Appendix D: Travel Demand Analysis Memo and Auto Dealership Survey

Memorandum

To: New York City Department of City Planning

Date: August 5, 2025 (revised March 24, 2026)

Project #: 22359.00

From: Lior Melnick and Alfred Yeung – VHB

Re: Dewitt Clinton Park North (629 West 54th Street and 801 Eleventh Avenue) EIS – Travel Demand Analysis Memorandum (New York, NY)

Introduction

This memorandum summarizes the travel demand assumptions and transportation screening analysis for the Proposed Projects consisting of two mixed-use residential and commercial buildings in the Hell's Kitchen neighborhood of Manhattan Community District 4. Development Site 1 would be located at 629 West 54th Street (Manhattan Block 1102, Lot 1) and Development Site 2 would be located at 801 Eleventh Avenue (Manhattan Block 1103, Lot 36). The two Development Sites are shown in Figure 1.

Analytic Framework

The Applicants intend to construct two buildings: a 44-story, mixed use residential and commercial building on Development Site 1 and a 38-story, mixed-use residential and commercial building on Development Site 2 (collectively, the "Proposed Projects"). The proposed building on Development Site 1 would include 617 residential dwelling units (DUs) and 113,990 square feet (sf) of commercial auto dealership space, and the proposed building on Development Site 2 would include 477 residential DUs and 85,760 sf of commercial auto dealership space. For the purpose of environmental analysis, two reasonable worst-case development scenarios (RWCDSs) were analyzed to provide a conservative baseline in analyzing the Proposed Actions' potential impacts. One scenario is the Maximum Commercial Scenario which assumes that the commercial space would be developed as office and retail uses instead of auto dealership use. The second scenario is the Maximum Residential Scenario which would maximize the residential development for the site.

Under the Maximum Commercial Scenario, it is assumed that Development Site 1 would contain 617 DUs, 65,364 sf of office space and 48,626 sf of retail space (assumed to be destination retail). Development Site 2 would contain 477 DUs, 47,350 sf of office space, and 38,410 sf of retail space (assumed to be local retail).

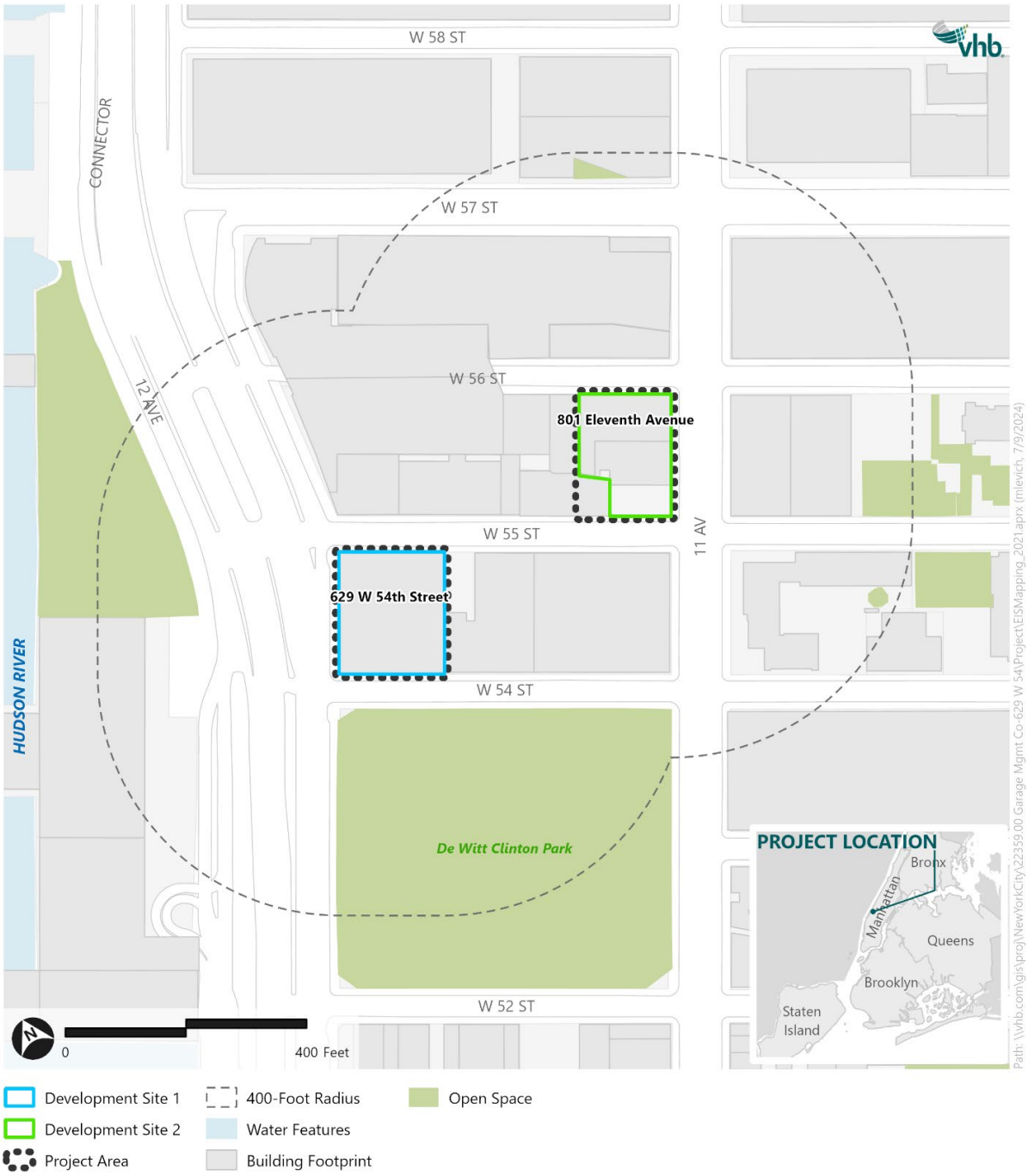
Under the Maximum Residential Scenario, it is assumed that Development Site 1 would contain 701 DUs and 50,118 sf of auto dealership space. Development Site 2 would contain 541 DUs and 38,441 sf of auto dealership space.

On-site parking would not be provided under the Proposed Projects or for the two RWCDSs. Absent the project (the No-Action condition), it is assumed that Development Site 1 would continue to operate as an auto dealership, and the existing auto dealership space on Development Site 2 would be leased to new tenants (152,375 sf for Development Site 1 and 57,805 sf for Development Site 2).

A summary of the development program assumptions for the No-Action and With-Action conditions is provided in Table 1.

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Figure 1: Site Location Map



Source: NYC DCP, MapPLUTO

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Table 1 Development Increment for Analysis

	No-Action Condition			Proposed Projects		
Use	**Development Site 1**	**Development Site 2**	**Total**	**Development Site 1**	**Development Site 2**	**Total**
Auto Dealership, sf	152,375	57,805	**210,180**	113,990	85,760	**199,750**
Residential, DUs	-	-	**-**	617	477	**1,094**
Office, sf	-	-	**-**	-	-	**-**
Local Retail, sf	-	-	**-**	-	-	**-**
Destination Retail, sf	-	-	**-**	-	-	**-**
	Maximum Commercial Scenario			**Maximum Residential Scenario**		
Use	**Development Site 1**	**Development Site 2**	**Total**	**Development Site 1**	**Development Site 2**	**Total**
Auto Dealership, sf	-	-	**-**	50,118	38,441	**88,559**
Residential, DUs	617	477	**1,094**	701	541	**1,242**
Office, sf	65,364	47,350	**112,714**	-	-	**-**
Local Retail, sf	-	38,410	**38,410**	-	-	**-**
Destination Retail, sf	48,626	-	**48,626**	-	-	**-**

Development Increment			
Use	**Proposed Projects**	**Maximum Commercial Scenario**	**Maximum Residential Scenario**
Auto Dealership, sf	**-10,430**	**-210,180**	**-121,621**
Residential, DUs	**1,094**	**1,094**	**1,242**
Office, sf	**-**	**112,714**	**-**
Local Retail, sf	**-**	**38,410**	**-**
Destination Retail, sf	**-**	**48,626**	**-**

CEQR Transportation Analysis Screening

According to the 2021 *CEQR Technical Manual* procedures for transportation analysis, a two-tiered screening process is to be undertaken to determine whether a quantified analysis is necessary. The first step, the Level 1 (Trip Generation) screening, determines whether the volume of peak hour person and vehicle trips generated by the Proposed Actions under the two RWCDSs identified above would remain below the minimum thresholds that would necessitate further study. These thresholds are:

- 50 peak hour vehicle trip ends;
- 200 peak hour subway/rail or bus transit riders;
- 50 peak hour ferry trips; and
- 200 peak hour pedestrian trips.

If the Proposed Action under the Maximum Commercial Scenario or Maximum Residential Scenario result in increments that would exceed any of these thresholds, a Level 2 (Trip Assignment) screening assessment is typically

performed. Under this assessment, project-generated trips (for each mode that exceeds the Level 1 thresholds listed above) are assigned to and from the site through their respective networks (streets, bus and subway lines, sidewalks, etc.) based on expected origin-destination patterns and travel routes.

Level 1 Screening Assessment (Trip Generation)

The travel demand factors used to calculate the projected number of trips were obtained primarily from the 2021 *CEQR Technical Manual*, information provided by the New York City Department of Transportation (NYCDOT), US Census data, and from other New York City environmental impact studies such as the 2021 *Starrett-Lehigh and Terminal Warehouse FEIS*. Table 2 provides the travel demand assumptions used for the weekday AM, midday, and PM peak hours, and Table 3 provides the travel demand assumptions used for the Saturday peak hour.

Residential

For the residential use, trip generation rates of 8.18 daily person trips per DU for weekday and 9.08 daily person trips per DU for Saturday, and temporal distributions of 9.3 percent, 5.6 percent, 8.5 percent, and 8.4 percent for the weekday AM, midday, PM, and Saturday peak hours, respectively, were obtained from the 2021 *CEQR Technical Manual*. The modal splits, auto vehicle occupancy and taxi occupancy were based on the 2015-2019 ACS journey to work data for Manhattan census tracts 127, 129, 133, 135, 139, 145, 147 and 151. Modal splits used were 7.1 percent for auto, 4.9 percent for taxi, 41.7 percent for subway, 6.3 percent for bus, 35.3 percent for walking, 1.1 percent for rail, 3.5 percent for bicycle and 0.1 percent for ferry. The vehicle occupancy rate of 1.12 was used for autos and taxis. The directional distributions of 22 percent "in" for the weekday AM peak hour, 50 percent "in" for the weekday midday peak hour, 62 percent "in" for the weekday PM peak hour, and 55 percent "in" for the Saturday peak hour were based on information provided by NYCDOT's surveys of residential uses.

For residential delivery trips, trip generation rates of 0.06 and 0.02 daily delivery trips per DU for the weekday and Saturday peak hours, respectively, and temporal distributions of 12 percent, 9 percent, 2 percent, and 9 percent for the weekday AM, midday, PM, and Saturday peak hours, respectively, were obtained from the *2021 CEQR Technical Manual*.

Auto Dealership

For auto dealership, the trip generation rate, temporal distribution, and directional distribution were based on surveys of the existing auto dealership at Development Site 1 conducted by VHB in June 2025. The survey combined pedestrian and vehicular video counts with intercept surveys to establish travel demand characteristics for the auto dealership use. The survey determined trip generation rates of 3.25 daily person trips per 1,000 sf for weekday and 2.40 daily person trips per 1,000 sf for Saturday, and temporal distributions of 9.2 percent, 8.5 percent, 11.0 percent, and 10.1 percent[1] for the weekday AM, midday, PM, and Saturday peak hours, respectively. Directional distributions of 67 percent "in" for the weekday AM peak hour, 46 percent "in" for the weekday midday peak hour, 37 percent "in" for the weekday PM peak hour, and 44 percent "in" for the Saturday peak hour were used. Modal splits used were:

[1]The auto dealership trip generation rates assumed for the Saturday peak hour analysis is the peak for the afternoon peak period and is consistent with the 2:45 to 3:45 pm traffic analysis peak hour and the peak for the other proposed land uses. The peak hour for the auto dealership was identified to be during the 10 to 11 am hour (temporal distribution rate of 13.2 percent) when background traffic volumes are lower.

- 52.2 percent by auto, 4.3 percent by taxi, 39.1 percent by subway, and 4.3 percent by walk during the weekday AM peak period;
- 60.0 percent by auto, 8.0 percent by subway, 16.0 percent by bike, and 16.0 percent by walk during the weekday midday peak period;
- 61.3 percent by auto, 3.2 percent by taxi, 16.1 percent by subway, 9.7 percent by bike, and 9.7 percent by walk during the weekday PM peak period; and
- 66.7 percent by auto, 4.2 percent by taxi, 12.5 percent by bus, 4.2 percent by subway, and 12.5 percent by walk during the Saturday peak period.

Vehicle occupancies of 1.18 persons per auto were used for the weekday peak hours and 1.25 persons per auto during the Saturday peak hour. A vehicle occupancy of 1.00 person per taxi was conservatively assumed.

For delivery trips, trip generation rate of 0.21 daily delivery trips per 1,000 sf for a weekday and 0.04 daily delivery trips per 1,000 sf for a Saturday were used. The delivery temporal distributions used for the peak hours were 9.4 percent, 21.9 percent, 9.4 percent, and 0.0 percent for weekday AM, midday, PM, and Saturday peak hours, respectively. Directional distributions for delivery trips of 67 percent "in" for the weekday AM peak hour, 43 percent "in" for the weekday midday peak hour, 33 percent "in" for the weekday PM peak hour, and 50 percent "in" for the Saturday peak hour were used.

Destination Retail

For the destination retail use, trip generation rates of 78.2 daily person trips per 1,000 sf for weekday and 92.5 daily person trips per 1,000 sf for Saturday were obtained from the 2021 *CEQR Technical Manual*. The temporal distribution of 3 percent, 9 percent, 9 percent and 11 percent for the weekday AM, midday. PM, and Saturday peak hours, respectively were also obtained from the 2021 *CEQR Technical Manual*. Modal splits of 9.0 percent by auto, 4.0 percent by taxi, 8.0 percent by bus, 26.5 percent by subway, 2.0 percent by commuter rail, and 50.5 percent by walk during the weekday AM and PM peak hours were based on the 2021 *Starrett-Lehigh and Terminal Warehouse FEIS*. Modal splits of 9.0 percent by auto, 4.0 percent by taxi, 8.0 percent by bus, 20.0 percent by subway, and 59.0 percent by walk during the weekday midday and Saturday peak hours were based on the 2021 *Starrett-Lehigh and Terminal Warehouse FEIS*. The auto and taxi vehicle occupancy rates of 1.40 and 1.65, respectively, for the weekday peak hours and the auto and taxi vehicle occupancy rates of 1.72 and 1.75 respectively, for the Saturday peak hour were based on the 2021 *Starrett-Lehigh and Terminal Warehouse FEIS*. The directional distributions of 63 percent "in" for the weekday AM peak hour, 53 percent "in" for the weekday midday peak hour, 49 percent "in" for the weekday PM peak hour, and 52 percent "in" for the Saturday peak hour were also based on the 2021 *Starrett-Lehigh and Terminal Warehouse FEIS*.

For destination retail delivery trips, trip generation rates of 0.35 and 0.04 daily delivery trip per 1,000 sf for weekday and Saturday, respectively, and temporal distribution rates of 8 percent, 11 percent, 2 percent, and 11 percent for the weekday AM, midday, PM, and Saturday peak hours, respectively, were obtained from the 2021 *CEQR Technical Manual*.

Local Retail

For the local retail use, trip generation rates and temporal distributions were obtained from the 2021 *CEQR Technical Manual*. Trip generation rates of 329 daily person trips per 1,000 sf for the weekday and 358 daily person trips per 1,000 sf for Saturday were used. A linked trip credit of 50 percent was assumed to account for internal linked trips between

the Development Site uses and for pass-by trips. The temporal distributions used were 4.8 percent, 8.0 percent, 10.9 percent, and 11.7 percent for the weekday AM, midday, PM, and Saturday peak hours, respectively. The mode splits and directional distributions were based on information provided by NYCDOT. The modal splits of 4 percent by auto, 1 percent by taxi, 1 percent by subway, 1 percent by bus, 1 percent by bike and 92 percent by walking were used. The directional distributions used were 52 percent "in" for weekday AM and 50 percent "in" for midday, PM, and Saturday peak hours. The auto and taxi vehicle occupancy rates of 1.40 and 1.65, respectively, for the weekday peak hours and Saturday peak hour were provided by NYCDOT.

For local retail delivery trips, trip generation rates of 0.35 and 0.04 daily delivery trips per 1,000 sf for the weekday and Saturday peak hours, respectively, and a temporal distribution of 8 percent, 11 percent, 2 percent, and 11 percent for the weekday AM, midday, PM, and Saturday peak hours, respectively, were obtained from the 2021 *CEQR Technical Manual*.

Office

For the office use, trip generation rates of 18.0 daily person trips per 1,000 sf for weekday and 3.9 daily person trips per 1,000 sf for Saturday were obtained from the 2021 *CEQR Technical Manual*. The temporal distribution rates of 12.4 percent, 11.0 percent, 10.5 percent and 14.1 percent for the weekday AM, midday, PM and Saturday peak hours, respectively, were also obtained from the *2021 CEQR Technical Manual*. Modal splits of 16.4 percent by auto, 1.2 percent by taxi, 11.7 percent by bus, 52.9 percent by subway, 8.8 percent by commuter rail, 0.8 percent by bike, 0.4 percent by ferry and 7.8 percent by walk during the weekday AM, PM and Saturday peak hours were based on the reverse journey-to-work data derived from 2012-2016 American Community Survey data for Manhattan census tracts 127, 129, 133, 135, 139, 145, 147 and 151. Modal splits of 2 percent by auto, 3 percent by taxi, 6 percent by bus, 6 percent by subway, and 83 percent by walk during the weekday midday peak hour was based on the 2021 *Starrett-Lehigh and Terminal Warehouse FEIS*. For all peak hours, the auto and taxi vehicle occupancy rates of 1.13 persons per vehicle was based on the reverse journey-to-work data. The directional distributions of 86 percent "in" for the weekday AM peak hour, 52 percent "in" for the weekday midday peak hour, 16 percent "in" for the weekday PM peak hour, and 48 percent "in" for the Saturday peak hour were also based on the information provided by NYCDOT.

For office delivery trips, trip generation rates of 0.32 and 0.01 daily delivery trips per 1,000 sf for weekday and Saturday, respectively, and temporal distributions of 10 percent, 11 percent, 2 percent, and 11 percent for the weekday AM, midday, PM, and Saturday peak hours, respectively, were obtained from the 2021 *CEQR Technical Manual*.

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Table 2 Weekday Travel Demand Characteristics

Rates	Residential	Auto Dealership	Destination Retail	Local Retail	Office
Person Trip Generation Rate	8.18[2] per DU	3.25[1] per 1,000 sf	78.2[2] per 1,000 sf	329[2] per 1,000 sf	18[2] per 1,000 sf
Linked Trip Credit	0%	0%	0%	50%	0%
Temporal Distribution					
AM Peak Hour	9.3%[2]	9.2%[1]	3%[2]	4.8%[2]	12.4%[2]
Midday Peak Hour	5.6%[2]	8.5%[1]	9%[2]	8.0%[2]	11.0%[2]
PM Peak Hour	8.5%[2]	11.0%[1]	9%[2]	10.9%[2]	10.5%[2]
Modal Split					
	All Periods	**AM/MD/PM**	**AM & PM/MD**	**All Periods**	**AM & PM/MD**
Auto	7.1%[4]	52%/60%/61%[1]	9%/9%[6]	4%[3]	16.4%[5]/2%[6]
Taxi	4.9%[4]	4%/0%/3%[1]	4%/4%[6]	1%[3]	1.2%[5]/3%[6]
Subway	41.7%[4]	39%/8%/16%[1]	26.5%/20%[6]	1%[3]	52.9%[5]/6%[6]
Bus	6.3%[4]	0%/0%/0%[1]	8%/8%[6]	1%[3]	11.7%[5]/6%[6]
Walk	35.3%[4]	4%/16%/10%[1]	50.5%/59%[6]	92%[3]	7.8%[5]/83%[6]
Rail	1.1%[4]	-	2%/0%[6]	-	8.8%[5]/0%[6]
Bicycle	3.5%[4]	0%/16%/10%[1]	-	1%[3]	0.8%[5]/0%[6]
Ferry	0.1%[4]	-	-	-	0.4%[5]/0%[6]
Vehicle Occupancy					
Auto/Taxi	1.12/1.12[4]	1.18/1.00[1]	1.40/1.65[6]	1.65/1.40[6]	1.13/1.13[5]
Directional Split (In/Out)					
AM Peak Hour	22%/78%[3]	67%/33%[1]	63%/37%[2]	52%/48%[3]	86%/14%[3]
Midday Peak Hour	50%/50%[3]	46%/54%[1]	53%/47%[2]	50%/50%[3]	52%/48%[3]
PM Peak Hour	62%/38%[3]	37%/63%[1]	49%/51%[2]	50%/50%[3]	16%/84%[3]
Delivery Trip Generation Rate	0.06[2] per DU	0.21[1] per 1,000 sf	0.35[2] per 1,000 sf	0.35[2] per 1,000 sf	0.32[2] per 1,000 sf
Delivery Temporal Distribution					
AM Peak Hour	12%[2]	9.4%[1]	8%[2]	8%[2]	10%[2]
Midday Peak Hour	9%[2]	21.9%[1]	11%[2]	11%[2]	11%[2]
PM Peak Hour	2%[2]	9.4%[1]	2%[2]	2%[2]	2%[2]
Delivery Trip Directional Split (In/Out) – 50%/50%. Auto Dealership: 67%/33% (AM), 43%/57% (MD), 33%/67% (PM)[1]					

Source:
(1) Auto dealership surveys conducted by VHB at Development Site 1 in June 2025
(2) 2021 *City Environmental Quality Review Technical Manual*
(3) Information provided by NYCDOT
(4) 2015-2019 American Community Survey five-year journey to work data for Manhattan census tracts 127, 129, 133, 135, 139, 145, 147 and 151
(5) 2012-2016 American Community Survey five-year reverse journey to work data for Manhattan census tracts 127, 129, 133, 135, 139, 145, 147 and 151
(6) 2021 *Starrett-Lehigh and Terminal Warehouse FEIS*

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Table 3 Saturday Travel Demand Characteristics

Rates	Residential	Auto Dealership	Destination Retail	Local Retail	Office
Person Trip Generation Rate	9.08[2] per DU	2.40[1] per 1,000 sf	92.5[2] per 1,000 sf	358[2] per 1,000 sf	3.9[2] per 1,000 sf
Linked Trip Credit	0%	0%	0%	50%	0%
Temporal Distribution					
Saturday Peak Hour	8.4%[2]	10.1%[1]	11%[2]	11.7%[2]	14.1%[2]
Modal Split					
Auto	7.1%[4]	66.7%[1]	9%[6]	4%[6]	16.4%[5]
Taxi	4.9%[4]	4.2%[1]	4%[6]	1%[6]	1.2%[5]
Subway	41.7%[4]	4.2%[1]	20%[6]	1%[6]	52.9%[5]
Bus	6.3%[4]	12.5%[1]	8%[6]	1%[6]	11.7%[5]
Walk	35.3%[4]	12.5%[1]	59%[6]	92%[6]	7.8%[5]
Rail	1.1%[4]	0%[1]	0%[6]	0%[6]	8.8%[5]
Bicycle	3.5%[4]	0%[1]	0%[6]	1%[6]	0.8%[6]
Ferry	0.1%[4]	0%[1]	0%[6]	0%[6]	0.4%[5]
Vehicle Occupancy					
Auto/Taxi	1.12/1.12[4]	1.25/1.00[1]	1.72/1.75[6]	1.65/1.40[6]	1.13/1.13[5]
Directional Split (In/Out)					
Saturday Peak Hour	55%/45%[3]	44%/56%[1]	52%/48%[2]	50%/ 50%[3]	48%/52%[3]
Delivery Trip Generation Rate	0.02[2] per DU	0.04[1] per 1,000 sf	0.04[2] per 1,000 sf	0.04[2] per 1000 sf	0.01[2] per 1000 sf
Delivery Temporal Distribution					
Saturday Peak Hour	9%[2]	0%[1]	11%[2]	11%[2]	11%[2]
Delivery Trip Directional Split (In/Out) – 50%/50%					
Auto Dealership: 50%/50%					

Source:
(1) Auto dealership surveys conducted by VHB at Development Site 1 in June 2025
(2) 2021 *City Environmental Quality Review Technical Manual*
(3) Information provided by NYCDOT
(4) 2015-2019 American Community Survey five-year journey to work data for Manhattan census tracts 127, 129, 133, 135, 139, 145, 147 and 151
(5) 2012-2016 American Community Survey five-year reverse journey to work data for Manhattan census tracts 127, 129, 133, 135, 139, 145, 147 and 151
(6) 2021 *Starrett-Lehigh and Terminal Warehouse FEIS*

Level 1 Screening Results

The estimated change in the number person and vehicle trips expected to result from the Proposed Actions under the two RWCDSs are detailed in Tables 4 through 7, and discussed in this section.

Transit and Pedestrians

The incremental number of pedestrian trips generated under the Maximum Commercial Development Scenario and the Maximum Residential Development Scenario are provided in Tables 4 and 5, respectively. Both scenarios would be expected to exceed the 2021 *CEQR Technical Manual* Level 1 screening thresholds for transit and pedestrian trips. As shown in Tables 4 and 5, the Maximum Commercial Development Scenario would generate more subway and pedestrian trips than the Maximum Residential Development Scenario; therefore a Level 2 screening analysis was conducted for the Maximum Commercial Scenario for conservative analysis purposes.

Table 4: Maximum Commercial Development Trip Generation Summary – Person Trips

Mode	AM Peak Hour			Midday Peak Hour			PM Peak Hour			Saturday Peak Hour		
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
Auto	39	50	89	30	25	55	51	51	102	61	50	111
Taxi	15	34	49	25	24	49	32	25	57	36	30	66
Bus	46	49	95	41	39	80	50	56	106	54	46	100
Subway	194	294	488	148	144	292	258	257	515	261	223	484
Rail	22	11	33	3	3	6	11	22	33	8	7	15
Ferry	1	0	1	0	0	0	0	0	0	0	0	0
Bicycle	11	24	35	8	7	15	16	11	27	20	17	37
Walk-only	260	386	646	521	501	1,022	569	517	1,086	683	641	1,324
Total	**588**	**848**	**1,436**	**776**	**743**	**1,519**	**987**	**939**	**1,926**	**1,123**	**1,014**	**2,137**

Note: Bus-only trips are shown above. Due to the distance from the Project Site and the closest subway and rail stations, subway and rail trips would also include a bus connection trip.

Table 5: Maximum Residential Development Trip Generation Summary – Person Trips

Mode	AM Peak Hour			Midday Peak Hour			PM Peak Hour			Saturday Peak Hour		
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
Auto	1	47	48	11	9	20	28	6	34	29	19	48
Taxi	9	36	45	14	14	28	26	15	41	25	20	45
Bus	13	46	59	18	18	36	34	21	55	32	25	57
Subway	77	302	379	118	118	236	221	132	353	218	176	394
Rail	2	9	11	3	3	6	6	4	10	5	5	10
Ferry	0	0	0	0	0	0	0	0	0	0	0	0
Bicycle	7	26	33	8	8	16	18	9	27	18	14	32
Walk-only	72	260	332	99	99	198	188	113	301	183	149	332
Total	**181**	**726**	**907**	**271**	**269**	**540**	**521**	**300**	**821**	**510**	**408**	**918**

Note: Bus-only trips are shown above. Due to the distance from the Project Site and the closest subway and rail stations, subway and rail trips would also include a bus connection trip.

Under the Maximum Commercial Scenario:

- During the weekday AM peak hour, the Maximum Commercial Scenario would generate 95 bus trips, 488 subway trips, 33 rail trips and 1,352 pedestrian trips (walk plus auto walk, bus, subway, rail, and ferry trips).
- During the weekday midday peak hour, the Maximum Commercial Scenario would generate 80 bus trips, 292 subway trips, 6 rail trips, and 1,455 pedestrian trips.
- During the weekday PM peak hour, the Maximum Commercial Scenario would generate 106 bus trips, 515 subway trips, 33 rail trips and 1,842 pedestrian trips.
- During the Saturday peak hour, the Maximum Commercial Scenario would generate 100 bus trips, 484 subway trips, 15 rail trips and 2,034 pedestrian trips.

Transit analyses generally examine conditions only during the commuter peak periods (weekday AM and PM peak hours) when overall transit demand and the potential for significant adverse impacts are typically highest. Therefore, as the Maximum Commercial Scenario is expected to generate over 200 subway trips in the weekday AM and PM peak hours, Level 2 trip assignments are necessary to determine if detailed subway analyses are warranted per *CEQR Technical Manual* guidelines. Although the bus trips would not exceed the Level 1 screening thresholds for further analysis, the Development Sites are located over a half-mile away from the closest subway station (59th Street-Columbus Circle). Therefore, it was assumed that all subway trips would include a bus transfer component, and the combination of bus-only and bus-to-subway trips would exceed the Level 1 screening thresholds for buses.

Pedestrian trips include walk-only trips to and from the Development Sites plus walking connections between the Development Sites to and from bus stops, and off-street parking facilities expected to be used by those who choose to drive to the sites. As the increase in pedestrian trips are expected to exceed the CEQR threshold of 200 pedestrian trips per hour, a Level 2 trip assignment is necessary to determine if (and where) detailed pedestrian analyses are warranted per *CEQR Technical Manual* guidelines.

Vehicle Traffic

Tables 6 and 7 summarize the incremental peak hour vehicular volumes ("ins" plus "outs") projected to be generated by the Development Sites under the With-Action condition. The hourly vehicle trips generated under the Maximum Commercial Development Scenario would be 161 vehicles per hour (vph) during the weekday AM peak hour, 100 vph in the weekday midday peak hour, 139 vph in weekday PM peak hour, and 157 vph in the Saturday peak hour. For the Maximum Residential Development Scenario, the number of vehicle trips generated would be 122 vehicles per hour (vph) during the weekday AM peak hour, 52 vph in the weekday midday peak hour, 77 vph in weekday PM peak hour, and 104 vph in the Saturday peak hour. As the Maximum Commercial Development Scenario would generate more vehicle trips than the Maximum Residential Development Scenario, the Level 2 screening analysis was conducted for this scenario.

Table 6: Maximum Commercial Development Trip Generation Summary – Vehicle Trips

Mode	AM Peak Hour			Midday Peak Hour			PM Peak Hour			Saturday Peak Hour		
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
Auto	32	43	75	22	18	40	40	39	79	45	36	81
Taxi	37	37	74	28	28	56	32	32	64	37	37	74
Truck	5	7	12	3	1	4	-1	-3	-4	1	1	2
Total	**74**	**87**	**161**	**53**	**47**	**100**	**71**	**68**	**139**	**83**	**74**	**157**

Table 7: Maximum Residential Development Trip Generation Summary – Vehicle Trips

Mode	AM Peak Hour			Midday Peak Hour			PM Peak Hour			Saturday Peak Hour		
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
Auto	1	43	44	10	8	18	25	6	31	26	18	44
Taxi	35	35	70	17	17	34	24	24	48	29	29	58
Truck	4	4	8	1	-1	0	-1	-1	-2	1	1	2
Total	**40**	**82**	**122**	**28**	**24**	**52**	**48**	**29**	**77**	**56**	**48**	**104**

Level 2 Screening Assessment (Trip Assignments)

Transit and Pedestrians

Pedestrian trips were assigned to the pedestrian network based on their origins and destinations to/from bus stops and walk only trips to/from surrounding residential blocks outside of the Development Sites. As no on-site parking would be provided under the Maximum Commercial Scenario (as under the Proposed Projects and Maximum Residential Scenario), auto vehicle trips were assigned to park at the nearby parking garages where there is availability. Walk-only trips were distributed to the local pedestrian network to nearby residences and attractions.

Subway trips were assigned to local bus routes to connect between the Developments Sites and closest subway stations. The majority of subway trips (65 percent) were assigned to the 59th Street-Columbus Circle station (A, B, C, D and No. 1 subway lines) via the M12, M31, and M57 bus routes. Approximately 20 percent of the subway trips were assigned to the 57th Street-7th Avenue station (N, Q, R, and W subway lines) and 57th Street (F subway line) stations via the M31 and M57 bus routes. The remaining subway trips were assigned to the 50th Street station (C and E subway lines, 10 percent), and the 72nd Street station (No. 1, 2 and 3 subway lines, 5 percent) via the M50 bus route and M57 bus routes, respectively. Rail trips were assigned to Penn Station and ferry trips were assigned to the West 39th Street ferry landing; both rail and ferry trips were assumed to connect to these services via the M11 bus route. Bus-only trips were assigned to nearby available bus routes – 30 percent to the M12 bus route, 30 percent to the M57 bus route, 20 percent to the M11 bus route, and 20 percent to the M31 bus route.

Traffic

Project-generated vehicle trips shown in Table 6 were assigned through the surrounding street network based on expected routes to the Development Sites, the configuration of the street network, and the anticipated entrances to the Development Sites. As the Development Sites would not provide parking on-site, auto trips were assigned to nearby parking facilities. Residential and office trips were assigned directly to the parking facilities, while retail and

auto dealership in trips were assigned first to the Development Sites, then to nearby parking facilities, per the *CEQR Technical Manual* guidance.

Residential Auto Trips

Residential auto trip assignments were based on the 2012 – 2016 American Community Survey journey to work data for New York County (Manhattan) Census Tracts 127, 129, 133, 135, 139, 145, 147, and 151. Approximately 34 percent of project-generated auto trips were assumed to be destined for other sections of Manhattan. Of the remaining trips, 24 percent were assumed to be destined to New Jersey, 14 percent to Long Island, 12 percent to Westchester and Upstate New York, 6 percent to the Bronx, 5 percent to Brooklyn, 3 percent to Connecticut, 1 percent to Queens, and 1 percent to Pennsylvania.

The majority of project-generated auto trips were assigned to the surrounding highway network. For Twelfth Avenue/NY 9A, approximately 42 percent of the trips were assigned to the north and 5 percent of trips to the south. Approximately 26 percent of the trips were assigned to Eleventh Avenue which is a two-way roadway north of West 57th Street and transitions to a one-way southbound roadway south of West 57th Street. Along the key local roadways in the study area – 5 percent of the auto trips were assigned along Ninth Avenue to the south, 3 percent were assigned to the north along Eighth Avenue, 8 percent were assigned along West 57th Street to the east, 11 percent were assigned to the east along local streets such as West 50th Street and West 54th Street. Inbound trips along the one-way avenue roadways were assumed to use the adjacent avenue roadway to travel to the Development Sites.

Local Retail Auto Trips

Auto trips generated by local retail uses were assumed to be local in nature and were assigned to the immediately surrounding areas. These auto trips were generally assigned within a one-mile radius of the Development Sites based on population densities.

Approximately 30 percent of the local trips were assigned along Tenth Avenue traveling to the Development Sites from the south and along Eleventh Avenue leaving the Development Sites. Approximately 50 percent were assigned from the north along Ninth and Eleventh Avenues from the north (returning via Eighth and Tenth Avenues), and 20 percent were assigned to east-west roadways between West 51st Street and West 57th Street. One percent of trips were assigned along Twelfth Avenue/NY 9A from points north.

Destination Retail and Auto Dealership Auto Trips

Auto trips generated by destination retail and auto dealership uses were assumed to attract trips from a wider geographic area than local retail trips. These auto trips were assigned based on the population densities within a three-mile radius of the Development Sites.

Approximately 21 percent of the destination-type trips were assigned along Eighth Avenue and Tenth Avenue traveling to the Development Sites form the south and 35 percent along Ninth Avenue and Eleventh Avenue from the north. Leaving the Development Sites, these trips were assigned along adjacent avenue roadways between Eighth Avenue and Twelfth Avenue/NY 9A. Approximately 24 percent of destination-type trips were assigned to east-west roadways between West 50th Street and West 57th Street. Twenty percent of the auto trips were assigned to travel to the Development Sites from Twelfth Avenue/NY 9A.

Office Auto Trips

Office auto vehicle trip assignments were based on the 2015 – 2019 American Community Survey reverse journey to work data for New York County (Manhattan) Census Tracts 127, 129, 133, 135, 139, 145, 147, and 151. Most trips would be expected to originate from Brooklyn (25 percent), Manhattan (23 percent) and Queens (21 percent). Of the remaining trips, 11 percent of the office trips were from Long Island and Staten Island, and 11 percent from Westchester and Upstate New York.

The majority of project-generated auto trips were assigned to the surrounding highway network. For Twelfth Avenue/NY 9A, approximately 36 percent of the trips were assigned to the north and 16 percent of trips to the south. Approximately six percent of the trips were assigned to Ninth Avenue, five percent were assigned to Tenth Avenue, and one percent were assigned to Eleventh Avenue. Along the other key local roadways in the study area – 16 percent were assigned along West 57th Street, and 20 percent were assigned to local east-west streets such as West 55th Street. Inbound trips along one-way avenue roadways would use the adjacent avenue roadway to travel to the Development Sites.

Other Vehicle Trips

Taxi trips were assumed to travel to and from the Development Sites following similar patterns as described above for auto trips. Delivery vehicles were assigned to travel along NYCDOT-designated truck routes to and from the Development Sites, such as West 57th Street, Eleventh Avenue, and Tenth Avenue.

Level 2 Screening Results

Transit and Pedestrians

Based on the pedestrian trip assignments described above, pedestrian counts and detailed analyses will need to be conducted at pedestrian elements (sidewalk, crosswalks, and corners) listed below during the weekday AM, midday, and PM and Saturday peak hours.

Crosswalks and Corners

- Eleventh Avenue and West 57th Street – east and west crosswalks, all four corners
- Eleventh Avenue and West 56th Street – east, south, and west crosswalks, all four corners
- Eleventh Avenue and West 55th Street – west crosswalk, northwest and southwest corners
- Eleventh Avenue and West 54th Street – west and south crosswalks, northwest, southwest, and southeast corners
- Twelfth Avenue and West 55th Street – southeast corner

Sidewalks

- Eleventh Avenue east and west sidewalks between West 56th Street and West 57th Street
- Eleventh Avenue east and west sidewalks between West 55th Street and West 56th Street
- Eleventh Avenue west sidewalk between West 54th Street and West 55th Street
- Eleventh Avenue west sidewalk between West 53rd Street and West 54th Street
- West 55th Street south sidewalk between Eleventh Avenue and Twelfth Avenue

- West 54th Street north sidewalk west of Eleventh Avenue
- West 54th Street south sidewalk east of Eleventh Avenue
- Twelfth Avenue east sidewalk south of West 55th Street

Due to the distance from the closest subway stations, and rail and ferry service, MTA bus connections are needed to access nearby transit modes. The combination of bus-only and bus connection trips would exceed the screening thresholds for the M12, M31 and M57 bus routes, therefore a bus line-haul analysis may be needed for these bus routes. The vast majority of subway trips were assigned to the 59th Street-Columbus Circle station and would exceed the Level 2 screening thresholds requiring detailed subway analysis at key subway elements at this station. Subway and bus analyses will be performed for the weekday AM and PM commuter peak hours.

Vehicle Traffic

Based on the vehicular trip assignments described above, traffic counts and detailed level of service analyses will be needed at the following intersections for the weekday AM, PM, and Saturday peak hours.

1. Twelfth Avenue/NY 9A and West 55th Street
2. Twelfth Avenue/NY 9A and West 56th Street
3. Twelfth Avenue/NY 9A and West 57th Street
4. Eleventh Avenue and West 55th Street

Memorandum

To: New York City Department of City Planning

Date: August 5, 2025 (revised March 24, 2026)

Project #: 22359.00

From: VHB

Re: Dewitt Clinton Park North (629 West 54th Street and 801 Eleventh Avenue) – Auto Dealership Travel Demand Survey Methodology

As part of their review of the *Dewitt Clinton Park North* (*629 West 54th Street and 801 Eleventh Avenue) EIS*, the New York City Department of Transportation (NYCDOT) requested that travel demand surveys be conducted of the existing 152,375 square feet auto dealership at Development Site 1 located at 629 West 54th Street. The survey results would form the basis of the trip generation projections for the existing uses which would be displaced in the With-Action condition analysis.

The auto dealership space at Development Site 1 was re-tenanted in late 2024/early 2025 and includes a showroom, service center, and storage for new vehicles. The proposed methodology for conducting the travel demand surveys to develop the trip generation rates and mode share assumptions is described below.

Methodology

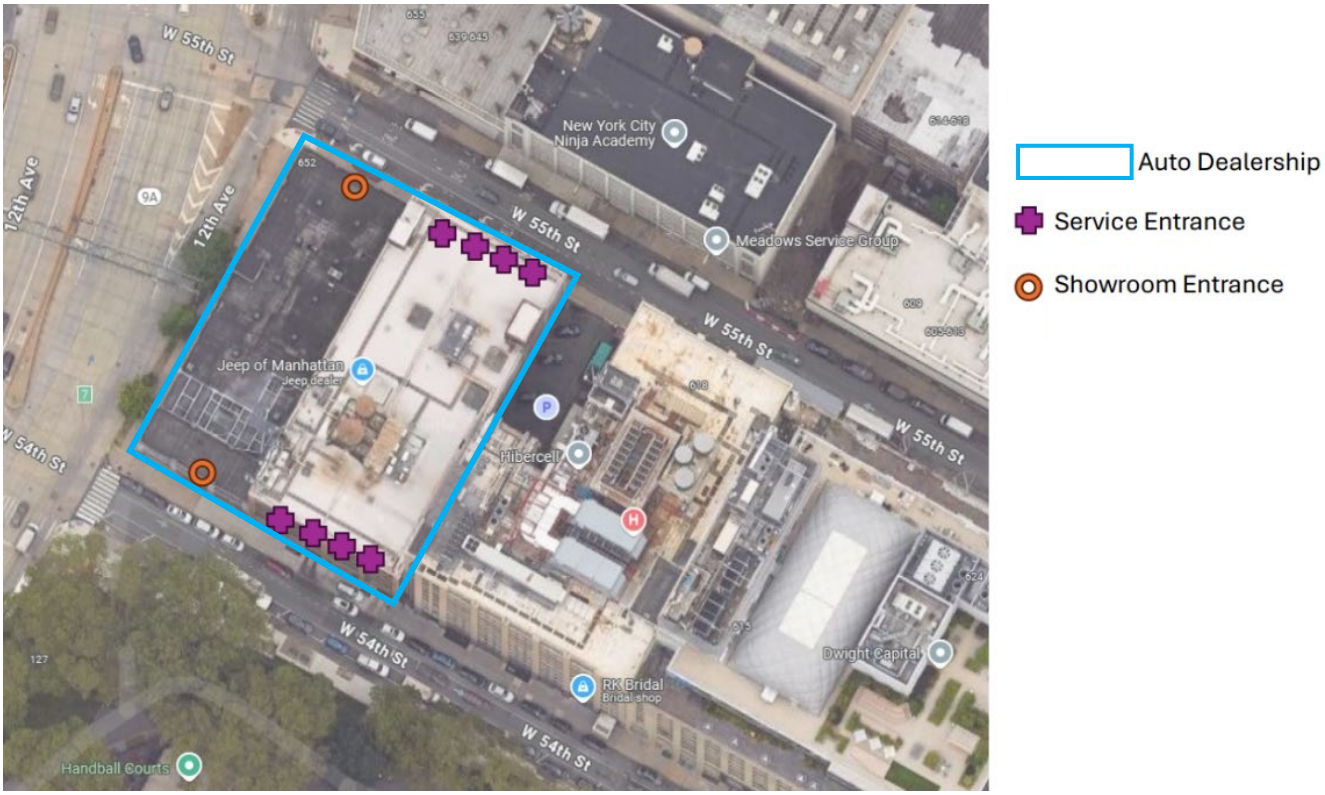
The auto dealership's showroom and service center are open Monday through Saturday; the dealership is closed on Sunday. The dealership opens at 9 AM and closes at 8 PM on most days, with the exception of Friday (closes at 7 PM) and Saturday (closes at 6 PM). Access is provided along two of the three frontages, as shown in Figure 1.

- *West 54th Street*: Four service center entrances and one showroom entrance
- *12th Avenue*: No entrances
- *West 55th Street*: Four service center entrances and one showroom entrance

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Memorandum

Figure 1 Auto Dealership Entrances



The survey methodology was developed in consultation with NYCDOT and the New York City Department of City Planning (DCP). As part of the surveys, pedestrian and vehicular counts were conducted at each entrance for one weekday (Tuesday, Wednesday, or Thursday) and one Saturday. The count volumes were then used to develop the trip generation rates, temporal profiles, and directional distributions.

Intercept surveys were conducted at the showroom and service center entrances to determine if trips were made by auto, taxi, transit, or walk mode. For auto/taxi trips, the vehicle occupancy rates were requested verbally or were observed during the trip arrivals or departures. These travel mode intercept surveys were conducted for two hours during each of the analysis periods (weekday AM, midday, PM, and Saturday midday/afternoon). The survey questions are provided below.

› How did you arrive at this dealership today? Please provide only your *primary* mode of transportation.
  - Auto
  - Taxi
  - Bus
  - Subway
  - Rail

- Bike
- Walk
- Ferry

› If you arrived by auto or took a taxi, how many occupants were in the vehicle (including yourself)?

› What is the purpose of your trip?

- Showroom
- Service Center
- Showroom and Service Center

Survey Findings

Survey Count Data

Video count footage was taken and was manually reviewed by our staff in order to identify and remove internal trips from the count total. There are several types of internal trips that take place at the dealership, specifically, staff moving vehicles between vehicle storage and the showroom, or between different areas of the service area. Pedestrian counts were also adjusted to account for service staff members walking in/out of the entrances as part of daily operations and linked trips between entrances such as pedestrian walking between the service center and showroom spaces.

The auto dealership consists of three spaces – showroom, service center and vehicle storage – and the operations between these spaces are linked. Access to some of these spaces is shared (i.e., between the service center and vehicle storage) and there are internal doors on the ground floor level between the showroom and service center. Because the site does not contain any on-site parking for customers or staff, customers must either utilize on-street parking or else temporarily park their vehicles in the service center valet driveway. From there, they may either be accessing the showroom, service center, or both. Inside the showroom, in addition to model vehicles that customers may examine, there are leasing offices, customer service desks for checking in vehicles for servicing, restrooms, and a customer waiting area with couches and coffee. Due to the overlapping operations between these spaces, the travel demand characteristics were summarized by a single use: "auto dealership". Survey count results are presented in **Table 1** and **Table 2**.

Memorandum

Table 1 Vehicle and Person Trips per Hour at the Survey Site – Full Dealership

	Weekday				Saturday			
	Vehicle Trips		Person Trips		Vehicle Trips		Person Trips	
Time	In	Out	In	Out	In	Out	In	Out
Overnight (10 PM to 7 AM)	2	0	2	0	1	1	1	1
7 AM to 8 AM	19	1	26	5	5	0	8	0
8 AM to 9 AM	16	6	28	15	12	2	20	6
9 AM to 10 AM	16	5	31	15	5	3	11	4
10 AM to 11 AM	7	9	21	16	10	15	24	25
11 AM to 12 PM	12	10	21	20	13	10	22	15
12 PM to 1 PM	8	11	19	23	6	9	17	18
1 PM to 2 PM	7	8	19	17	12	7	22	12
2 PM to 3 PM	8	7	18	16	8	15	16	21
3 PM to 4 PM	6	11	18	24	6	7	20	11
4 PM to 5 PM	5	23	15	35	3	5	17	13
5 PM to 6 PM	5	20	20	35	3	8	4	11
6 PM to 7 PM	0	5	3	13	1	10	7	24
7 PM to 8 PM	1	2	2	3	2	1	4	2
8 PM to 9 PM	1	4	1	11	0	4	3	9
9 PM to 10 PM	0	2	0	2	0	0	0	0
Total	113	124	246	250	87	97	195	170

Note:

1. Vehicle and person trips for weekday were conducted on June 17, 2025 and for Saturday on June 21, 2025.
2. Counts were conducted using video cameras at the showroom access doors and the service center driveways.
3. Vehicle and person trips do not include delivery trips.
4. Person trips are based on a combination of pedestrian door counts and vehicle trips converted to person trips, resulting in potential discrepancies in the total daily In and Out person trips.

Memorandum

Table 2 Delivery Trips per Hour at the Survey Site – Full Dealership

	Weekday				Saturday			
	Delivery Trips		Person Trips		Delivery Trips		Person Trips	
Time	In	Out	In	Out	In	Out	In	Out
Overnight (10 PM to 7 AM)	3	3	-	-	2	2	-	-
7 AM to 8 AM	1	0	-	-	0	0	-	-
8 AM to 9 AM	2	1	-	-	0	0	-	-
9 AM to 10 AM	0	0	-	-	1	1	-	-
10 AM to 11 AM	2	3	-	-	0	0	-	-
11 AM to 12 PM	1	0	-	-	0	0	-	-
12 PM to 1 PM	0	0	-	-	0	0	-	-
1 PM to 2 PM	3	1	-	-	0	0	-	-
2 PM to 3 PM	3	4	-	-	0	0	-	-
3 PM to 4 PM	1	2	-	-	0	0	-	-
4 PM to 5 PM	1	0	-	-	0	0	-	-
5 PM to 6 PM	0	1	-	-	0	0	-	-
6 PM to 7 PM	0	0	-	-	0	0	-	-
7 PM to 8 PM	0	0	-	-	0	0	-	-
8 PM to 9 PM	0	0	-	-	0	0	-	-
9 PM to 10 PM	0	0	-	-	0	0	-	-
Total	17	15	-	-	3	3	-	-

Note:
1. Delivery trips for weekday were conducted on June 17, 2025 and for Saturday on June 21, 2025.
2. Counts were conducted using video cameras observing the service center driveways and the 54th Street and 55th Street frontages.

Survey Count Results

The trip generation rate for the overall auto dealership, which currently comprises 152,375 gsf, was determined to be 3.25 daily person trips per 1,000 sf for a weekday and 2.40 daily person trips per 1,000 sf for a Saturday. The temporal distributions for the peak hours were determined to be 9.2 percent, 8.5 percent, 11.0 percent, and 10.1 percent[1] for the weekday AM, midday, PM, and Saturday peak hours, respectively. The directional distributions were determined to be 67 percent "in" for the weekday AM peak hour, 46 percent "in" for the weekday midday peak hour, 37 percent "in" for the weekday PM peak hour, and 44 percent "in" for the Saturday peak hour.

For delivery trips, the trip generation rate was determined to be 0.21 daily delivery trips per 1,000 sf for a weekday and 0.04 daily delivery trips per 1,000 sf for a Saturday. The delivery temporal distributions for the peak hours were determined to be 9.4 percent, 21.9 percent, 9.4 percent, and 0.0 percent for weekday AM, midday, PM, and Saturday

[1] The auto dealership trip generation rates assumed for the Saturday peak hour analysis is the peak for the afternoon peak period and is consistent with the 2:45 to 3:45 pm traffic analysis peak hour and the peak for the other proposed land uses. The peak hour for the auto dealership was identified to be during the 10 to 11 am hour (temporal distribution rate of 13.2 percent) when background traffic volumes are lower.

peak hours, respectively. Directional distributions for delivery trips were determined to be 67 percent "in" for the weekday AM peak hour, 43 percent "in" for the weekday midday peak hour, 33 percent "in" for the weekday PM peak hour, and 50 percent "in" for the Saturday peak hour.

Intercept Survey Data

Travel mode intercept surveys were conducted from 8-10 AM for the weekday AM peak hour, from 12-2 PM for the weekday midday peak hour, from 4-6 PM for the weekday PM peak hour, and from 1-3 PM for the Saturday peak hour. Data from these surveys were tabulated and used to determine the modal splits and vehicle occupancies. A combined total of 103 survey responses were recorded during the four survey periods, amounting to a sample size of approximately 29 percent of the total person trips during the same periods. Period-specific sample sizes ranged from 26 percent in the weekday AM peak period to 32 percent in the Saturday peak period.

Modal splits were determined to be: 52.2 percent by auto, 4.3 percent by taxi, 39.1 percent by subway, and 4.3 percent by walk during the weekday AM peak period; 60.0 percent by auto, 8.0 percent by subway, 16.0 percent by bike, and 16.0 percent by walk during the weekday midday peak period; 61.3 percent by auto, 3.2 percent by taxi, 16.1 percent by subway, 9.7 percent by bike, and 9.7 percent by walk during the weekday PM peak period; and 66.7 percent by auto, 4.2 percent by taxi, 12.5 percent by bus, 4.2 percent by subway, and 12.5 percent by walk during the Saturday peak period. Vehicle occupancies were determined to be 1.18 persons per auto during the weekday and 1.25 persons per auto during the Saturday period.

Travel Demand Characteristics

Both the video counts and the intercept survey contributed to the development of the full travel demand characteristics for the auto dealership. These results are summarized in Table 3.

Table 3 Travel Demand Characteristics – Auto Dealership

Rates	Weekday AM	Weekday Midday	Weekday PM	Saturday
Person Trip Generation Rate	3.25 per 1,000 sf	3.25 per 1,000 sf	3.25 per 1,000 sf	2.40 per 1,000 sf
Linked Trip Credit	0%	0%	0%	0%
Temporal Distribution				
Temporal Distribution	9.2%	8.5%	11.0%	10.1%
Modal Split				
Auto	52.4%	60.0%	61.3%	66.7%
Taxi	4.3%	0.0%	3.2%	4.2%
Subway	39.1%	8.0%	16.1%	4.2%
Bus	-	-	-	12.5%
Walk	4.3%	16.0%	9.7%	12.5%
Rail	-	-	-	-
Bicycle	-	16.0%	9.7%	-
Ferry	-	-	-	-
Vehicle Occupancy				
Auto/Taxi	1.18/1.00	1.18/1.00	1.18/1.00	1.25/1.00
Directional Split (In/Out)				
Directional Split (In/Out)	67%/33%	46%/54%	37%/63%	44%/56%
Delivery Trip Generation Rate	0.21 per 1,000 sf	0.21 per 1,000 sf	0.21 per 1,000 sf	0.04 per 1,000 sf
Delivery Temporal Distribution				
Temporal Distribution	9.4%	21.9%	9.4%	0.0%
Delivery Trip Directional Split (In/Out)				
Directional Split (In/Out)	67%/33%	43%/57%	33%/67%	50%/50%

Source: Auto dealership surveys conducted by VHB in June 2025