c ratio of 1.04 and 72.3 spv of delay to a v/c ratio of 1.05 and 76.3 spv of delay), an increase in delay of four seconds, during the weekday PM peak hour. This projected increase in delay constitutes a significant adverse impact.
- The southbound through (Viaduct Exit) at the Park Avenue and East 40th Street intersection would deteriorate within LOS E (from a v/c ratio of 1.05 and 64.2 spv of delay to a v/c ratio of 1.06 and 68.9 spv of delay) and from LOS E (v/c ratio of 1.09 and 78.7 spv of delay) to LOS F (v/c ratio of 1.12 and 91.3 spv of delay), increases in delay of more than four seconds and four seconds, during the weekday AM and PM peak hours, respectively. These projected increases in delay constitute significant adverse impacts.
- The westbound approach at the Park Avenue and East 39th Street intersection would deteriorate within LOS F (from a v/c ratio of 1.68 and 339.0 spv of delay to a v/c ratio of 1.68 and 342.3 spv of delay) and within LOS F (from a v/c ratio of 1.71 and 355.7 spv of delay to a v/c ratio of 1.78 and 387.1 spv of delay), increases in delay of more than three seconds, during the weekday AM and PM peak hours, respectively. These projected increases in delay constitute significant adverse impacts.

Vanderbilt Avenue

- The southbound approach at the Vanderbilt Avenue and East 46th Street intersection would deteriorate from LOS D (v/c ratio of 0.96 and 52.0 spv of delay) to LOS E (v/c ratio of 0.99 and 61.0 spv of delay) and from LOS D (v/c ratio of 0.92 and 45.8 spv of delay) to LOS E (v/c ratio of 0.97 and 55.7 spv of delay), increases in delay of more than five seconds, during the weekday AM and PM peak hours, respectively. These projected increases in delay constitute significant adverse impacts.
- The westbound through at the Vanderbilt Avenue and East 42nd Street intersection would deteriorate within LOS E (from a v/c ratio of 1.07 and 73.8 spv of delay to a v/c ratio of 1.09 and 79.5 spv of delay) and within LOS F (from a v/c ratio of 1.12 and 90.6 spv of delay to a v/c ratio of 1.16 and 108.0 spv of delay), increases in delay of more than four seconds and three seconds, during the weekday AM and PM peak hours, respectively. These projected increases in delay constitute significant adverse impacts.

Madison Avenue

- The eastbound approach at the Madison Avenue and East 44th Street intersection would deteriorate within LOS E (from a v/c ratio of 0.95 and 60.9 spv of delay to a v/c ratio of 0.97 and 66.4 spv of delay), within LOS D (from a v/c ratio of 0.85 and 45.6 spv of delay to a v/c ratio of 0.90 and 52.2 spv of delay), and from LOS D (v/c ratio of 0.87 and 48.4 spv of delay) to LOS E (from a v/c ratio of 0.95 and 61.6 spv of delay), increases in delay of more than four seconds, five seconds, and five seconds, during the weekday AM, midday, and PM peak hours, respectively. These projected increases in delay constitute significant adverse impacts.
- The northbound through at the Madison Avenue and East 44th Street intersection would deteriorate from LOS E (v/c ratio of 1.10 and 77.5 spv of delay) to LOS F (v/c ratio of 1.14 and 91.2 spv of delay) and within LOS D (from a v/c ratio of 0.98 and 37.8 spv of delay to a v/c ratio of 1.01 and 45.6 spv of delay), increases in delay of more than four seconds and five seconds, during the weekday AM and PM peak hours, respectively. These projected increases in delay constitute significant adverse impacts.
- The northbound left-turn at the Madison Avenue and East 43rd Street intersection would deteriorate within LOS D (from a v/c ratio of 0.80 and 42.2 spv of delay to a v/c ratio of 0.93 and 62.8 spv of delay) and within LOS F (from a v/c ratio of 1.20 and 147.6 spv of delay to a v/c ratio of 1.24 and 163.4 spv of delay), increases in delay of more than five seconds and three seconds, during the weekday AM and PM peak hours, respectively. These projected increases in delay constitute significant adverse impacts.
- The westbound through at the Madison Avenue and East 42nd Street intersection would deteriorate within LOS F (from a v/c ratio of 1.12 and 94.3 spv of delay to a v/c ratio of 1.14 and 101.3 spv of delay), from LOS D (v/c ratio of 0.96 and 45.9 spv of delay) to LOS E (v/c ratio of 1.06 and 72.8 spv of delay), and within LOS E (from a v/c ratio of 1.02 and 61.6 spv of delay to a v/c ratio of 1.07 and 74.4 spv of delay), increases in delay of more than three seconds, five seconds, and four seconds, during the weekday AM, midday, and PM peak hours, respectively. These projected increases in delay constitute significant adverse impacts.
- The northbound left-turn/through at the Madison Avenue and East 42nd Street intersection would deteriorate within LOS F (from a v/c ratio of 1.14 and 90.2 spv of delay to a v/c ratio of 1.16 and 98.4 spv of delay) and within LOS E (v/c ratio of 1.05 and 55.5 spv of delay to v/c ratio of 1.08 and 67.2 spv of delay), increases in delay of more than three seconds and four seconds, during the weekday AM and midday peak hours, respectively. These projected increases in delay constitute significant adverse impacts.

Fifth Avenue

- The southbound through at the Fifth Avenue and 47th Street intersection would deteriorate within LOS F (from a v/c ratio of 1.22 and 124.8 spv of delay to a v/c ratio of 1.23 and 130.4 spv of delay), an increase in delay of more than three seconds, during the weekday AM peak hour. This projected increase in delay constitutes a significant adverse impact.
- The southbound approach at the Fifth Avenue and 46th Street intersection would deteriorate within LOS E (from a v/c ratio of 1.11 and 72.6 spv of delay to a v/c ratio of 1.12 and 79.8 spv of delay), an increase in delay of more than four seconds, during the weekday AM peak hour. This projected increase in delay constitutes a significant adverse impact.

- The eastbound right-turn at the Fifth Avenue and 44th Street intersection would deteriorate within LOS F (from a v/c ratio of 1.12 and 118.9 spv of delay to a v/c ratio of 1.20 and 148.5 spv of delay), an increase in delay of more than three seconds, during the weekday PM peak hour. This projected increase in delay constitutes a significant adverse impact.
- The southbound approach at the Fifth Avenue and 44th Street intersection would deteriorate within LOS F (v/c ratio of 1.12 and 80.9 spv of delay to a v/c ratio of 1.15 and 91.1 spv of delay), an increase in delay of more than three seconds, during the weekday AM peak hour. This projected increase in delay constitutes a significant adverse impact.
- The westbound approach at the Fifth Avenue and 42nd Street intersection would deteriorate within LOS F (from a v/c ratio of 1.20 and 125.9 spv of delay to a v/c ratio of 1.21 and 133.5 spv of delay), within LOS F (from a v/c ratio of 1.09 and 85.4 spv of delay to a v/c ratio of 1.21 and 130.3 spv of delay), within LOS F (from a v/c ratio of 1.21 and 131.0 spv of delay to a v/c ratio of 1.26 and 150.5 spv of delay), and from LOS C (v/c ratio of 0.85 and 34.0 spv of delay) to LOS D (v/c ratio of 0.97 and 48.1 spv of delay), increases in delay of more than three seconds, three seconds, three seconds, and five seconds, during the weekday AM, midday, PM, and Saturday peak hours, respectively. These projected increases in delay constitute significant adverse impacts.

Sixth Avenue

- The westbound right-turn at the Sixth Avenue and West 42nd Street intersection would deteriorate from LOS E (v/c ratio of 0.94 and 68.4 spv of delay) to LOS F (v/c ratio of 1.13 and 124.2 spv of delay), and from LOS D (v/c ratio of 0.75 and 41.5 spv of delay) to LOS E (v/c ratio of 0.94 and 68.9 spv of delay), increases in delay of more than four and five seconds, during the weekday midday and Saturday peak hours, respectively. These projected increases in delay constitute significant adverse impacts.

E. DETAILED TRANSIT ANALYSIS

The One Vanderbilt site is located near two NYCT subway stations: (1) GCT (Nos. 4, 5, 6, 7 lines and Shuttle service); and (2) 42nd Street and Bryant Park Station (B, D, F, and M Lines). Subway services at these stations provide convenient connections to other subway lines. Therefore, most projected subway and rail trips are expected to be served by these stations. The NYCT M1, M2, M3, M4, M5, M15, M15 SBS, M42, M101, M102, M103, and Q32 local bus routes also have stops adjacent to or near the One Vanderbilt site. These subway and bus facilities are illustrated in **Figure 10-14**.

A detailed analysis of transit operations during the critical weekday AM and PM peak periods is presented below. During other time periods, background transit ridership and station utilization, as well as project trip generation, are comparatively lower. Hence, potential transit impacts were evaluated only for the weekday AM and PM peak periods.

TRANSIT STUDY AREAS

SUBWAY SERVICE

Below is a summary of the subway lines that serve the One Vanderbilt site from the two nearby subway stations.

- The No. 4 subway line (Lexington Avenue Express) operates between Woodlawn, Bronx and New Lots Avenue, Brooklyn.
- The No. 5 subway line (Lexington Avenue Express) operates between Eastchester-Dyre Avenue, Bronx and Flatbush Avenue-Brooklyn College, Brooklyn. During morning and evening peak periods, the route is extended to Nereid Avenue (238th Street), Bronx.
- The No. 6 subway line (Lexington Avenue Local) operates between Pelham Bay Park, Bronx and Brooklyn Bridge-City Hall, Manhattan.
- The No. 7 subway line (Flushing Local and Express) operates between Times Square-42nd Street, Manhattan and Flushing-Main Street, Queens.
- The B subway line (Sixth Avenue Express) operates between Bedford Park Boulevard, Bronx and Brighton Beach, Brooklyn during weekdays only.
- The D subway line (Sixth Avenue Express) operates between Norwood-205th Street, Bronx and Coney Island-Stillwell Avenue, Brooklyn.
- The F subway line (Sixth Avenue Local) operates between Jamaica-179th Street, Queens and Coney Island-Stillwell Avenue, Brooklyn.
- The M subway line (Sixth Avenue Local) generally operates between Forest Hills-71st Street, Queens and Middle Village-Metropolitan Avenue, Queens during weekdays. It generally operates between Delancey Street-Essex Street, Manhattan and Middle Village-Metropolitan Avenue, Queens during weekends.
- The Shuttle (S) service (42nd Street Shuttle) operates between Times Square and GCT, Manhattan from 6 AM to 12 AM.

As discussed above in Section B, "Preliminary Analysis Methodology and Screening Assessment," an analysis of subway station elements at the GCT and 42nd Street and Bryant Park subway stations, as well as subway line-haul conditions on the nine subway lines (4/5/6/7/B/D/F/M/S), would be warranted for the weekday AM and PM peak hours.

BUS SERVICE

For area bus routes, it was determined that none would incur 50 or more peak hour riders in a single direction. Therefore, a quantified bus line-haul analysis is not warranted and the proposed One Vanderbilt development is not expected to result in any significant adverse bus line-haul impacts.

SUBWAY STATION ANALYSIS

SUBWAY STATION ANALYSIS—2014 EXISTING CONDITIONS

As presented above in Section B under "Level 1 Screening Assessment," the proposed One Vanderbilt development is expected to generate 1,720 and 1,785 peak hour net incremental subway trips during the weekday AM and PM peak hours, respectively. These trips were assigned to the nine area subway lines, and critical station elements, including station control areas and stairways. In consultation with MTA NYCT, baseline data from the *East Midtown Rezoning and Related Actions FEIS* were used to develop subway station trips for the existing conditions analysis.

Grand Central-42nd Street Station

The Grand Central-42nd Street subway station complex is served by the No. 4 and No. 5 express trains and No. 6 local trains operating along the Lexington Avenue Line, the No. 7 express and local trains operating on the Flushing Line, and the 42nd Street shuttle, S trains.

Lexington Avenue Line (Nos. 4, 5, 6)

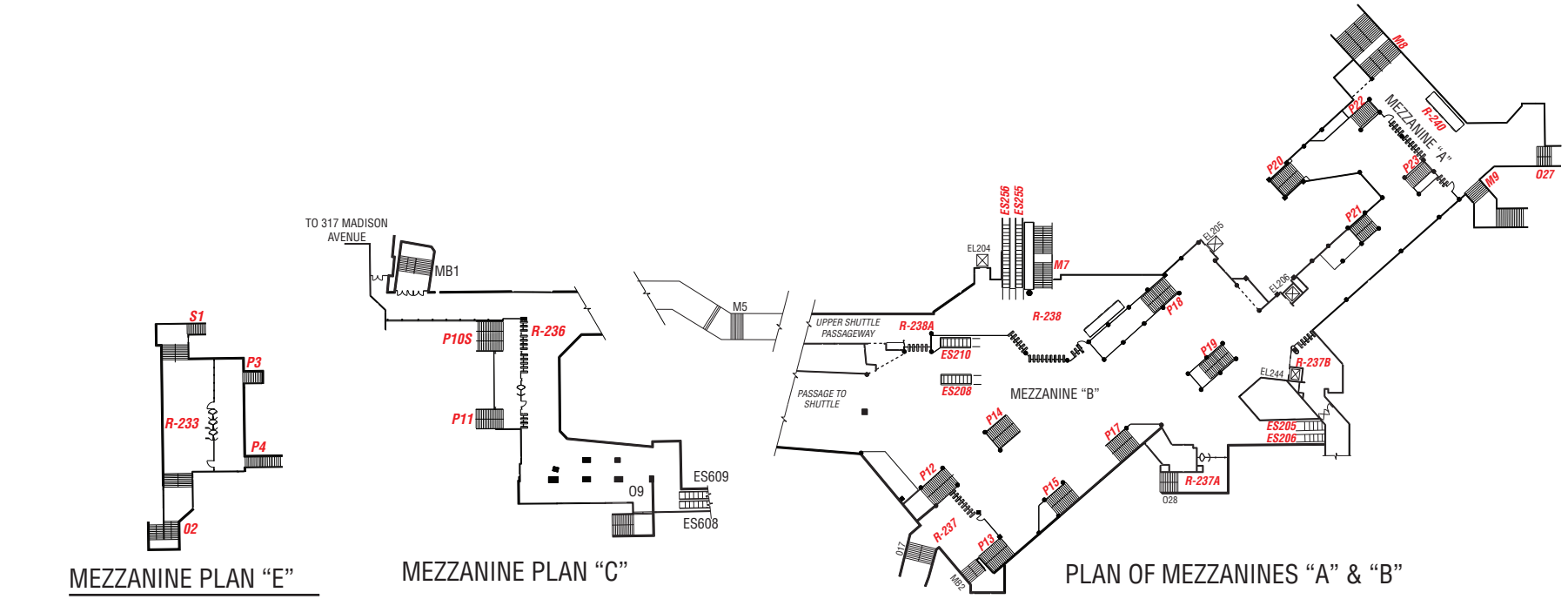
As shown is **Figure 10-41**, the Lexington Avenue Line platform is accessed primarily via Mezzanine A/B with several fare array areas (R238, R238A, R237, R237A, R237B, and R240). Fare array areas have associated stairs to the street level and are configured as follows:

- The R238 fare array area has 15 turnstiles and connects via the M7 stair, escalators ES255 and ES256, and ADA elevator E204 to Grand Central Terminal on the north side of East 42nd Street between Park and Lexington Avenues. To the west of R238 is fare array area R238A, which has two high entry/exit turnstiles, and serves the unpaid shuttle passageway and M5 stair.
- At the south end of Mezzanine A/B is fare array area R237, which has seven turnstiles, and is served by stair O17 that leads to a street exit on the east side of Park Avenue south of East 42nd Street. Fare array area R237 is also served by stair MB2 that leads to the south side of East 42nd Street between Park and Lexington Avenues through the Bowery Savings Bank.
- Fare array area R237A is northeast of R237 and has one high exit turnstile that leads to the Bowery Savings Bank on the south side of East 42nd Street. East of fare array R237A is R237B, which consists of four turnstiles, and leads to the street through the Chanin Building on the south side of East 42nd Street.
- At the north end of Mezzanine A/B is fare array area R240, which has eleven turnstiles, and connects to Grand Central Terminal via stair M8. It also connects to the Chrysler Building via stair O27 and to Lexington Avenue north of East 42nd Street via stair M9.
- Two island platforms serve the uptown and downtown express and local tracks and are located on a level below Mezzanine A/B. Five stairways (P12, P14, P18, P20, and P22) connect the mezzanine to the southbound platform, and six stairways (P13, P15, P17, P19, P21, and P23) connect the mezzanine to the northbound platform.

Flushing Line (No. 7)

The Flushing Line platform is located underneath East 42nd Street, centered beneath Lexington Avenue and below the diagonal Lexington Avenue Line island platforms. As shown in **Figure 10-42**, the platform is served by three main vertical circulation cores: one at the western end, one in the center and one at the eastern end of the platform. The western and center vertical circulation cores connect to Lexington Avenue Line Mezzanine A/B, and the third core, at the east end of the platform, connects to street level. These circulation cores are configured as follows:

- At the western end of the platform are two switchback escalators (E207-8 and E209-10) that connect to the platform and Lexington Avenue Line Mezzanine A/B.
- At the east end of the platform, stair PL8-9 leads to two escalators (ES203 and ES204) and then to a five flight stair (ML1-5) up to fare array area R241A (Third Avenue core). Fare array area R241A, which has five turnstiles, is located at street level on the south side of East 42nd Street between Lexington and Third Avenues.
- At the center of the platform, there are two sets of splayed stairs (PL2 and PL3 feeding into PL1, and PL5 and PL6 feeding into PL 4) that lead to a lower mezzanine where two

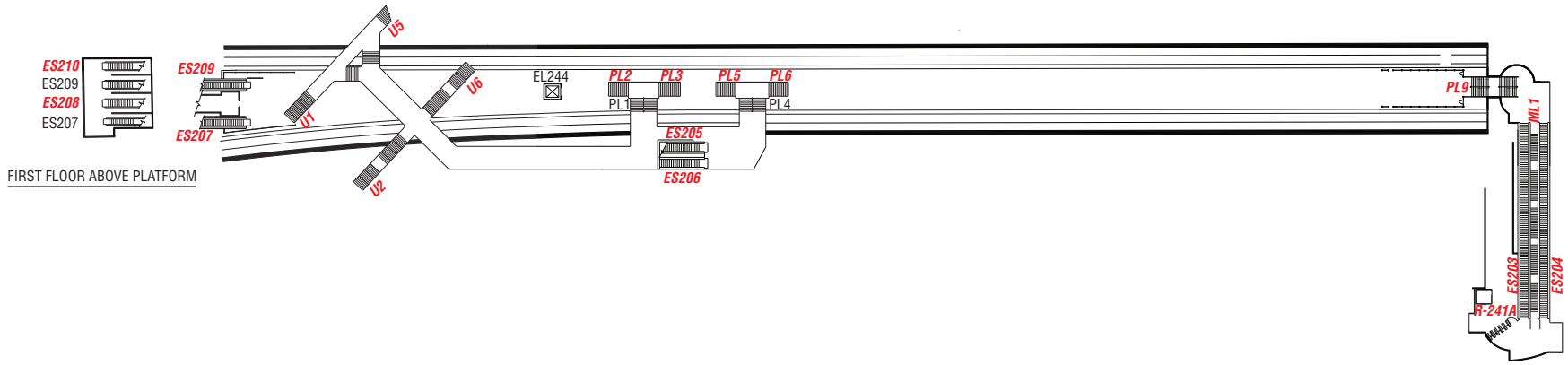


Grand Central-42nd Street Station Mezzanine
Existing Conditions

Figure 10-41

Vanderbilt Corridor and One Vanderbilt

This figure has been updated for the FEIS



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*ES207 Denotes Analysis Locations

Grand Central-42nd Street Station - Flushing Line
Existing Conditions
Figure 10-42

Vanderbilt Corridor and One Vanderbilt
This figure has been updated for the FEIS

escalators (ES205 and ES206) provide connections to Lexington Avenue Line Mezzanine A/B. The lower mezzanine also connects to the Flushing Line passageway, which extends west below the Lexington Avenue Line island platforms. Stairs U1 and U5 connect from the Flushing Line passageway up to the southbound Lexington Avenue Line platform, and stairs U2 and U6 connect up to the northbound Lexington Avenue Line platform.

Shuttle Line (S)

The Shuttle Line platform area is underneath East 42nd Street primarily between Vanderbilt and Madison Avenues. It is comprised of two island platforms that join at its eastern end. This wide platform area connects to a paid zone passageway leading to Lexington Avenue Line Mezzanine A/B. There are also connections to street-level as follows.

- The eastern end of the platform area also connects to stairs P10 and P11, which lead up to fare array area R236 where there are 12 turnstiles and one high exit turnstile. At the south end of fare array area R236, there is a stair (O9) in One Grand Central Place that connects to street level on the south side of East 42nd Street between Madison and Park Avenues. Also at the south end of fare array area R236, there are two escalators (ES608 and ES609) that lead to street level at the southwest corner of Park Avenue and East 42nd Street. At the north end of the R236, there is a passageway that connects into 317 Madison Avenue and stair (MB1) that leads to street level through the building at 51 East 42nd Street. In addition, the north end of R236 connects to Grand Central Terminal and the shuttle unpaid passageway (leading to R238A and the Lexington Avenue Line Mezzanine A/B). See **Figure 10-41**, Mezzanine Plan "C."
- At the west end of the two Shuttle platforms, the northern platform is connected to fare array area R233 by stair P3 and the southern platform is connected to R233 by P4. Fare array area R233 has two high entry/exit turnstiles and one high exit turnstile. There are two street stairs, S1 and O2, which connect fare array area R233 to East 42nd Street, west of Madison Avenue. S1 is a sidewalk stair on the north side of East 42nd Street, and O2 is an easement stair in the Carbide building and is located on the south side of East 42nd Street. See **Figure 10-41**, Mezzanine Plan "E."

The selected station analysis elements are depicted in **Figures 10-41 and 10-42** for the Grand Central station complex. As shown in **Table 10-30 through Table 10-33**, the following critical analysis elements at the Grand Central-42nd Street station currently operate at LOS D or worse in at least one peak hour under existing conditions.

AM Peak Hour:

- Free zone stair M7, located near the north side of East 42nd Street and connecting Grand Central Terminal to the R238 fare array area, currently operates at LOS E, with a v/c ratio of 1.56.
- Free zone escalators ES255 and ES256, also located near the north side of East 42nd Street and connecting Grand Central Terminal to the R238 fare array area, both currently operate at LOS D, with v/c ratios of 1.09.
- Street stair M9, located in the Strawberry store on the west side of Lexington Avenue north of East 42nd Street, currently operates at LOS E, with a v/c ratio of 1.38.
- Lexington Avenue Line southbound platform stairs P12, P14, P18, and P22 currently operate at LOS E, E, D, and F, respectively with corresponding v/c ratios of 1.38, 1.47, 1.25, and 1.69.

Table 10-30
Existing Conditions Subway Platform Stair Analysis
Grand Central-42nd Street Station

Stair	Location	Width (ft)	Effective Width (ft)	Peak Hour Volumes		Peak 15-Minute Volumes		Friction Factor	Surge Factor		V/C Ratio	LOS
				Up	Down	Up	Down		Up	Down		
AM Peak Hour												
P12	SB Lexington Ave Platform	10.00	8.75	2517	2067	755	620	0.90	0.75	1.00	1.38	E
P14	SB Lexington Ave Platform	10.00	8.75	1367	3960	410	1188	0.90	0.75	1.00	1.47	E
P18	SB Lexington Ave Platform	10.00	8.75	2230	1863	669	559	0.90	0.75	0.95	1.25	D
P20	SB Lexington Ave Platform	10.00	8.75	1630	1010	489	303	0.90	0.75	1.00	0.81	C
P22	SB Lexington Ave Platform	6.16	5.16	1713	1637	514	491	0.90	0.75	1.00	1.69	F
P13	NB Lexington Ave Platform	10.00	8.75	1687	303	506	91	0.90	0.75	1.00	0.65	B
P15	NB Lexington Ave Platform	10.00	8.75	937	800	281	240	0.90	0.75	1.00	0.52	B
P17	NB Lexington Ave Platform	10.00	8.75	963	863	289	259	0.90	0.75	1.00	0.55	B
P19	NB Lexington Ave Platform	10.00	8.75	1087	903	326	271	0.90	0.75	0.95	0.61	B
P21	NB Lexington Ave Platform	10.00	8.75	2537	167	761	50	0.90	0.75	1.00	0.90	C
P23	NB Lexington Ave Platform	6.16	5.16	2333	340	700	102	0.90	0.75	1.00	1.49	E
U1	Flushing Transfer via SB Lex	6.00	5.00	610	787	183	236	0.90	0.90	0.75	0.77	C
U5	Flushing Transfer via SB Lex	6.00	5.00	1187	470	356	141	0.90	0.90	0.75	0.86	C
U2	Flushing Transfer via NB Lex	6.00	5.00	297	570	89	171	0.90	0.90	0.75	0.48	B
U6	Flushing Transfer via NB Lex	6.00	5.00	523	640	157	192	0.90	0.90	0.75	0.64	B
PL2	Flushing transfer at platform	7.58	6.58	1900	1137	570	341	0.90	0.75	0.95	1.26	D
PL3	Flushing transfer at platform	7.58	6.58	873	1303	262	391	0.90	0.75	0.95	0.86	C
PL5	Flushing transfer at platform	7.00	6.00	1060	3	318	1	1.00	0.75	0.95	0.47	B
PL6	Flushing transfer at platform	7.00	6.00	3373	20	1012	6	1.00	0.75	0.95	1.51	E
PL8	Flushing transfer at platform	10.42	9.17	3843	257	1153	77	0.90	0.75	1.00	1.31	D
ML1-5	Flushing transfer at platform	4.58	3.58	0	257	0	77	1.00	0.75	1.00	0.14	A
P10S	Shuttle at platform	15.58	14.08	2317	2063	695	619	0.90	0.75	1.00	0.81	C
P11	Shuttle at platform	9.33	8.08	1137	820	341	246	0.90	0.75	1.00	0.64	B
P3	Shuttle at platform	5.00	4.00	367	30	110	9	0.90	0.75	1.00	0.29	A
P4	Shuttle at platform	5.00	4.00	763	43	229	13	0.90	0.75	1.00	0.59	B
PM Peak Hour												
P12	SB Lexington Ave Platform	10.00	8.75	1113	1227	334	368	0.90	0.75	1.00	0.69	B
P14	SB Lexington Ave Platform	10.00	8.75	673	3407	202	1022	0.90	0.75	1.00	1.09	D
P18	SB Lexington Ave Platform	10.00	8.75	1020	1113	306	334	0.90	0.75	1.00	0.63	B
P20	SB Lexington Ave Platform	10.00	8.75	427	1240	128	372	0.90	0.75	1.00	0.46	B
P22	SB Lexington Ave Platform	6.16	5.16	370	2057	111	617	0.90	0.75	1.00	1.10	D
P13	NB Lexington Ave Platform	10.00	8.75	1723	1433	517	430	0.90	0.75	1.00	0.95	C
P15	NB Lexington Ave Platform	10.00	8.75	1133	1683	340	505	0.90	0.75	1.00	0.81	C
P17	NB Lexington Ave Platform	10.00	8.75	917	1947	275	584	0.90	0.75	1.00	0.80	C
P19	NB Lexington Ave Platform	10.00	8.75	783	1067	235	320	0.90	0.75	1.00	0.54	B
P21	NB Lexington Ave Platform	10.00	8.75	1907	817	572	245	0.90	0.75	1.00	0.85	C
P23	NB Lexington Ave Platform	6.16	5.16	1920	1513	576	454	0.90	0.75	1.00	1.75	F
U1	Flushing Transfer via SB Lex	6.00	5.00	173	1230	52	369	0.90	0.90	0.75	0.81	C
U5	Flushing Transfer via SB Lex	6.00	5.00	267	660	80	198	0.90	0.90	0.75	0.52	B
U2	Flushing Transfer via NB Lex	6.00	5.00	123	1357	37	407	0.90	0.90	0.75	0.86	C
U6	Flushing Transfer via NB Lex	6.00	5.00	340	1880	102	564	0.90	0.90	0.75	1.28	D
PL2	Flushing transfer at platform	7.58	6.58	647	1807	194	542	0.90	0.75	0.95	0.93	C
PL3	Flushing transfer at platform	7.58	6.58	250	2520	75	756	0.90	0.75	0.95	1.01	D
PL5	Flushing transfer at platform	7.00	6.00	230	507	69	152	0.90	0.75	0.95	0.31	A
PL6	Flushing transfer at platform	7.00	6.00	1197	1693	359	508	0.90	0.75	0.95	1.25	D
PL8	Flushing transfer at platform	10.42	9.17	240	2857	72	857	0.90	0.75	1.00	0.77	C
ML1-5	Flushing transfer at platform	4.58	3.58	0	0	0	0	1.00	0.75	1.00	0.00	A
P10S	Shuttle at platform	15.58	14.08	1890	2417	567	725	0.90	0.75	1.00	0.78	C
P11	Shuttle at platform	9.33	8.08	693	1107	208	332	0.90	0.75	1.00	0.56	B
P3	Shuttle at platform	5.00	4.00	53	267	16	80	0.90	0.75	1.00	0.19	A
P4	Shuttle at platform	5.00	4.00	103	680	31	204	0.90	0.75	1.00	0.45	B

Source: NYCT, 2013.
Note: Under the With-Action condition, a new Lexington Avenue Line "P10" would be added; hence, the existing Shuttle P10 is hereby designated as "P10S."

Table 10-31
Existing Conditions Free-Zone Stair Analysis
Grand Central-42nd Street Station

Free-Zone Stair	Location	Width (ft)	Effective Width (ft)	Peak Hour Volumes		Peak 15-Minute Volumes		Friction Factor	Surge Factor		V/C Ratio	LOS
				Up	Down	Up	Down		Up	Down		
AM Peak Hour												
M8	Control Area R240	19.16	17.66	3927	2347	1178	704	0.90	0.90	1.00	0.84	C
M9	Control Area R240	7.83	6.83	3310	567	993	170	0.90	0.90	1.00	1.38	E
O27	Control Area R240	12.00	10.75	1890	440	567	132	0.90	1.00	0.90	0.49	B
M7	Control Area R238/A	10.00	8.75	1410	4673	423	1402	0.90	0.95	1.00	1.56	E
S1	Control Area R233	4.75	3.75	577	43	173	13	0.90	0.80	1.00	0.45	B
O2	Control Area R233	9.00	7.75	557	33	167	10	0.90	0.80	1.00	0.21	A
PM Peak Hour												
M8	Control Area R240	19.16	17.66	3203	3250	961	975	0.90	0.90	1.00	0.86	C
M9	Control Area R240	7.83	6.83	953	2210	286	663	0.90	0.90	1.00	1.06	D
O27	Control Area R240	12.00	10.75	93	1040	28	312	0.90	1.00	0.90	0.26	A
M7	Control Area R238/A	10.00	8.75	2433	3030	730	909	0.90	0.95	1.00	1.42	E
S1	Control Area R233	4.75	3.75	80	487	24	146	0.90	0.80	1.00	0.35	A
O2	Control Area R233	9.00	7.75	70	383	21	115	0.90	0.80	1.00	0.14	A

Source: NYCT, 2013.

Table 10-32
Existing Conditions Subway Escalator Analysis
Grand Central-42nd Street Station

Escalator	Location	Tread Width (in)	Peak Hour Volumes		Peak 15-Minute Volumes		Surge Factor		Capacity	V/C Ratio	LOS
			Up	Down	Up	Down	Up	Down			
AM Peak Hour											
ES203(UP)	Flushing East Core	32"	1923	-	577	-	0.80	-	750	0.96	C
ES204(UP)	Flushing East Core	32"	1923	-	577	-	0.80	-	750	0.96	C
ES205(UP)	Flushing Center Core	40"	2297	-	689	-	0.80	-	945	0.91	C
ES206(UP)	Flushing Center Core	40"	2297	-	689	-	0.80	-	945	0.91	C
ES208(UP)	Flushing West Core	40"	1993	-	598	-	0.75	-	945	0.84	C
ES210(UP)	Flushing West Core	40"	1993	-	598	-	0.75	-	945	0.84	C
ES255(UP)	R238 Free Zone	40"	3273	-	982	-	0.95	-	945	1.09	D
ES256(UP)	R238 Free Zone	40"	3273	-	982	-	0.95	-	945	1.09	D
PM Peak Hour											
ES203(DN)	Flushing East Core	32"	-	2857	-	857	-	1.00	750	1.14	D
ES204(UP)	Flushing East Core	32"	240	-	72	-	0.80	-	750	0.12	A
ES205(UP)	Flushing Center Core	40"	1420	-	426	-	0.80	-	945	0.56	B
ES206(DN)	Flushing Center Core	40"	-	1397	-	419	-	1.00	945	0.44	A
ES208(DN)	Flushing West Core	40"	-	1910	-	573	-	1.00	945	0.61	B
ES210(UP)	Flushing West Core	40"	1307	-	392	-	0.75	-	945	0.55	B
ES255(DN)	R238 Free Zone	40"	-	3103	-	931	-	1.00	945	0.99	C
ES256(UP)	R238 Free Zone	40"	2857	-	857	-	0.95	-	945	0.95	C

Source: NYCT, 2013.
Note: All escalators operate up in the AM peak.

Table 10-33
Existing Conditions Fare Array Analysis
Grand Central-42nd Street Station

Peak Period	Fare Array	Control Element	Quantity	Peak Hour Pedestrian Volumes		15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS
				In	Out	In	Out				
AM	R233	High Entry/Exit Turnstile	2	73	1133	22	340	0.80	0.90	0.34	A
		High Exit Turnstile	1								
	R236	Two-way Turnstile	12	2880	3457	864	1037	0.80	0.90	0.36	A
		High Entry/Exit Turnstile	1								
	R237	Two-way Turnstile	7	233	2397	70	719	0.90	0.90	0.22	A
	R237A	High Exit Turnstile	1	N/A	437	N/A	131	0.90	1.00	0.26	A
	R237B	Two-way Turnstile	4	113	2047	34	614	0.90	0.90	0.32	A
	R238	Two-way Turnstile	15	5337	8460	1601	2538	0.90	0.90	0.61	B
	R238A	High Entry/Exit Turnstile	2	937	157	281	47	0.90	0.90	0.67	B
	R240	Two-way Turnstile	11	3353	9127	1006	2738	0.90	0.90	0.72	C
	R241A	Two-way Turnstile	5	257	3843	77	1153	0.95	0.90	0.46	B
PM	R233	High Entry/Exit Turnstile	2	870	150	261	45	0.80	0.90	0.61	B
		High Exit Turnstile	1								
	R236	Two-way Turnstile	12	3190	2583	957	775	0.80	0.90	0.34	A
		High Entry/Exit Turnstile	1								
	R237	High Entry/Exit Turnstile	7	1910	393	573	118	0.90	0.90	0.25	A
	R237A	High Exit Turnstile	1	N/A	110	N/A	33	0.90	1.00	0.07	A
	R237B	Two-way Turnstile	4	1217	300	365	90	0.90	0.90	0.28	A
	R238	Two-way Turnstile	15	6143	5350	1843	1605	0.90	0.90	0.53	B
	R238A	High Entry/Exit Turnstile	2	917	237	275	71	0.90	0.90	0.68	B
	R240	Two-way Turnstile	11	6503	4247	1951	1274	0.90	0.90	0.69	B
	R241A	Two-way Turnstile	5	2857	240	857	72	0.95	0.90	0.48	B

Source: NYCT, 2013.

- Lexington Avenue Line northbound platform stair P23 currently operates at LOS E, with a v/c ratio of 1.49.
- Flushing Line platform stair PL2 currently operates at LOS D with a v/c ratio of 1.26. In addition, Flushing Line platform stair PL6 currently operates at LOS E, with a v/c ratio of 1.51.
- At the far eastern end of the Flushing Line platform, stair PL8 currently operates at LOS D, with a v/c ratio of 1.31.

PM Peak Hour:

- Street stair M7 currently operates at LOS E, with a v/c ratio of 1.42.
- Street stair M9 currently operates at LOS D, with a v/c ratio of 1.06.
- Southbound Lexington Avenue Line platform stairs P14 and P22 both currently operate at LOS D, with v/c ratios of 1.09 and 1.10, respectively.
- Northbound Lexington Avenue Line platform stair P23 currently operates at LOS F, with a v/c ratio of 1.75.
- One of the Flushing underpass stairs that connects to the northbound Lexington Avenue Line platform, U6, currently operates at LOS D with a v/c ratio of 1.28.
- Flushing Line platform stairs (that connect through the center core) PL3 and PL6 currently operate at LOS D with v/c ratios of 1.01 and 1.25, respectively.
- Escalator ES203, in the Third Avenue core to the far east of the Flushing platform, currently operates at LOS D with a v/c ratio of 1.14.

42nd St-Bryant Park Station

The 42nd Street-Bryant Park subway station is served by B and D express trains and F and M local trains operating along the Sixth Avenue Line. Based on the estimated project-generated transit trips using this station, fare array and stairway elements at control area N502, as depicted in **Figure 10-43**, located on the northeast side of Sixth Avenue and West 42nd Street, were selected for analysis. As shown in **Tables 10-34 and 10-35**, all critical analysis elements at the 42nd Street-Bryant Park Station currently operate at LOS A, B, or C during the weekday AM and PM peak analysis periods.

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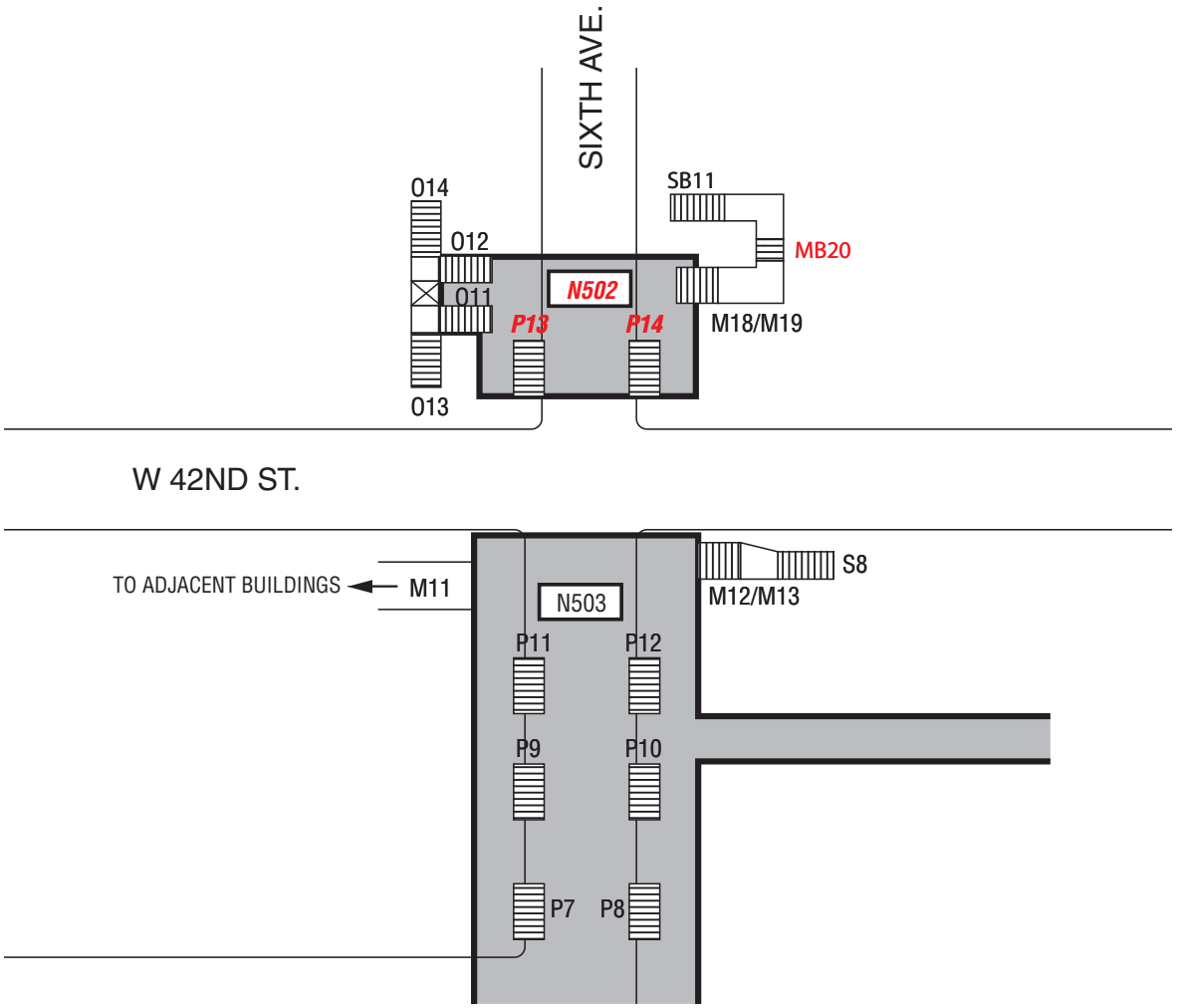


Stair

N501 Fare Array

Elevator

***MB20** Denotes Analysis Locations*

42nd Street Bryant Park Subway Station

Vanderbilt Corridor and One Vanderbilt

Figure 10-43

Table 10-34
Existing Conditions Subway Stairway Analysis
42nd Street-Bryant Park Station

Stairway	Width (ft.)	Effective Width (ft.)	Peak Hour Pedestrian Volumes		Surging Factor for Exiting Passengers	Surging Factor for Entering Passengers	Friction Factor	V/C Ratio	LOS
			Up	Down					
Weekday AM Peak Hour									
42nd Street – Bryant Park (B/D/F/M Line) – N502									
Mezzanine Level									
MB20 (East side of Sixth Avenue between W. 42nd Street and W. 43rd Street	10.00	8.75	2,016	57	0.90	1.00	1.00	0.55	B
Platform Level									
P13 (West side of Sixth Avenue between W. 42nd Street and W. 43rd Street)	10.00	8.75	992	88	0.75	1.00	0.90	0.37	A
P14 (East side of Sixth Avenue between W. 42nd Street and W. 43rd Street)	10.00	8.75	2,036	70	0.75	1.00	1.00	0.66	B
Weekday PM Peak Hour									
42nd Street – Bryant Park (B/D/F/M Line) – N502									
Mezzanine Level									
MB20 (East side of Sixth Avenue between W. 42nd Street and W. 43rd Street	10.00	8.75	174	1,788	0.90	1.00	0.90	0.52	B
Platform Level									
P13 (West side of Sixth Avenue between W. 42nd Street and W. 43rd Street)	10.00	8.75	160	2,069	0.75	1.00	0.90	0.60	B
P14 (East side of Sixth Avenue between W. 42nd Street and W. 43rd Street)	10.00	8.75	266	1,105	0.75	1.00	0.90	0.39	A

Table 10-35
Existing Conditions Subway Fare Array Analysis
42nd Street-Bryant Park Station

Station Fare Array Elements	Quantity	Fare Array Capacity for 15 Minutes (per element)		Peak Hour Ped Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS
		Entry	Exit	Entry	Exit				
Weekday AM Peak Hour									
42nd Street – Bryant Park (B/D/F/M Line) – N502									
Two-way Turnstiles	5	420	645	155	3,803	0.90	1.00	0.29	A
High Entry/Exit Turnstile (HEET)	1	255	540						
High-Exit only –Turnstile (HXT)	2	0	555						
Weekday PM Peak Hour									
42nd Street – Bryant Park (B/D/F/M Line) – N502									
Two-way Turnstiles	5	420	645	2,980	471	0.90	0.90	0.48	B
High Entry/Exit Turnstile (HEET)	1	255	540						
High-Exit only –Turnstile (HXT)	2	0	555						

SUBWAY STATION ANALYSIS—2021 NO-ACTION CONDITION

To account for substantial effects of large-scale projects directly impacting passenger demand in the study area, estimates of peak hour trips for the future No-Action condition were developed using outputs from MTA's Regional Transit Forecasting Model (RTFM). The RTFM is a model

of regional travel in the New York Metropolitan area, including NYCT subway and bus riders; MTA Bus Company riders; commuters using the MNR, LIRR, and transit travel to/from New Jersey; automobile travelers to Manhattan or regional transit stops; and people using other travel modes, including taxi, bicycle, and walk. It uses TransCAD, a transportation planning software package that combines a geographic information system (GIS) with travel demand models and analysis tools. The model is based on socioeconomic forecasts developed by NYMTC; the Department of City Planning participated in the development of these forecasts by allocating borough-level growth to specific model analysis zones. Forecasts were made to represent 2021 conditions. Planned improvements reflected in the RTFM data include the following three MTA capital projects, all of which are currently under construction:

LIRR East Side Access – The LIRR East Side Access project will include new tunnels connecting the LIRR Mainline tracks in Queens to GCT via the existing 63rd Street Tunnel under the East River; and a new passenger concourse with eight tracks and four wide platforms, along with mezzanines and concourses, beneath Park Avenue at an elevation below GCT's existing lower level.

New street-level entrances would be provided on the south side of East 47th Street east of Madison Avenue, on the north side of East 48th Street midblock between Park and Madison Avenues, on the south side of East 47th Street midblock between Park and Lexington Avenues. In addition, connections to GCT will include escalators to the Biltmore Room and the Dining Concourse. LIRR trains are expected to begin serving GCT in 2023. Although the currently anticipated completion year for East Side Access is beyond the One Vanderbilt development's future analysis year of 2021, it would have long-term permanent effects on the area's travel patterns and concentrate LIRR trips in the area of GCT. Therefore, to provide for a reasonably conservative transit analysis, the long-term effects of East Side Access in bringing LIRR trips to GCT were incorporated into the 2021 future No-Action analyses.

Second Avenue Subway (Phase 1) – The Second Avenue Subway project will include a two-track line along Second Avenue from East 125th Street to the Financial District in Lower Manhattan. It will also include a connection from Second Avenue through the 63rd Street Tunnel to existing tracks for service to West Midtown and Brooklyn. Sixteen new ADA accessible stations will be constructed. The Second Avenue subway line is being built in phases; the first phase will provide service from East 96th Street to East 63rd Street as an extension of the Q train, and is expected to be in operation by the end of 2016. As funding for phases 2 through 4 has not been identified, completion of these phases is not assumed for the 2021 analysis year. Operation of Phase 1 of the Second Avenue Line is expected to ease crowding on the Lexington Avenue Line.

No. 7 Subway Line Extension – The No. 7 subway is being extended approximately one mile west from its current terminus at Times Square to a new terminal station at West 34th Street and Eleventh Avenue. The line will extend west under West 41st Street and curve to the south under Eleventh Avenue. A terminal station will be located at approximately West 34th Street and Eleventh Avenue. Full operation of the No. 7 Line extension is expected in 2015.

For this EIS, the RTFM was used to estimate the percentage increase in peak hour entering and exiting demand at each analyzed subway station during the 2013 through 2021 period as a result of regional growth and planned improvements to the transit system. RTFM data were also used to estimate the percentage increase in transfer activity at the 51st Street/Lexington Avenue-53rd Street subway station.

Because of its unique complexity, a more elaborate procedure was used to analyze the Grand Central-42nd Street subway station. Volumes on each subway station element were sub-divided into different categories of subway demand, in order to distinguish between growth rates in moves between platforms and the street, transfers between subway platforms, and transfers to and from the commuter railroads. In most cases the RTFM was used to determine this growth. For certain transfer moves estimated growth was taken directly from either the Hudson Yards EIS or the East Side Access EIS. The growth in each market was then allocated back to individual station elements.

In addition to the changes in subway demand due to regional growth and MTA capital improvements, projected future development independent of the Proposed Action that would have a potential effect on baseline 2021 subway demand at analyzed stations was included in the No-Action subway analysis. Development on projected development sites pursuant to existing zoning was considered, as were other No-Action development projects in study area.

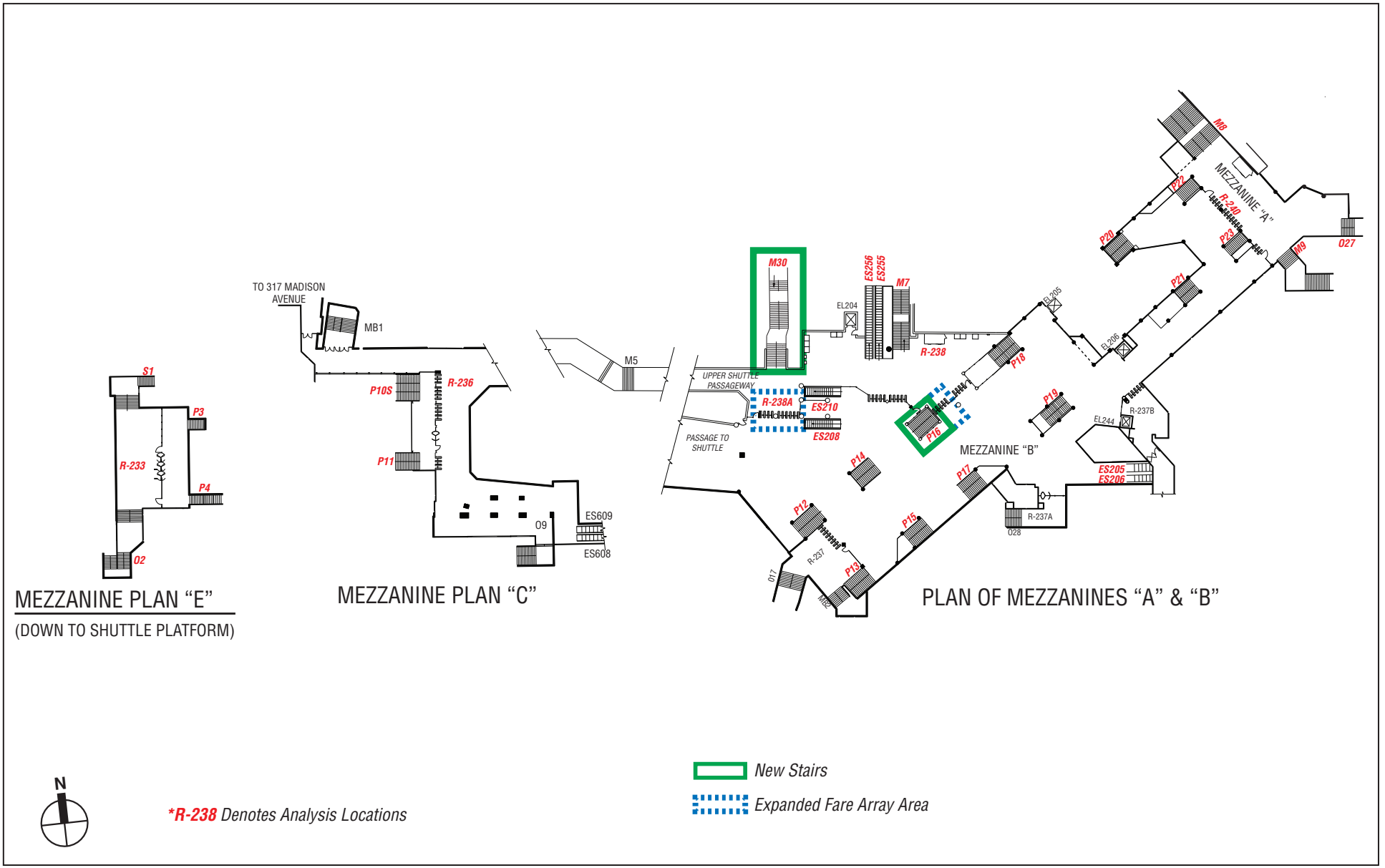
Analysis results of subway station elements for the 2021 No-Action condition during the weekday AM and PM peak periods are discussed below.

Grand Central-42nd Street Station

In the No-Action condition, the Grand Central-42nd Street subway station analysis includes the following station changes, as depicted in **Figure 10-44**:

- A new 10-foot-wide street-level stair (M30) near the north side of East 42nd Street, east of Park Avenue, will have been added within GCT space currently leased to a Kenneth Cole store. The stair would be in lieu of reducing the width of stair M7 and adding a high speed escalator, which was identified as requiring mitigation in the *No. 7 Extension-Hudson Yards Rezoning and Development Program Final GEIS.*
- Fare Array (R238A), located west of the existing R238 fare array area and just in front of new stair M30, will have been expanded to include eight new turnstiles. This was identified as required mitigation in the *East Side Access Final EIS.*
- Lexington Avenue Line southbound platform stair (P16) will have been added. Stair P16 (9.25 feet wide) was identified as required mitigation in both *East Side Access Final EIS* and *No. 7 Extension-Hudson Yard Rezoning and Development Program Final GEIS.*
- Stairs (U2/U6) that connect Lexington Line northbound platform to the Flushing passageway underneath the Lexington Line tracks will have been widened by 1 foot each. This was done in lieu of widening the U5/U7 stairs by two feet, which was identified as required mitigation in the *No. 7 Extension-Hudson Yard Rezoning and Development Program Final GEIS*, based on additional analysis done subsequent to the GEIS.

Tables 10-36 through 10-39 summarize the 2021 No-Action AM and PM peak hour service levels at all analyzed stairs, escalators, and fare arrays at the Grand Central-42nd Street subway station. Of the analyzed station elements, the following locations are expected to operate at LOS D or worse in at least one peak hour.



Grand Central-42nd Street Station Mezzanine
No-Action Condition

Figure 10-44

Vanderbilt Corridor and One Vanderbilt

This figure has been updated for the FEIS

Table 10-36
2021 No-Action Condition Subway Platform Stair Analysis
Grand Central-42nd Street Station

Stair	Location	Width (ft)	Effective Width (ft)	Peak Hour Volumes		Peak 15-Minute Volumes		Friction Factor	Surge Factor		V/C Ratio	LOS
				Up	Down	Up	Down		Up	Down		
AM Peak Hour												
P12	SB Lexington Ave Platform	10.00	8.75	1957	3300	587	990	0.90	0.75	1.00	1.50	E
P14	SB Lexington Ave Platform	10.00	8.75	1160	2750	348	825	0.90	0.75	1.00	1.09	D
P16*	SB Lexington Ave Platform	9.25	8.00	883	3303	265	991	0.90	0.75	1.00	1.24	D
P18	SB Lexington Ave Platform	10.00	8.75	1523	1993	457	598	0.90	0.75	0.95	1.05	D
P20	SB Lexington Ave Platform	10.00	8.75	1650	1397	495	419	0.90	0.75	1.00	0.91	C
P22	SB Lexington Ave Platform	6.16	5.16	1817	1280	545	384	0.90	0.75	1.00	1.59	E
P13	NB Lexington Ave Platform	10.00	8.75	1683	680	505	204	0.90	0.75	1.00	0.74	C
P15	NB Lexington Ave Platform	10.00	8.75	1140	763	342	229	0.90	0.75	1.00	0.58	B
P17	NB Lexington Ave Platform	10.00	8.75	1463	1713	439	514	0.90	0.75	1.00	0.93	C
P19	NB Lexington Ave Platform	10.00	8.75	1567	913	470	274	0.90	0.75	0.95	0.77	C
P21	NB Lexington Ave Platform	10.00	8.75	2093	240	628	72	0.90	0.75	1.00	0.77	C
P23	NB Lexington Ave Platform	6.16	5.16	2060	490	618	147	0.90	0.75	1.00	1.39	E
U1	Flushing Transfer via SB Lex	6.00	5.00	680	963	204	289	0.90	0.90	0.75	0.91	C
U5	Flushing Transfer via SB Lex	6.00	5.00	1263	847	379	254	0.90	0.90	0.75	1.13	D
U2	Flushing Transfer via NB Lex	7.00	6.00	273	1120	82	336	0.90	0.90	0.75	0.67	C
U6	Flushing Transfer via NB Lex	7.00	6.00	507	940	152	282	0.90	0.90	0.75	0.67	C
PL2	Flushing transfer at platform	7.50	6.50	1867	1670	560	501	0.90	0.75	0.95	1.45	E
PL3	Flushing transfer at platform	7.50	6.50	957	2080	287	624	0.90	0.75	0.95	1.18	D
PL5	Flushing transfer at platform	7.00	6.00	1633	0	490	0	1.00	0.75	0.95	0.73	C
PL6	Flushing transfer at platform	7.00	6.00	2933	120	880	36	1.00	0.75	0.95	1.35	E
PL9A	Flushing transfer at platform	10.00	8.75	3623	590	1087	177	0.90	0.75	1.00	1.38	E
ML1-5	Flushing transfer at platform	4.58	3.58	0	590	0	177	1.00	0.75	1.00	0.33	A
P10S	Shuttle at platform	15.50	14.00	1640	2270	492	681	0.90	0.75	1.00	0.71	C
P11	Shuttle at platform	9.25	8.00	807	883	242	265	0.90	0.75	1.00	0.54	B
P3	Shuttle at platform	5.00	4.00	227	30	68	9	0.90	0.75	1.00	0.18	A
P4	Shuttle at platform	5.00	4.00	457	43	137	13	0.90	0.75	1.00	0.36	A
PM Peak Hour												
P12	SB Lexington Ave Platform	10.00	8.75	1013	1613	304	484	0.90	0.75	1.00	0.75	C
P14	SB Lexington Ave Platform	10.00	8.75	527	1247	158	374	0.90	0.75	1.00	0.49	B
P16*	SB Lexington Ave Platform	9.25	8.75	397	1533	119	460	0.90	0.75	1.00	0.57	B
P18	SB Lexington Ave Platform	10.00	8.75	623	1323	187	397	0.90	0.75	1.00	0.55	B
P20	SB Lexington Ave Platform	10.00	8.75	387	1510	116	453	0.90	0.75	1.00	0.51	B
P22	SB Lexington Ave Platform	6.16	5.16	473	1430	142	429	0.90	0.75	1.00	0.89	C
P13	NB Lexington Ave Platform	10.00	8.75	2460	1400	738	420	0.90	0.75	1.00	1.19	D
P15	NB Lexington Ave Platform	10.00	8.75	1540	1567	462	470	0.90	0.75	1.00	0.92	C
P17	NB Lexington Ave Platform	10.00	8.75	1933	2317	580	695	0.90	0.75	1.00	1.24	D
P19	NB Lexington Ave Platform	10.00	8.75	2063	1237	619	371	0.90	0.75	1.00	1.01	D
P21	NB Lexington Ave Platform	10.00	8.75	1263	1140	379	342	0.90	0.75	1.00	0.72	C
P23	NB Lexington Ave Platform	6.16	5.16	1447	1700	434	510	0.90	0.75	1.00	1.56	E
U1	Flushing Transfer via SB Lex	6.00	5.00	103	987	31	296	0.90	0.90	0.75	0.64	B
U5	Flushing Transfer via SB Lex	6.00	5.00	190	807	57	242	0.90	0.90	0.75	0.57	B
U2	Flushing Transfer via NB Lex	7.00	6.00	117	1607	35	482	0.90	0.90	0.75	0.84	D
U6	Flushing Transfer via NB Lex	7.00	6.00	217	1967	65	590	0.90	0.90	0.75	1.06	D
PL2	Flushing transfer at platform	7.50	6.50	430	2580	129	774	0.90	0.75	0.95	1.12	D
PL3	Flushing transfer at platform	7.50	6.50	217	2683	65	805	0.90	0.75	0.95	1.06	D
PL5	Flushing transfer at platform	7.00	6.00	450	650	135	195	0.90	0.75	0.95	0.48	B
PL6	Flushing transfer at platform	7.00	6.00	793	1080	238	324	0.90	0.75	0.95	0.81	C
PL9A	Flushing transfer at platform	10.00	8.75	1110	2643	333	793	0.90	0.75	1.00	1.05	D
ML1-5	Flushing transfer at platform	4.58	3.58	0	0	0	0	1.00	0.75	1.00	0.00	A
P10S	Shuttle at platform	15.50	14.00	2417	2133	735	640	0.90	0.75	1.00	0.85	C
P11	Shuttle at platform	9.25	8.00	320	410	96	123	0.90	0.75	1.00	0.23	A
P3	Shuttle at platform	5.00	4.00	40	250	12	75	0.90	0.75	1.00	0.17	A
P4	Shuttle at platform	5.00	4.00	83	373	25	112	0.90	0.75	1.00	0.27	A

Source: NYCT, 2014.
Note: Under the With-Action condition, a new Lexington Avenue Line "P10" would be added; hence, the existing Shuttle P10 is hereby designated as "P10S."
*****P16 - new stair parallel to existing stair P18 at SB Lex platform.

Table 10-37
2021 No-Action Condition Free-Zone Stair Analysis
Grand Central-42nd Street Station

Free-Zone Stair	Location	Width (ft)	Effective Width (ft)	Peak Hour Volumes		Peak 15-Minute Volumes		Friction Factor	Surge Factor		V/C Ratio	LOS
				Up	Down	Up	Down		Up	Down		
AM Peak Hour												
M8	Control Area R240	19.20	17.70	3938	2433	1181	730	0.90	0.90	1.00	0.86	C
M9	Control Area R240	7.83	6.83	3335	551	1000	165	0.90	0.90	1.00	1.38	D
O27	Control Area R240	12.00	10.75	1843	456	553	137	0.90	1.00	0.90	0.52	B
M7	Control Area R238-A	10.00	8.75	1250	3637	375	1091	0.90	0.95	1.00	1.26	D
M30(KC)*	Control Area R238-A	11.5	10.25	687	6190	206	1857	0.90	0.95	1.00	1.50	E
S1	Control Area R233	4.75	3.75	170	20	51	6	0.90	0.80	1.00	0.14	A
O2	Control Area R233	9.00	7.75	510	57	153	17	0.90	0.80	1.00	0.20	A
PM Peak Hour												
M8	Control Area R240	19.20	17.70	2000	3043	600	913	0.90	0.90	1.00	0.66	B
M9	Control Area R240	7.83	6.83	1087	2320	326	696	0.90	0.90	1.00	1.15	D
O27	Control Area R240	12.00	10.75	1283	900	385	270	0.90	1.00	0.90	0.47	B
M7	Control Area R238-A	10.00	8.75	4263	1013	1279	304	0.90	0.95	1.00	1.40	E
M30(KC)*	Control Area R238-A	11.5	10.25	663	3997	199	1199	0.90	0.95	1.00	1.02	D
S1	Control Area R233	4.75	3.75	30	160	9	48	0.90	0.80	1.00	0.12	A
O2	Control Area R233	9.00	7.75	93	467	28	140	0.90	0.80	1.00	0.17	A

Source: NYCT, 2014.
Note: *M30 (KC) - new stair parallel to existing stair M7 west of Grand Central entry hallway near Kenneth Cole store.

Table 10-38
2021 No-Action Condition Subway Escalator Analysis
Grand Central-42nd Street Station

Escalator	Location	Tread Width (in.)	Peak Hour Volumes		Peak 15-Minute Volumes		Surge Factor		Capacity	V/C Ratio	LOS
			Up	Down	Up	Down	Up	Down			
AM Peak Hour											
ES203(UP)	Flushing East Core	32"	1813	-	544	-	0.80	-	750	0.91	C
ES204(UP)	Flushing East Core	32"	1813	-	544	-	0.80	-	750	0.91	C
ES205(UP)	Flushing Center Core	40"	2333	-	700	-	0.80	-	945	0.93	C
ES206(UP)	Flushing Center Core	40"	2333	-	700	-	0.80	-	945	0.93	C
ES208(UP)	Flushing West Core	40"	2060	-	618	-	0.75	-	945	0.87	C
ES210(UP)	Flushing West Core	40"	2060	-	618	-	0.75	-	945	0.87	C
ES255(UP)	R238 Free Zone	40"	3500	-	1050	-	0.95	-	945	1.17	D
ES256(UP)	R238 Free Zone	40"	3500	-	1050	-	0.95	-	945	1.17	D
PM Peak Hour											
ES203(UP)	Flushing East Core	32"	1110	-	333	-	0.80	-	750	0.56	B
ES204(DN)	Flushing East Core	32"	-	2643	-	793	-	1.00	750	1.06	D
ES205(UP)	Flushing Center Core	40"	1267	-	380	-	0.80	-	945	0.50	B
ES206(DN)	Flushing Center Core	40"	-	1627	-	488	-	1.00	945	0.52	B
ES208(UP)	Flushing West Core	40"	1403	-	421	-	0.75	-	945	0.59	B
ES210(DN)	Flushing West Core	40"	-	3143	-	943	-	1.00	945	1.00	C
ES255(UP)	R238 Free Zone	40"	3500	-	1050	-	0.95	-	945	1.17	D
ES256(DN)	R238 Free Zone	40"	-	3600	-	1080	-	1.00	945	1.14	D

Source: NYCT, 2014.
Note: All escalators operate up in the AM peak.

Table 10-39
2021 No-Action Condition Fare Array Analysis
Grand Central-42nd Street Station

Peak Period	Fare Array	Control Element	Quantity	Peak Hour Pedestrian Volumes		15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS
				In	Out	In	Out				
AM	R233	High Entry/Exit Turnstile	2	73	680	22	204	0.80	0.90	0.22	A
		High Exit Turnstile	1								
	R236	Two-way Turnstile	12	3150	2637	945	791	0.80	0.90	0.34	A
		High Entry/Exit Turnstile	1								
	R237	Two-way Turnstile	7	273	2443	82	733	0.90	0.90	0.23	A
	R237A	High Exit Turnstile	1	N/A	437	N/A	131	0.90	1.00	0.26	A
	R237B	Two-way Turnstile	4	153	1997	46	599	0.90	0.90	0.32	A
	R238	Two-way Turnstile	16	3637	8000	1091	2400	0.90	0.90	0.47	B
	R238A	Two-way Turnstile	8	7390	1287	2217	386	0.90	0.90	0.83	C
	R240	Two-way Turnstile	11	3440	9117	1032	2735	0.90	0.90	0.72	C
	R241A	Two-way Turnstile	5	590	3623	177	1087	0.95	0.90	0.49	B
PM	R233	High Entry/Exit Turnstile	2	623	123	187	37	0.80	0.90	0.44	A
		High Exit Turnstile	1								
	R236	Two-way Turnstile	12	2727	2737	818	821	0.80	0.90	0.32	A
		High Entry/Exit Turnstile	1								
	R237	Two-way Turnstile	7	1917	437	573	131	0.90	0.90	0.25	A
	R237A	High Exit Turnstile	1	N/A	113	N/A	34	0.90	1.00	0.07	A
	R237B	Two-way Turnstile	4	1837	330	551	99	0.90	0.90	0.41	A
	R238	Two-way Turnstile	16	4613	8163	1384	2449	0.90	0.90	0.52	B
	R238A	Two-way Turnstile	8	4650	1203	1395	361	0.90	0.90	0.55	B
	R240	Two-way Turnstile	11	6647	3987	1994	1196	0.90	0.90	0.69	B
	R241A	Two-way Turnstile	5	2643	1110	793	333	0.90	0.90	0.54	B

Source: NYCT, 2014.

AM Peak Hour:

- Lexington Avenue Line southbound platform stairs P12, P14, P16, and P18 will operate at LOS E, D, D, and D, respectively, with corresponding v/c ratios of 1.50, 1.09, 1.24, and 1.05.
- Lexington Avenue Line northbound platform stair P23 will operate at LOS E with a v/c ratio of 1.39.
- Stair U5, which descend below the southbound Lexington Avenue platform to the Flushing Line passageway, will operate at D with v/c ratios of 1.13.
- Flushing Line platform stairs PL2, PL3, PL6, and PL9A will operate at LOS E, D, E, and E, respectively, with corresponding v/c ratios of 1.45, 1.18, 1.35, and 1.38.
- Free zone stair M7, located near the north side of East 42nd Street and connecting Grand Central Terminal to the R238 fare array area, will operate at LOS D with a v/c ratio of 1.26.
- Free zone stair M9, located near the R240 fare array area will operate at LOS D with a v/c ratio of 1.38.
- Future free zone stair M30 will be over capacity by 2021, operating at LOS E with a v/c ratio of 1.50.
- Free zone escalators ES255 and ES256, also located near the north side of East 42nd Street and connecting Grand Central Terminal to the R238 fare array area, will both operate at LOS D with v/c ratios of 1.17.

PM Peak Hour:

- Lexington Avenue Line north platform stairs P13, P17, P19, and P23 will operate at LOS D, D, D, and E, respectively, with corresponding v/c ratios of 1.19, 1.24, 1.01, and 1.56.
- Flushing Line platform stairs PL2, PL3, and PL9A will operate at LOS D, D, and D with v/c ratios of 1.12, 1.06, and 1.05, respectively.
- Stair U6 will operate at LOS D with v/c ratio of 1.06.
- Free zone stair M7will operate at LOS E with a v/c ratio of 1.40.
- Free zone stair M9 will operate at LOS D with a v/c ratio of 1.15.
- Future free zone stair M30 will operate at LOS D with a v/c ratio of 1.02.
- Flushing East Core escalator ES204 will operate at LOS D with a v/c ratio of 1.06.
- Free zone escalators ES255 and ES256, will both operate at LOS D with v/c ratios of 1.17 and 1.14, respectively.

42nd Street-Bryant Park Station

As shown in **Tables 10-40 and 10-41**, all critical analysis elements at the 42nd Street-Bryant Park subway station will continue to operate at acceptable levels during the weekday AM and PM peak periods.

Table 10-40
2021 No-Action Condition Subway Stairway Analysis
42nd Street-Bryant Park Station

Stairway	Width (ft.)	Effective Width (ft.)	Peak Hour Pedestrian Volumes		Surging Factor for Exiting Passengers	Surging Factor for Entering Passengers	Friction Factor	V/C Ratio	LOS
			Up	Down					
Weekday AM Peak Hour									
42nd Street – Bryant Park (B/D/F/M Line) – N502									
Mezzanine Level									
MB20 (East side of Sixth Avenue between W. 42nd Street and W. 43rd Street	10.00	8.75	2,158	56	0.90	1.00	1.00	0.58	B
Platform Level									
P13 (West side of Sixth Avenue between W. 42nd Street and W. 43rd Street)	10.00	8.75	1,002	86	0.75	1.00	0.90	0.38	A
P14 (East side of Sixth Avenue between W. 42nd Street and W. 43rd Street)	10.00	8.75	2,240	70	0.75	1.00	1.00	0.70	B
Weekday PM Peak Hour									
42nd Street – Bryant Park (B/D/F/M Line) – N502									
Mezzanine Level									
MB20 (East side of Sixth Avenue between W. 42nd Street and W. 43rd Street	10.00	8.75	186	1,765	0.90	1.00	0.90	0.52	B
Platform Level									
P13 (West side of Sixth Avenue between W. 42nd Street and W. 43rd Street)	10.00	8.75	162	2,028	0.75	1.00	0.90	0.59	B
P14 (East side of Sixth Avenue between W. 42nd Street and W. 43rd Street)	10.00	8.75	293	1,105	0.75	1.00	0.90	0.40	A

Table 10-41
2021 No-Action Condition Subway Fare Array Analysis
42nd Street-Bryant Park Station

Station Fare Array Elements	Quantity	Fare Array Capacity for 15 Minutes (per element)		Peak Hour Ped Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS
		Entry	Exit	Entry	Exit				
Weekday AM Peak Hour									
42nd Street – Bryant Park (B/D/F/M Line) – N502									
Two-way Turnstiles	5	420	645	153	4,072	0.90	1.00	0.31	A
High Entry/Exit Turnstile (HEET)	1	255	540						
High-Exit only –Turnstile (HXT)	2	0	555						
Weekday PM Peak Hour									
42nd Street – Bryant Park (B/D/F/M Line) – N502									
Two-way Turnstiles	5	420	645	2,942	504	0.90	0.90	0.47	B
High Entry/Exit Turnstile (HEET)	1	255	540						
High-Exit only –Turnstile (HXT)	2	0	555						

SUBWAY STATION ANALYSIS—2021 WITH-ACTION CONDITION

As shown in **Table 10-8**, the Proposed Action is expected to generate net totals of 1,720 and 1,785 incremental subway trips in the AM and PM peak hours, respectively. Based on trip assignment data provided by NYCT, the highest numbers of incremental peak hour subway trips

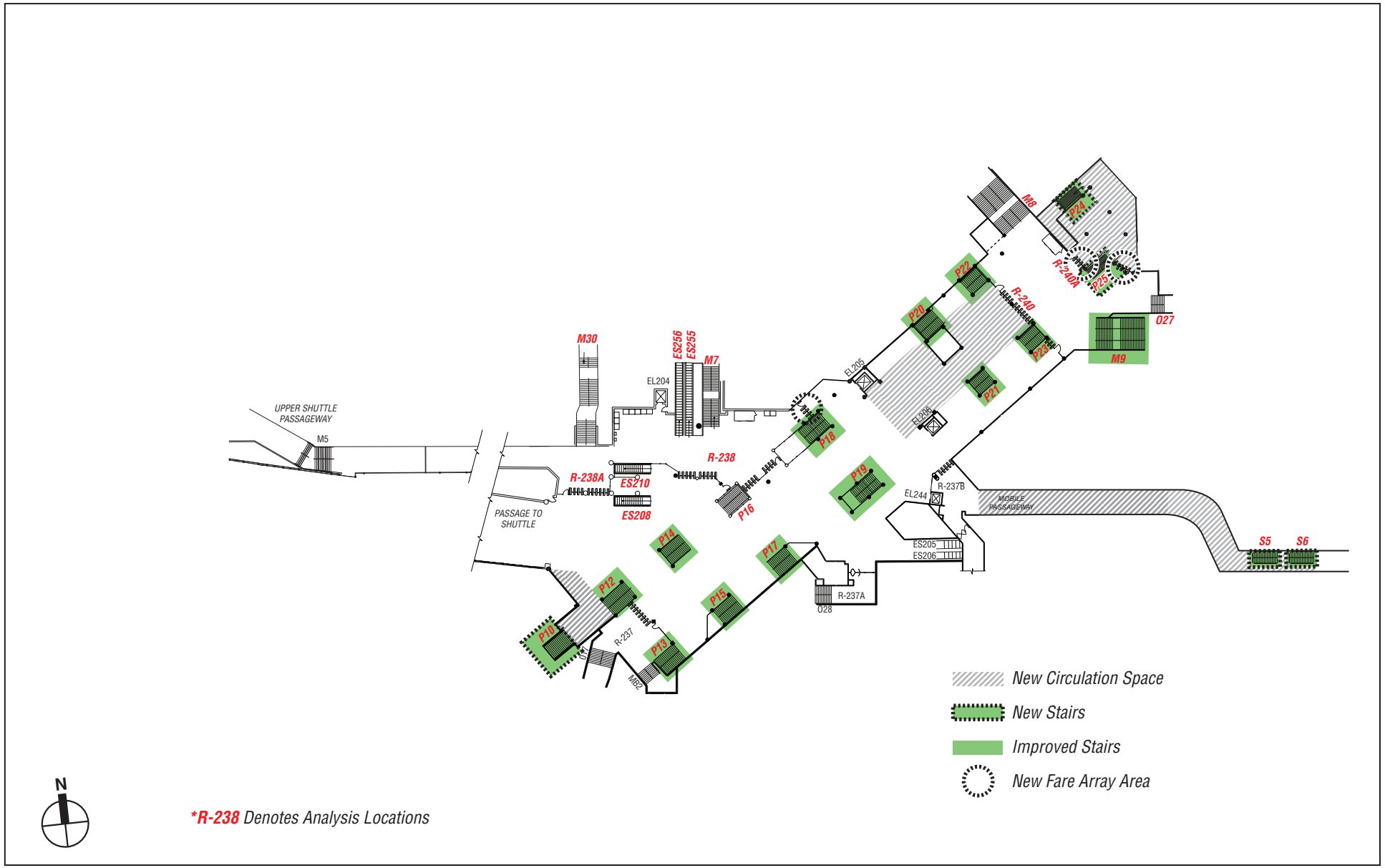
are expected to occur at the Grand Central-42nd Street station complex, which would experience approximately 1,309 incremental trips in the AM peak hour and 1,751 incremental trips in the PM peak hour. The 42nd Street-Bryant Park/Sixth Avenue subway station would serve the bulk of the remaining incremental peak hour subway trips—411 in the AM peak hour and 407 in the PM peak hour.

As noted in Chapter 1, "Project Description," the future with the Proposed Action would incorporate priority improvements to Grand Central-42nd Street subway station complex. These improvements have been developed to enhance this station's passenger circulation (see **Figures 10-45 and 10-46**), with the following goals:

- Provide better access to/from the Flushing Line platforms;
- Provide new connections between Grand Central Terminal, particularly the new LIRR concourse and the lower level MNR tracks, and the subway station, effectively directing customers away from congested areas, such as the R238 fare array area and the Lexington Avenue Line platforms;
- Provide more Lexington Avenue Line platform space to make it easier for customers to board and alight Lexington Avenue Line trains, reducing train dwell time and increasing train capacity;
- Improve way-finding in the station by opening up the Lexington Avenue Line mezzanine; and
- Provide more exit capacity to the street from the Lexington Avenue Line mezzanine.

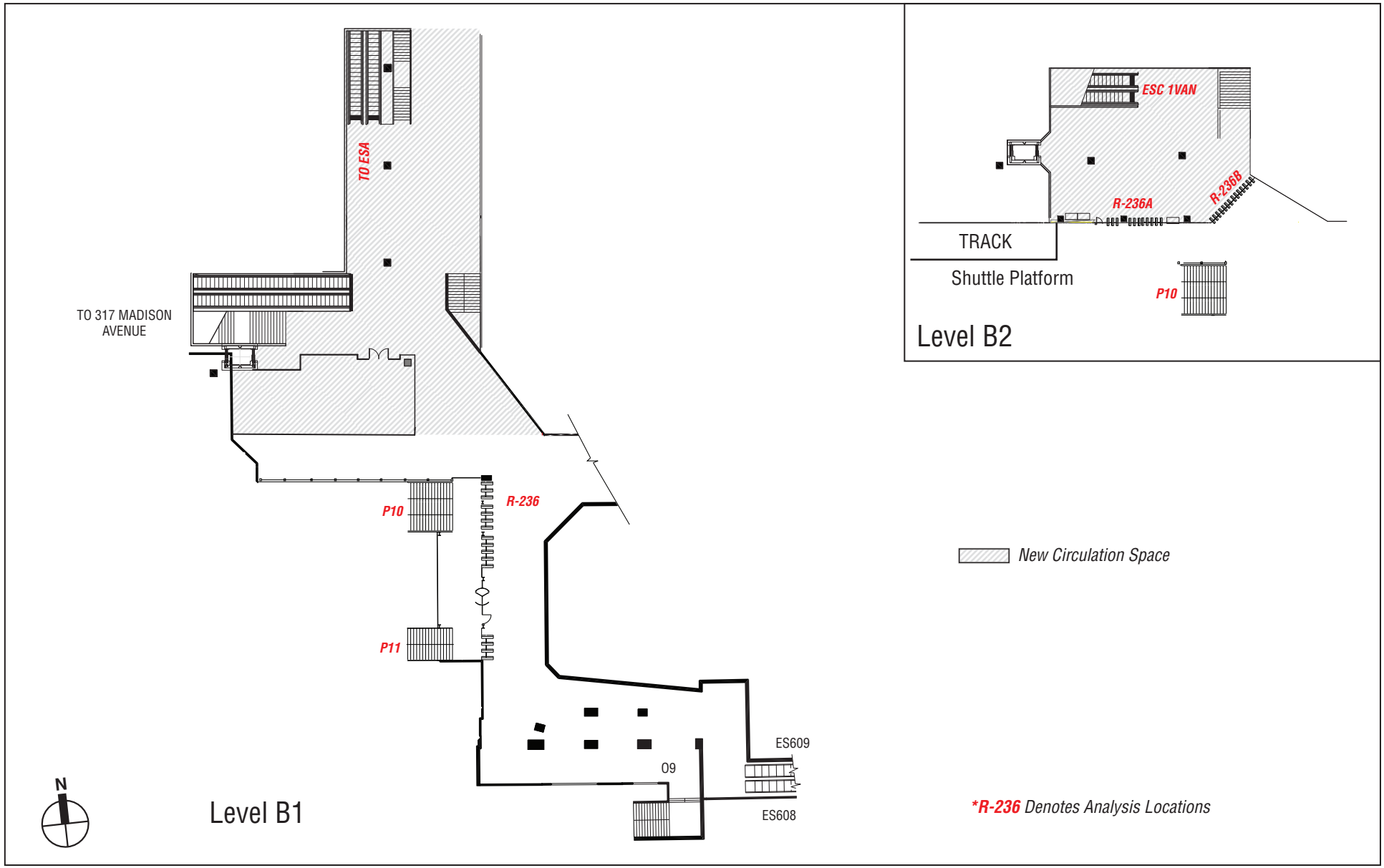
These goals, which are intended to improve passenger circulation at the Grand Central-42nd Street subway station, can be accomplished through the following actions:

- Existing stair M9 in the Strawberry store would be widened to a total effective width of 12 feet 6 inches (from 6 feet 10 inches in No-Action). A new elevator will be also placed at this location.
- An unused track in Grand Central Terminal would be converted into a new passageway to service the new LIRR concourse under Vanderbilt Avenue. This passageway would connect to a new mezzanine below the Shuttle passageway. This new mezzanine would also have a connection to the MNR lower level tracks. The mezzanine would have a new 6-foot-wide (5-foot effective) stair (ML1) connecting to the R238 fare array area on Lexington Avenue mezzanine A/B.
- R238A would be expanded to include eight turnstiles. In addition, there would be a new fare array called R238B placed adjacent to Stair P18 and would include four turnstiles.
- Space on the mezzanine, which is currently not public, would be opened to improve way finding throughout the station. For example, customers entering the mezzanine at the north end of the station would be able to easily find their way to Flushing escalators ES205 and ES206, or to the shuttle passageway.
- On both Lexington Avenue Line platforms, a number of changes would be made to the staircases and the nearby columns. Selected 10-foot-wide stairs would be reduced to nine feet, six inches. These stairs, while narrower, would still be of sufficient width to accommodate four lanes of pedestrian traffic. Once the tread height reaches six feet, eight inches, the space behind each stair would be opened for pedestrian circulation, and columns adjacent to the staircases would be made narrower to accommodate pedestrian circulation along the express side of the southbound platform and the local side of the northbound



Grand Central-42nd Street Station Mezzanine
With-Action Condition
Figure 10-45

Vanderbilt Corridor and One Vanderbilt
This figure has been updated for the FEIS



Grand Central-42nd Street Station Mezzanine - Transit Hall Connections
With-Action Condition

Figure 10-46

Vanderbilt Corridor and One Vanderbilt

This figure has been updated for the FEIS

platform. A total of nine stairs (four southbound, five northbound) would be altered in this fashion.

- At the shuttle platform level (B2), a new control area (R236A and R236B) would be added, providing a direct access to One Vanderbilt via escalators and an elevator at the shuttle platform level and a stairway leading to the LIRR escalators at B1 level.

The Grand Central-42nd Street subway station elements were analyzed with these station improvements and the results are presented in **Table 10-42 through 10-45**. With these improvements, the congestion noted in the No-Action condition would be alleviated. For elements that would be LOS D or worse in the No-Action condition, there would be improved conditions during both the AM and PM peak hours. In addition, elements with LOS F operations would be improved to LOS D in most cases or at least to LOS E. However, as a result of the narrowing of certain stairs, the v/c ratios would worsen, with LOS D conditions or worse at a few station elements. As described above, the narrowing of these stairs would be made in order to facilitate movement on the Lexington Avenue Line platform and increase track capacity, allowing one more train southbound during the AM peak hour and one more train northbound during the PM peak hour. Overall, these improvements, even with the stair narrowing, would improve circulation in the station complex. However, two station elements would be expected to deteriorate to levels in exceedance of the CEQR impact threshold. When viewed in the context of the subway station improvements that are part of the proposed One Vanderbilt development, the deteriorations in service levels at a few stairways are not considered significant adverse impacts.

Table 10-42
2021 With-Action Subway Platform Stair Analysis
Grand Central-42nd Street Station

Stair	Location	Width (ft)	Effective Width (ft)	Peak Hour Volumes		Peak 15-Minute Volumes		Friction Factor	Surge Factor		V/C Ratio	LOS
				Up	Down	Up	Down		Up	Down		
AM Peak Hour												
P10*	SB Lexington Ave Platform	7.50	6.50	1080	1443	324	433	0.90	0.75	1.00	0.99	C
P12	SB Lexington Ave Platform	9.25	8.00	1143	2517	343	755	0.90	0.75	1.00	1.12	D
P14	SB Lexington Ave Platform	9.25	8.00	1127	2397	338	719	0.90	0.75	1.00	1.08	D
P16	SB Lexington Ave Platform	9.25	8.00	960	3200	288	960	0.90	0.75	1.00	1.24	D
P18	SB Lexington Ave Platform	9.25	8.00	1397	2163	419	649	0.90	0.75	0.95	1.15	D
P20	SB Lexington Ave Platform	9.25	8.00	1637	1273	491	382	0.90	0.75	1.00	0.96	C
P22	SB Lexington Ave Platform	9.25	8.00	1117	1127	335	338	0.90	0.75	1.00	0.73	C
P24*	SB Lexington Ave Platform	7.00	6.00	817	0	245	0	1.00	0.75	1.00	0.36	A
P13	NB Lexington Ave Platform	9.25	8.00	1877	680	563	204	0.90	0.75	1.00	0.88	C
P15	NB Lexington Ave Platform	9.25	8.00	1330	820	399	246	0.90	0.75	1.00	0.72	C
P17	NB Lexington Ave Platform	9.25	8.00	1697	1687	509	506	0.90	0.75	1.00	1.10	D
P19	NB Lexington Ave Platform	9.25	8.00	1853	1020	556	306	0.90	0.75	0.95	0.98	D
P21	NB Lexington Ave Platform	9.25	8.00	1397	207	419	62	0.90	0.75	1.00	0.57	B
P23	NB Lexington Ave Platform	9.25	8.00	1187	310	356	93	0.90	0.75	1.00	0.53	B
P25*	NB Lexington Ave Platform	6.00	5.00	977	103	293	31	0.90	0.75	1.00	0.62	B
U1	Flushing Transfer via SB Lex	6.00	5.00	680	963	204	289	0.90	0.90	0.75	0.91	C
U5	Flushing Transfer via SB Lex	6.00	5.00	1263	877	379	263	0.90	0.90	0.75	1.14	D
U2	Flushing Transfer via NB Lex	7.00	6.00	273	1127	82	338	0.90	0.90	0.75	0.67	B
U6	Flushing Transfer via NB Lex	7.00	6.00	507	940	152	282	0.90	0.90	0.75	0.67	B
PL2	Flushing transfer at platform	7.50	6.50	1870	1743	561	523	0.90	0.75	0.95	1.48	E
PL3	Flushing transfer at platform	7.50	6.50	957	2047	287	614	0.90	0.75	0.95	1.17	D
PL5	Flushing transfer at platform	7.00	6.00	1637	0	491	0	1.00	0.75	0.95	0.73	C
PL6	Flushing transfer at platform	7.00	6.00	2940	120	882	36	1.00	0.75	0.95	1.35	E
PL9A	Flushing transfer at platform	10.00	8.75	3370	560	1011	168	0.90	0.75	0.95	1.28	D
ML1-5	Flushing transfer at platform	4.58	3.58	0	560	0	168	1.00	0.75	1.00	0.31	A
P10S	Shuttle at platform	15.50	14.00	1820	2290	546	687	0.90	0.75	1.00	0.75	C
P11	Shuttle at platform	9.25	8.00	897	890	269	267	0.90	0.75	1.00	0.58	B
P3	Shuttle at platform	5.00	4.00	227	30	68	9	0.90	0.75	1.00	0.18	A
P4	Shuttle at platform	5.00	4.00	457	43	137	13	0.90	0.75	1.00	0.36	A
PM Peak Hour												
P10*	SB Lexington Ave Platform	7.50	6.50	567	517	170	155	0.90	0.75	1.00	0.43	A
P12	SB Lexington Ave Platform	9.25	8.00	440	1053	132	316	0.90	0.75	1.00	0.46	B
P14	SB Lexington Ave Platform	9.25	8.00	430	1197	129	359	0.90	0.75	1.00	0.49	B
P16	SB Lexington Ave Platform	9.25	8.00	443	1847	133	554	0.90	0.75	1.00	0.68	B
P18	SB Lexington Ave Platform	9.25	8.00	717	1750	215	525	0.90	0.75	1.00	0.75	C
P20	SB Lexington Ave Platform	9.25	8.00	297	1363	89	409	0.90	0.75	1.00	0.49	B
P22	SB Lexington Ave Platform	9.25	8.00	287	1243	86	373	0.90	0.75	1.00	0.45	B
P24*	SB Lexington Ave Platform	7.00	6.00	133	0	40	0	1.00	0.75	1.00	0.06	A
P13	NB Lexington Ave Platform	9.25	8.00	2547	1277	764	383	0.90	0.75	1.00	1.30	D
P15	NB Lexington Ave Platform	9.25	8.00	1817	1727	545	518	0.90	0.75	1.00	1.15	D
P17	NB Lexington Ave Platform	9.25	8.00	1947	2183	584	655	0.90	0.75	1.00	1.33	D
P19	NB Lexington Ave Platform	9.25	8.00	1923	1593	577	478	0.90	0.75	1.00	1.15	D
P21	NB Lexington Ave Platform	9.25	8.00	1043	960	313	288	0.90	0.75	1.00	0.65	B
P23	NB Lexington Ave Platform	9.25	8.00	840	1367	252	410	0.90	0.75	1.00	0.69	B
P25*	NB Lexington Ave Platform	6.00	5.00	677	533	203	160	0.90	0.75	1.00	0.64	B
U1	Flushing Transfer via SB Lex	6.00	5.00	103	987	31	296	0.90	0.90	0.75	0.64	B
U5	Flushing Transfer via SB Lex	6.00	5.00	190	807	57	242	0.90	0.90	0.75	0.57	B
U2	Flushing Transfer via NB Lex	7.00	6.00	117	1607	35	482	0.90	0.90	0.75	0.84	C
U6	Flushing Transfer via NB Lex	7.00	6.00	217	1967	65	590	0.90	0.90	0.75	1.06	D

Table 10-42 (cont'd)
2021 With-Action Subway Platform Stair Analysis
Grand Central-42nd Street Station

Stair	Location	Width (ft)	Effective Width (ft)	Peak Hour Volumes		Peak 15-Minute Volumes		Friction Factor	Surge Factor		V/C Ratio	LOS
				Up	Down	Up	Down		Up	Down		
PL2	Flushing transfer at platform	7.50	6.50	437	2607	131	782	0.90	0.75	0.95	1.14	D
PL3	Flushing transfer at platform	7.50	6.50	217	2683	65	805	0.90	0.75	0.95	1.06	D
PL5	Flushing transfer at platform	7.00	6.00	453	757	136	227	0.90	0.75	0.95	0.52	B
PL6	Flushing transfer at platform	7.00	6.00	803	1217	241	365	0.90	0.75	0.95	0.87	C
PL9A	Flushing transfer at platform	10.00	7.00	1053	2510	316	753	0.90	0.75	0.95	0.99	C
ML1	Flushing transfer at platform	4.58	3.58	0	0	0	0	1.00	0.75	1.00	0.00	A
P10S	Shuttle at platform	15.50	14.00	1777	1513	533	454	0.90	0.75	1.00	0.62	B
P11	Shuttle at platform	9.25	8.00	877	590	263	177	0.90	0.75	1.00	0.49	B
P3	Shuttle at platform	5.00	4.00	40	250	12	75	0.90	0.75	1.00	0.17	A
P4	Shuttle at platform	5.00	4.00	83	373	25	112	0.90	0.75	1.00	0.27	A

Source: NYCT, 2014.
Note: *****New stairs added under the with-Action condition.

Table 10-43
2021 With-Action Free-Zone Stair Analysis
Grand Central-42nd Street Station

Free-Zone Stair	Location	Width (ft)	Effective Width (ft)	Peak Hour Volumes		Peak 15-Minute Volumes		Friction Factor	Surge Factor		V/C Ratio	LOS
				Up	Down	Up	Down		Up	Down		
AM Peak Hour												
M8	Control Area R240	19.16	17.66	2433	3937	730	1181	0.90	0.90	1.00	0.84	C
M9	Control Area R240	14.00	12.5	2753	270	826	81	0.90	0.90	1.00	0.59	B
O27	Control Area R240	12.00	10.75	230	1520	69	456	0.90	1.00	0.90	0.40	A
M7	Control Area R238/A	10.00	8.75	767	3590	230	1077	0.90	0.95	1.00	1.12	D
M30(KC)	Control Area R238/A	11.50	10.25	680	6333	204	1900	0.90	0.95	1.00	1.53	E
S1	Control Area R233	4.75	3.75	170	20	51	6	0.90	0.80	1.00	0.14	A
O3	Control Area R233	9.00	7.75	510	57	153	17	0.90	0.80	1.00	0.20	A
PM Peak Hour												
M8	Control Area R240	19.20	17.70	2000	3043	600	913	0.90	0.90	1.00	0.66	B
M9	Control Area R240	14.00	12.5	630	1937	189	581	0.90	0.90	1.00	0.47	B
O27	Control Area R240	12.00	10.75	1067	527	320	158	0.90	1.00	0.90	0.34	A
M7	Control Area R238/A	10.00	8.75	4063	1500	1219	450	0.90	0.95	1.00	1.47	E
M30(KC)	Control Area R238/A	11.50	10.25	1037	2660	311	798	0.90	0.95	1.00	0.81	C
S1	Control Area R233	4.75	3.75	30	157	9	47	0.90	0.80	1.00	0.12	A
O3	Control Area R233	9.00	7.75	93	467	28	140	0.90	0.80	1.00	0.17	A

Source: NYCT, 2014.

Table 10-44
2021 With-Action Subway Escalator Analysis
Grand Central-42nd Street Station

Escalator	Location	Tread Width (ft)	Peak Hour Volumes		Peak 15-Minute Volumes		Surge Factor		Capacity	V/C Ratio	LOS
			Up	Down	Up	Down	Up	Down			
AM Peak Hour											
ES203(UP)	Flushing East Core	32"	1683	-	505	-	0.80	-	750	0.84	C
ES204(UP)	Flushing East Core	32"	1687	-	506	-	0.80	-	750	0.84	C
ES205(UP)	Flushing Center Core	40"	2337	-	701	-	0.80	-	945	0.93	C
ES206(UP)	Flushing Center Core	40"	2340	-	702	-	0.80	-	945	0.93	C
ES208(UP)	Flushing West Core	40"	2267	-	680	-	0.75	-	945	0.96	C
ES210(UP)	Flushing West Core	40"	2267	-	680	-	0.75	-	945	0.96	C
ES255(UP)	R238 Free Zone	40"	3000	-	900	-	0.95	-	945	1.06	D
ES256(UP)	R238 Free Zone	40"	3000	-	900	-	0.95	-	945	1.06	D
1 Van. Esc UP*	R236A/B Free Zone	40"	2853	-	856	-	0.90	-	945	1.01	D
1 Van. Esc. DN*	R236A/B Free Zone	40"	-	513	-	154	-	1.00	945	0.16	A
PM Peak Hour											
ES203(UP)	Flushing East Core	32"	1153	-	316	-	0.80	-	750	0.56	B
ES204(DN)	Flushing East Core	32"	-	2510	-	753	-	1.00	750	1.06	D
ES205(UP)	Flushing Center Core	40"	1283	-	385	-	0.80	-	945	0.50	B
ES206(DN)	Flushing Center Core	40"	-	1893	-	568	-	1.00	945	0.52	B
ES208(UP)	Flushing West Core	40"	1500	-	450	-	0.75	-	945	0.59	B
ES210(DN)	Flushing West Core	40"	-	3303	-	991	-	1.00	945	1.00	C
ES255(UP)	R238 Free Zone	40"	3500	-	1050	-	0.90	-	945	1.17	D
ES256(DN)	R238 Free Zone	40"	-	3600	-	1080	-	1.00	945	1.14	D
1 Van. Esc UP*	R236A/B Free Zone	40"	613	-	184	-	0.90	-	945	0.22	A
1 Van. Esc. DN*	R236A/B Free Zone	40"	-	2700	-	810	-	1.00	945	0.86	C

Source: NYCT, 2014.
Note: ***** New escalators added in the free zone for One Vanderbilt access at the shuttle platform level.

Table 10-45
2021 With-Action Condition Fare Array Analysis
Grand Central-42nd Street Station

Peak Period	Fare Array	Control Element	Quantity	Peak Hour Pedestrian Volumes		15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS
				In	Out	In	Out				
AM	R233	High Entry/Exit Turnstile	2	73	680	22	204	0.80	0.90	0.22	A
		High Exit Turnstile	1								
	R236	Two-way Turnstile	12	3067	2177	920	653	0.80	0.90	0.31	A
		High Entry/Exit Turnstile	1								

Table 10-45 (cont'd)
2021 With-Action Condition Fare Array Analysis
Grand Central-42nd Street Station

Peak Period	Fare Array	Control Element	Quantity	Peak Hour Pedestrian Volumes		15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS
				In	Out	In	Out				
AM	R236A*	Two-way Turnstile	5	110	2123	121	637	0.75	0.90	0.12	A
	R236B*	Two-way Turnstile	5	403	680	22	204	0.95	0.90	0.30	A
	R237	Two-way Turnstile	7	273	2443	82	733	0.90	0.90	0.23	A
	R237A	High Exit Turnstile	1	N/A	437	N/A	131	0.90	1.00	0.26	A
	R237B	Two-way Turnstile	4	723	3553	217	1066	0.90	0.90	0.65	B
	R238	Two-way Turnstile	16	3230	5873	969	1762	0.90	0.90	0.37	A
	R238A	Two-way Turnstile	8	7087	1023	2126	307	0.90	0.90	0.78	C
	R238B*	Two-way Turnstile	4	360	653	108	196	0.90	0.90	0.17	A
	R240	Two-way Turnstile	11	2827	6567	843	1970	0.90	0.90	0.55	B
	R240A*	Two-way Turnstile	4	103	1633	31	490	0.90	0.90	0.25	A
	R241A	Two-way Turnstile	5	560	3370	168	1011	0.95	0.90	0.46	B
PM	R233	High Entry/Exit Turnstile	2	623	123	187	37	0.80	0.90	0.44	A
		High Exit Turnstile	1								
	R236	Two-way Turnstile	12	2287	2653	686	796	0.80	0.90	0.28	A
		High Entry/Exit Turnstile	1								
	R236A*	Two-way Turnstile	5	707	130	212	39	0.75	0.90	0.13	B
	R236B*	Two-way Turnstile	5	1993	483	598	145	0.95	0.90	0.37	A
	R237	Two-way Turnstile	7	1917	437	573	131	0.90	0.90	0.25	A
	R237A	High Exit Turnstile	1	N/A	113	N/A	34	0.90	1.00	0.07	A
	R237B	Two-way Turnstile	4	2870	1497	861	449	0.90	0.90	0.78	C
	R238	Two-way Turnstile	16	4843	6807	1453	2042	0.90	0.90	0.48	B
	R238A	Two-way Turnstile	8	2477	1217	743	365	0.90	0.90	0.33	A
	R238B*	Two-way Turnstile	4	540	757	162	227	0.90	0.90	0.22	A
	R240	Two-way Turnstile	11	6647	3987	1994	1196	0.90	0.90	0.52	B
	R240A*	Two-way Turnstile	4	533	810	160	243	0.90	0.90	0.22	A
	R241A	Two-way Turnstile	5	2510	1053	753	316	0.90	0.90	0.52	B

Source: NYCT, 2014.
Note: * New fare array area added under the With-Action condition.

42nd Street-Bryant Park Station

As shown in **Tables 10-46 and 10-47**, all station analysis elements would continue operate at an acceptable LOS C or better in both the AM and PM peak hours. Therefore, the proposed One Vanderbilt development would not result in any significant adverse impact at the 42nd Street-Bryant Park subway station.

Table 10-46
2021 With-Action Condition Subway Stairway Analysis
42nd Street-Bryant Park Station

Stairway	Width (ft.)	Effective Width (ft.)	Peak Hour Pedestrian Volumes		Surging Factor for Exiting Passengers	Surging Factor for Entering Passengers	Friction Factor	V/C Ratio	LOS
			Up	Down					
Weekday AM Peak Hour									
42nd Street – Bryant Park (B/D/F/M Line) – N502									
Mezzanine Level									
MB20 (East side of Sixth Avenue between W. 42nd Street and W. 43rd Street	10.00	8.75	2,569	56	0.90	1.00	1.00	0.69	B
Platform Level									
P13 (West side of Sixth Avenue between W. 42nd Street and W. 43rd Street)	10.00	8.75	1,002	86	0.75	1.00	0.90	0.43	A
P14 (East side of Sixth Avenue between W. 42nd Street and W. 43rd Street)	10.00	8.75	2,509	70	0.75	1.00	1.00	0.81	C
Weekday PM Peak Hour									
42nd Street – Bryant Park (B/D/F/M Line) – N502									
Mezzanine Level									
MB20 (East side of Sixth Avenue between W. 42nd Street and W. 43rd Street	10.00	8.75	186	2,172	0.90	1.00	0.90	0.63	B
Platform Level									
P13 (West side of Sixth Avenue between W. 42nd Street and W. 43rd Street)	10.00	8.75	162	2,294	0.75	1.00	0.90	0.66	B
P14 (East side of Sixth Avenue between W. 42nd Street and W. 43rd Street)	10.00	8.75	293	1,246	0.75	1.00	0.90	0.43	A

Table 10-47
2021 With-Action Condition Subway Fare Array Analysis
42nd Street-Bryant Park Station

Station Fare Array Elements	Quantity	Fare Array Capacity for 15 Minutes (per element)		Peak Hour Ped Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS
		Entry	Exit	Entry	Exit				
Weekday AM Peak Hour									
42nd Street – Bryant Park (B/D/F/M Line) – N502									
Two-way Turnstiles	5	420	645	153	4,483	0.90	1.00	0.34	A
High Entry/Exit Turnstile (HEET)	1	255	540						
High-Exit only –Turnstile (HXT)	2	0	555						
Weekday PM Peak Hour									
42nd Street – Bryant Park (B/D/F/M Line) – N502									
Two-way Turnstiles	5	420	645	3,349	504	0.90	0.90	0.53	B
High Entry/Exit Turnstile (HEET)	1	255	540						
High-Exit only –Turnstile (HXT)	2	0	555						

SUBWAY LINE-HAUL ANALYSIS

SUBWAY LINE-HAUL ANALYSIS—EXISTING CONDITIONS

Existing line-haul conditions are summarized in **Table 10-48**. Based on NYCT subway data, five subway lines—No.4 NB, No.4 SB, No.5 NB, No.5 SB, and M NB—are currently operating above guideline capacity (v/c ratio greater than 1.00) in the AM peak hour, with v/c ratios of 1.09, 1.02, 1.03, 1.01, and 1.01, respectively. These ratios are higher in the AM peak hour than in the PM peak hour as peak demand is typically more concentrated in the morning commuter peak period. The No.4 NB also operates above guideline capacity in the PM peak hour, with a v/c ratio of 1.09.

Table 10-48
Existing Conditions Subway Line Haul Analysis

Peak Hour	Line	Direction	Maximum Load Point (Leaving Station)	Average Train Per Hour (1)	Cars Per Hour (1)	Passengers Per Hour (1)	Peak Hour Capacity (2)	V/C Ratio (3)
AM	4	SB	Grand Central-42 St	14.4	144.0	17,194	15,800	**1.09**
	5	SB	Grand Central-42 St	12.7	127.0	14,385	14,000	**1.03**
	6	SB	68 St-Hunter College	23.9	239.0	24,680	26,262	0.94
	7 exp	SB	Woodside-61 St	13.8	151.8	16,150	16,738	0.96
	7 loc	SB	40 St-Lowery St	13.8	151.8	13,560	16,698	0.81
	B	SB	72 St	7.3	58.4	5,156	8,176	0.63
	D	SB	125 St	9.6	76.8	9,639	13,475	0.72
	F	SB	Roosevelt Island	14.5	145.0	18,044	21,025	0.86
	M	SB	Queens Plaza	10.1	80.8	6,022	11,771	0.51
	S	SB	Grand Central-42 St	29.5	98.5	5,520	10,835	0.51
	4	NB	14 St-Union Sq	13.0	130.0	14,560	14,300	**1.02**
	5	NB	14 St-Union Sq	13.0	130.0	14,420	14,300	**1.01**
	B	NB	7 Av	10.2	81.6	9,497	14,321	0.66
	D	NB	36 St	10.6	84.8	9,998	13,144	0.76
	F	NB	2 Av	14.0	140.0	13,676	20,300	0.67
	M	NB	Marcy Av	8.0	64.0	7,419	7,360	**1.01**
	S	NB	Times Sq-42 St	29.5	98.5	5,874	10,835	0.54
PM	4	NB	59 St	12.2	122.0	14,620	13,444	**1.09**
	5	NB	59 St	12.8	128.0	12,036	14,056	0.86
	6	NB	59 St	20.3	203.0	21,293	22,314	0.95
	7	NB	Queensboro Plaza	24.4	244.0	22,680	29,524	0.77
	7	SB	Grand Central-42 St	26.0	286.0	7,724	31,460	0.25
	B	NB	59 St	7.0	56.0	4,864	7,840	0.62
	D	NB	59 St	8.5	68.0	6,968	11,900	0.59
	F	NB	Lexington Av/63 St	15.3	153.0	15,022	22,185	0.68
	M	NB	Lexington Av/53 St	7.8	62.4	4,278	9,035	0.47
	S	NB	Times Sq-42 St	28.0	93.5	5,418	10,285	0.53
	4	SB	14 St-Union Square	14.0	140.0	11,929	15,400	0.77
	5	SB	14 St-Union Square	10.5	105.0	8,018	11,550	0.69
	B	SB	Grand St	8.9	71.2	8,184	12,400	0.66
	D	SB	Grand St	10.0	80.0	9,742	12,400	0.79
	F	SB	Jay St-Borough Hall	13.1	131.0	11,555	18,995	0.61
	M	SB	Essex St	6.8	54.4	5,508	6,256	0.88
	S	SB	Grand Central-42 St	27.5	92.0	6,006	10,120	0.59

Source: NYCT, 2014.
Note: (1) Based on 2012-2013 ridership and train throughput data from NYCT.
(2) Capacity based on NYCT rush hour guideline capacities.
(3) Volume-to-capacity ratio.

SUBWAY LINE-HAUL ANALYSIS—2021 NO-ACTION CONDITION

As shown in **Table 10-49**, four subway lines—No.4 NB, No.4 SB, No.5 NB, and No.5 SB—will operate above guideline capacity under the 2021 No-Action condition.

Table 10-49
2021 No-Action Condition Subway Line Haul Analysis

Peak Hour	Line	Direction	Maximum Load Point (Leaving Station)	Average Train Per Hour (1)	Cars Per Hour (1)	Passengers Per Hour (2)	Peak Hour Capacity (3)	V/C Ratio (4)
AM	4	SB	Grand Central-42 St	14.9	149.3	17,894	16,385	**1.09**
	5	SB	Grand Central-42 St	13.2	131.7	14,971	14,519	**1.03**
	6	SB	68 St-Hunter College	23.9	239.0	19,874	26,262	0.76
	7 exp	SB	Woodside-61 St	14.8	163.0	16,645	17,978	0.93
	7 loc	SB	40 St-Lowery St	14.8	163.0	14,043	17,935	0.78
	B	SB	72 St	7.3	58.4	5,364	8,176	0.66
	D	SB	125 St	9.6	76.8	10,061	13,475	0.75
	F	SB	Roosevelt Island	14.5	145.0	20,332	21,025	0.97
	M	SB	Queens Plaza	10.1	80.8	6,232	11,771	0.53
	S	SB	Grand Central-42 St	29.5	98.5	4,191	10,835	0.39
	4	NB	14 St-Union Sq	13.0	130.0	14,769	14,300	**1.03**
	5	NB	14 St-Union Sq	13.0	130.0	14,628	14,300	**1.02**
	B	NB	7 Av	10.2	81.6	10,626	14,321	0.74
	D	NB	36 St	10.6	84.8	10,638	13,992	0.76
	F	NB	2 Av	14.0	140.0	14,274	20,300	0.70
	M	NB	Marcy Av	10.0	80.0	8,705	10,000	0.87
	S	NB	Times Sq-42 St	29.5	98.5	4,352	10,835	0.40
PM	4	NB	59 St	12.2	122.0	13,771	13,444	**1.02**
	5	NB	59 St	12.8	128.0	11,337	14,056	0.81
	6	NB	59 St	20.3	203.0	17,141	22,314	0.77
	7	NB	Queensboro Plaza	24.4	244.0	23,593	29,524	0.80
	7	SB	Grand Central-42 St	26.0	286.0	9,423	31,460	0.30
	B	NB	59 St	7.0	56.0	5,060	7,840	0.65
	D	NB	59 St	8.5	68.0	7,274	11,900	0.61
	F	NB	Lexington Av/63 St	15.3	153.0	16,927	22,185	0.76
	M	NB	Lexington Av/53 St	7.8	62.4	4,427	9,035	0.49
	S	NB	Times Sq-42 St	28.0	93.5	4,113	10,285	0.40
	4	SB	14 St-Union Square	14.0	140.0	12,101	15,400	0.79
	5	SB	14 St-Union Square	10.5	105.0	8,134	11,550	0.70
	B	SB	Atlantic Av	8.9	71.2	9,157	12,400	0.74
	D	SB	Pacific St	10.0	80.0	10,366	12,400	0.84
	F	SB	Jay St-Borough Hall	13.1	131.0	12,059	18,995	0.63
	M	SB	Essex St	6.8	54.4	6,463	7,176	0.90
	S	SB	Grand Central-42 St	27.5	92.0	4,440	10,120	0.44

Source: NYCT, 2014.
Note: (1) Based on existing average throughput and future anticipated capacity increases
(2) Based on Regional Transit Forecasting Model (RTFM) outputs.
(3) Capacity based on NYCT rush hour guideline capacities.
(4) Volume-to-capacity ratio.

During the AM peak hour, the southbound Nos. 4 and 5 will continue to operate with v/c ratios of 1.09 and 1.03, respectively, and the northbound Nos. 4 and 5 will operate with v/c ratios of 1.03 and 1.02, respectively. In addition, the No. 4 NB will operate with a v/c ratio of 1.02 during the PM peak hour.

SUBWAY LINE-HAUL ANALYSIS—2021 WITH-ACTION CONDITION

It is anticipated that the platform circulation improvements on Lexington Avenue Line platforms at the Grand Central-42nd Street subway station would reduce dwell time on the No. 4 and No. 5 trains and would result in additional capacity of one peak-hour train southbound during the AM peak hour and one peak-hour train northbound during the PM peak hour. The line haul analysis results for the future With-Action condition are summarized in **Table 10-50**.

Table 10-50
2021 With-Action Condition Subway Line Haul Analysis

Peak Hour	Line	Direction	Maximum Load Point (Leaving Station)	Average Train Per Hour (1)	Cars Per Hour (1)	Passengers Per Hour (2)	Incremental Passengers Per Car	Peak Hour Capacity (3)	V/C Ratio (4)
AM	4	SB	Grand Central-42 St	15.4	154.3	17,913	-3.76	16,977	**1.06**
	5	SB	Grand Central-42 St	13.7	136.7	14,993	-3.99	15,037	**1.00**
	6	SB	68 St-Hunter College	23.9	239.0	20,086	0.89	26,262	0.76
	7 exp	SB	Woodside-61 St	14.8	163.0	16,723	0.48	17,978	0.93
	7 loc	SB	40 St-Lowery St	14.8	163.0	14,146	0.63	17,935	0.79
	B	SB	72 St	7.3	58.4	5,392	0.49	8,176	0.66
	D	SB	125 St	9.6	76.8	10,099	0.49	13,475	0.75
	F	SB	Roosevelt Island	14.5	145.0	20,388	0.39	21,025	0.97
	M	SB	Queens Plaza	10.1	80.8	6,258	0.32	11,771	0.53
	S	SB	Grand Central-42 St	29.5	98.5	4,220	0.30	10,835	0.39
	4	NB	14 St-Union Sq	13.0	130.0	14,882	0.87	14,300	**1.04**
	5	NB	14 St-Union Sq	13.0	130.0	14,762	1.03	14,300	**1.03**
	B	NB	7 Av	10.2	81.6	10,688	0.76	14,321	0.75
	D	NB	36 St	10.6	84.8	10,711	0.85	13,992	0.77
	F	NB	2 Av	14.0	140.0	14,401	0.91	20,300	0.71
	M	NB	Marcy Av	10.0	80.0	8,723	0.23	10,000	0.87
	S	NB	Times Sq-42 St	29.5	98.5	4,632	2.84	10,835	0.43
PM	4	NB	59 St	12.7	127.0	13,868	-3.68	13,970	0.99
	5	NB	59 St	13.3	133.0	11,435	-2.59	14,630	0.78
	6	NB	59 St	20.3	203.0	17,186	0.22	22,314	0.77
	7	NB	Queensboro Plaza	24.4	244.0	23,740	0.60	29,524	0.80
	7	SB	Grand Central-42 St	26.0	286.0	9,423	0.00	31,460	0.30
	B	NB	59 St	7.0	56.0	5,084	0.42	7,840	0.65
	D	NB	59 St	8.5	68.0	7,310	0.53	11,900	0.61
	F	NB	Lexington Av/63 St	15.3	153.0	16,972	0.29	22,185	0.77
	M	NB	Lexington Av/53 St	7.8	62.4	4,443	0.25	9,035	0.49
	S	NB	Times Sq-42 St	28.0	93.5	4,142	0.31	10,285	0.40
	4	SB	14 St-Union Square	14.0	140.0	12,210	0.78	15,400	0.79
	5	SB	14 St-Union Square	10.5	105.0	8,242	1.02	11,550	0.71
	B	SB	Atlantic Av	8.9	71.2	9,221	0.90	12,400	0.74
	D	SB	Pacific St	10.0	80.0	10,436	0.88	12,400	0.84
	F	SB	Jay St-Borough Hall	13.1	131.0	12,124	0.50	18,995	0.64
	M	SB	Essex St	6.8	54.4	6,490	0.42	7,176	0.90
	S	SB	Grand Central-42 St	27.5	92.0	4,469	-0.31	10,120	0.44

Source: NYCT, 2014.
Note: (1) Based on existing average throughput and future anticipated capacity increases
(2) Based on Regional Transit Forecasting Model (RTFM) outputs.
(3) Capacity based on NYCT rush hour guideline capacities.
(4) Volume-to-capacity ratio.

- In the AM peak hour, southbound No. 4 trains would operate with an improved v/c ratio of 1.06 and southbound No. 5 trains would operate with an improved v/c ratio of 1.00.
  - In the AM peak hour, northbound No. 4 trains would operate with a v/c ratio of 1.04 and northbound No. 5 train would operate with a v/c ratio of 1.03.
  - In the PM peak hour, northbound the No. 4 trains would operate with an improved v/c ratio of 0.99.

The greatest increase in incremental trips per subway car would total 2 trips per car on the shuttle leaving the Grand Central-42nd Street subway station in the PM peak hour. Since all lines are expected to experience fewer than five incremental trips per car in each direction in each peak hour as a result of the proposed One Vanderbilt development, significant adverse impacts to subway line haul conditions are not anticipated based on *CEQR Technical Manual* criteria.

F. DETAILED PEDESTRIAN ANALYSIS

As described above in Section B, "Preliminary Analysis Methodology and Screening Assessment," Level 1 and Level 2 screening analyses were prepared to identify the pedestrian elements warranted a detailed analysis. Based on the assignment of pedestrian trips, 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 were selected for analysis.

2014 EXISTING CONDITIONS

Pedestrian data were collected in June 2013 and June 2014 in accordance with procedures outlined in the *CEQR Technical Manual* during the weekday hours of 7:00 AM to 10:00 AM, 11:00 AM to 2:00 PM, and 4:00 PM to 7:00 PM, and during the Saturday hours of 12:00 PM to 4:00 PM. In addition, baseline pedestrian volumes and analyses developed as part of the 2013 *East Midtown Rezoning and Related Actions FEIS* were used to supplement, as needed, the 2014 existing baseline pedestrian networks.

STREET-LEVEL PEDESTRIAN OPERATIONS

Peak hours were determined by comparing rolling hourly averages and the highest 15-minute volumes within the selected peak hours were selected for analysis. The existing peak hour pedestrian volumes are shown in **Figures 10-47 to 10-50**. A summary of the existing conditions pedestrian analysis results is presented in **Table 10-51**. As shown in **Tables 10-52 to 10-54**, with the exception of the following locations, all sidewalk, corner reservoir, and crosswalk analysis locations currently operate at acceptable mid-LOS D or better (minimum of 31.5 SFP platoon flows for sidewalks; minimum of 19.5 SFP for corners and crosswalks):

- The north-west sidewalk of East 42nd Street between Madison Avenue and Vanderbilt Avenue, which operates at LOS D with 30.2 and 23.3 SFP during the weekday AM and PM peak hours, respectively;
- The north-east sidewalk of East 42nd Street between Madison Avenue and Vanderbilt Avenue, which operates at LOS D with 25.8 SFP during the weekday PM peak hour;
- The south sidewalk of West 42nd Street between Fifth Avenue and Sixth Avenue, which operates at LOS D with 26.0 SFP during the weekday PM peak hour;
- The north sidewalk of East 42nd Street between Madison Avenue and Fifth Avenue, which operates at LOS D with 28.1 SFP and 29.5 SFP during the weekday PM and Saturday peak hours, respectively;
- The northeast corner of Madison Avenue and East 43rd Street, which operates at LOS E with 11.0 and 14.0 SFP during the weekday AM and PM peak hours, respectively, and at LOS D with 18.5 SFP during the weekday midday hour;
- The northwest corner of Madison Avenue and East 42nd Street, which operates at LOS D with 16.1 SFP during the weekday PM peak hour;
- The northeast corner of Madison Avenue and East 41st Street, which operates at LOS E with 13.1 SFP during the weekday AM peak hour, and at LOS D with 16.3 SFP during the weekday PM peak hour;
- The northwest corner of Lexington Avenue and East 42nd Street, which operates at LOS E with 12.7, 14.6, and 14.4 SFP during the weekday AM, midday, and PM peak hours, respectively;

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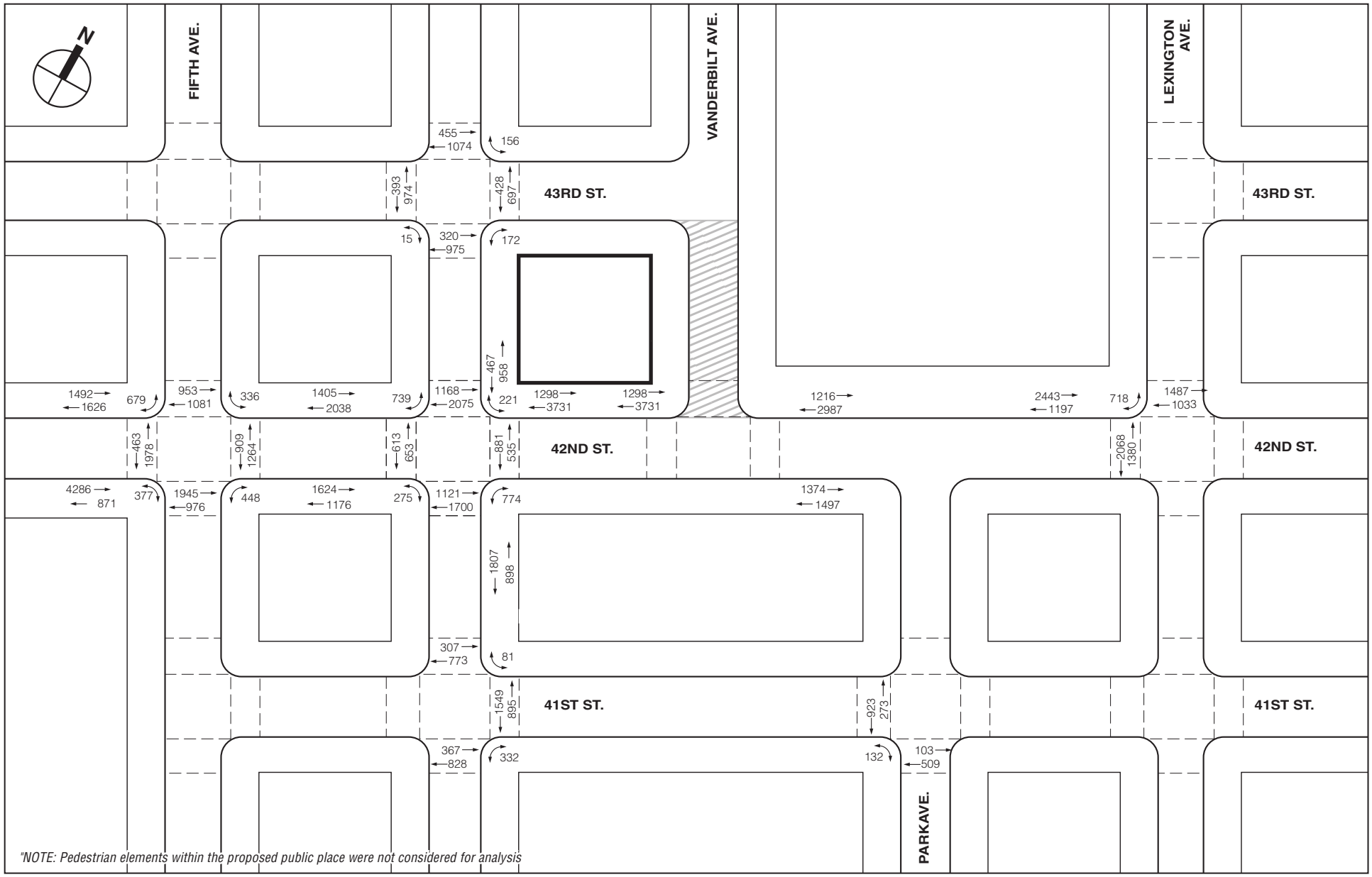
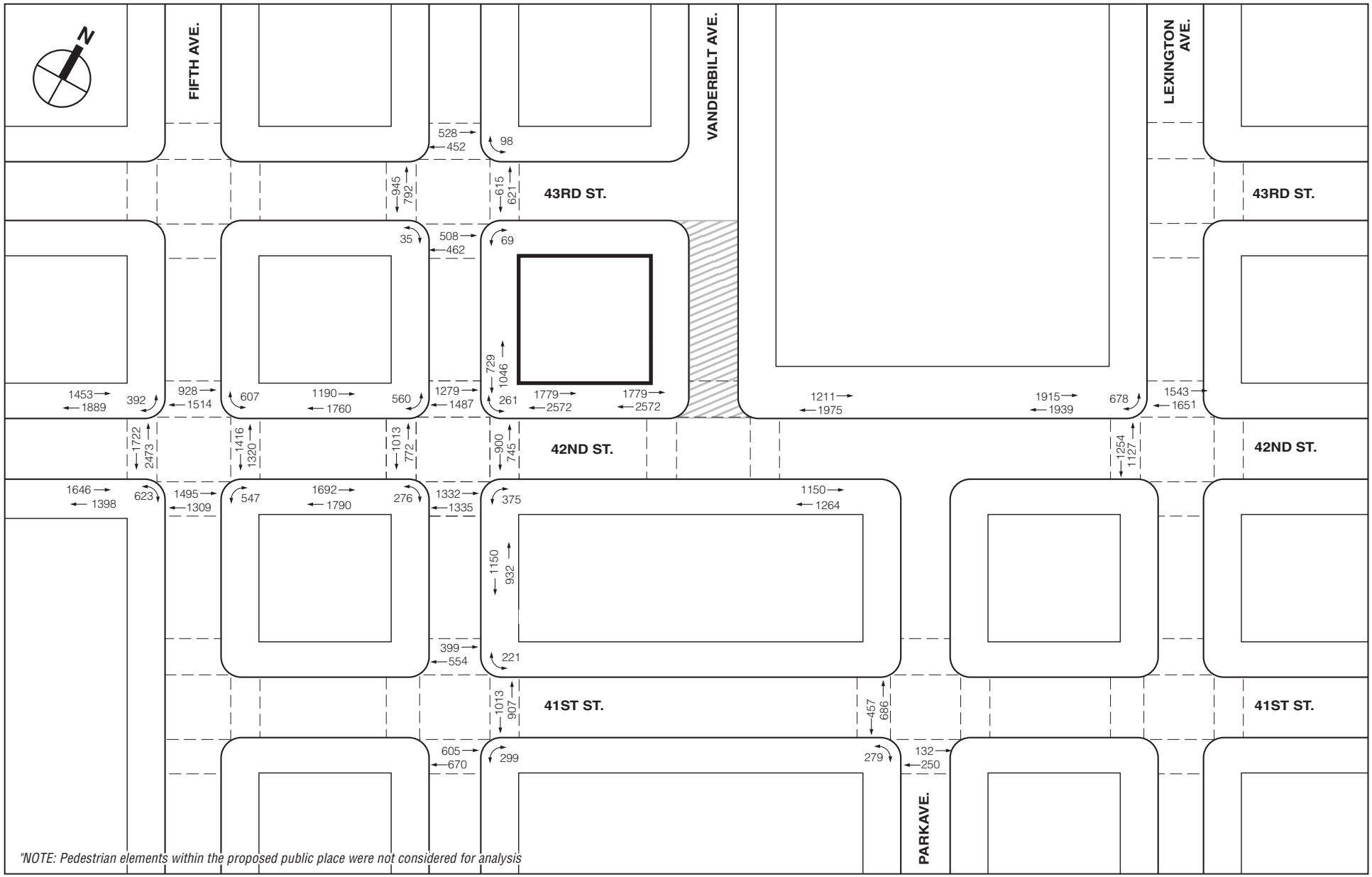


NOT TO SCALE

One Vanderbilt Development Site Proposed Public Place

2014 Existing Pedestrian Volumes
Weekday AM Peak Hour

10.8.14



NOT TO SCALE

One Vanderbilt Development Site Proposed Public Place

2014 Existing Pedestrian Volumes
Weekday Midday Peak Hour

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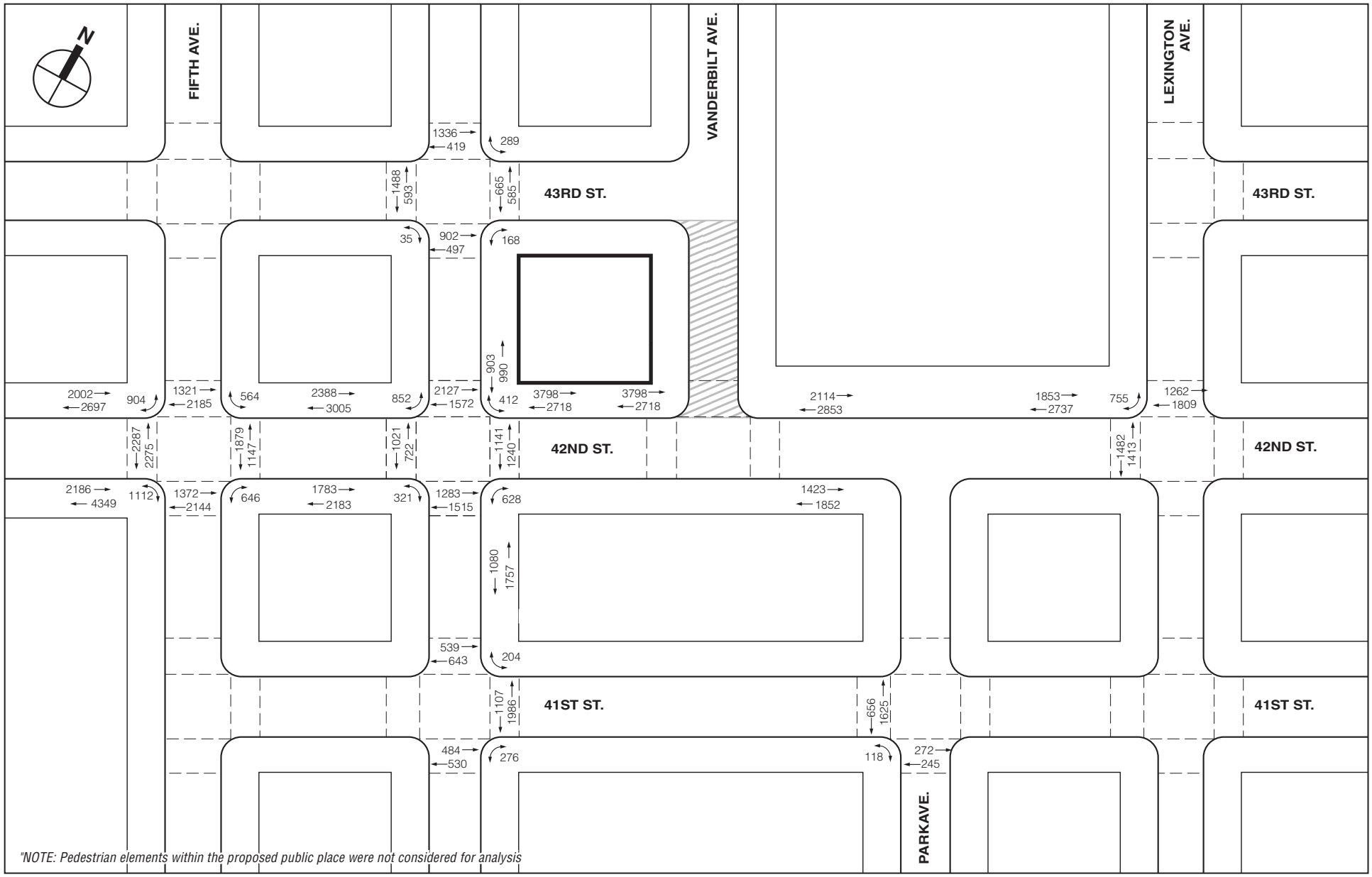

NOT TO SCALE

One Vanderbilt Development Site *Proposed Public Place*

2014 Existing Pedestrian Volumes
Weekday PM Peak Hour

Vanderbilt Corridor and One Vanderbilt

Figure 10-49

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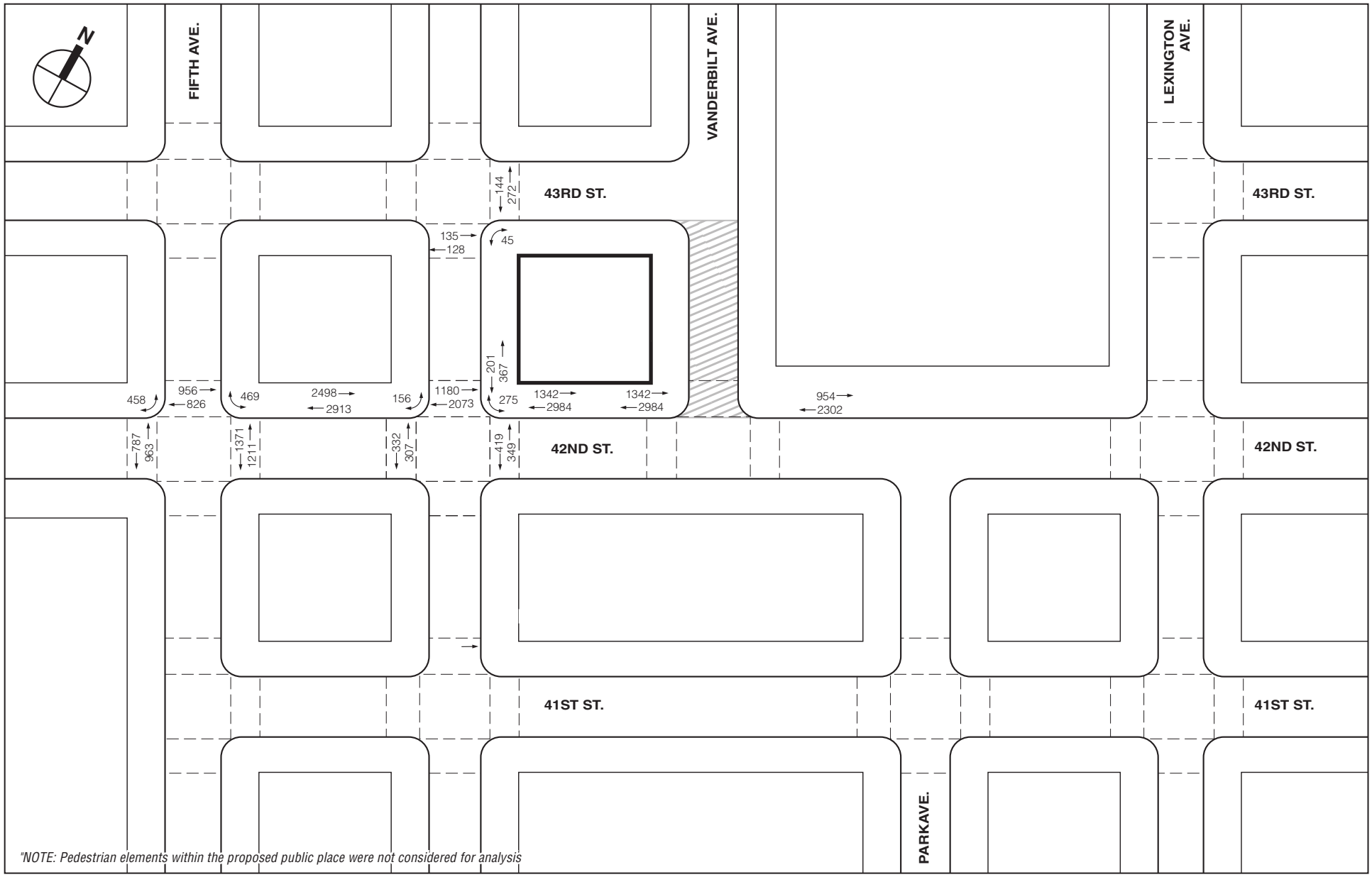

NOT TO SCALE

One Vanderbilt Development Site *Proposed Public Place*

2014 Existing Pedestrian Volumes
Saturday Peak Hour

Vanderbilt Corridor and One Vanderbilt

Figure 10-50

Table 10-51
Summary of 2014 Existing Pedestrian Analysis Results

Level of Service	Analysis Peak Hours			
	Weekday AM	Weekday Midday	Weekday PM	Saturday
Sidewalks				
Sidewalks at LOS A/B/C	7	9	6	2
Sidewalks at LOS D	4	2	5	3
Sidewalks at LOS E	0	0	0	0
Sidewalks at LOS F	0	0	0	0
Total	11	11	11	5
Corner Reservoirs				
Corners at LOS A/B/C	10	13	7	5
Corners at LOS D	2	1	6	0
Corners at LOS E	3	1	2	0
Corners at LOS F	0	0	0	0
Total	15	15	15	5
Crosswalks				
Crosswalks at LOS A/B/C	4	4	1	3
Crosswalks at LOS D	2	2	2	0
Crosswalks at LOS E	3	3	6	1
Crosswalks at LOS F	0	0	0	0
Total	9	9	9	4

Notes: LOS = Level-of-Service

Table 10-52
2014 Existing Conditions: Sidewalk Analysis

Location	Sidewalk	Effective Width (ft)	Two-way Peak Hour Volume	PHF	SFP	Platoon LOS
Weekday AM Peak Hour						
West 42nd Street between Fifth Avenue and Sixth Avenue	South	12.0	5,157	0.92	32.3	D
	North	13.0	3,118	0.93	60.5	C
Madison Avenue between East 42nd Street and East 43rd Street	East	8.0	1,425	0.85	74.9	C
East 42nd Street between Madison Avenue and Vanderbilt Avenue	North-West	11.0	5,029	0.92	30.2	D
	North-East	12.0	5,029	0.92	33.2	D
Madison Avenue between East 42nd Street and East 41st Street	East	13.0	2,705	0.95	71.6	C
East 42nd Street between Madison Avenue and Fifth Avenue	South	14.0	2,800	0.89	69.7	C
	North	12.0	3,443	0.96	52.0	C
East 42nd Street between Lexington Avenue and Park Avenue	North	14.0	3,640	0.89	53.2	C
East 42nd Street between Vanderbilt Avenue and Park Avenue	North	12.0	4,203	0.88	38.4	D
	South	15.0	2,871	0.91	74.6	C
Weekday Midday Peak Hour						
West 42nd Street between Fifth Avenue and Sixth Avenue	South	12.0	3,044	0.97	59.7	C
	North	13.0	3,342	0.90	54.5	C
Madison Avenue between East 42nd Street and East 43rd Street	East	8.0	1,775	0.94	66.3	C
East 42nd Street between Madison Avenue and Vanderbilt Avenue	North-West	11.0	4,351	0.94	36.2	D
	North-East	12.0	4,351	0.94	39.7	D
Madison Avenue between East 42nd Street and East 41st Street	East	13.0	2,082	0.96	94.4	B
East 42nd Street between Madison Avenue and Fifth Avenue	South	14.0	3,482	0.93	58.3	C
	North	12.0	2,950	0.97	61.6	C
East 42nd Street between Lexington Avenue and Park Avenue	North	14.0	3,854	0.86	48.4	C
East 42nd Street between Vanderbilt Avenue and Park Avenue	North	12.0	3,186	0.95	55.7	C
	South	15.0	2,414	0.93	90.9	B

Table 10-52 (cont'd)
2014 Existing Conditions: Sidewalk Analysis

Location	Sidewalk	Effective Width (ft)	Two-way Peak Hour Volume	PHF	SFP	Platoon LOS
Weekday PM Peak Hour						
West 42nd Street between Fifth Avenue and Sixth Avenue	South	12.0	6,535	0.96	26.0	D
	North	13.0	4,699	0.96	40.8	C
Madison Avenue between East 42nd Street and East 43rd Street	East	8.0	1,893	0.91	60.0	C
East 42nd Street between Madison Avenue and Vanderbilt Avenue	North-West	11.0	6,516	0.95	23.3	D
	North-East	12.0	6,516	0.95	25.8	D
Madison Avenue between East 42nd Street and East 41st Street	East	13.0	2,837	0.92	66.0	C
East 42nd Street between Madison Avenue and Fifth Avenue	South	14.0	3,966	0.88	48.1	C
	North	12.0	5,393	0.85	28.1	D
East 42nd Street between Lexington Avenue and Park Avenue	North	14.0	4,590	0.97	45.7	C
East 42nd Street between Vanderbilt Avenue and Park Avenue	North	12.0	4,967	0.94	34.5	D
	South	15.0	3,275	0.92	65.9	C
Saturday Peak Hour						
East 42nd Street between Madison Avenue and Vanderbilt Avenue	North-West	11.0	4,326	0.89	34.3	D
	North-East	12.0	4,326	0.89	37.7	D
East 42nd Street between Madison Avenue and Fifth Avenue	North	12.0	5,411	0.89	29.5	D
Madison Avenue between East 43rd Street and East 42nd Street	East	8.0	568	0.89	198.3	B
East 42nd Street between Vanderbilt Avenue and Park Avenue	North	12.0	3,256	0.94	53.9	C

Note: SFP = square feet per pedestrian

Table 10-53
2014 Existing Conditions: Corner Analysis

Location	Corner	Weekday AM Peak Hour		Weekday Midday Peak Hour		Weekday PM Peak Hour		Saturday Peak Hour	
		SFP	LOS	SFP	LOS	SFP	LOS	SFP	LOS
Fifth Avenue and 42nd Street	Northwest	68.5	A	44.4	B	34.4	C	80.8	A
	Northeast	70.8	A	55.8	B	38.9	C	67.7	A
	Southwest	46.4	B	34.6	C	33.4	C		
	Southeast	28.0	C	25.8	C	19.2	D		
Madison Avenue and East 43rd Street	Northeast	11.0	E	18.5	D	14.0	E		
	Southwest	27.4	C	31.4	C	21.7	D		
	Southeast	30.0	C	42.7	B	37.7	C	161.1	A
Madison Avenue and East 42nd Street	Northwest	27.4	C	26.7	C	16.1	D	31.4	C
	Northeast	23.9	D	30.5	C	20.1	D	25.1	C
	Southwest	83.4	A	79.5	A	72.6	A		
	Southeast	42.2	B	51.3	B	36.2	C		
Madison Avenue and East 41st Street	Northeast	13.1	E	24.1	C	16.3	D		
	Southeast	22.1	D	28.3	C	19.6	D		
Park Avenue and East 41st Street	Southwest	65.0	A	66.9	A	34.0	C		
Lexington Avenue and East 42nd Street	Northwest	12.7	E	14.6	E	14.4	E		

Note: SFP = square feet per pedestrian

Table 10-54
2014 Existing Conditions: Crosswalk Analysis

Location	Crosswalk	Crosswalk Length (ft)	Crosswalk Width (ft)	2-way Peak Hour Volume	SFP	LOS
Weekday AM Peak Hour						
Fifth Avenue and 42nd Street	North	54	21	2,034	25.2	C
	South	54	22	2,921	14.4	E
	East	55	22	2,173	27.0	C
	West	54	21	2,441	23.8	D
Madison Avenue and East 43rd Street	East	35	14	1,125	40.2	B
Madison Avenue and East 42nd Street	North	53	22	3,243	12.5	E
	South	45	20	2,821	11.5	E
	East	56	19	1,416	37.7	C
Madison Avenue and East 41st Street	East	34	15	2,444	16.2	D
Weekday Midday Peak Hour						
Fifth Avenue and 42nd Street	North	54	21	2,442	19.6	D
	South	54	22	2,804	14.7	E
	East	55	22	2,736	25.4	C
	West	54	21	4,195	12.8	E
Madison Avenue and East 43rd Street	East	35	14	1,236	32.7	C
Madison Avenue and East 42nd Street	North	53	22	2,766	16.7	D
	South	45	20	2,667	14.2	E
	East	56	19	1,645	32.0	C
Madison Avenue and East 41st Street	East	34	15	1,920	24.1	C
Weekday PM Peak Hour						
Fifth Avenue and 42nd Street	North	54	21	3,506	13.0	E
	South	54	22	3,516	12.7	E
	East	55	22	3,026	19.8	D
	West	54	21	4,562	13.0	E
Madison Avenue and East 43rd Street	East	35	14	1,250	35.5	C
Madison Avenue and East 42nd Street	North	53	22	3,699	10.5	E
	South	45	20	2,798	11.2	E
	East	56	19	2,381	23.4	D
Madison Avenue and East 41st Street	East	34	15	3,093	13.1	E
Saturday Peak Hour						
Fifth Avenue and 42nd Street	North	54	21	1,782	25.6	C
	West	54	21	1,750	36.4	C
Madison Avenue and East 42nd Street	North	53	22	3,253	10.7	E
	East	56	19	768	76.2	A

Note: SFP = square feet per pedestrian

- The southeast corner of Fifth Avenue and 42nd Street, which operates at LOS D with 19.2 SFP during the weekday PM peak hour;
- The north crosswalk of Fifth Avenue and 42nd Street, which operates at LOS E with 13.0 SFP during the weekday PM peak hour;
- The south crosswalk of Fifth Avenue and 42nd Street, which operates at LOS E with 14.4, 14.7, and 12.7 SFP during the weekday AM, midday, and PM peak hours, respectively;
- The west crosswalk of Fifth Avenue and 42nd Street, which operates at LOS E with 12.8 and 13.0 SFP during the weekday midday and PM peak hours, respectively;
- The north crosswalk of Madison Avenue and East 42nd Street, which operates at LOS E with 12.5, 10.5, and 10.7 SFP during the weekday AM, PM, and Saturday peak hours, respectively, and at LOS D with 16.7 SFP during the weekday midday peak hour;

- The south crosswalk of Madison Avenue and East 42nd Street, which operates at LOS E with 11.5, 14.2, and 11.2 SFP the weekday AM, midday, and PM peak hours, respectively; and
- The east crosswalk at Madison Avenue and 41st Street, which operates at LOS D with 16.2 SFP during the weekday AM peak hour, and at LOS E with 13.1 SFP during the weekday PM peak hour.

THE FUTURE WITHOUT THE PROPOSED ACTIONS

No-Action condition pedestrian volumes were estimated by increasing existing pedestrian levels to reflect expected growth in overall travel through and within the study area. As per *CEQR* guidelines, an annual background growth rate of 0.25 percent was assumed for the years 2014 to 2019, and an annual background growth rate of 0.125 percent was assumed for the years 2019 to 2021. As discussed in Section D, "Detailed Traffic Analysis," the East Side Access project was assumed, for analysis purposes, to be completed by the One Vanderbilt future analysis year of 2021. For pedestrians, this assumption would also present, overall, a more conservative impact analysis since East Side Access commuters would enter and exit GCT adjacent to the One Vanderbilt site and traverse the pedestrian facilities most affected by trips generated by the One Vanderbilt development. Pedestrian volumes from projects that are anticipated to be completed in the study area (including the No-Action building), were also added to determine the No-Action condition pedestrian volumes. The total No-Action peak 15-minute pedestrian volumes for the weekday AM, midday, PM, and Saturday peak periods are presented in **Figures 10-51 to 10-54**. As further detailed in the next section, "The Future with the Proposed Actions," the No-Action building is conservatively assumed to incorporate security bollards along the perimeter of its adjacent sidewalks.

STREET-LEVEL PEDESTRIAN OPERATIONS

A summary of the 2021 No-Action condition pedestrian analysis results is presented in **Table 10-55**. As shown in **Tables 10-56 to 10-58**, with the exception of the following locations, all sidewalk, corner reservoir, and crosswalk analysis locations will continue to operate at acceptable mid-LOS D or better service levels (31.5 SFP platoon flows for sidewalks; minimum of 19.5 SFP for corners and crosswalks) or will operate at the same LOS as in the existing conditions:

- The south sidewalk of West 42nd Street between Fifth Avenue and Sixth Avenue, which will deteriorate to LOS D with 29.9 SFP during the weekday AM peak hour;
- The north-east sidewalk of East 42nd Street between Madison Avenue and Vanderbilt Avenue, which will deteriorate to LOS D with 30.6 SFP during the weekday AM peak hour;
- The northeast corner of Madison Avenue and East 42nd Street, which will deteriorate to LOS D with 19.2 SFP during the weekday PM peak hour;
- The northwest corner of Madison Avenue and East 42nd Street, which will deteriorate to LOS D with 14.8 SFP during the weekday PM peak hour;
- The southeast corner of Madison Avenue and East 41st Street, which will deteriorate to LOS D with 19.0 SFP during the weekday PM peak hour;
- The north crosswalk of Fifth Avenue and 42nd Street, which will deteriorate to LOS D with 18.0 SFP during the weekday midday peak hour; and

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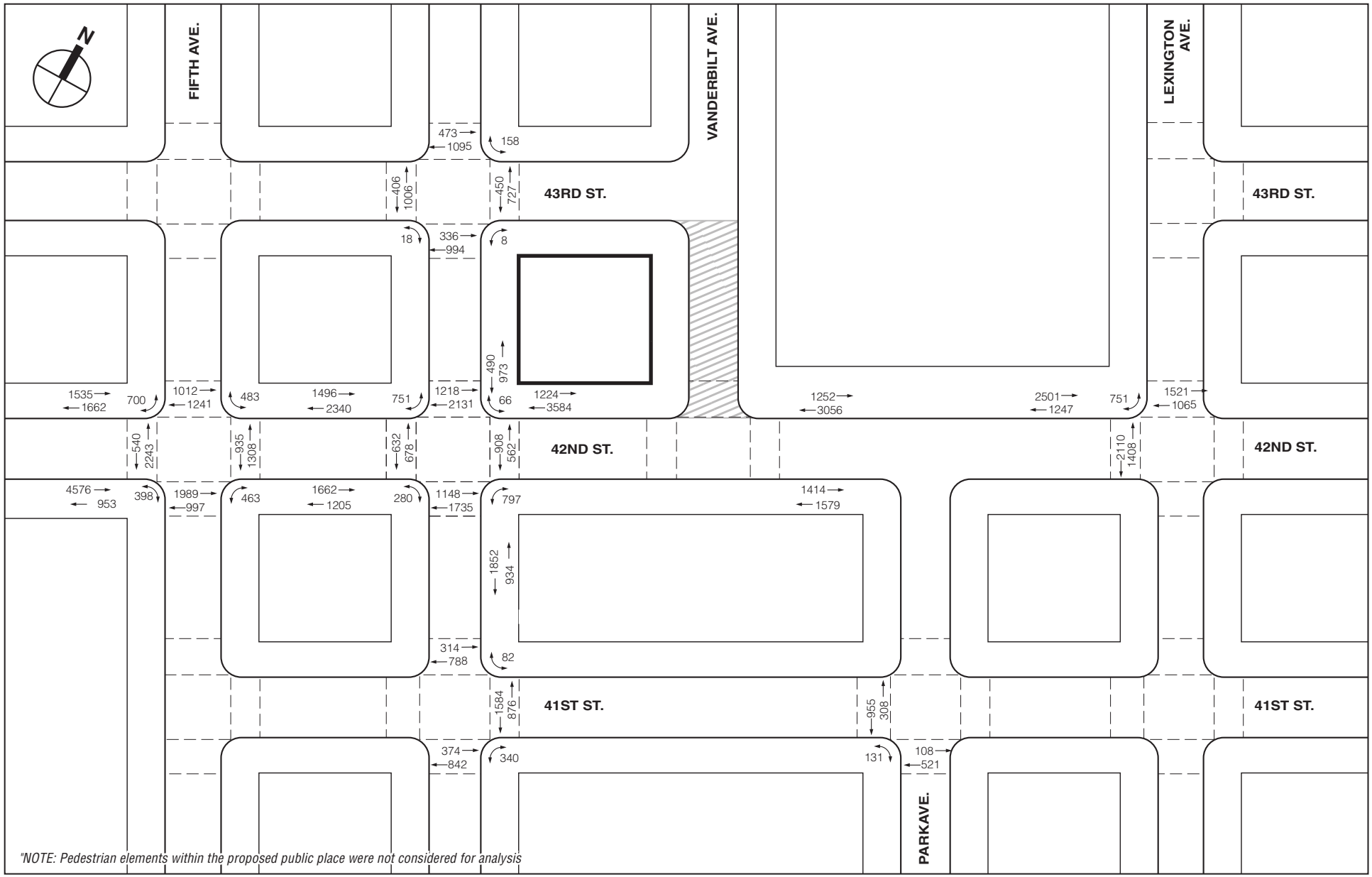

NOT TO SCALE

One Vanderbilt Development Site

Proposed Public Place

2021 No-Action Pedestrian Volumes
Weekday AM Peak Hour

Figure 10-51

Vanderbilt Corridor and One Vanderbilt

This figure has been updated for the FEIS

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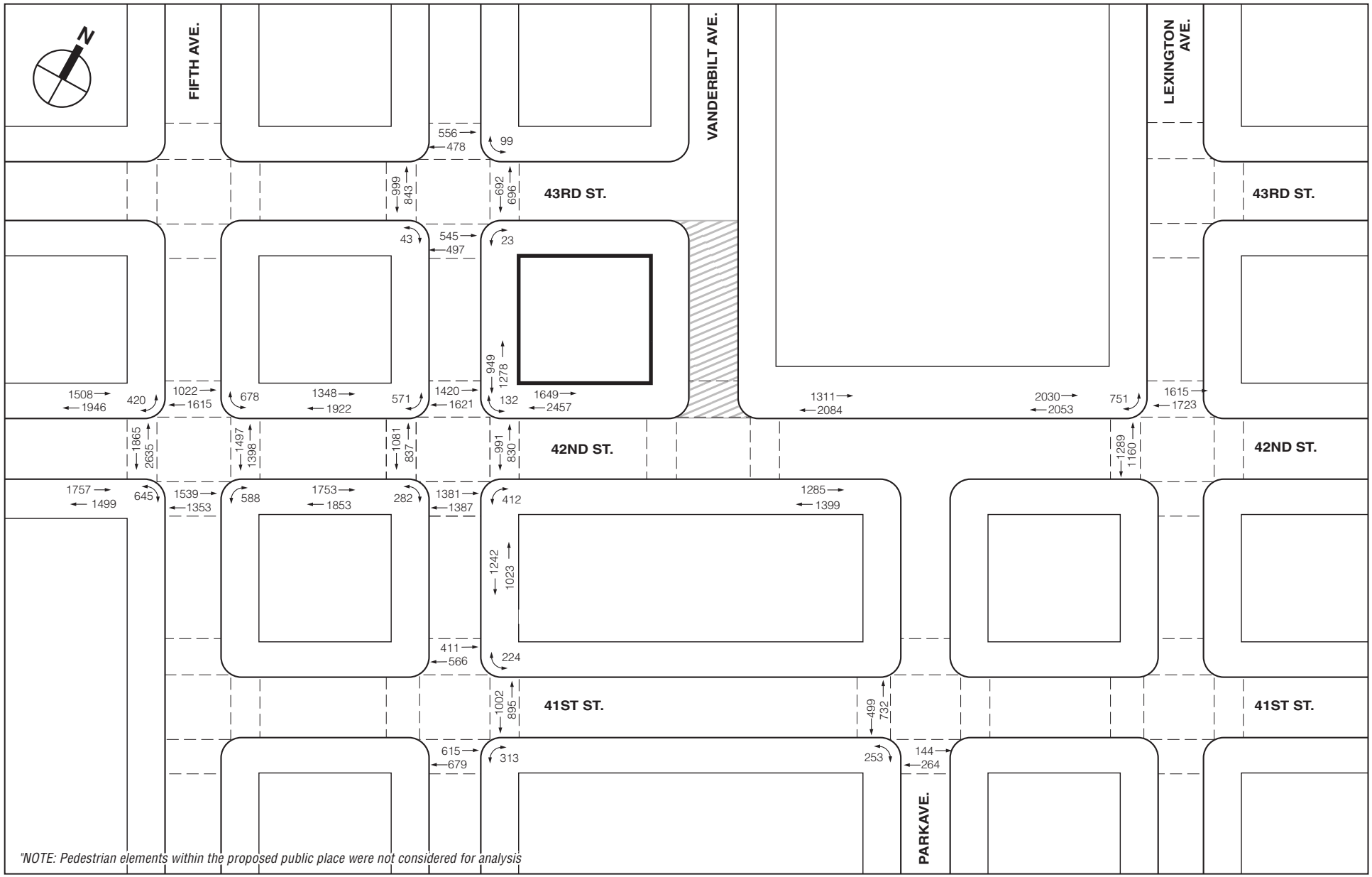

2021 No-Action Pedestrian Volumes
Weekday Midday Peak Hour

Figure 10-52

Vanderbilt Corridor and One Vanderbilt

This figure has been updated for the FEIS

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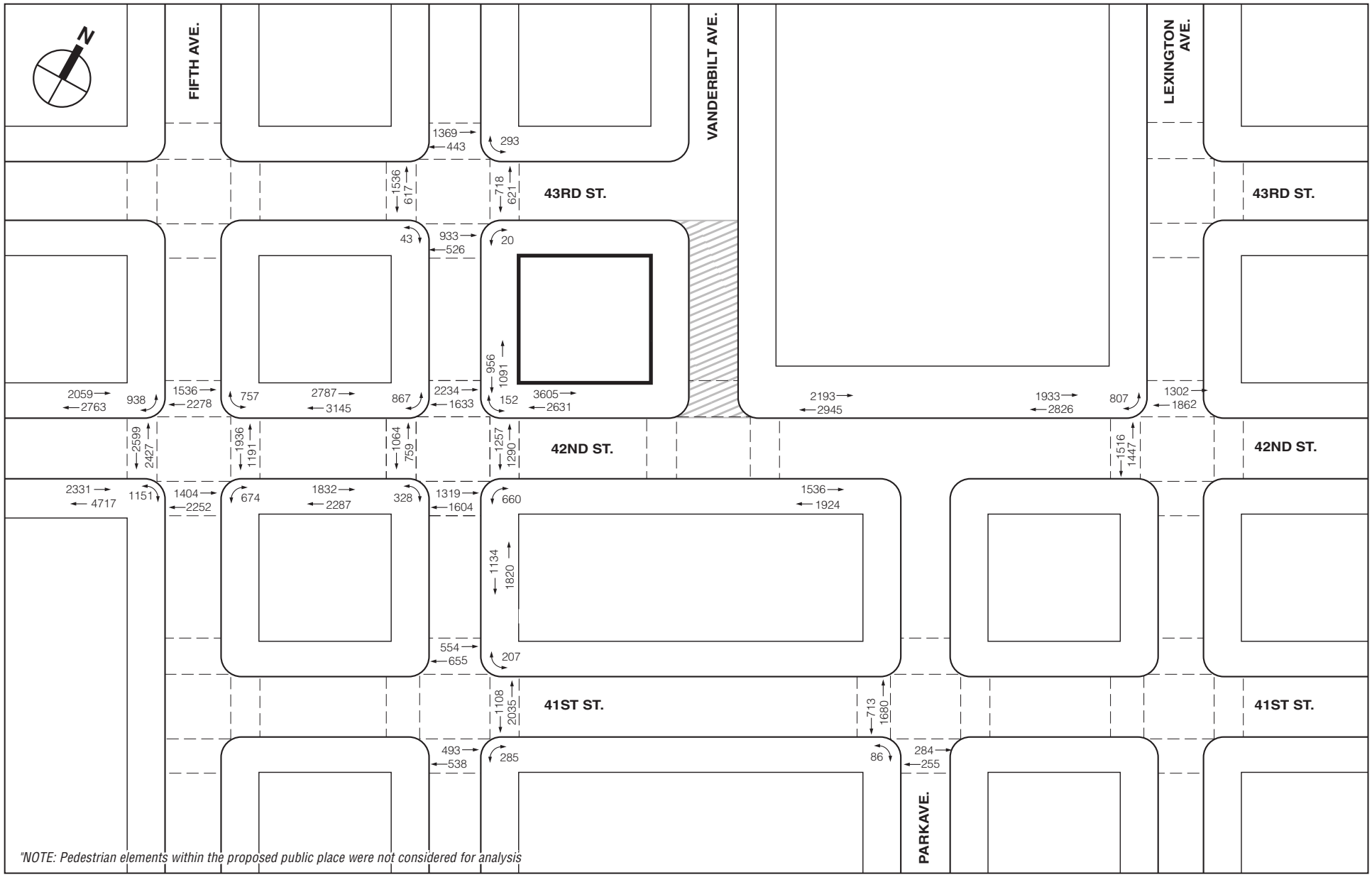

NOT TO SCALE

One Vanderbilt Development Site

Proposed Public Place

2021 No-Action Pedestrian Volumes
Weekday PM Peak Hour

Vanderbilt Corridor and One Vanderbilt

Figure 10-53

This figure has been updated for the FEIS

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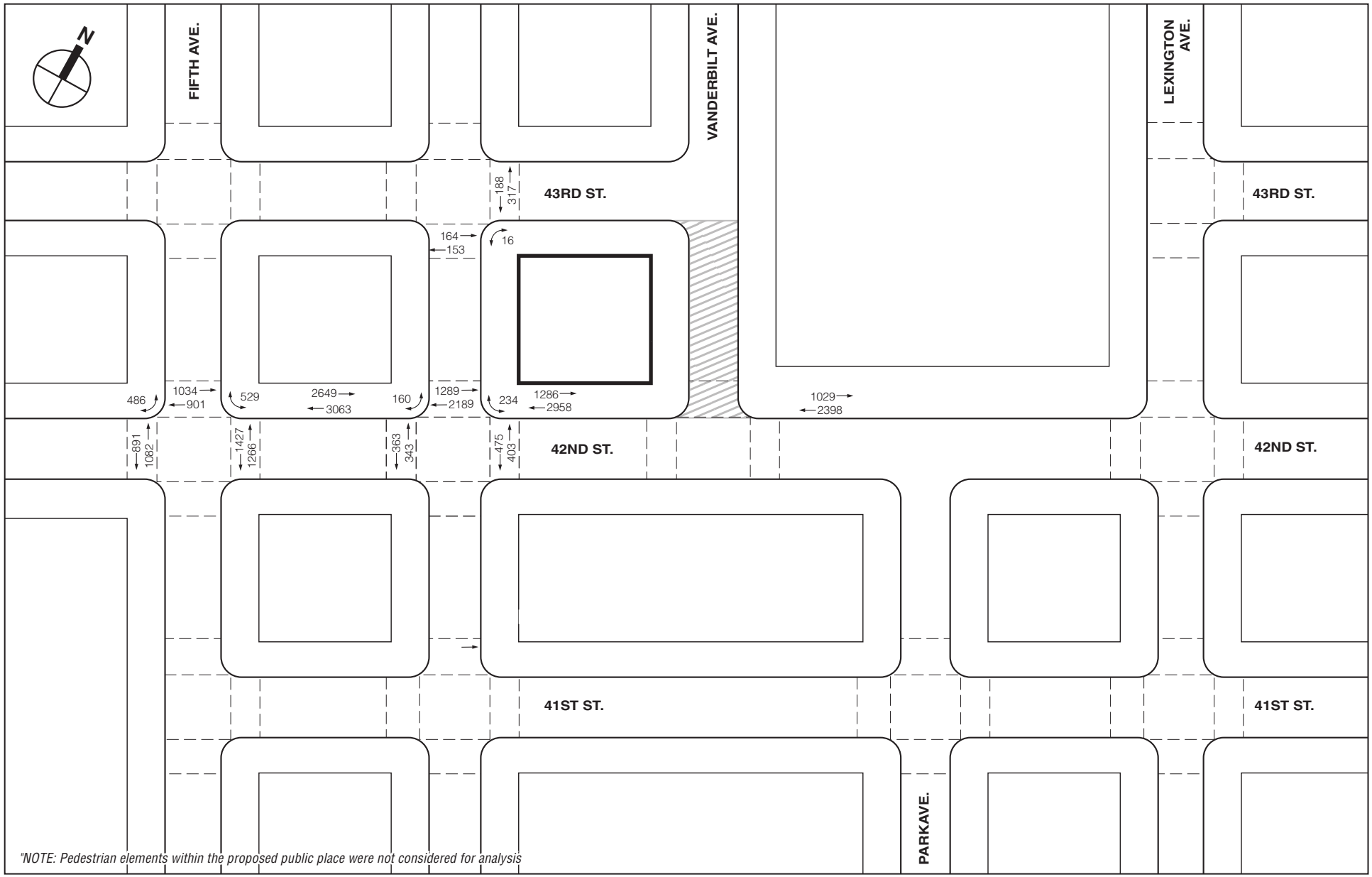

NOT TO SCALE

One Vanderbilt Development Site *Proposed Public Place*

2021 No-Action Pedestrian Volumes
Saturday Peak Hour

Vanderbilt Corridor and One Vanderbilt

Figure 10-54

This figure has been updated for the FEIS

Table 10-55
Summary of 2021 No-Action Pedestrian Analysis Results

Level of Service	Analysis Peak Hours			
	Weekday AM	Weekday Midday	Weekday PM	Saturday
Sidewalks				
Sidewalks at LOS A/B/C	7	9	5	2
Sidewalks at LOS D	4	2	6	3
Sidewalks at LOS E	0	0	0	0
Sidewalks at LOS F	0	0	0	0
Total	11	11	11	5
Corner Reservoirs				
Corners at LOS A/B/C	10	11	8	4
Corners at LOS D	2	3	4	1
Corners at LOS E	3	1	3	0
Corners at LOS F	0	0	0	0
Total	15	15	15	5
Crosswalks				
Crosswalks at LOS A/B/C	3	3	1	2
Crosswalks at LOS D	3	3	2	1
Crosswalks at LOS E	3	3	6	1
Crosswalks at LOS F	0	0	0	0
Total	9	9	9	4

Notes: LOS = Level-of-Service

Table 10-56
2021 No-Action Condition: Sidewalk Analysis

Location	Sidewalk	Effective Width (ft)	Two-way Peak Hour Volume	PHF	SFP	Platoon LOS
Weekday AM Peak Hour						
West 42nd Street between Fifth Avenue and Sixth Avenue	South	12.0	5,529	0.92	29.9	D
	North	13.0	3,197	0.93	59.0	C
Madison Avenue between East 42nd Street and East 43rd Street	East	8.0	1,463	0.85	72.9	C
East 42nd Street between Madison Avenue and Vanderbilt Avenue	North-West	11.0	4,808	0.92	31.7	D
	North-East	12.0	5,414	0.92	30.6	D
Madison Avenue between East 42nd Street and East 41st Street	East	13.0	2,786	0.95	69.4	C
East 42nd Street between Madison Avenue and Fifth Avenue	South	14.0	2,867	0.89	68.1	C
	North	12.0	3,836	0.96	46.4	C
East 42nd Street between Lexington Avenue and Park Avenue	North	14.0	3,748	0.89	51.6	C
East 42nd Street between Vanderbilt Avenue and Park Avenue	North	12.0	4,308	0.88	37.4	D
	South	15.0	2,993	0.91	71.5	C
Weekday Midday Peak Hour						
West 42nd Street between Fifth Avenue and Sixth Avenue	South	12.0	3,256	0.97	55.7	C
	North	13.0	3,454	0.90	52.6	C
Madison Avenue between East 42nd Street and East 43rd Street	East	8.0	2,227	0.94	52.5	C
East 42nd Street between Madison Avenue and Vanderbilt Avenue	North-West	11.0	4,106	0.94	38.5	D
	North-East	12.0	4,769	0.94	36.0	D
Madison Avenue between East 42nd Street and East 41st Street	East	13.0	2,265	0.96	86.7	C
East 42nd Street between Madison Avenue and Fifth Avenue	South	14.0	3,606	0.93	56.2	C
	North	12.0	3,270	0.97	55.4	C
East 42nd Street between Lexington Avenue and Park Avenue	North	14.0	4,083	0.86	45.5	C
East 42nd Street between Vanderbilt Avenue and Park Avenue	North	12.0	3,395	0.95	52.2	C
	South	15.0	2,684	0.93	81.7	C

Table 10-56 (cont'd)
2021 No-Action Condition: Sidewalk Analysis

Location	Sidewalk	Effective Width (ft)	Two-way Peak Hour Volume	PHF	SFP	Platoon LOS
Weekday PM Peak Hour						
West 42nd Street between Fifth Avenue and Sixth Avenue	South	12.0	7,048	0.96	23.8	D
	North	13.0	4,822	0.96	39.7	D
Madison Avenue between East 42nd Street and East 43rd Street	East	8.0	2,047	0.91	55.4	C
East 42nd Street between Madison Avenue and Vanderbilt Avenue	North-West	11.0	6,236	0.95	24.5	D
	North-East	12.0	7,075	0.95	23.4	D
Madison Avenue between East 42nd Street and East 41st Street	East	13.0	2,954	0.92	63.3	C
East 42nd Street between Madison Avenue and Fifth Avenue	South	14.0	4,119	0.88	46.2	C
	North	12.0	5,932	0.85	25.2	D
East 42nd Street between Lexington Avenue and Park Avenue	North	14.0	4,759	0.97	44.0	C
East 42nd Street between Vanderbilt Avenue and Park Avenue	North	12.0	5,138	0.94	33.2	D
	South	15.0	3,460	0.92	62.3	C
Saturday Peak Hour						
East 42nd Street between Madison Avenue and Vanderbilt Avenue	North-West	11.0	4,244	0.89	35.1	D
	North-East	12.0	4,630	0.89	35.1	D
East 42nd Street between Madison Avenue and Fifth Avenue	North	12.0	5,712	0.89	28.0	D
Madison Avenue between East 43rd Street and East 42nd Street	East	8.0	1,172	0.89	96.2	B
East 42nd Street between Vanderbilt Avenue and Park Avenue	North	12.0	3,427	0.94	51.1	C

Note: SFP = square feet per pedestrian

Table 10-57
2021 No-Action Condition: Corner Analysis

Location	Corner	Weekday AM Peak Hour		Weekday Midday Peak Hour		Weekday PM Peak Hour		Saturday Peak Hour	
		SFP	LOS	SFP	LOS	SFP	LOS	SFP	LOS
Fifth Avenue and 42nd Street	Northwest	61.2	A	40.7	B	30.4	C	72.8	A
	Northeast	63.8	A	51.2	B	35.3	C	62.6	A
	Southwest	42.1	B	32.2	C	30.7	C		
	Southeast	47.1	B	43.3	B	34.4	C		
Madison Avenue and East 43rd Street	Northeast	10.3	E	16.1	D	12.9	E		
	Southwest	26.2	C	28.7	C	20.5	D		
	Southeast	30.6	C	38.6	C	37.1	C	138.0	A
Madison Avenue and East 42nd Street	Northwest	26.2	C	23.6	D	14.8	E	28.3	C
	Northeast	23.4	D	27.3	C	19.2	D	22.4	D
	Southwest	81.0	A	75.0	A	69.1	A		
	Southeast	40.7	B	47.4	B	33.6	C		
Madison Avenue and East 41st Street	Northeast	12.6	E	23.9	D	15.9	D		
	Southeast	21.9	D	28.2	C	19.0	D		
Park Avenue and East 41st Street	Southwest	62.0	A	63.1	A	32.5	C		
Lexington Avenue and East 42nd Street	Northwest	12.2	E	13.6	E	13.7	E		

Note: SFP = square feet per pedestrian

Table 10-58
2021 No-Action Condition: Crosswalk Analysis

Location	Crosswalk	Crosswalk Length (ft)	Crosswalk Width (ft)	2-way Peak Hour Volume	SFP	LOS
Weekday AM Peak Hour						
Fifth Avenue and 42nd Street	North	54	21	2,253	22.4	D
	South	54	22	2,986	14.0	E
	East	55	22	2,243	26.0	C
	West	54	21	2,783	20.4	D
Madison Avenue and East 43rd Street	East	35	14	1,177	38.2	C
Madison Avenue and East 42nd Street	North	53	22	3,349	12.1	E
	South	45	20	2,883	11.2	E
	East	56	19	1,470	36.1	C
Madison Avenue and East 41st Street	East	34	15	2,460	16.1	D
Weekday Midday Peak Hour						
Fifth Avenue and 42nd Street	North	54	21	2,637	18.0	D
	South	54	22	2,892	14.2	E
	East	55	22	2,895	23.8	D
	West	54	21	4,500	11.8	E
Madison Avenue and East 43rd Street	East	35	14	1,388	28.6	C
Madison Avenue and East 42nd Street	North	53	22	3,041	15.0	D
	South	45	20	2,768	13.6	E
	East	56	19	1,821	28.5	C
Madison Avenue and East 41st Street	East	34	15	1,897	24.4	C
Weekday PM Peak Hour						
Fifth Avenue and 42nd Street	North	54	21	3,814	11.8	E
	South	54	22	3,656	12.1	E
	East	55	22	3,127	19.1	D
	West	54	21	5,026	11.5	E
Madison Avenue and East 43rd Street	East	35	14	1,339	32.8	C
Madison Avenue and East 42nd Street	North	53	22	3,867	9.9	E
	South	45	20	2,923	10.6	E
	East	56	19	2,547	21.6	D
Madison Avenue and East 41st Street	East	34	15	3,143	12.8	E
Saturday Peak Hour						
Fifth Avenue and 42nd Street	North	54	21	1,914	23.3	D
	West	54	21	1,881	31.9	C
Madison Avenue and East 42nd Street	North	53	22	3,477	9.9	E
	East	56	19	870	66.2	A

Note: SFP = square feet per pedestrian

- The east crosswalk of Fifth Avenue and 42nd Street, which will deteriorate to LOS D with 19.1 SFP during the weekday PM peak hour.

THE FUTURE WITH THE PROPOSED ACTIONS

Project-generated pedestrian volumes were assigned to the pedestrian network considering current land uses in the area, population distribution, nearby parking locations, available transit services, and surrounding pedestrian facilities. In addition, the new East Side Access connection that would be incorporated into the One Vanderbilt development was accounted for in the assignment of pedestrian trips. The hourly incremental pedestrian volumes presented above in Section D, "Level 2 Screening Assessment", were added to the projected 2021 No-Action volumes to generate the 2021 With-Action pedestrian volumes for analysis (see **Figures 10-55 to 10-58**).

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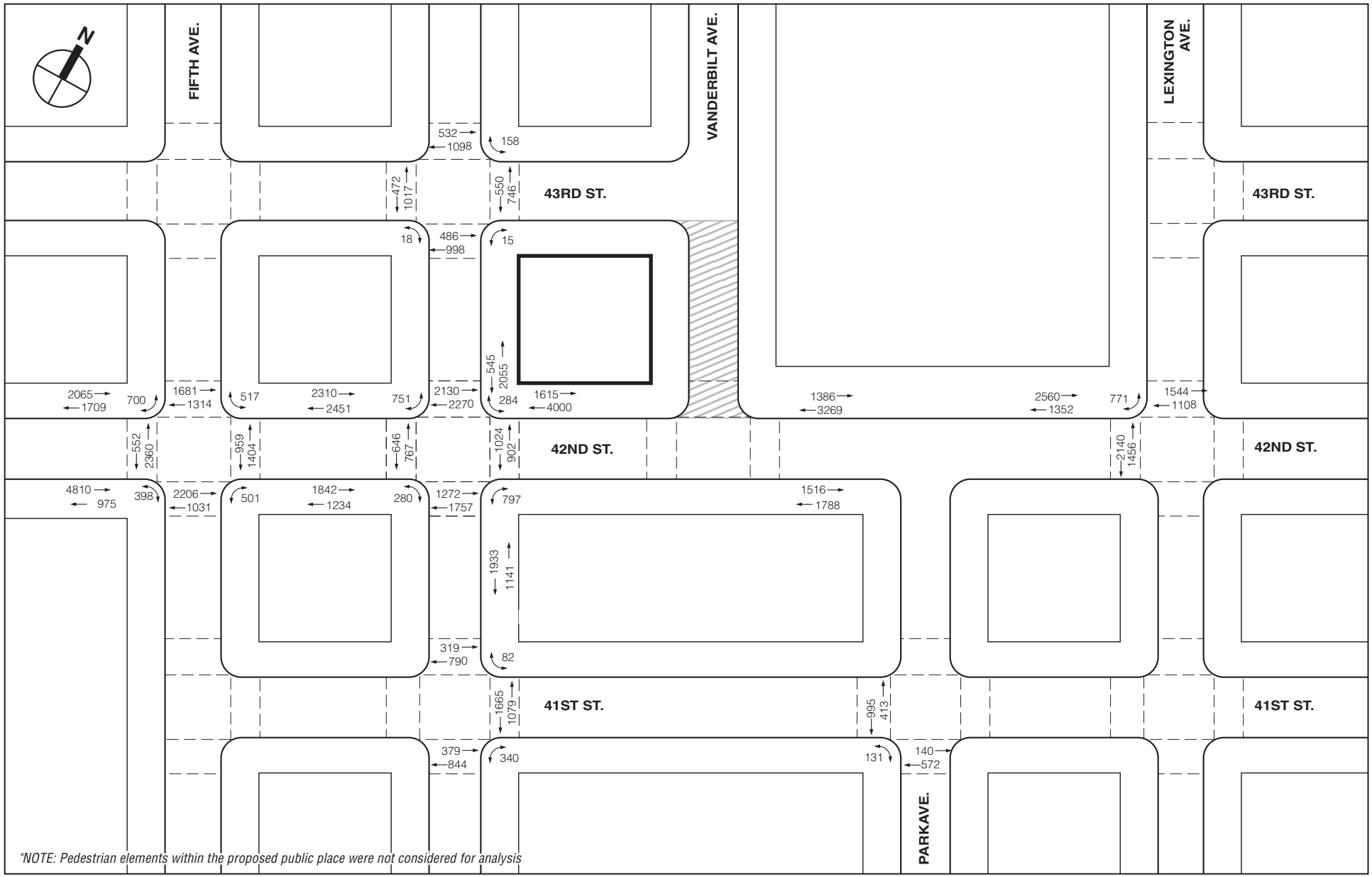

NOT TO SCALE

One Vanderbilt Development Site *Proposed Public Place*

2021 With-Action Pedestrian Volumes
Weekday AM Peak Hour

Figure 10-55

Vanderbilt Corridor and One Vanderbilt

This figure has been updated for the FEIS

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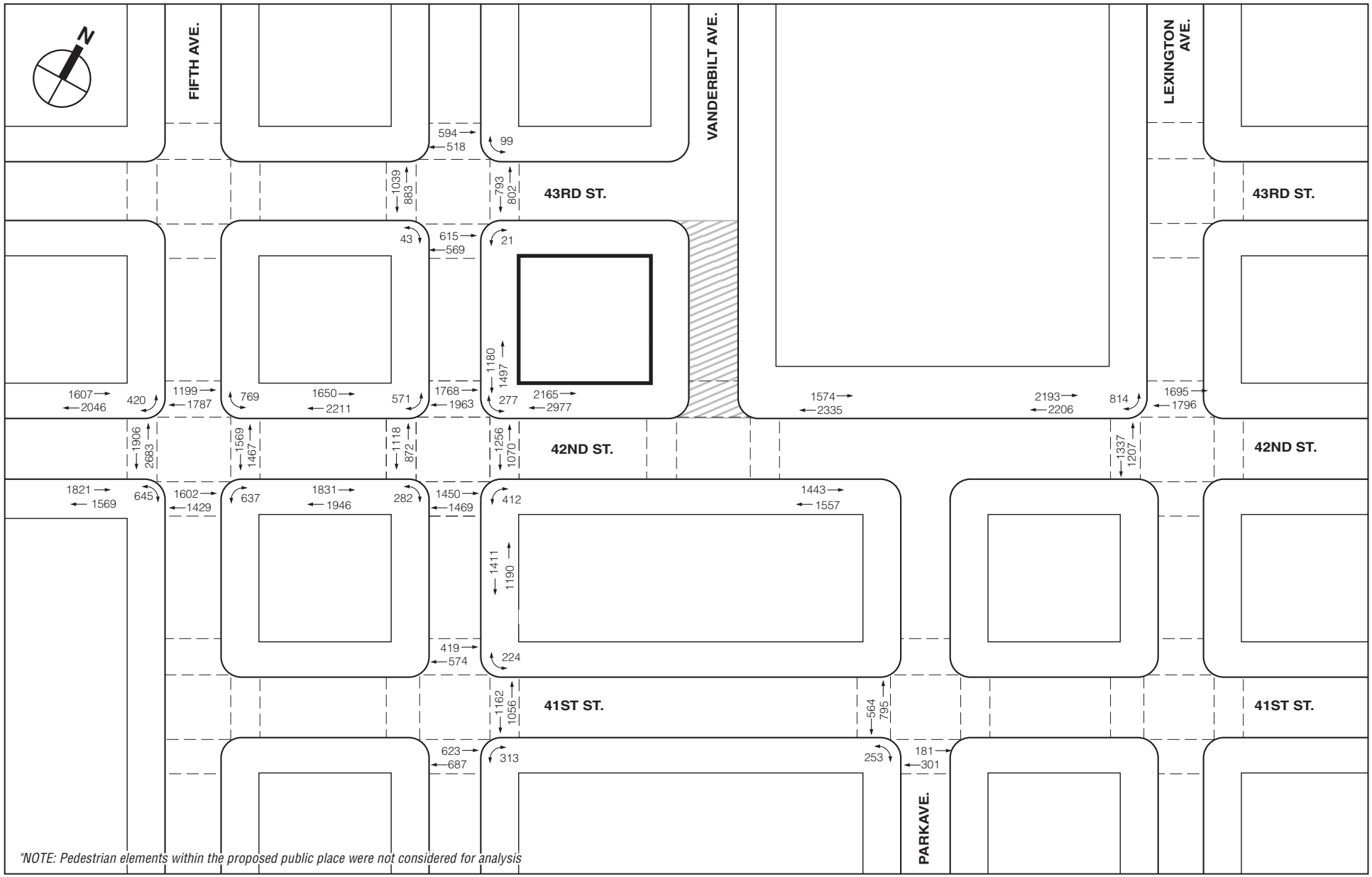

NOT TO SCALE

One Vanderbilt Development Site Proposed Public Place

2021 With-Action Pedestrian Volumes
Weekday Midday Peak Hour

Vanderbilt Corridor and One Vanderbilt

Figure 10-56

This figure has been updated for the FEIS

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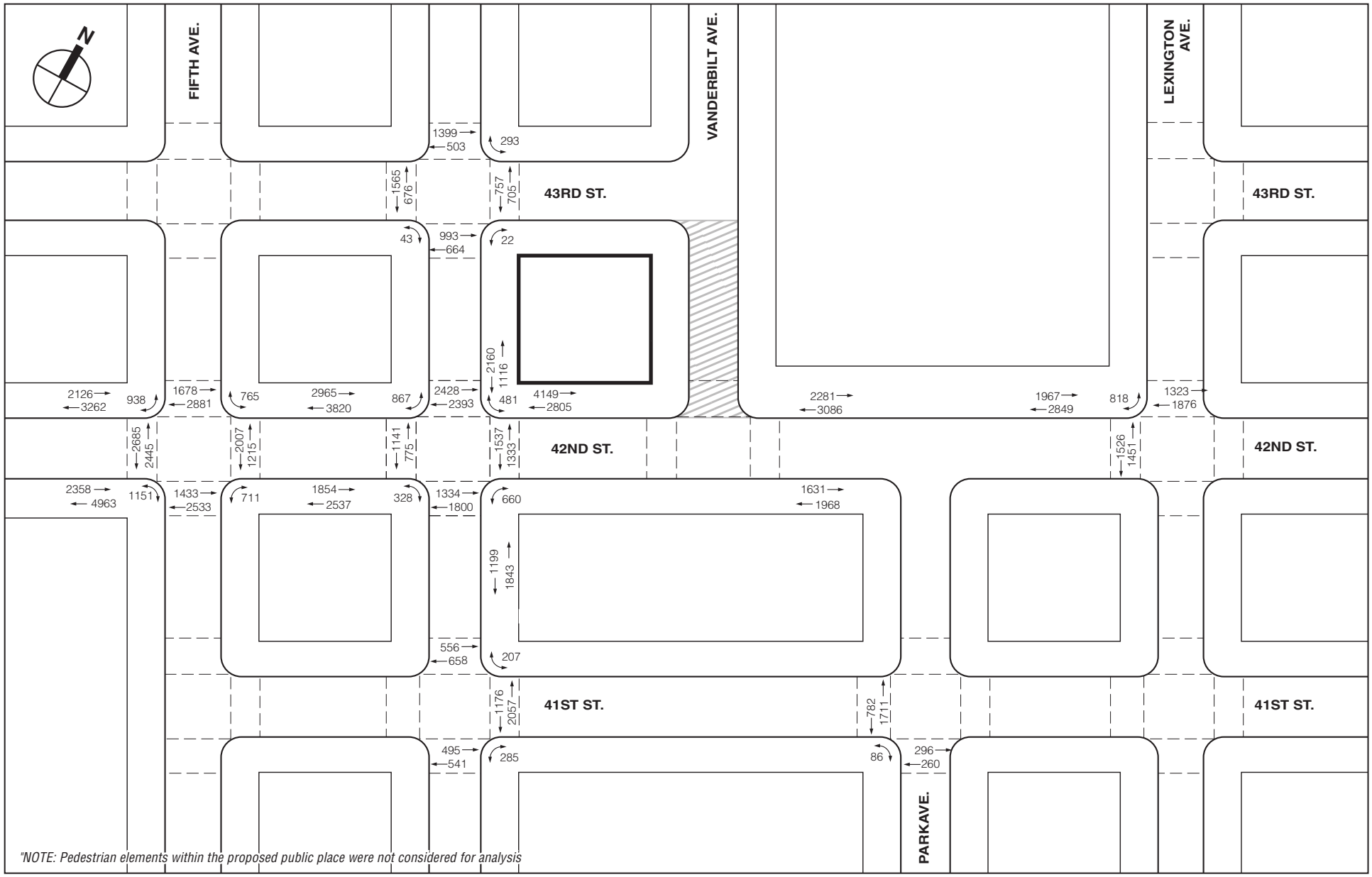

NOT TO SCALE

One Vanderbilt Development Site

Proposed Public Place

2021 With-Action Pedestrian Volumes
Weekday PM Peak Hour

Vanderbilt Corridor and One Vanderbilt

This figure has been updated for the FEIS

Figure 10-57

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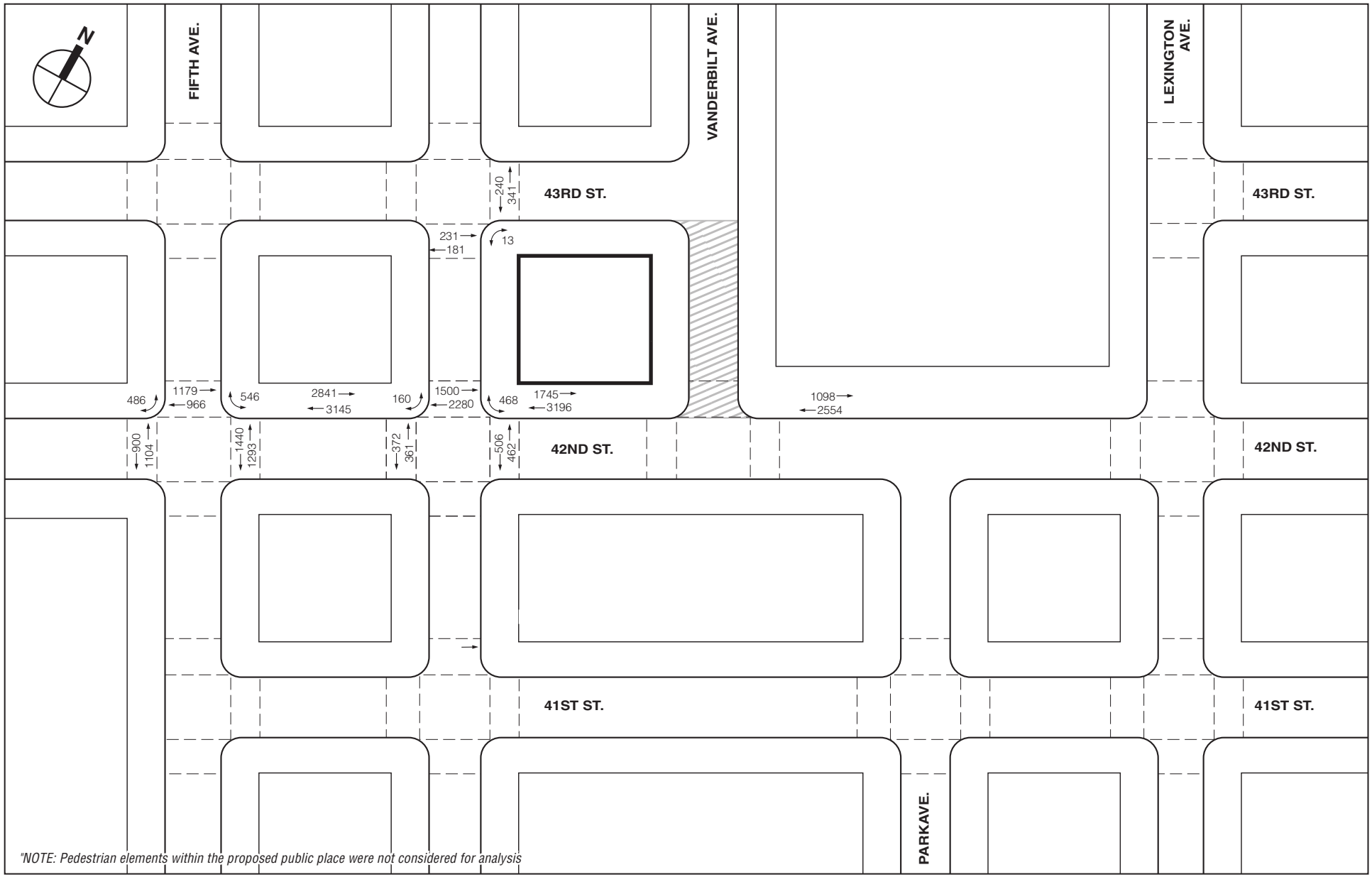


NOT TO SCALE

One Vanderbilt Development Site

Proposed Public Place

2021 With-Action Pedestrian Volumes
Saturday Peak Hour

Vanderbilt Corridor and One Vanderbilt

Figure 10-58

This figure has been updated for the FEIS

STREET-LEVEL PEDESTRIAN OPERATIONS AND SIGNIFICANT ADVERSE IMPACTS

As part of the proposed zoning text amendment, the One Vanderbilt development would be required to incorporate a building setback along the Madison Avenue frontage to provide a minimum sidewalk width of 20 feet (from an existing width of 13 feet). This requirement has been incorporated into the proposed building design. Along the East 42nd Street frontage, the proposed One Vanderbilt building would recede from the Vanderbilt Avenue corner to open up the view to GCT and provide added pedestrian space. As part of the on-going design, security bollards may be installed surrounding the One Vanderbilt block. For analysis purposes, a 7-foot increase in sidewalk width along Madison Avenue has been incorporated into the With-Action pedestrian analysis (i.e., widened effective sidewalk width and increased corner reservoir areas). Because the narrowest effective sidewalk widths used for analysis account for obstructions that currently exist or expected to be in place with the proposed actions, the potential addition of security bollards is not expected to further narrow these effective sidewalk widths surrounding the One Vanderbilt block. For the analysis corner locations along the east side of Madison Avenue at East 42nd and East 43rd Streets, however, the security bollards would introduce additional obstructions within these corners. Although the specific design of these bollards has not been developed, they are typically approximately one foot in diameter, placed five to six feet apart. At the nearby Bank of America headquarters at One Bryant Park, the security bollards are approximately 1.2 feet in diameter and installed five feet center-to-center. This configuration was assumed for determining obstruction areas at these two analysis corners.

A summary of the 2021 With-Action condition pedestrian analysis results is presented in **Table 10-59**. Details on SFP and level-of-service are presented in **Tables 10-60 to 10-62**. Based on the *CEQR Technical Manual* sliding scale impact thresholds, significant adverse pedestrian impacts, as detailed below, were identified for 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. Potential measures that can be implemented to mitigate these significant adverse pedestrian impacts are discussed in Chapter 18, "Mitigation."

Sidewalks

- The north sidewalk of East 42nd Street between Madison and Fifth Avenues would deteriorate from LOS D with 25.2 SFP to LOS E with 21.5 SFP during the weekday PM peak hour. This degradation in pedestrian operations constitutes a significant adverse impact.

Corner Reservoirs

- The northeast corner of Madison Avenue and East 43rd Street would deteriorate from LOS E with 10.3 SFP, LOS D with 16.1 SFP, and LOS E with 12.9 SFP to LOS E with 9.1, 13.4, and 11.5 SFP during the weekday AM, midday, and PM peak hours, respectively. These degradations in pedestrian operations constitute significant adverse impacts.
- The southwest corner of Madison Avenue and East 43rd Street would deteriorate from LOS D with 20.5 SFP to LOS D with 18.3 SFP during the weekday PM peak hour. This degradation in pedestrian operations constitutes a significant adverse impact.

Table 10-59
Summary of 2021 With-Action Pedestrian Analysis Results

Level of Service	Analysis Peak Hours			
	Weekday AM	Weekday Midday	Weekday PM	Saturday
Sidewalks				
Sidewalks at LOS A/B/C	7	10	5	3
Sidewalks at LOS D	4	1	4	2
Sidewalks at LOS E	0	0	2	0
Sidewalks at LOS F	0	0	0	0
Total	11	11	11	5
Number of sidewalks with significant impacts	0	0	1	0
Corner Reservoirs				
Corners at LOS A/B/C	9	11	9	5
Corners at LOS D	3	2	3	0
Corners at LOS E	3	2	3	0
Corners at LOS F	0	0	0	0
Total	15	15	15	5
Number of corner reservoirs with significant impacts	3	2	3	0
Crosswalks				
Crosswalks at LOS A/B/C	3	1	1	2
Crosswalks at LOS D	2	4	2	1
Crosswalks at LOS E	4	4	5	1
Crosswalks at LOS F	0	0	1	0
Total	9	9	9	4
Number of crosswalks with significant impacts	4	2	5	1

Notes: LOS = Level-of-Service

Table 10-60
2021 With-Action Condition: Sidewalk Analysis

Location	Sidewalk	Effective Width (ft)	Two-way Peak Hour Volume	PHF	SFP	Platoon LOS
Weekday AM Peak Hour						
West 42nd Street between Fifth Avenue and Sixth Avenue	South	12.0	5,785	0.92	28.4	D
	North	13.0	3,774	0.93	49.7	C
Madison Avenue between East 42nd Street and East 43rd Street	East	15.0	2,600	0.85	77.0	C
East 42nd Street between Madison Avenue and Vanderbilt Avenue	North-West	12.0	5,615	0.92	29.4	D
	North-East	22.0	7,200	0.92	43.3	C
Madison Avenue between East 42nd Street and East 41st Street	East	13.0	3,074	0.95	62.8	C
East 42nd Street between Madison Avenue and Fifth Avenue	South	14.0	3,076	0.89	63.3	C
	North	12.0	4,761	0.96	36.9	D
East 42nd Street between Lexington Avenue and Park Avenue	North	14.0	3,912	0.89	49.4	C
East 42nd Street between Vanderbilt Avenue and Park Avenue	North	12.0	4,655	0.88	34.4	D
	South	15.0	3,304	0.91	64.6	C
Weekday Midday Peak Hour						
West 42nd Street between Fifth Avenue and Sixth Avenue	South	12.0	3,390	0.97	53.4	C
	North	13.0	3,653	0.90	49.7	C
Madison Avenue between East 42nd Street and East 43rd Street	East	15.0	2,677	0.94	82.8	C
East 42nd Street between Madison Avenue and Vanderbilt Avenue	North-West	12.0	5,142	0.94	33.2	D
	North-East	22.0	5,955	0.94	54.0	C
Madison Avenue between East 42nd Street and East 41st Street	East	13.0	2,601	0.96	75.3	C
East 42nd Street between Madison Avenue and Fifth Avenue	South	14.0	3,777	0.93	53.6	C
	North	12.0	3,861	0.97	46.6	C
East 42nd Street between Lexington Avenue and Park Avenue	North	14.0	4,399	0.86	42.1	C
East 42nd Street between Vanderbilt Avenue and Park Avenue	North	12.0	3,909	0.95	45.0	C
	South	15.0	3,000	0.93	72.9	C

Table 10-60 (cont'd)
2021 With-Action Condition: Sidewalk Analysis

Location	Sidewalk	Effective Width (ft)	Two-way Peak Hour Volume	PHF	SFP	Platoon LOS
Weekday PM Peak Hour						
West 42nd Street between Fifth Avenue and Sixth Avenue	South	12.0	7,321	0.96	22.7	E
	North	13.0	5,388	0.96	35.2	D
Madison Avenue between East 42nd Street and East 43rd Street	East	15.0	3,276	0.91	65.2	C
East 42nd Street between Madison Avenue and Vanderbilt Avenue	North-West	12.0	6,954	0.95	23.9	D
	North-East	22.0	8,955	0.95	35.5	D
Madison Avenue between East 42nd Street and East 41st Street	East	13.0	3,042	0.92	61.4	C
East 42nd Street between Madison Avenue and Fifth Avenue	South	14.0	4,391	0.88	43.2	C
	North	12.0	6,785	0.85	21.5	**E+**
East 42nd Street between Lexington Avenue and Park Avenue	North	14.0	4,816	0.97	43.4	C
East 42nd Street between Vanderbilt Avenue and Park Avenue	North	12.0	5,367	0.94	31.7	D
	South	15.0	3,599	0.92	59.8	C
Saturday Peak Hour						
East 42nd Street between Madison Avenue and Vanderbilt Avenue	North-West	12.0	4,941	0.89	32.7	D
	North-East	22.0	5,607	0.89	54.3	C
East 42nd Street between Madison Avenue and Fifth Avenue	North	12.0	5,986	0.89	26.3	D
Madison Avenue between East 43rd Street and East 42nd Street	East	15.0	1,349	0.89	156.4	B
East 42nd Street between Vanderbilt Avenue and Park Avenue	North	12.0	3,652	0.94	47.8	C

Note: SFP = square feet per pedestrian
+ Denotes a significant adverse impact

Table 10-61
2021 With-Action Conditions: Corner Analysis

Location	Corner	Weekday AM Peak Hour		Weekday Midday Peak Hour		Weekday PM Peak Hour		Saturday Peak Hour	
		SFP	LOS	SFP	LOS	SFP	LOS	SFP	LOS
Fifth Avenue and 42nd Street	Northwest	50.4	B	37.8	C	27.4	C	68.0	A
	Northeast	54.1	B	45.7	B	29.7	C	59.0	B
	Southwest	38.2	C	30.9	C	29.3	C		
	Southeast	43.4	B	40.6	B	31.3	C		
Madison Avenue and East 43rd Street	Northeast	9.1	**E+**	13.4	**E+**	11.5	**E+**		
	Southwest	22.6	D	25.8	C	18.3	**D+**		
	Southeast	53.8	B	59.1	B	57.2	B	189.8	A
Madison Avenue and East 42nd Street	Northwest	17.1	**D+**	19.0	**D+**	11.7	**E+**	24.8	C
	Northeast	34.1	C	38.1	C	26.3	C	39.6	C
	Southwest	75.5	A	71.3	A	65.0	A		
	Southeast	35.1	C	40.2	B	29.8	C		
Madison Avenue and East 41st Street	Northeast	11.3	**E+**	20.7	D	15.3	D		
	Southeast	19.5	D	25.0	C	18.5	D		
Park Avenue and East 41st Street	Southwest	54.4	B	55.7	B	30.9	C		
Lexington Avenue and East 42nd Street	Northwest	11.7	E	12.5	E	13.5	E		

Note: SFP = square feet per pedestrian
+ Denotes a significant adverse impact

Table 10-62
2021 With-Action Condition: Crosswalk Analysis

Location	Crosswalk	Crosswalk Length (ft)	Crosswalk Width (ft)	2-way Peak Hour Volume	SFP	LOS
Weekday AM Peak Hour						
Fifth Avenue and 42nd Street	North	54	21	2,995	16.2	**D+**
	South	54	22	3,237	12.7	**E+**
	East	55	22	2,363	24.5	C
	West	54	21	2,912	19.3	D
Madison Avenue and East 43rd Street	East	35	14	1,296	34.4	C
Madison Avenue and East 42nd Street	North	53	22	4,400	8.8	**E+**
	South	45	20	3,029	10.6	E
	East	56	19	1,926	26.9	C
Madison Avenue and East 41st Street	East	34	15	2,744	14.1	**E+**
Weekday Midday Peak Hour						
Fifth Avenue and 42nd Street	North	54	21	2,986	15.6	**D+**
	South	54	22	3,031	13.5	E
	East	55	22	3,036	22.6	D
	West	54	21	4,589	11.5	E
Madison Avenue and East 43rd Street	East	35	14	1,595	24.4	C
Madison Avenue and East 42nd Street	North	53	22	3,731	11.8	**E+**
	South	45	20	2,919	12.7	E
	East	56	19	2,326	21.7	D
Madison Avenue and East 41st Street	East	34	15	2,218	20.3	D
Weekday PM Peak Hour						
Fifth Avenue and 42nd Street	North	54	21	4,559	9.4	**E+**
	South	54	22	3,966	10.9	**E+**
	East	55	22	3,222	18.4	D
	West	54	21	5,130	11.2	E
Madison Avenue and East 43rd Street	East	35	14	1,462	29.7	C
Madison Avenue and East 42nd Street	North	53	22	4,821	7.6	**F+**
	South	45	20	3,134	9.7	**E+**
	East	56	19	2,870	18.8	**D+**
Madison Avenue and East 41st Street	East	34	15	3,233	12.4	E
Saturday Midday Peak Hour						
Fifth Avenue and 42nd Street	North	54	21	2,145	20.7	D
	West	54	21	2,004	31.3	C
Madison Avenue and East 42nd Street	North	53	22	3,780	9.0	**E+**
	East	56	19	968	59.7	B

Note: SFP = square feet per pedestrian
+ Denotes a significant adverse impact

- The northwest corner of Madison Avenue and East 42nd Street would deteriorate from LOS C with 26.2 SFP to LOS D with 17.1 SFP during the weekday AM peak hour, from LOS D with 23.6 SFP to LOS D with 19.0 SFP during the weekday midday peak hour, and from LOS E with 14.8 SFP to LOS E with 11.7 SFP during the weekday PM peak hour. These degradations in pedestrian operations constitute significant adverse impacts.
- The northeast corner of Madison Avenue and East 41st Street would deteriorate from LOS E with 12.6 SFP to LOS E with 11.3 SFP during the weekday AM peak hour. This degradation in pedestrian operations constitutes a significant adverse impact.

Crosswalks

- The north crosswalk of Fifth Avenue and 42nd Street would deteriorate from LOS D with 22.4 and 18.0 SFP to LOS D with 16.2 and 15.6 SFP during the weekday AM and midday

peak hours, respectively, and from LOS E with 11.8 SFP to LOS E with 9.4 SFP during the weekday PM peak hour. These degradations in pedestrian operations constitute significant adverse impacts.

- The south crosswalk of Fifth Avenue and 42nd Street would deteriorate from LOS E with 14.0 and 12.1 SFP to LOS E with 12.7 and 10.9 SFP during the weekday AM and PM peak hours, respectively. These degradations in pedestrian operations constitute significant adverse impacts.
- The north crosswalk of Madison Avenue and East 42nd Street would deteriorate from LOS E with 12.1 and 9.9 SFP to LOS E with 8.8 and 9.0 SFP during the weekday AM and Saturday peak hours, respectively, LOS D with 15.0 SFP to LOS E with 11.8 SFP during the weekday midday peak hour, and from LOS E with 9.9 SFP to LOS F with 7.6 SFP during the weekday PM peak hour. These degradations in pedestrian operations constitute significant adverse impacts.
- The south crosswalk of Madison Avenue and East 42nd Street would deteriorate from LOS E with 10.6 SFP to LOS E with 9.7 SFP during the weekday PM peak hour. This degradation in pedestrian operations constitutes a significant adverse impact.
- The East crosswalk of Madison Avenue and East 42nd Street would deteriorate from LOS D with 21.6 SFP to LOS D with 18.8 SFP during the weekday PM peak hour. This degradation in pedestrian operations constitutes a significant adverse impact.
- The east crosswalk of Madison Avenue and East 41st Street would deteriorate from LOS D with 16.1 SFP to LOS E with 14.1 SFP during the weekday AM peak hour. This degradation in pedestrian operations constitutes a significant adverse impact.

G. VEHICULAR AND PEDESTRIAN SAFETY EVALUATION

Crash data for the study area intersections were obtained from the New York State Department of Transportation (NYSDOT) for the period between December 1, 2010 and November 30, 2013. The data obtained quantify the total number of reportable accidents (involving fatality, injury, or more than $1,000 in property damage), fatalities, and injuries during the study period, as well as a yearly breakdown of vehicular crashes with pedestrians and bicycles at each location.

During the December 1, 2010 and November 30, 2013 three-year period, a total of 352 reportable and non-reportable accidents, zero fatalities, 316 injuries, and 140 pedestrian/bicyclist-related accidents occurred at the study area intersections. A rolling total of accident data identifies seven study area intersections as high accident locations in the 2010 to 2013 period; these are Sixth Avenue and West 42nd Street, Fifth Avenue and 47th Street, Fifth Avenue and 42nd Street, Madison Avenue and East 42nd Street, Vanderbilt Avenue and East 42nd Street, Lexington Avenue and East 42nd Street, and Third Avenue and East 42nd Street. **Table 10-63** depicts total accident characteristics by intersection during the study period, as well as a breakdown of pedestrian and bicycle accidents by year and location. **Table 10-64** shows a detailed description of each pedestrian/bicyclist-related accident at the high accident locations listed above during the three-year period.

Table 10-63
Accident Summary

Intersection		Study Period						Accidents by Year							
North-South Roadway	East-West Roadway	All Accidents by Year				Total Fatalities	Total Injuries	Pedestrian				Bicycle			
		2010	2011	2012	2013			2010	2011	2012	2013	2010	2011	2012	2013
Sixth Avenue	**42nd Street**	1	15	8	9	0	38	1	4	3	1		5	2	1
Fifth Avenue	44th Street	0	5	4	10	0	19		1	1	1		1	1	2
Fifth Avenue	**47th Street**	0	12	5	3	0	15		3	3			2		2
Fifth Avenue	46th Street	1	7	6	3	0	17		1	2	2	1	1	1	
Fifth Avenue	**42nd Street**	3	9	10	10	0	35	1	4	3	4		1	3	3
Madison Avenue	47th Street	0	5	1	3	0	5				1		1		1
Madison Avenue	46th Street	2	2	0	3	0	8		1					1	
Madison Avenue	44th Street	0		3	2	0	5			1	1				
Madison Avenue	43rd Street	0	1	2	3	0	5		1						
Madison Avenue	**42nd Street**	1	6	7	5	0	14			2	1		1	1	2
Vanderbilt Avenue	47th Street	1	1	0	0	0	1	1							
Vanderbilt Avenue	46th Street	0	1	2	3	0	11		1						
Vanderbilt Avenue	44th Street	0	2	1	1	0	2		1						
Vanderbilt Avenue	43rd Street	0	1	1	0	0	1			1					
Vanderbilt Avenue	**42nd Street**	0	7	5	5	0	21		2	2	1		1	1	
Park Avenue	47th Street	0	3	10	1	0	10								
Park Avenue	46th Street	0	1	5	1	0	4		1	1				1	
Park Avenue	42nd Street	0	1	1	3	0	3				2				
Park Avenue	40th Street	0	4	4	3	0	12		1	1	1		1	1	
Park Avenue	39th Street	0	1	0	8	0	6								
Park Avenue	38th Street	0	1	2	3	0	5			1	2			1	
Park Avenue	37th Street	0	4	2	4	0	11		2		1				1
Lexington Avenue	**42nd Street**	1	12	9	10	0	25	1	4	2	5		2		
Third Avenue	**42nd Street**	1	20	11	12	0	31	1	4	5	4		1		
Third Avenue	41st Street	0	6	3	7	0	12		1		1		1	2	1

Source: NYSDOT December 1, 2010 through November 30, 2013 accident data.
Note: **Bold** intersections are high accident locations.

Table 10-64
Vehicle and Pedestrian Accident Details

Intersection	Year	Date	Time	Accident Class		Action of Vehicle	Action of Pedestrian	Cause of Accident			
				Injured	Killed			Left / Right Turns	Pedestrian Error/ Confusion	Driver Inattention	Other
Sixth Avenue and West 42nd Street	2010	12/15	22:45 PM	X		Going straight – West	Crossing against signal		X		
	2011	2/3	9:10 AM	X		Going straight – West	Unknown		X		
		4/22	19:55 PM	X		Going straight – West	Emerge front/behind parked vehicle				Unknown
		6/21	10:20 AM	X		Making right turn – Northwest	Crossing against signal	X			
		6/28	19:02 PM	X		Making right turn – North	Other actions in roadway	X			Aggressive driving, TCD disregarded
		8/23	11:16 AM	X		Stopped in traffic – West	Along highway with traffic		X		Passenger distraction
		10/2	12:00 PM	X		Making right turn – Northwest	Crossing with signal	X			Failure to yield R.o.W.
		10/6	6:50 AM	X		Going straight – West	Crossing against signal		X		
		10/10	9:15 AM	X		Stopped in traffic -	Unknown				Unknown

Table 10-64, (cont'd)
Vehicle and Pedestrian Accident Details

Intersection	Year	Date	Time	Accident Class		Action of Vehicle	Action of Pedestrian	Cause of Accident			
				Injured	Killed			Left / Right Turns	Pedestrian Error/ Confusion	Driver Inattention	Other
		12/23	4:05 AM	X		Unknown – East	Unknown				Unknown
	2012	4/21	12:14 PM	X		Going straight – West	Not in roadway				Unknown
		5/2	1:10 AM	X		Making left turn on Red – Northeast	Crossing with signal	X			Left turn on red
		5/8	17:20 PM	X		Backing – North	Along highway with traffic				Unknown
		6/25	19:50 PM	X		Stopped in traffic – North	Along highway with traffic				Other, not entered
		6/30	16:15 PM	X		Making left turn – Northwest	Crossing with signal	X		X	Failure to yield R.o.W.
		11/20	19:00 PM	X		Going straight – North	Other actions in roadway		X		
	2013	7/8	20:00 PM	X		Going straight – North	Crossing with signal				Unknown
		8/16	20:10 PM	X		Making left turn – West	Crossing with signal	X		X	
Fifth Avenue and 47th Street	2011	2/1	10:40 AM	X		Making left turn – Southeast	Unknown	X		X	Reaction to other uninvolved vehicle
		5/29	9:20 AM	X		Making left turn – Southwest	Crossing against signal	X	X		
		6/6	21:25 PM	X		Parked – Unknown	Along highway with traffic		X	X	
		10/8	16:00 PM	X		Going straight – South	Crossing against signal		X		
		10/27	16:40 PM	X		Going straight – West	Crossing against signal		X		
	2012	2/18	11:45 AM	X		Making left turn – West	Crossing with signal	X		X	Failure to yield R.o.W.
		10/31	9:30 AM	X		Overtaking – South	Crossing with signal				Passing or lane usage improperly
		12/30	12:15 PM	X		Going straight – East	Unknown				Unknown
	2013	4/10	12:10 PM	X		Stopped in traffic – West	Along highway with traffic			X	
		10/9	8:00 AM	X		Slowed or stopping – South	Along highway with traffic				Failure to yield R.o.W.
Fifth Avenue and 42nd Street	2010	11/1	10:40 AM	X		Backing – West	Crossing/No signal or xwalk		X		Backing Unsafely
	2011	3/30	21:05 PM	X		Merging – East	Along highway with traffic				Unsafe lane change, passing or lane use improper
		7/8	23:00 PM	X		Making left turn – East	Crossing with signal	X			Reaction to other uninvolved vehicle
		9/16	10:45 AM	X		Going straight – South	Crossing against signal		X		
		10/1	16:29 PM	X		Going straight – East	Not in roadway			X	Reaction to other uninvolved vehicle
		11/4	22:50 PM	X		Going straight – South	Crossing with signal		X		

Table 10-64, (cont'd)
Vehicle and Pedestrian Accident Details

Intersection	Year	Date	Time	Accident Class		Action of Vehicle	Action of Pedestrian	Cause of Accident			
				Injured	Killed			Left / Right Turns	Pedestrian Error/ Confusion	Driver Inattention	Other
	2012	5/23	20:45 PM	X		Slowed or stopping – West	Along highway with traffic		X		
		6/27	18:20 PM	X		Going straight – West	Going straight – West		X		
		8/29	20:45 PM	X		Stopped in traffic – South	Working in roadway				Unknown
		9/1	10:30 AM	X		Going straight – East	Crossing, no signal			X	
		12/12	11:40 AM	X		Going straight – East	Crossing against signal		X		
		12/14	23:50 PM	X		Going straight – West	Along highway with traffic				Unknown
	2013	1/28	20:45 PM	X		Merging – Southwest	Along highway with traffic			X	
		1/30	15:00 PM	X		Going straight – West	Unknown				Unknown
		3/20	13:15 PM	X		Going straight – East	Crossing against signal		X		
		4/22	16:22 PM	X		Starting in traffic – West	Crossing, no signal				Failure to yield R.o.W.
		5/19	17:15 PM	X		Going straight – South	Not in roadway				Pavement slippery
		6/11	13:15 PM	X		Going straight – East	Along highway with traffic				Unknown
		8/19	20:25 PM	X		Going straight – West	Crossing, no signal				Unknown
Madison Avenue and East 42nd Street	2011	8/24	N/A	X		Making right turn – Northeast	Unknown				Unknown
	2012	1/24	8:00 AM	X		Going straight – North	Along highway with traffic				Unknown
		9/21	10:40 AM	X		Going straight – North	Crossing against signal		X		
		10/22	8:05 AM	X		Going straight – East	Crossing with signal				Unknown
	2013	6/14	17:02 PM	X		Making right turn – Northwest	Crossing with signal	X			Traffic control devices disregarded, turning improper
		7/2	16:39 PM	X		Making right turn – North	Along highway with traffic	X	X		
		7/17	18:40 PM	X		Changing lanes – North	Along highway with traffic			X	
Vanderbilt Avenue and East 42nd Street	2011	10/5	17:50 PM	X		Parked – East	Along highway with traffic				Unknown
		10/20	05:40 AM	X		Going straight – West	Crossing against signal			X	
		12/9	23:30 PM	X		Going straight – West	Crossing/ No signal or xwalk				Unknown

Table 10-64, (cont'd)
Vehicle and Pedestrian Accident Details

Intersection	Year	Date	Time	Accident Class		Action of Vehicle	Action of Pedestrian	Cause of Accident			
				Injured	Killed			Left / Right Turns	Pedestrian Error/ Confusion	Driver Inattention	Other
	2012	5/12	18:15 PM	X		Going straight – East	Along highway with traffic				Unsafe lane change
		5/24	09:05 AM	X		Making right turn - Northeast	Crossing/No signal or xwalk	X	X		Pavement slippery
		9/19	16:50 PM	X		Going straight – East	Unknown				Unknown
	2013	2/2	02:00 AM	X		Going straight – West	Crossing with signal				Failure to yield R.o.W.
		9/8	16:08 PM	X		Stopped in traffic – West	Going straight – West			X	
Lexington Avenue and East 42nd Street	2010	12/11	19:00 PM	X		Starting in traffic – West	Other actions in roadway				Aggressive driving/Road rage
	2011	7/5	17:50 PM	X		Going straight – East	Crossing with signal			X	
		7/14	19:25 PM	X		Going straight – South	Along highway with traffic			X	
		7/28	16:00 PM	X		Going straight – South	Crossing with signal				Changing lanes
		9/7	12:30 PM	X		Making right turn – Southeast	Crossing with signal	X			Failure to yield R.o.W.
		9/13	22:55 PM	X		Making left turn – East	Crossing with signal	X			Unknown
		9/30	23:50 PM	X		Making right turn – West	Crossing with signal	X		X	Turning improper
	2012	6/7	13:45 PM	X		Unknown	Crossing/No signal or xwalk				Unknown
		6/13	13:30 PM	X		Making left turn – East	Crossing with signal	X		X	Failure to yield R.o.W.
	2013	4/8	17:45 PM	X		Making right turn – Southeast	Crossing with signal	X			Unknown
		4/9	20:50 PM	X		Going straight – East	Unknown				Unknown
		6/7	00:05 AM	X		Going straight – East	Crossing with signal				View obstructed/limited
		6/28	03:00 AM	X		Making left turn – Southeast	Unknown	X			Unknown
		11/16	18:02 PM	X		Making left turn – East	Crossing with signal	X			View obstructed/limited
Third Avenue and East 42nd Street	2010	12/4	17:09 PM	X		Going straight – North	Crossing against signal		X		
	2011	3/16	09:11 AM	X		Making left turn – West	Crossing with signal	X			Failure to yield R.o.W.
		5/6	23:00 PM	X		Going straight – West	Getting on/off vehicle				Oversized vehicle, view obstructed/limited
		8/24	12:07 PM	X		Going straight – West	Getting on/off vehicle				Unknown
		8/28	20:15 PM	X		Making right turn – East	Crossing with signal	X			Unknown
		9/3	08:25 AM	X		Going straight – East	Crossing against signal		X		

Table 10-64, (cont'd)
Vehicle and Pedestrian Accident Details

Intersection	Year	Date	Time	Accident Class		Action of Vehicle	Action of Pedestrian	Cause of Accident			
				Injured	Killed			Left / Right Turns	Pedestrian Error/ Confusion	Driver Inattention	Other
	2012	2/17	11:40 AM	X		Going straight	Crossing with signal				Unknown
		3/30	15:20 PM	X		Going straight – East	Crossing against signal		X		Alcohol involvement
		4/17	16:06 PM			Making left turn – North	Crossing against signal	X			
		9/14	14:00 PM	X		Making left turn on red – Northeast	Crossing with signal	X			Traffic control devices disregarded, turning improper
		12/11	20:10 PM	X		Making left turn – West	Working in roadway	X			Unsafe speed
	2013	4/3	14:10 PM	X		Backing – West	Other actions in roadway				Unknown
		6/13	06:19 AM	X		Making left turn – West	Crossing with signal				Unknown
		7/24	00:05 AM	X		Going straight – East	Crossing with signal				Unknown
		9/10	19:15 PM	X		Going straight – West	Crossing with signal				Unknown

SIXTH AVENUE AND WEST 42ND STREET

Based on the review of the accident history at the intersection of Sixth Avenue and West 42nd Street, no prevailing trends with regard to geometric deficiencies were identified as the primary causes of recorded accidents. With respect to geometric deficiencies that could potentially cause safety hazards, the intersection of Sixth Avenue and West 42nd Street is signalized and provides four high visibility crosswalks. In terms of project-generated activity, the intersection would experience incremental peak-hour volume increases of approximately 70 or fewer vehicle trips and fewer than 200 pedestrian trips at any crosswalk during each of the four analysis peak hours. Restriping the intersection's faded north, east, and south crosswalks could enhance visibility and delineation of pedestrian space for both motorists and pedestrians.

FIFTH AVENUE AND 47TH STREET

Based on the review of the accident history at the intersection of Fifth Avenue and 47th Street, no prevailing trends with regard to geometric deficiencies were identified as the primary causes of recorded accidents. With respect to geometric deficiencies that could potentially cause safety hazards, the intersection of Fifth Avenue and 47th Street is signalized and provides four high visibility crosswalks around a gridlock box. In terms of project-generated activity, the intersection would experience incremental peak-hour volume increases of approximately 60 or fewer vehicle trips and fewer than 200 pedestrian trips at any crosswalk during each of the four analysis peak hours. As described in Chapter 18, "Mitigation," the predicted impact at this intersection could be fully mitigated with standard traffic engineering measures. Therefore, the proposed One Vanderbilt development is not anticipated to exacerbate any of the current causes of pedestrian-related accidents. Nonetheless, additional safety measures, such as the installation of countdown timers on all crosswalks, can be implemented to improve pedestrian safety at this intersection.

FIFTH AVENUE AND 42ND STREET

Based on the review of the accident history at the intersection of Fifth Avenue and 42nd Street, no prevailing trends with regard to geometric deficiencies were identified as the primary causes of recorded accidents. With respect to geometric deficiencies that could potentially cause safety hazards, the intersection of Fifth Avenue and 42nd Street is signalized and provides four high visibility crosswalks. In addition, countdown timers are posted on all crosswalks. In terms of project-generated activity, the intersection would experience incremental peak-hour volume increases of approximately 80 or fewer vehicle trips and 750 or fewer pedestrian trips at any crosswalk during each of the four analysis peak hours. Restriping the intersection's faded south crosswalk could enhance visibility and delineation of pedestrian space for both motorists and pedestrians.

MADISON AVENUE AND EAST 42ND STREET

Based on the review of the accident history at the intersection of Madison Avenue and East 42nd Street, no prevailing trends with regard to geometric deficiencies were identified as the primary causes of recorded accidents. With respect to geometric deficiencies that could potentially cause safety hazards, the intersection of Madison Avenue and East 42nd Street is signalized and provides four high visibility crosswalks. In addition, countdown timers are active on all crosswalks. In terms of project-generated activity, the intersection would experience incremental peak-hour volume increases of approximately 85 or fewer vehicle trips and 1,050 or fewer pedestrian trips at any crosswalk during each of the four analysis peak hours. Restriping the intersection's faded north, east, and south crosswalks could enhance visibility and delineation of pedestrian space for both motorists and pedestrians.

VANDERBILT AVENUE AND EAST 42ND STREET

Based on the review of the accident history at the intersection of Vanderbilt Avenue and East 42nd Street, no prevailing trends with regard to geometric deficiencies were identified as the primary causes of recorded accidents. With respect to geometric deficiencies that could potentially cause safety hazards, the intersection of Vanderbilt Avenue and East 42nd Street is a signalized T-intersection that provides three high visibility crosswalks. In addition, countdown timers are posted on the eastern and western crosswalks. In terms of project-generated activity, the intersection would experience incremental peak-hour volume increases of approximately 60 or fewer vehicle trips and 560 or fewer pedestrian trips at any crosswalk during each of the four analysis peak hours. It should be noted that with the proposed One Vanderbilt development, the north crosswalk at this intersection would be integrated into the Vanderbilt Avenue public place between East 42nd and East 43rd Streets, such that there would no longer be any turning vehicles from East 42nd Street onto Vanderbilt Avenue. This project-related roadway reconfiguration is expected to substantially reduce vehicular-pedestrian conflicts at this intersection. As described in Chapter 18, "Mitigation," the predicted impacts at this intersection could be fully mitigated with standard traffic engineering measures. Therefore, the proposed One Vanderbilt development is not anticipated to exacerbate any of the current causes of pedestrian-related accidents. Nonetheless, additional safety measures, such as the restriping of the faded east and west crosswalks, can be implemented to further improve pedestrian safety.

LEXINGTON AVENUE AND EAST 42ND STREET

Based on the review of the accident history at the intersection of Lexington Avenue and East 42nd Street, no prevailing trends with regard to geometric deficiencies were identified as the primary causes of recorded accidents. It is worth noting that half of all pedestrian accidents involved vehicles turning during the pedestrians walk cycle. These turning movements are not isolated to a single approach. With respect to geometric deficiencies that could potentially cause safety hazards, the intersection of Lexington Avenue and East 42nd Street is signalized and provides four high visibility crosswalks. In addition, countdown timers are posted on all crosswalks. In terms of project-generated activity, the intersection would experience incremental peak-hour volume increases of approximately 60 or fewer vehicle trips and fewer than 200 pedestrian trips at any crosswalk during each of the four analysis peak hours. As described in Chapter 18, "Mitigation," the predicted impacts at this intersection could be fully mitigated with standard traffic engineering measures. Therefore, the proposed One Vanderbilt development is not anticipated to exacerbate any of the current causes of pedestrian-related accidents. Nonetheless, additional safety measures, such as the restriping of all four faded or paved-over crosswalks, can be implemented to improve pedestrian safety at this intersection.

THIRD AVENUE AND EAST 42ND STREET

Based on the review of the accident history at the intersection of Third Avenue and East 42nd Street, no prevailing trends with regard to geometric deficiencies were identified as the primary causes of recorded accidents. With respect to geometric deficiencies that could potentially cause safety hazards, the intersection of Third Avenue and East 42nd Street is signalized and provides four high visibility crosswalks around a gridlock box. In addition, countdown timers are posted on all crosswalks. In terms of project-generated activity, the intersection would experience incremental peak-hour volume increases of approximately 50 or fewer vehicle trips and fewer than 200 pedestrian trips at any crosswalk during each of the four analysis peak hours. Restriping the faded north and west crosswalks could enhance visibility and delineation of pedestrian space for both motorists and pedestrians.

As described above, most of the high accident locations are located along the 42nd Street corridor, all characterized by high existing volumes of vehicular and pedestrian traffic. To address the safety at some of these locations, DOT has, in recent years, implemented a variety of pedestrian and bicycle safety improvement measures[1]. As part of its Vision Zero initiatives, the City will explore additional measures for potential implementation at these high accident locations and others in the study area to enhance traffic and pedestrian safety. In addition, the proposed public place on Vanderbilt Avenue between East 42nd Street and East 43rd Street would introduce a new at-grade pedestrian space adjacent to the One Vanderbilt site and several other measures were identified above to further improve safety at the surrounding intersections. Additional safety measures—such as adjusting signal timings to incorporate LPI, split LPI, split phases—may also be considered at the time the proposed One Vanderbilt development is completed.

[1] Safety improvements implemented in the study area since 2010 have included pedestrian countdown signals, advance stop bars, "LOOK!" pavement markings, and crosstown bicycle lanes.

H. PARKING ASSESSMENT

2014 EXISTING CONDITIONS

An inventory of on- and off-street parking within a ¼-mile of the One Vanderbilt site was conducted in May 2014. The on-street survey involved recording curbside regulations and performing general observations of daytime utilization. The off-street survey provided an inventory of the area's public parking facilities and their legal capacities and daytime utilization.

ON-STREET PARKING

Curbside parking regulations within a ¼-mile of the One Vanderbilt site are illustrated in **Figure 10-59** and summarized in **Table 10-65**. The curbside regulations in the area generally include no standing or no parking anytime except authorized vehicles and/or commercial vehicles. Based on field observations, on-street parking in the area is generally at or near full utilization during daytime hours.

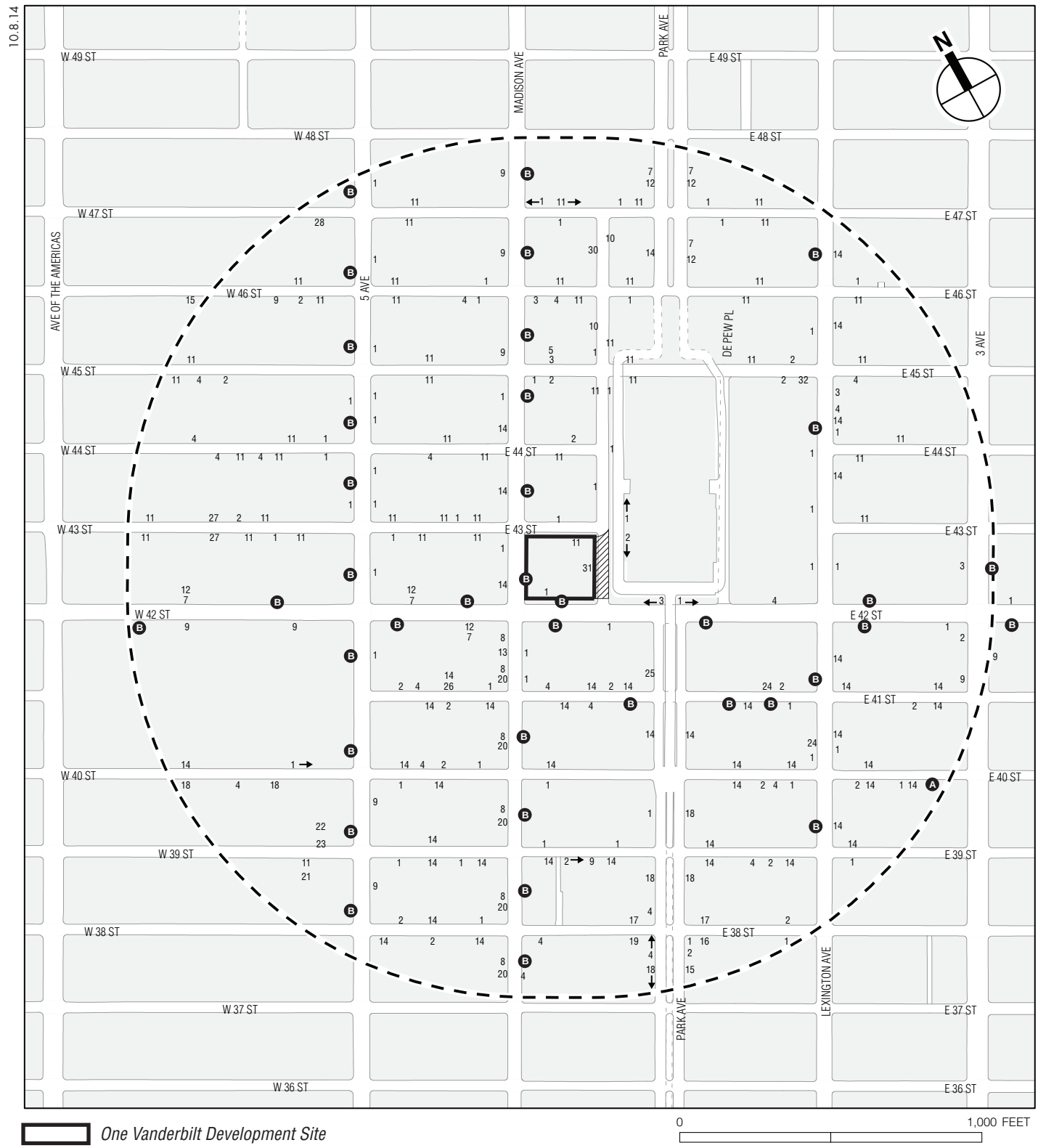
Table 10-65
On-Street Parking Regulations

No.	Regulation	No.	Regulation
1	No Standing Anytime	17	NS Except Commercial Vehicles, 3 Hr Limit 8AM-7PM Except Sun
2	NS Except Authorized Vehicles	18	NS Except Commercial Vehicles, 3 Hr Limit 8AM-6PM Except Sun
3	NS Taxi Stand	19	NS 8AM-6PM Except Sunday
4	NS Hotel Loading Zone	20	NS Except Commercial Vehicles, 3 Hr Limit 7AM-1PM Except Sun
5		21	NP 2AM-6AM Sunday
6	NP 7AM-6PM Mon-Fri	22	NS 10PM-6AM Including Sunday
7	NS 7AM-10AM, 4PM-7PM Except Sunday	23	NS Except Commercial Vehicles, 3 Hr Limit 6AM-7PM Mon-Fri
8	NS 1PM-7PM Except Sunday	24	No Stopping 7AM-1PM Mon-Fri
9	NS 7AM-7PM Mon-Sat	25	NS Except Commercial Vehicles, 3 Hr Limit 7AM-7PM Mon-Fri
10	NS Except Commercial Vehicles, 3 Hr Limit Except Sun	26	NS 7PM-1AM Mon-Fri TLC Licensed Vehicle Prearranged Service Only
11	NS Except Commercial Vehicles, 3 Hr Limit 7AM-6PM Mon-Fri	27	NS Fire Zone
12	NS Except Commercial Vehicles, 3 Hr Limit 10AM-4PM Except Sun	28	NS 7AM-2PM Mon-Fri, NS Other Times Except Trucks Loading & Unloading
13	NS Except Commercial Vehicles, 3 Hr Limit 7AM-1PM Except Sun	29	NS 3AM-5AM Except Sunday
14	NS Except Commercial Vehicles, 3 Hr Limit 7AM-7PM Except Sun	30	NS 5PM-Midnight Mon-Fri Except TLC Licensed Vehicles Other Times NS Except Trucks Loading & Unloading
15	NS Except Trucks Loading & Unloading 8AM-6PM Mon-Fri	31	Citi Bike Station
16	NS 8AM-7PM Except Sunday	32	NP Anytime

Notes: NP = No Parking; NS = No Standing; Sun = Sunday; Mon = Monday; Tue = Tuesday; Wed = Wednesday; Thu = Thursday; Fri = Friday; Sat = Saturday
Sources: Surveys conducted by AKRF, Inc. in August 2014.

OFF-STREET PARKING

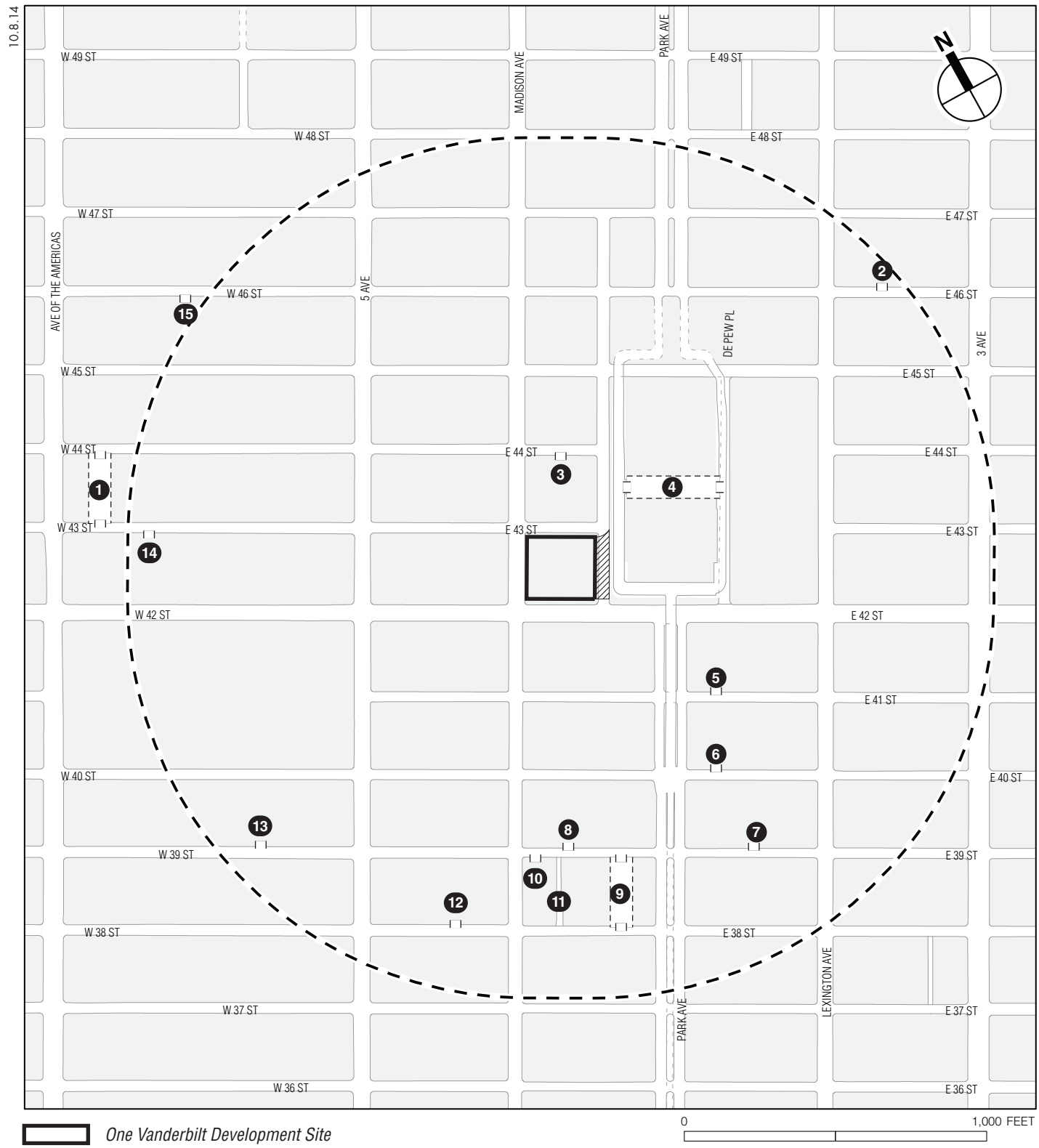
Off-street publicly accessible parking lots and garages (see **Figure 10-60**) within ¼-mile of the One Vanderbilt site were surveyed in May 2014. Each facility's operating license and legal capacity were noted. Based on responses given by parking attendants and visual inspections, where possible, estimates were made on the parking occupancy or utilization at each facility for the weekday morning, midday, evening, and overnight time periods. The One Vanderbilt site is located in the Manhattan CBD where parking demand on the weekend is generally lower than



On-Street Parking Regulations

Vanderbilt Corridor and One Vanderbilt

Figure 10-59



Off-Street Parking Facilities

Vanderbilt Corridor and One Vanderbilt

Figure 10-60

weekday peak periods. Therefore, the detailed off-street parking analysis presented in this section was conducted only for the critical weekday time periods. A summary of the recorded information and the area's overall off-street public parking supply and utilization is presented in **Table 10-66**.

Table 10-66
2014 Existing Weekday Off-Street Parking Utilization—¼-mile Study Area

Map #	Name/Operator and Address/Location	License Number	Licensed Capacity	Utilization Rate				Utilized Spaces				Available Spaces			
				AM	MD	PM	ON	AM	MD	PM	ON	AM	MD	PM	ON
1	Fast Park Edison Parking, LLC: 1120 Sixth Avenue	1250358	648	50%	66%	50%	20%	324	428	324	130	324	220	324	518
2	Kinney Parking Systems, Inc: 485 Lexington Avenue	1451289	100	70%	85%	60%	15%	70	85	60	15	30	15	40	85
3	CPS: 335 Madison Avenue	368723	90	80%	0.90	80%	20%	72	81	72	18	18	9	18	72
4	One Parking Corp.: 200 Park Avenue	1379494	350	30%	0.75	0.75	15%	105	263	263	53	245	87	87	297
5	Grand Central Park, LLC: 110 E. 42nd Street	1320538	77	60%	85%	25%	5%	46	65	19	4	31	12	58	73
6	Quick Park, LLC: 101 Park Avenue	1293753	124	10%	0.90	85%	5%	12	112	105	6	112	12	19	118
7	Rapid Park 99 Park Avenue Corp: 99 Park Avenue	1181507	75	25%	40%	25%	5%	19	30	19	4	56	45	56	71
8	Park Avenue 39: 90 Park Avenue	1298776	150	70%	0.90	30%	15%	105	135	45	23	45	15	105	127
9	Imperial Parking, Inc: 35 E. 38th Street	1387693 /1387690	112	80%	100 %	80%	50%	90	112	90	56	22	0	22	56
10	Affiliated Parking, LLC: 247-261 Madison Avenue	429844	80	55%	80%	50%	10%	44	64	40	8	36	16	40	72
11	Affiliated Parking, LLC: 238 E. 39th Street	469319	25	85%	60%	70%	CLD	21	15	18	CLD	4	10	7	CLD
12	Regal Parking, LLC: 250-264 Madison Avenue	429658	155	70%	85%	30%	15%	109	132	47	23	46	23	108	132
13	Bryant Park Car Park, LLC: 13 W. 39th Street	1001165	76	40%	0.90	65%	20%	30	68	49	15	46	8	27	61
14	1114 Sixth Parking LLC: 1114 Sixth Avenue	1020999	188	45%	70%	70%	15%	85	132	132	28	103	56	56	160
15	Kinney Parking Systems: 38 W. 46th Street	1463445	225	25%	70%	0.75	10%	56	158	169	23	169	67	56	202
			2,475	**48%**	**76%**	**59%**	**17%**	**1,188**	**1,880**	**1,452**	**406**	**1,287**	**595**	**1,023**	**2,044**

Notes: MD = Midday; ON = Overnight; CLD = Closed
Sources: Survey conducted by AKRF Inc. in May 2014.

Within the ¼-mile parking study area, 15 public parking facilities were inventoried. The combined capacity of these facilities totals 2,475 parking spaces. Overall, they were 48, 76, 59, and 17-percent utilized, with 1,287, 595, 1,023, and 2,044 parking spaces available during the weekday morning, midday, evening, and overnight time periods, respectively.

THE FUTURE WITHOUT THE PROPOSED ACTIONS

Overall off-street public parking utilization is expected to experience the same growth as projected for traffic. As presented in **Table 10-67**, accounting for the parking demand generated from background growth, parking demand from discrete No Build projects anticipated to utilize off-street public parking facilities in the ¼-mile study area, and incremental parking demand generated by the No-Action building (the No-Action building parking demand would replace the Existing building parking demand), the No-Action condition public parking utilization is expected to increase to 52, 81, 61, and 19 percent during the weekday morning, midday, evening, and overnight peak periods, respectively, in the ¼-mile off-street parking study area.

Table 10-67
2014 Existing and 2021 No-Action Off-Street Parking Supply and Utilization

	Weekday AM	Weekday Midday	Weekday PM	Weekday Overnight
2014 Existing Public Parking Supply	2,475	2,475	2,475	2,450
2014 Existing Public Parking Demand	1,188	1,880	1,452	406
2014 Existing Public Parking Utilization	48%	76%	59%	17%
2021 No-Action Public Parking Supply Total	2,475	2,475	2,475	2,450
2021 No-Action Background Incremental Parking Demand	18	28	22	6
Discrete No Build Projects Total Parking Demand	71	89	37	42
Discrete No Build Projects Parking Demand Accommodated by Public Parking	71	89	37	42
One Vanderbilt Site: Existing Building Parking Demand	80	131	17	0
One Vanderbilt Site: No-Action Building Parking Demand	88	148	25	0
No-Action Building Incremental Parking Demand (No-Action - Existing)	8	17	8	0
No-Action Building Incremental Parking Demand Accommodated by Public Parking	8	17	8	0
No-Action Incremental Public Parking Demand	97	134	67	48
2021 No-Action Public Parking Demand Total	1,285	2,014	1,519	454
2021 No-Action Public Parking Utilization	52%	81%	61%	19%
2021 No-Action Available Spaces (Shortfall)	1,190	461	956	1,996

Sample Calculations: No-Action Building Incremental Parking Demand = No-Action Building Parking Demand – Existing Building Parking Demand
No-Action Building Incremental Parking Demand for Weekday AM = 88 – 80 = 8
No-Action Incremental Public Parking Demand = 2021 No-Action Background Incremental Parking Demand + Discrete No Build Projects Parking Demand Accommodated by Public Parking + No-Action Building Incremental Parking Demand Accommodated by Public Parking
No-Action Incremental Public Parking Demand for Weekday AM = 18 + 71 + 8 = 97
2021 No-Action Public Parking Demand Total = 2014 Existing Public Parking Demand + No-Action Incremental Public Parking Demand
2021 No-Action Public Parking Demand Total for Weekday AM = 1,188 + 97 = 1,190

THE FUTURE WITH THE PROPOSED ACTIONS

The weekday parking demand generated by the proposed One Vanderbilt development is presented in **Table 10-68**. This parking demand would replace the No-Action building parking demand at the One Vanderbilt site. As presented in **Table 10-69**, accounting for the incremental parking demand generated by the proposed One Vanderbilt development, the With-Action condition public parking utilization is expected to increase to 62, 95, 65, and 19 percent during the weekday morning, midday, evening, and overnight peak periods, respectively, in the ¼-mile off-street parking study area. Since these occupancy levels are within the area's parking capacity, the proposed One Vanderbilt development is not expected to result in the potential for a parking shortfall or a significant adverse parking impact.

Table 10-68
One Vanderbilt Development—Weekday Parking Demand

Hour	Event Space	Local Retail	Destination Retail	Observation Deck	Restaurant	Trading Floor: Traders	Trading Floor: Visitors	Office	Total
12:00 AM - 1:00 AM	0	0	0	0	0	0	0	0	0
1:00 AM - 2:00 AM	0	0	0	0	0	0	0	0	0
2:00 AM - 3:00 AM	0	0	0	0	0	0	0	0	0
3:00 AM - 4:00 AM	0	0	0	0	0	0	0	0	0
4:00 AM - 5:00 AM	0	0	0	0	0	0	0	0	0
5:00 AM - 6:00 AM	0	0	0	0	0	0	0	0	0
6:00 AM - 7:00 AM	0	0	0	0	0	0	0	0	0
7:00 AM - 8:00 AM	0	0	0	0	0	15	0	11	26
8:00 AM - 9:00 AM	0	0	2	0	0	197	3	145	347
9:00 AM - 10:00 AM	0	0	4	0	0	221	4	245	474
10:00 AM - 11:00 AM	0	0	6	0	3	221	4	235	469
11:00 AM - 12:00 PM	0	0	8	0	13	221	4	231	477
12:00 PM - 1:00 PM	0	0	10	0	13	221	4	229	477
1:00 PM - 2:00 PM	0	0	10	0	16	221	5	231	483
2:00 PM - 3:00 PM	0	0	9	0	7	221	5	237	479
3:00 PM - 4:00 PM	0	0	10	0	5	221	4	247	487
4:00 PM - 5:00 PM	0	0	9	0	0	211	2	176	398
5:00 PM - 6:00 PM	45	0	9	0	5	29	0	23	111
6:00 PM - 7:00 PM	86	0	6	0	16	9	0	3	120
7:00 PM - 8:00 PM	65	0	5	0	20	1	0	1	92
8:00 PM - 9:00 PM	48	0	4	0	12	0	0	0	64
9:00 PM - 10:00 PM	0	0	0	0	5	0	0	0	5
10:00 PM - 11:00 PM	0	0	0	0	2	0	0	0	2
11:00 PM - 12:00 AM	0	0	0	0	0	0	0	0	0

Table 10-69
2021 No-Action and With-Action Off-Street Parking Supply and Utilization

	Weekday AM	Weekday Midday	Weekday PM	Weekday Overnight
2021 No-Action Public Parking Supply	2,475	2,475	2,475	2,450
2021 No-Action Public Parking Demand	1,285	2,014	1,519	454
2021 No-Action Public Parking Utilization	52%	81%	61%	19%
2021 With-Action Public Parking Supply Total	2,475	2,475	2,475	2,450
One Vanderbilt Site: No-Action Building Parking Demand	88	148	25	0
One Vanderbilt Site: With-Action Building Parking Demand	347	477	111	0
One Vanderbilt Development Incremental Parking Demand (With-Action - No-Action)	259	329	86	0
One Vanderbilt Development Incremental Parking Demand Accommodated by Public Parking	259	329	86	0
2021 With-Action Public Parking Demand Total	1,544	2,343	1,605	454
2021 With-Action Public Parking Utilization	62%	95%	65%	19%
2021 With-Action Available Spaces (Shortfall)	931	132	870	1,996

Sample Calculations: One Vanderbilt Development Incremental Parking Demand = With-Action Building Parking Demand – No-Action Building Parking Demand
One Vanderbilt Development Incremental Parking Demand for Weekday AM = 347 – 88 = 259
2021 With-Action Public Parking Demand Total = 2021 No-Action Public Parking Demand + One Vanderbilt Development Incremental Parking Demand Accommodated by Public Parking
2021 With-Action Public Parking Demand Total for Weekday AM = 1,285 + 259 = 1,544

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