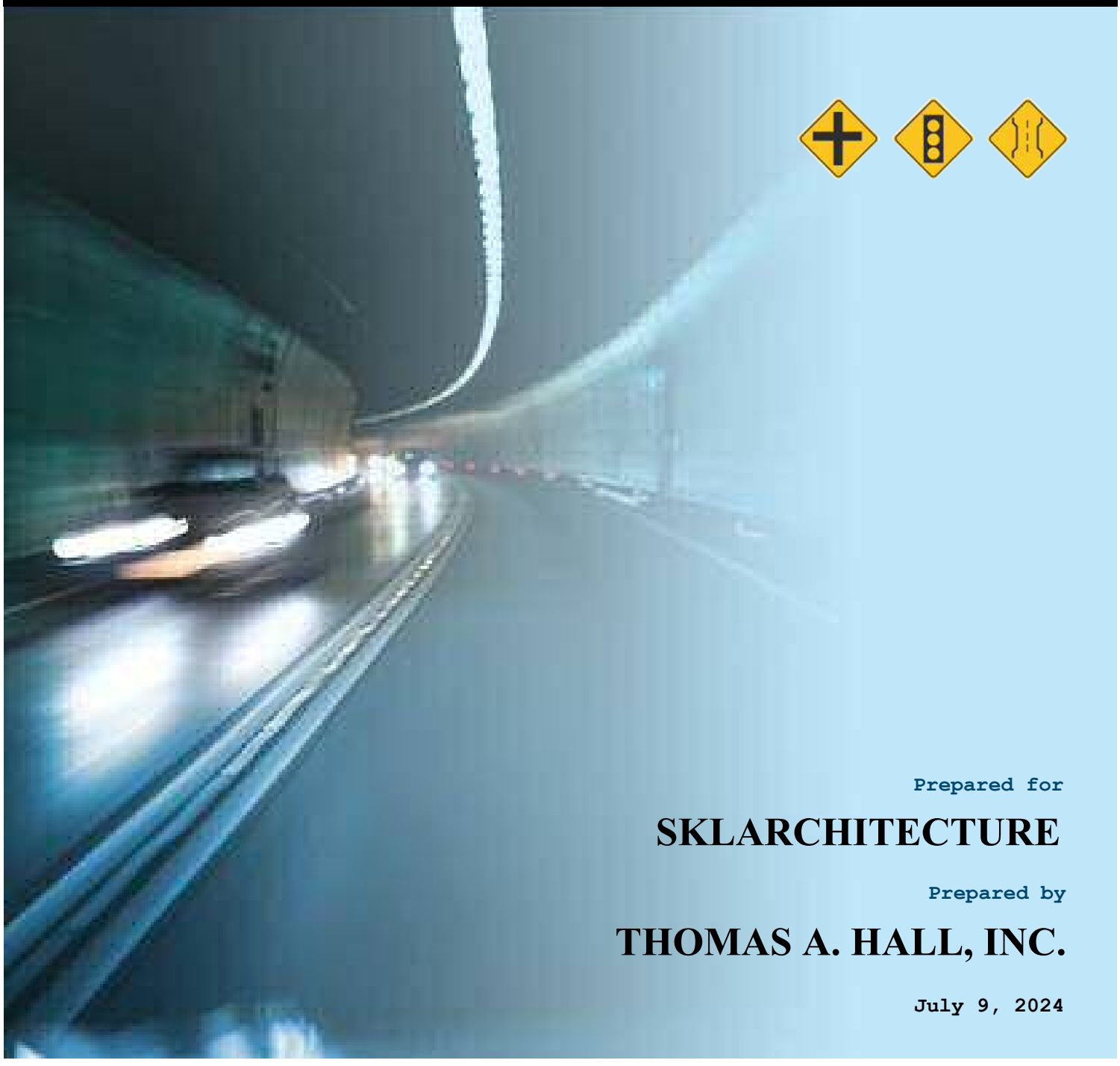
317 NE 168th Avenue

Traffic Statement

Miami-Dade County, Florida



Prepared for

SKLARCHITECTURE

Prepared by

THOMAS A. HALL, INC.

July 9, 2024

317 NE 168TH AVENUE TRAFFIC STATEMENT

Miami-Dade County, Florida

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Introduction

Thomas A. Hall, Inc. has completed a traffic analysis for this project in northeastern Miami-Dade County, Florida. The project proposes to construct a multi-family, residential building containing 12 dwelling units. The project is proposed to be four stories tall.

The project site is currently a vacant lot. The property folio number is: 07-2207-005-0170.

Figure 1 – Project Site Location shows the proposed development site location.

What follows is a summary of the project-related trips associated with the proposed multi-family project.

A copy of the project's site plan may be found in **Appendix A – Site Plan**.

Thomas A. Hall, Inc.

Figure 1 – Project Site Location

317 NE 168th Street Traffic Statement

Miami-Dade County, Florida

Trip Generation

Using trip generation characteristics information obtained from the Institute of Transportation Engineers' (ITE) *Trip Generation* manual, 11th Edition, a trip generation estimate for the proposed land use was completed. ITE Land Use Code 221 (Multi-Family Housing, Mid-Rise) was used for the proposed land use. Copies of the ITE trip generation rates may be found in **Appendix B – Trip Generation Characteristics Data.**

Table 1 – Daily Trip Generation, Table 2 – AM Peak-Hour Trip Generation, and **Table 3 – PM Peak-Hour Trip Generation**, enclosed, show the resulting daily, a.m., and p.m. peak-hour trips for the project. As the tables show, the proposed redevelopment project is expected to generate 54 new daily trips, four (4) new morning peak-hour trips, and five (5) new afternoon peak-hour trips.

Table 1
Daily Trip Generation
317 NE 168th Street

Land Use	ITE Code	Intensity		Trip Generation Rate[1]	Total Trips			Internal Trips					Adjusted Trips			Pass-by Trips		Adjusted Trips			Multi-Modal Trips		Net New Trips		
					In	Out	Total	In	%	Out	%	Total	In	Out	Total			In	Out	Total			In	Out	Total
Proposed Use																								
Multi-Family Housing (Mid-Rise)	221	12	D.U.	T = 4.54(X) (50/50)	27	27	54	0	0%	0	0%	0	27	27	54	0	0.00%	27	27	54	0	0.00%	27	27	54
Total					**27**	**27**	**54**	**0**		**0**		**0**	**27**	**27**	**54**	**0**		**27**	**27**	**54**	**0**		**27**	**27**	**54**

[1] Source: Institute of Transportation Engineers' *Trip Generation* manual, 11th Edition.

Table 2
AM Peak-Hour Trip Generation
317 NE 168th Street

Land Use	ITE Code	Intensity		Trip Generation Rate[1]	Total Trips			Internal Trips					Adjusted Trips			Pass-by Trips		Adjusted Trips			Multi-Modal Trips		Net New Trips		
					In	Out	Total	In	%	Out	%	Total	In	Out	Total			In	Out	Total			In	Out	Total
Proposed Use																								
Multi-Family Housing (Mid-Rise)	221	12	D.U.	T = 0.37(X) (23/77)	1	3	4	0	0%	0	0%	0	1	3	4	0	0.00%	1	3	4	0	0.00%	1	3	4
Total					**1**	**3**	**4**	**0**		**0**		**0**	**1**	**3**	**4**	**0**		**1**	**3**	**4**	**0**		**1**	**3**	**4**

[1] Source: Institute of Transportation Engineers' *Trip Generation* manual, 11th Edition.

Table 3
PM Peak-Hour Trip Generation
317 NE 168th Street

Land Use	ITE Code	Intensity		Trip Generation Rate[1]	Total Trips			Internal Trips					Adjusted Trips			Pass-by Trips		Adjusted Trips			Multi-Modal Trips		Net New Trips		
					In	Out	Total	In	%	Out	%	Total	In	Out	Total			In	Out	Total			In	Out	Total
Proposed Use																								
Multi-Family Housing (Mid-Rise)	221	12	D.U.	T = 0.39(X) + 0.34 (61/39)	3	2	5	0	0%	0	0%	0	3	2	5	0	0.00%	3	2	5	0	0.00%	3	2	5
Total					**3**	**2**	**5**	**0**		**0**		**0**	**3**	**2**	**5**	**0**		**3**	**2**	**5**	**0**		**3**	**2**	**5**

[1] Source: Institute of Transportation Engineers' *Trip Generation* manual, 11th Edition.

T = 0.39(X) + 0.34

Queue Analysis

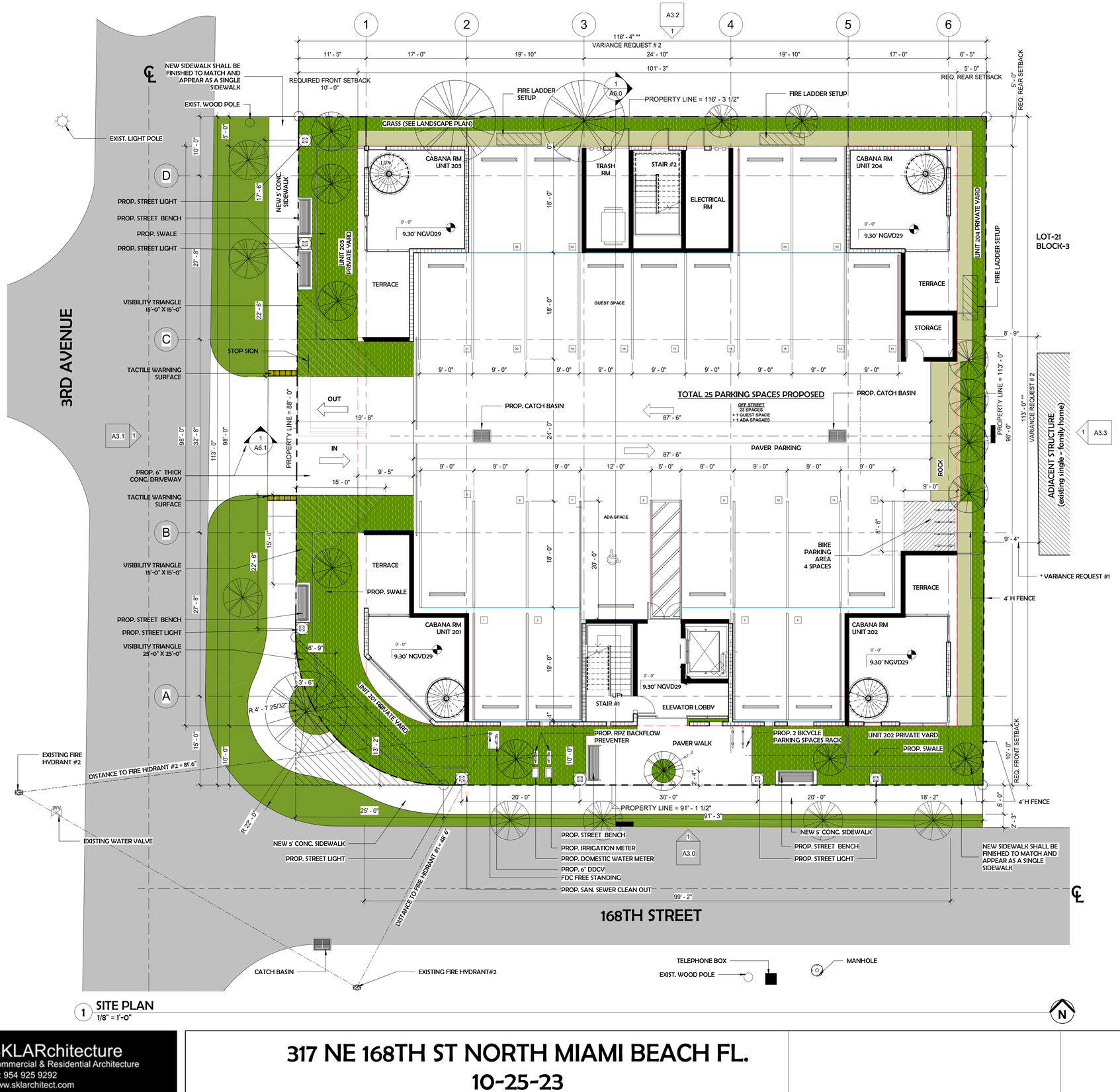
There are no gates proposed for this new development nor are there to be any valet parking operations; therefore, no queuing analysis is required. However, should gates at the project's entrances ever be contemplated, a queuing analysis was completed to determine how much queue storage length would be required to ensure that all entering vehicles are stored outside the public right of way.

Using the highest entering traffic volume of three (3) vehicles, which occurs in the p.m. peak hour, a queuing analysis was completed using the method provided in the ITE's manual entitled *Transportation and Land Development*. As the enclosed queuing analysis worksheet shows (see **Appendix C – Queuing Analysis**), even with an unusually long average service time per vehicle of two minutes per vehicle (typical service times are less than 30 seconds per vehicle) at a single entry gate, there is less than a single vehicle queue length required. In other words, a gate that is located approximately 22 feet inside the property (an average vehicle length) would, at a 95 percent confidence level, not exceed the available queue storage length during the peak entry hour.

Conclusion

Based on the analysis findings described in this traffic statement, the 12 dwelling units proposed for the 317 NE 168th Street project in Miami-Dade County, Florida are expected to generate a minor increase in project trips. The proposed project is expected to generate 54 new daily trips, four (4) new morning peak-hour trips, and five (5) new afternoon peak-hour trips.

Appendix A – Site Plan



1 SITE PLAN
1/8" = 1'-0"

GENERAL		
ZONING:	MU/IB - (MIXED USE INTERNATIONAL BOULEVARD) - EDGE SUB-DISTRICT	
LAND USE:	MIXED USE	
BASE FLOOD ELEVATION (B.F.E.):	ZONE: X B.F.E.: N/A	
BUILDING TYPOLOGY	FLEX BUILDING	
REQ'D/ALLOWED	**REQUIRED**	**PROPOSED**
HEIGHT:	4 STORIES	4 STORIES
LOT SIZE:	N/A	(BAD13,108) 13,008 SF
DENSITY:	40 DU/AC - 40DU/0.2986 = 11.94 UNITS	12 UNITS
TOTAL BUILDING SQ. FT.	N/A	33,248 SF (GROSS AREA)
LOT COVERAGE	N/A	9,514 SF
OPEN SPACE	N/A	26.94 % = 3,505 SF
IMPERVIOUS AREA	90%	76.72% = 9,980 SF
PERVIOUS AREA	10% = 1,310.8 SF.	23.28% = 3,012 SF
SETBACKS		
FRONT - 168TH STREET (SOUTH)	10'-0" - 20'-0"	10'-0"
FRONT - NE 3RD AVE (WEST)	10'-0" - 20'-0"	10'-0"
SIDE	0'-0"	5'-0"
REAR (NORTH & EAST)	0'-0"	5'-0" *
RESIDENTIAL UNITS		
12 UNITS	MIN 550 SF	
AVERAGE UNIT SIZE	MIN 800 SF	APPROX 1,660 SF
PARKING		
12 UNITS 3 BEDROOMS	1.5 SPACES / 3BR UNIT 1SPACE / 20 UNITS (GUEST PARKING) 12 UNITS X 1.5 SPACE = 18 SPACES 1 GUEST SPACE	7 SINGLE SPACES 8 TANDEM SPACES (16) + 1 GUEST SPACE +1 ADA SPACE
TOTALS	19 PARKING SPACES REQUIRED	25 PARKING SPACES PROPOSED

* VARIANCE# 1 REQUEST. **REAR EAST SETBACK** LESS THAN 30 FT INTERIOR REQUIREMENT WHEN ABUTTING AN EXISTING SINGLE - FAMILY HOME, FOR FLEX BUILDING TYPOLOGY.

**VARIANCE # 2 REQUEST. LOT DOES NOT MEET THE MINIMUM LOT DEPTH OF 130 FT FOR A FLEX BUILDING TYPOLOGY.

NOTE:
ALL SIGNAGE SHALL BE IN COMPLIANCE WITH THE ZONING AND LAND DEVELOPMENT REGULATIONS.

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317 NE 168TH ST NORTH MIAMI BEACH FL.
10-25-23

SITE PLAN

PROJEC#21-043

A1.0

Appendix B – Trip Generation Characteristics Data

Land Use: 221
Multifamily Housing (Mid-Rise)

Description

Mid-rise multifamily housing includes apartments and condominiums located in a building that has between four and 10 floors of living space. Access to individual dwelling units is through an outside building entrance, a lobby, elevator, and a set of hallways.

Multifamily housing (low-rise) (Land Use 220), multifamily housing (high-rise) (Land Use 222), off-campus student apartment (mid-rise) (Land Use 226), and mid-rise residential with ground-floor commercial (Land Use 231) are related land uses.

Land Use Subcategory

Data are presented for two subcategories for this land use: (1) not close to rail transit and (2) close to rail transit. A site is considered close to rail transit if the walking distance between the residential site entrance and the closest rail transit station entrance is ½ mile or less.

Additional Data

For the six sites for which both the number of residents and the number of occupied dwelling units were available, there were an average of 2.5 residents per occupied dwelling unit.

For the five sites for which the numbers of both total dwelling units and occupied dwelling units were available, an average of 96 percent of the total dwelling units were occupied.

The technical appendices provide supporting information on time-of-day distributions for this land use. The appendices can be accessed through either the ITETripGen web app or the trip generation resource page on the ITE website (https://www.ite.org/technical-resources/topics/trip-and-parking-generation/).

It is expected that the number of bedrooms and number of residents are likely correlated to the trips generated by a residential site. To assist in future analysis, trip generation studies of all multifamily housing should attempt to obtain information on occupancy rate and on the mix of residential unit sizes (i.e., number of units by number of bedrooms at the site complex).

The sites were surveyed in the 1990s, the 2000s, the 2010s, and the 2020s in Alberta (CAN), California, District of Columbia, Florida, Georgia, Illinois, Maryland, Massachusetts, Minnesota, Montana, New Jersey, New York, Ontario (CAN), Oregon, Utah, and Virginia.

Source Numbers

168, 188, 204, 305, 306, 321, 818, 857, 862, 866, 901, 904, 910, 949, 951, 959, 963, 964, 966, 967, 969, 970, 1004, 1014, 1022, 1023, 1025, 1031, 1032, 1035, 1047, 1056, 1057, 1058, 1071, 1076

Multifamily Housing (Mid-Rise)
Not Close to Rail Transit (221)

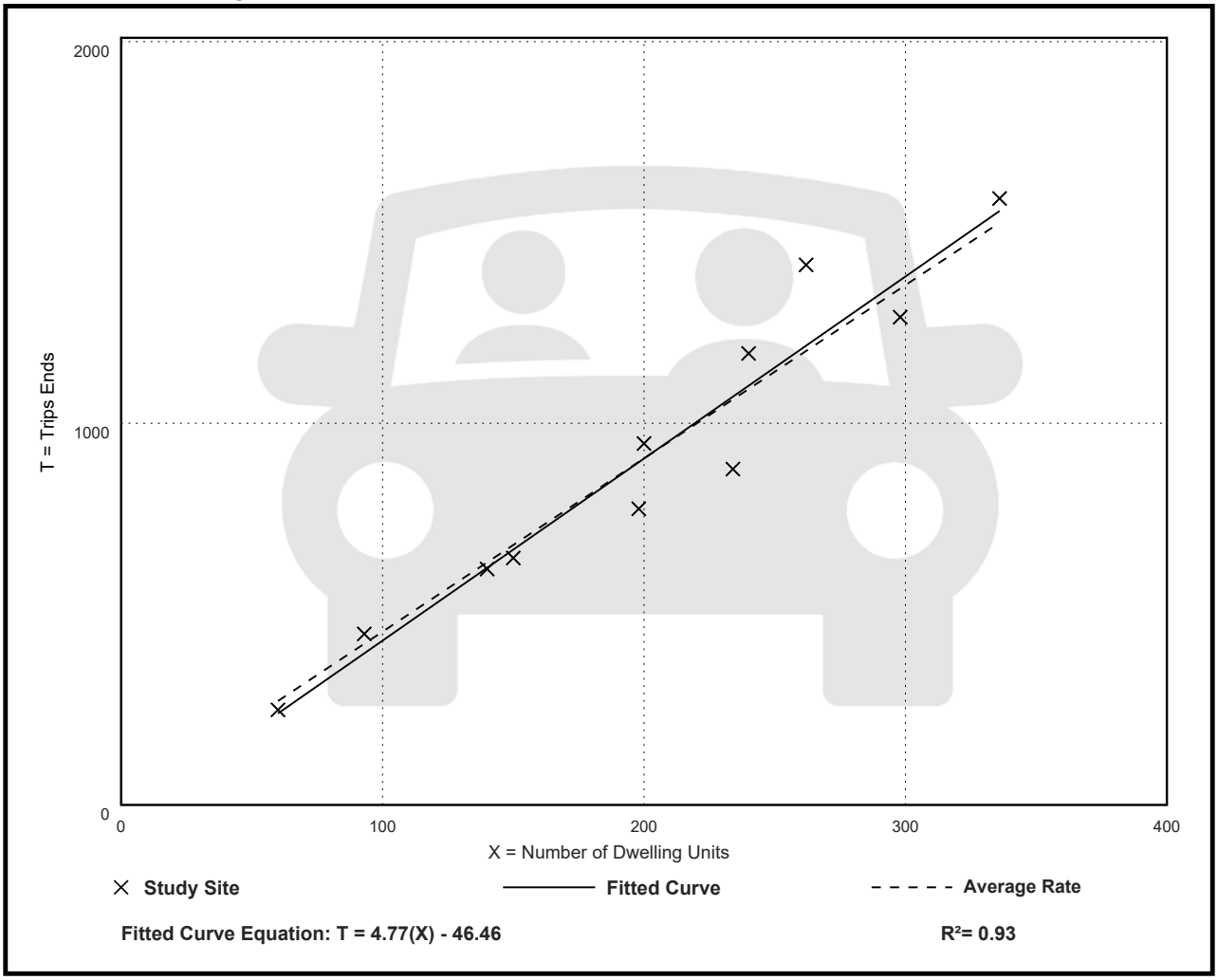
Vehicle Trip Ends vs: Dwelling Units
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 11
Avg. Num. of Dwelling Units: 201
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
4.54	3.76 - 5.40	0.51

Data Plot and Equation



Fitted Curve Equation: T = 4.77(X) - 46.46

R^2= 0.93

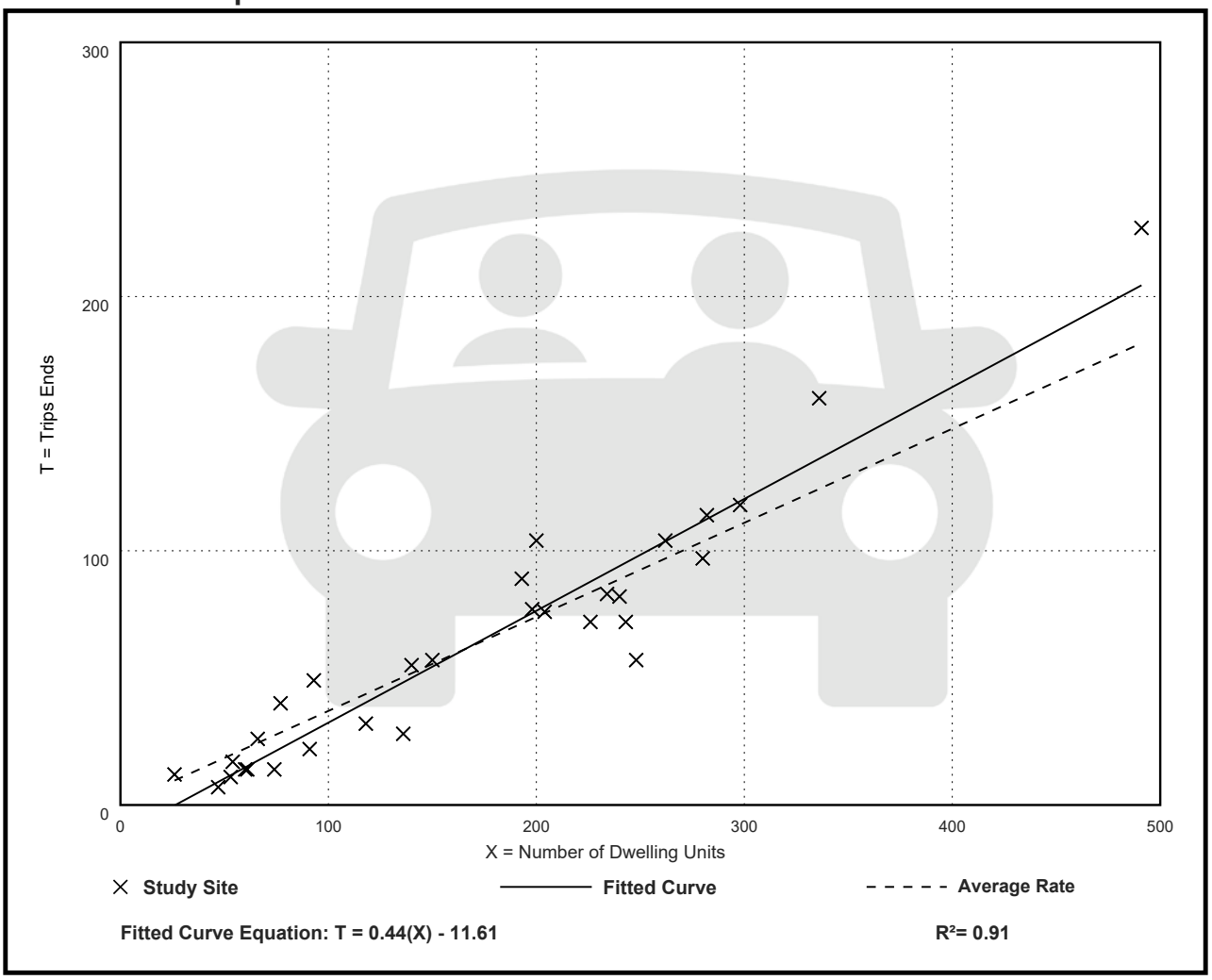
Multifamily Housing (Mid-Rise)
Not Close to Rail Transit (221)

Vehicle Trip Ends vs: Dwelling Units
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: General Urban/Suburban
Number of Studies: 30
Avg. Num. of Dwelling Units: 173
Directional Distribution: 23% entering, 77% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.37	0.15 - 0.53	0.09

Data Plot and Equation



Fitted Curve Equation: T = 0.44(X) - 11.61

R^2= 0.91

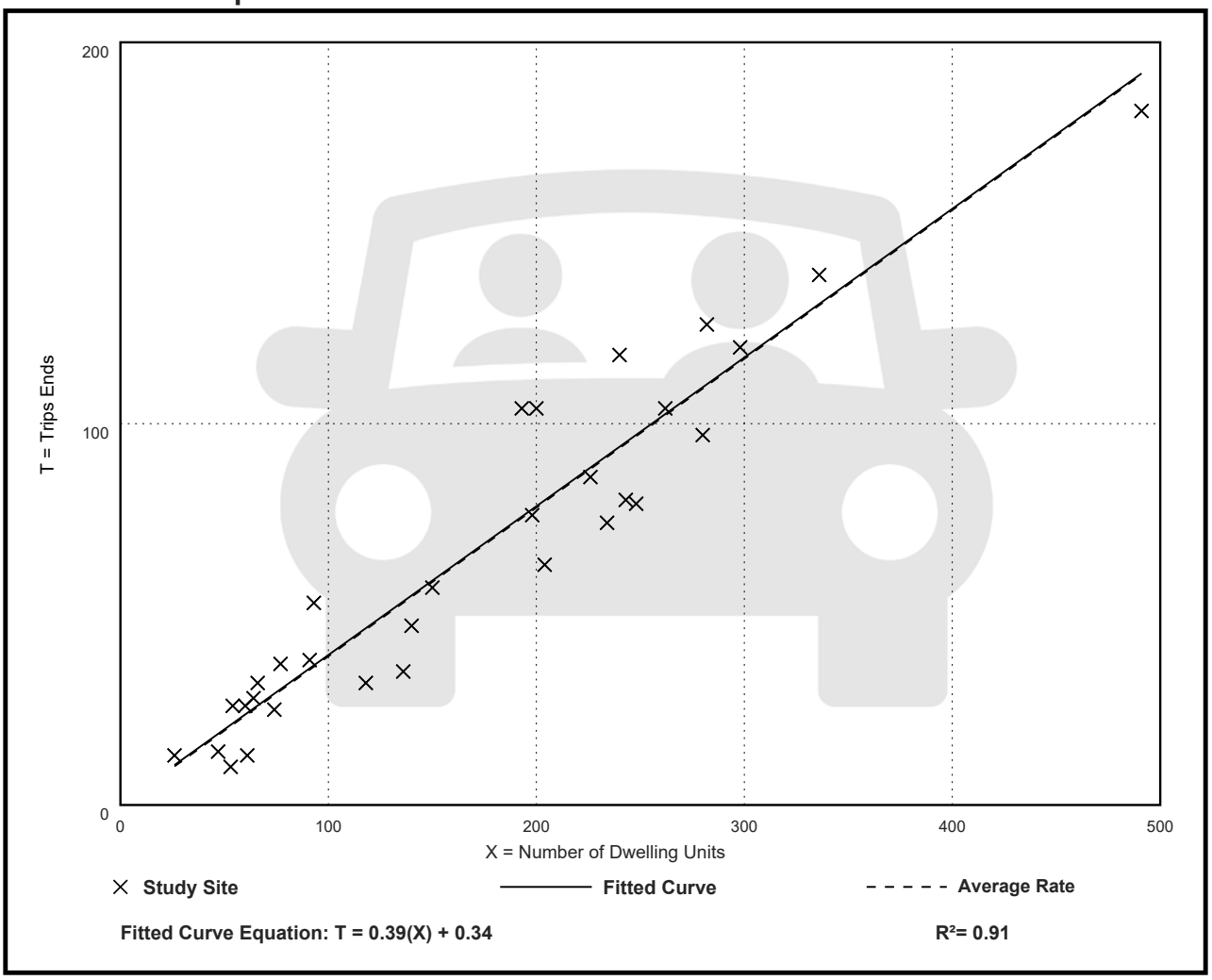
Multifamily Housing (Mid-Rise)
Not Close to Rail Transit (221)

Vehicle Trip Ends vs: Dwelling Units
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: General Urban/Suburban
Number of Studies: 31
Avg. Num. of Dwelling Units: 169
Directional Distribution: 61% entering, 39% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.39	0.19 - 0.57	0.08

Data Plot and Equation



Appendix C - Queuing Analysis

Peak Parking Demand Queue Analysis for 317 NE 168th Street residential development.

Scenario 1 - Peak hour demand for a gated entrance:

P=	0.05	(probability of backup onto the adjacent street)
M=	1	(queue length which is exceeded p percent of the time)
N=	1	(number of service positions)
Q=	30.00	(service rate - vehicles per hour)
p=	0.100	(utilization factor)
q=	3	(demand rate - vehicles per hour)
Q_M=	0.1000	(tabled value of the relationship between queue length, number of channels, and utilization factor)

$$M = \frac{[\ln P(x>M) - \ln Q_M]}{\ln p} - 1$$

$$M = \frac{[\ln 0.05 - \ln 0.1000]}{\ln 0.100} - 1$$

$$M = \frac{[-2.9957 - -2.3026]}{-2.3026} - 1$$

M= **-0.6990** < (1 vehicles of available vehicle queue length)