

KBP CONSULTING, INC.

March 15, 2021

Mr. Brandon M. Spirk
Senior Director of Design & Construction
Ocean Land Investments
1800 E. Las Olas Boulevard
Fort Lauderdale, FL 33301

**Re: Aviva – Fort Lauderdale, Florida
Traffic Statement**

Dear Brandon:

As requested, KBP Consulting, Inc. has prepared a traffic statement associated with the proposed redevelopment of a parcel of land generally located on the west side of SE 6th Avenue at the intersection with N. Rio Vista Boulevard in the City of Fort Lauderdale, Broward County, Florida. More specifically, the subject site is located at 501 SE 6th Avenue. A project location map is presented in Attachment A to this memorandum.

This traffic statement addresses the trip generation characteristics associated with the existing and proposed development on the subject site and documents if the estimated number of net new project trips exceeds the minimum trip thresholds established by the City of Fort Lauderdale that would require a comprehensive traffic impact study.

TRAFFIC IMPACT ANALYSIS

Existing and Proposed Development

The total land area of the subject site is approximately 0.796 acre (34,669 square feet) and the existing development consists of a three-story multi-family residential condominium building with 30 dwelling units. The site is proposed to be redeveloped with an eight-story multi-family residential building with 96 dwelling units and 7,969 square feet of commercial / retail space on the first floor. Vehicular access to the site will be provided by one (1) right-turn in / right-turn out only driveway on SE 6th Avenue / East Avenue. A preliminary site plan along with the unit matrix is presented in Attachment B to this memorandum.

Trip Generation Analysis

A trip generation analysis has been conducted for the existing and proposed development at the subject site. This analysis was performed using the trip generation rates and equations published in the Institute of Transportation Engineer's (ITE) *Trip Generation Manual (10th Edition)*.

This trip generation analysis was undertaken for daily, AM peak hour, and PM peak hour conditions. According to the referenced ITE manual, the most appropriate land use categories and corresponding rates and equations for the existing and proposed development are as follows:

Multifamily Housing (Mid-Rise) – ITE Land Use #221

- Weekday: $T = 5.45 (X) - 1.75$
where T = number of trips and X = number of dwelling units
- AM Peak Hour: $\ln(T) = 0.98 \ln(X) - 0.98$ (26% in / 74% out)
- PM Peak Hour: $\ln(T) = 0.96 \ln(X) - 0.63$ (61% in / 39% out)

Mid-Rise Residential with 1st Floor Commercial – ITE Land Use #231

- Weekday: $T = 3.44 (X)$
where T = number of trips and X = number of dwelling units
- AM Peak Hour: $T = 0.30 (X)$ (28% in / 72% out)
- PM Peak Hour: $T = 0.36 (X)$ (70% in / 30% out)

Relevant excerpts from the referenced ITE manual are presented in Attachment C to this memorandum.

Utilizing the above-listed trip generation rates and equations from the referenced ITE manual, a trip generation analysis was undertaken for the existing and proposed development. The results of this effort are documented in Table 1 below.

Table 1 Aviva Trip Generation Analysis 501 SE 6th Avenue - Fort Lauderdale, Florida								
Land Use	Size	Daily Trips	AM Peak Hour Trips			PM Peak Hour Trips		
			In	Out	Total	In	Out	Total
Existing Multifamily Housing (Mid-Rise)	30 DU	162	3	8	11	9	5	14
Proposed Mid-Rise Residential with 1st-Floor Commercial	96 DU	330	8	21	29	25	10	35
Difference (Proposed - Existing)		168	5	13	18	16	5	21

Compiled by: KBP Consulting, Inc. (March 2021).

Source: ITE Trip Generation Manual (10th Edition).

As indicated in Table 1 above, the proposed Aviva residential development is anticipated to generate 330 daily vehicle trips, 29 AM peak hour vehicle trips (8 inbound and 21 outbound) and 35 vehicle trips (25 inbound and 10 outbound) during the typical afternoon peak hour. When compared with the existing development on this site this represents an increase of 168 daily vehicle trips, an increase of 18 AM peak hour vehicle trips, and an increase of 21 PM peak hour vehicle trips.

Conclusions

Based upon the foregoing analysis, the proposed project is not required to prepare a comprehensive traffic impact study for the following reasons:

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- According to the City of Fort Lauderdale's ULDR Section 47-25.2.M.4, when the proposed development generates more than 1,000 net new daily vehicle trips, a traffic impact study is required. The subject project is projected to generate 168 net new daily vehicle trips.
- And, if the daily trips are less than 1,000 and more than 20% of the daily trips are anticipated to arrive or depart, or both, within one-half hour, a traffic impact study is required. As presented in Table 1, the proposed development will result in 18 additional vehicle trips in the AM peak hour and 21 additional vehicle trips during the PM peak hour. The maximum number of trips anticipated within one-half hour is approximately 6.55% of the daily vehicle trips, which is significantly less than the 20% threshold. *(Twenty-one additional PM peak hour vehicle trips occurring in one (1) hour represents, on average, 11 vehicle trips in one-half hour. Eleven (11) vehicle trips equate to approximately 6.55% of the 168 net new daily vehicle trips.)*

Based upon the foregoing analyses, the trip generation characteristics of the Aviva residential development do not warrant further detailed traffic analyses.

If you have any questions or require additional information, please do not hesitate to contact me.

Sincerely,

KBP CONSULTING, INC.



Karl B. Peterson, P.E.

Florida Registration Number 49897

Engineering Business Number 29939

Attachment A

Aviva

Project Location Map



Attachment A

Aviva
Fort Lauderdale, Florida

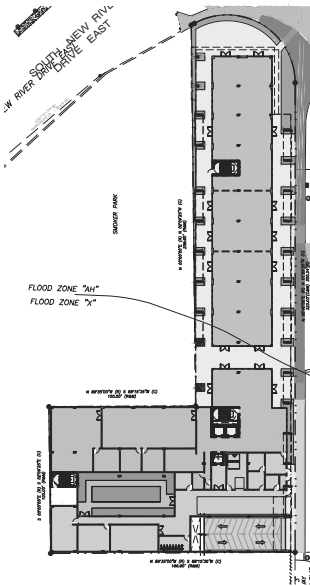
Project Location Map

KBP
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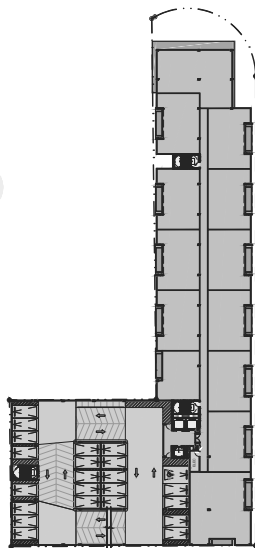
Attachment B

Aviva

Preliminary Site Plan Information



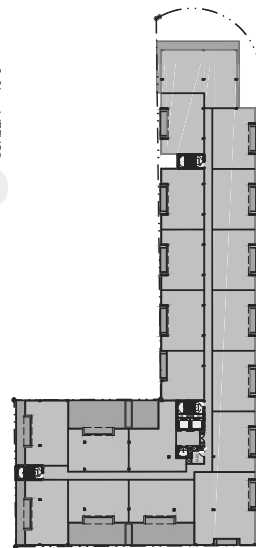
1 Ground Floor Plan
A-013 SCALE: 1" = 40'-0"



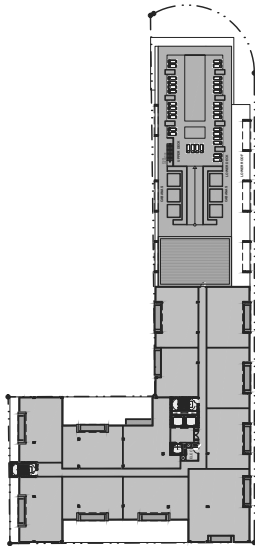
2 2nd-5th Floor Plan
A-013 SCALE: 1" = 40'-0"



3 6th Floor Plan
A-013 SCALE: 1" = 40'-0"



4 7th Floor Plan
A-013 SCALE: 1" = 40'-0"



5 8th Floor Plan
A-013 SCALE: 1" = 40'-0"

- LEASABLE RETAIL & RESIDENTIAL UNITS
- VERTICAL CIRCULATION
- COMMON AREAS & HORIZONTAL CIRCULATION
- PARKING AREA, SERVICES & BACK-OF-HOUSE
- BALCONIES & TERRACES
- ROOF DECK & POOL DECK

6 AREA IDENTIFICATION
A-013 SCALE: NTS

AVIVA (GROSS AREA TABLE)

	LEASABLE RETAIL	SALEABLE RESIDENTIAL	COMMON AREAS	VERTICAL CIRCULATION	SERVICES	BALCONIES / POOL DECK	PARKING	TOTAL
Ground Floor	7,569.37	2,042.95	7,313.31	762.86	5,223.01	0.00	1,375.92	24,687.42
2nd floor	0.00	16,359.56	1,602.44	761.61	119.76	1,426.21	11,274.01	31,543.59
3rd floor	0.00	16,359.56	1,602.44	761.61	119.76	1,426.21	11,274.01	31,543.59
4th floor	0.00	16,359.56	1,602.44	761.61	119.76	1,426.21	11,274.01	31,543.59
5th floor	0.00	16,359.56	1,602.44	761.61	119.76	1,426.21	11,274.01	31,543.59
6th floor	0.00	16,359.56	1,602.44	761.61	119.76	1,426.21	11,044.27	31,313.85
7th floor	0.00	23,758.06	2,121.54	771.05	94.65	4,798.29	0.00	31,543.59
8th floor	0.00	14,986.69	1,498.71	788.74	269.46	9,119.68	0.00	26,663.28
TOTAL	7,569.37	122,585.50	13,945.76	6,130.70	6,185.92	21,049.02	57,516.23	240,382.50

Efficiency 54.31%

7 Gross Floor Area Table
A-013 SCALE: NTS

Units Matrix & Parking Count					
	1 BD	2 BDs	3 BDs	TOTAL	# PARKING
Ground Floor	-	-	-	-	-
2nd floor	1	10	2	13	23
3rd floor	1	10	2	13	23
4th floor	1	10	2	13	23
5th floor	1	10	2	13	23
6th floor	1	10	2	13	23
7th floor	1	16	2	19	-
8th floor	1	10	1	12	-
TOTAL	7	76	13	96	115
	7.29%	79.17%	13.54%	100.00%	

8 Units Matrix & Parking Count
A-013 SCALE: NTS

Attachment C

Aviva

**Relevant Excerpts from the
*ITE Trip Generation Manual (10th Edition)***

Land Use: 221

Multifamily Housing (Mid-Rise)

Description

Mid-rise multifamily housing includes apartments, townhouses, and condominiums located within the same building with at least three other dwelling units and that have between three and 10 levels (floors). Multifamily housing (low-rise) (Land Use 220), multifamily housing (high-rise) (Land Use 222), off-campus student apartment (Land Use 225), and mid-rise residential with 1st-floor commercial (Land Use 231) are related land uses.

Additional Data

In prior editions of *Trip Generation Manual*, the mid-rise multifamily housing sites were further divided into rental and condominium categories. An investigation of vehicle trip data found no clear differences in trip making patterns between the rental and condominium sites within the ITE database. As more data are compiled for future editions, this land use classification can be reinvestigated.

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 2.46 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 95.7 percent of the total dwelling units were occupied.

Time-of-day distribution data for this land use are presented in Appendix A. For the eight general urban/suburban sites with data, the overall highest vehicle volumes during the AM and PM on a weekday were counted between 7:00 and 8:00 a.m. and 4:45 and 5:45 p.m., respectively.

For the four dense multi-use urban sites with 24-hour count data, the overall highest vehicle volumes during the AM and PM on a weekday were counted between 7:15 and 8:15 a.m. and 4:15 and 5:15 p.m., respectively. For the three center city core sites with 24-hour count data, the overall highest vehicle volumes during the AM and PM on a weekday were counted between 6:45 and 7:45 a.m. and 5:00 and 6:00 p.m., respectively.

For the six sites for which data were provided for both occupied dwelling units and residents, there was an average of 2.46 residents per occupied dwelling unit.

For the five sites for which data were provided for both occupied dwelling units and total dwelling units, an average of 95.7 percent of the units were occupied.

The average numbers of person trips per vehicle trip at the five center city core sites at which both person trip and vehicle trip data were collected were as follows:

- 1.84 during Weekday, Peak Hour of Adjacent Street Traffic, one hour between 7 and 9 a.m.
- 1.94 during Weekday, AM Peak Hour of Generator
- 2.07 during Weekday, Peak Hour of Adjacent Street Traffic, one hour between 4 and 6 p.m.
- 2.59 during Weekday, PM Peak Hour of Generator

The average numbers of person trips per vehicle trip at the 32 dense multi-use urban sites at which both person trip and vehicle trip data were collected were as follows:

- 1.90 during Weekday, Peak Hour of Adjacent Street Traffic, one hour between 7 and 9 a.m.
- 1.90 during Weekday, AM Peak Hour of Generator
- 2.00 during Weekday, Peak Hour of Adjacent Street Traffic, one hour between 4 and 6 p.m.
- 2.08 during Weekday, PM Peak Hour of Generator

The average numbers of person trips per vehicle trip at the 13 general urban/suburban sites at which both person trip and vehicle trip data were collected were as follows:

- 1.56 during Weekday, Peak Hour of Adjacent Street Traffic, one hour between 7 and 9 a.m.
- 1.88 during Weekday, AM Peak Hour of Generator
- 1.70 during Weekday, Peak Hour of Adjacent Street Traffic, one hour between 4 and 6 p.m.
- 2.07 during Weekday, PM Peak Hour of Generator

The sites were surveyed in the 1980s, the 1990s, the 2000s, and the 2010s in Alberta (CAN), British Columbia (CAN), California, Delaware, District of Columbia, Florida, Georgia, Illinois, Maryland, Massachusetts, Minnesota, New Hampshire, New Jersey, Ontario, Oregon, Pennsylvania, South Carolina, South Dakota, Tennessee, Utah, Virginia, and Wisconsin.

Source Numbers

168, 188, 204, 305, 306, 321, 357, 390, 436, 525, 530, 579, 638, 818, 857, 866, 901, 904, 910, 912, 918, 934, 936, 939, 944, 947, 948, 949, 959, 963, 964, 966, 967, 969, 970

Multifamily Housing (Mid-Rise) (221)

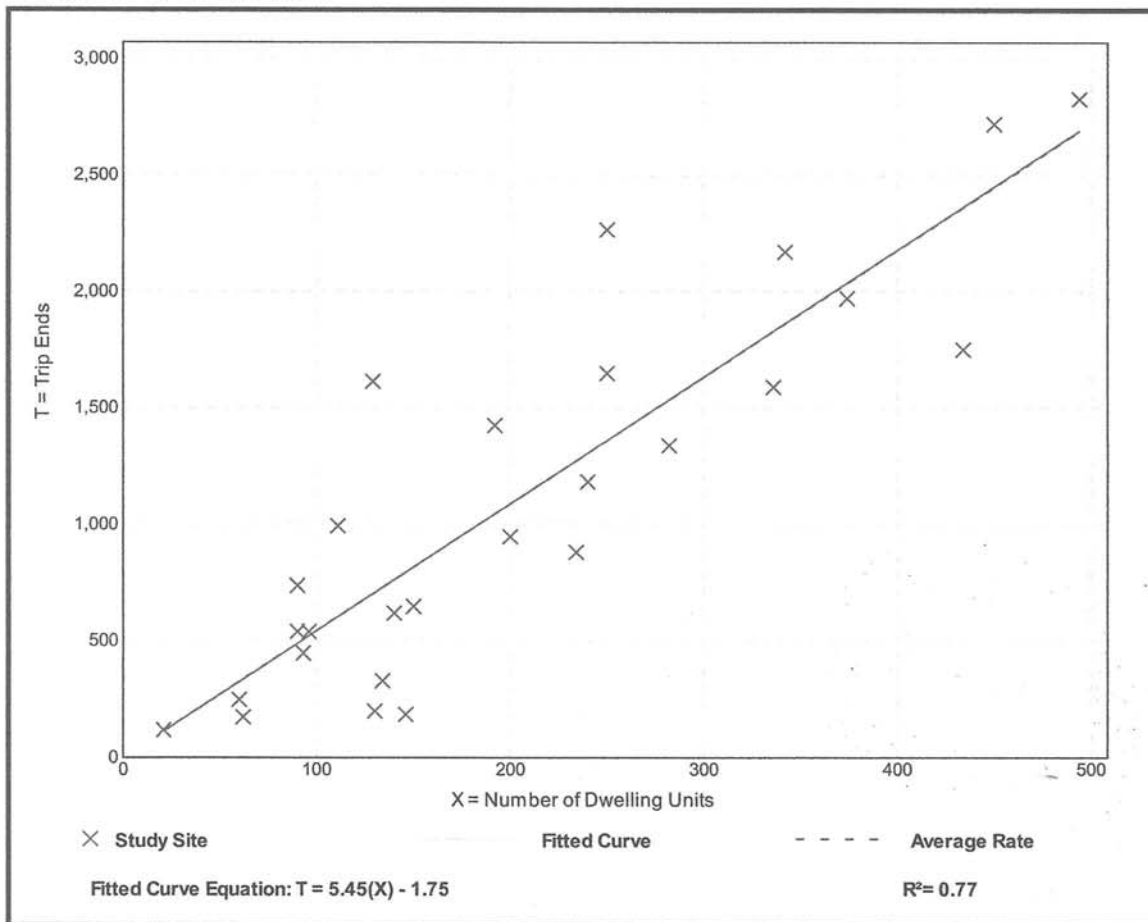
Vehicle Trip Ends vs: Dwelling Units
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 27
Avg. Num. of Dwelling Units: 205
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
5.44	1.27 - 12.50	2.03

Data Plot and Equation



Multifamily Housing (Mid-Rise) (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: 53

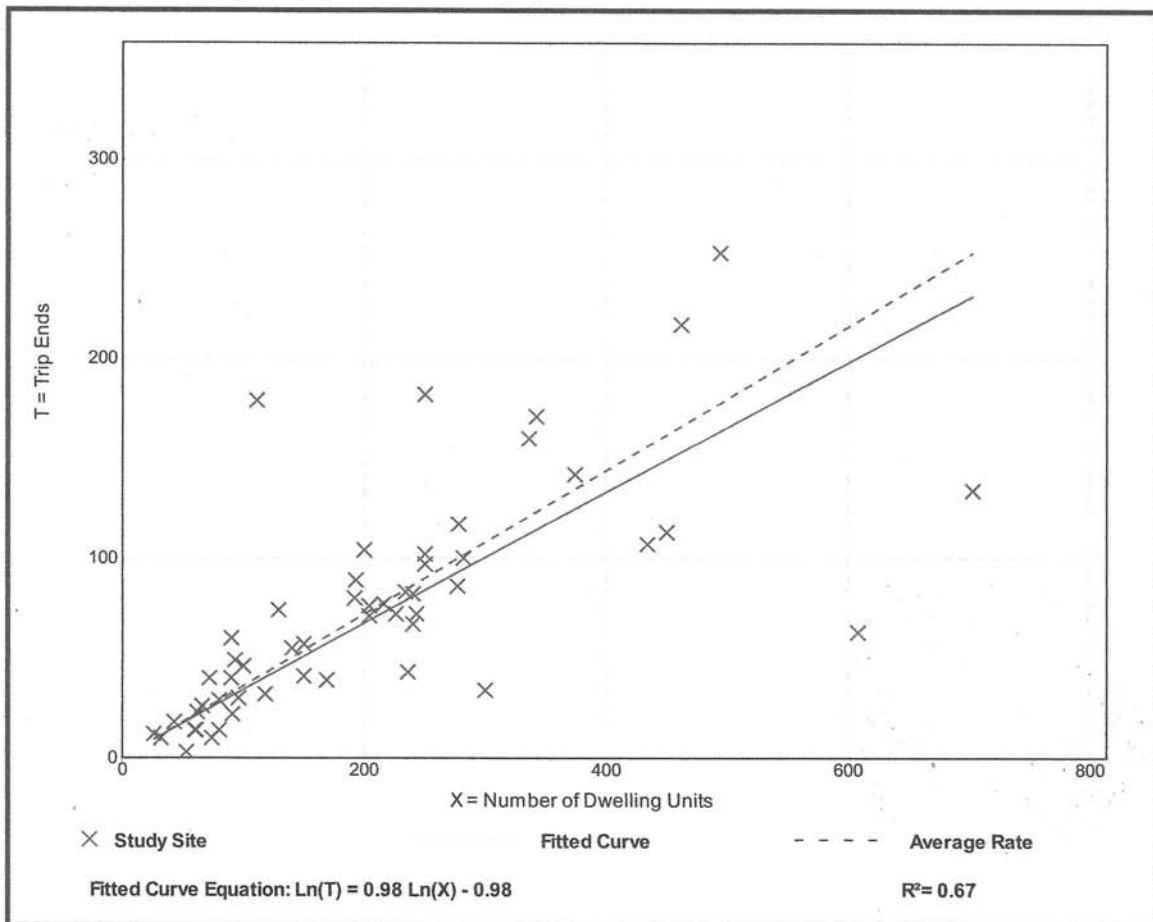
Avg. Num. of Dwelling Units: 207

Directional Distribution: 26% entering, 74% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.36	0.06 - 1.61	0.19

Data Plot and Equation



Multifamily Housing (Mid-Rise) (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: 60

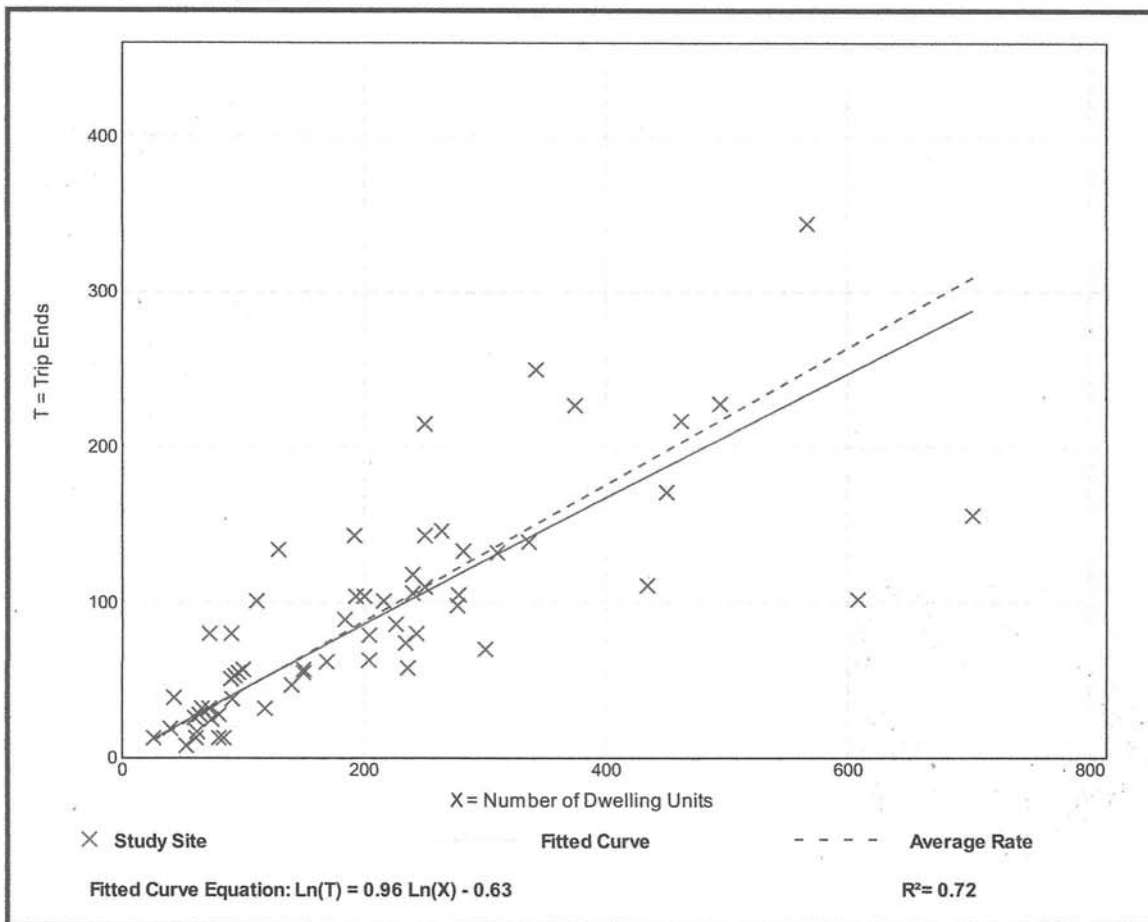
Avg. Num. of Dwelling Units: 208

Directional Distribution: 61% entering, 39% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.44	0.15 - 1.11	0.19

Data Plot and Equation



Land Use: 231

Mid-Rise Residential with 1st-Floor Commercial

Description

Mid-rise residential with 1st-floor commercial are mixed-use multifamily housing buildings that have between three and 10 levels (floors) and include retail space on the first level. These facilities are typically found in dense multi-use urban and center city core settings. Multifamily housing (mid-rise) (Land Use 221) and high-rise residential with 1st-floor commercial (Land Use 232) are related land uses.

Additional Data

The sites included in this land use category include both a residential and retail component. A multi-variable regression analysis based on-site characteristics reflecting both components produced the following fitted curve equations:

Dense Multi-Use Urban Sites

Weekday, AM Peak Hour of Generator

$$\text{Vehicle Trips} = [1.64 \times (\text{Retail GFA (000)})] + [0.14 \times (\text{Occupied Units})] + 3.9 \{R^2 = 0.58\}$$

Weekday, AM Peak Hour of Adjacent Street Traffic

$$\text{Vehicle Trips} = [2.65 \times (\text{Retail GFA (000)})] + [0.03 \times (\text{Occupied Units})] + 5.2 \{R^2 = 0.75\}$$

$$\text{Person Trips} = [6.67 \times (\text{Retail GFA (000)})] + [0.29 \times (\text{Occupied Units})] + 21.9 \{R^2 = 0.65\}$$

Weekday, PM Peak Hour of Generator

$$\text{Vehicle Trips} = [3.43 \times (\text{Retail GFA (000)})] + [0.10 \times (\text{Occupied Units})] - 8.2 \{R^2 = 0.77\}$$

$$\text{Person Trips} = [8.98 \times (\text{Retail GFA (000)})] + [0.67 \times (\text{Occupied Units})] + 60.5 \{R^2 = 0.58\}$$

Center City Core Sites

Weekday, AM Peak Hour of Generator

$$\text{Vehicle Trips} = [0.97 \times (\text{Retail GFA (000)})] + [0.25 \times (\text{Occupied Units})] + 9.1 \{R^2 = 0.83\}$$

$$\text{Person Trips} = [1.32 \times (\text{Retail GFA (000)})] + [1.11 \times (\text{Occupied Units})] + 51.0 \{R^2 = 0.76\}$$

Weekday, AM Peak Hour of Adjacent Street Traffic

$$\text{Vehicle Trips} = [1.26 \times (\text{Retail GFA (000)})] + [0.16 \times (\text{Occupied Units})] + 18.6 \{R^2 = 0.94\}$$

$$\text{Person Trips} = [2.42 \times (\text{Retail GFA (000)})] + [0.73 \times (\text{Occupied Units})] + 111.5 \{R^2 = 0.84\}$$

Weekday, PM Peak Hour of Generator

$$\text{Vehicle Trips} = [1.51 \times (\text{Retail GFA (000)})] + [0.16 \times (\text{Occupied Units})] + 2.0 \{R^2 = 0.87\}$$

$$\text{Person Trips} = [8.01 \times (\text{Retail GFA (000)})] + [0.87 \times (\text{Occupied Units})] + 68.0 \{R^2 = 0.78\}$$

Weekday, PM Peak Hour of Adjacent Street Traffic

$$\text{Vehicle Trips} = [3.46 \times (\text{Retail GFA (000)})] + [0.31 \times (\text{Occupied Units})] - 27.8 \{R^2 = 0.99\}$$

$$\text{Person Trips} = [2.87 \times (\text{Retail GFA (000)})] + [1.14 \times (\text{Occupied Units})] + 83.8 \{R^2 = 0.98\}$$

Time-of-day distribution data for this land use are presented in Appendix A. For the one general urban/suburban site with data, the overall highest vehicle volumes during the AM and PM on a weekday were counted between 7:30 and 8:30 a.m. and 5:30 and 6:30 p.m., respectively.

The average numbers of person trips per vehicle trip at the 15 center city core sites at which both person trip and vehicle trip data were collected were as follows:

- 3.90 during Weekday, Peak Hour of Adjacent Street Traffic, one hour between 7 and 9 a.m.
- 3.85 during Weekday, AM Peak Hour of Generator
- 5.76 during Weekday, Peak Hour of Adjacent Street Traffic, one hour between 4 and 6 p.m.
- 6.33 during Weekday, PM Peak Hour of Generator

The average numbers of person trips per vehicle trip at the 33 dense multi-use urban sites at which both person trip and vehicle trip data were collected were as follows:

- 3.36 during Weekday, Peak Hour of Adjacent Street Traffic, one hour between 7 and 9 a.m.
- 3.45 during Weekday, AM Peak Hour of Generator
- 3.48 during Weekday, Peak Hour of Adjacent Street Traffic, one hour between 4 and 6 p.m.
- 4.36 during Weekday, PM Peak Hour of Generator

The sites were surveyed in the 2010s in Alberta (CAN), District of Columbia, Oregon, and Utah.

Source Numbers

855, 901, 949, 950, 951, 970

Mid-Rise Residential with 1st-Floor Commercial (231)

Vehicle Trip Ends vs: Dwelling Units
On a: Weekday

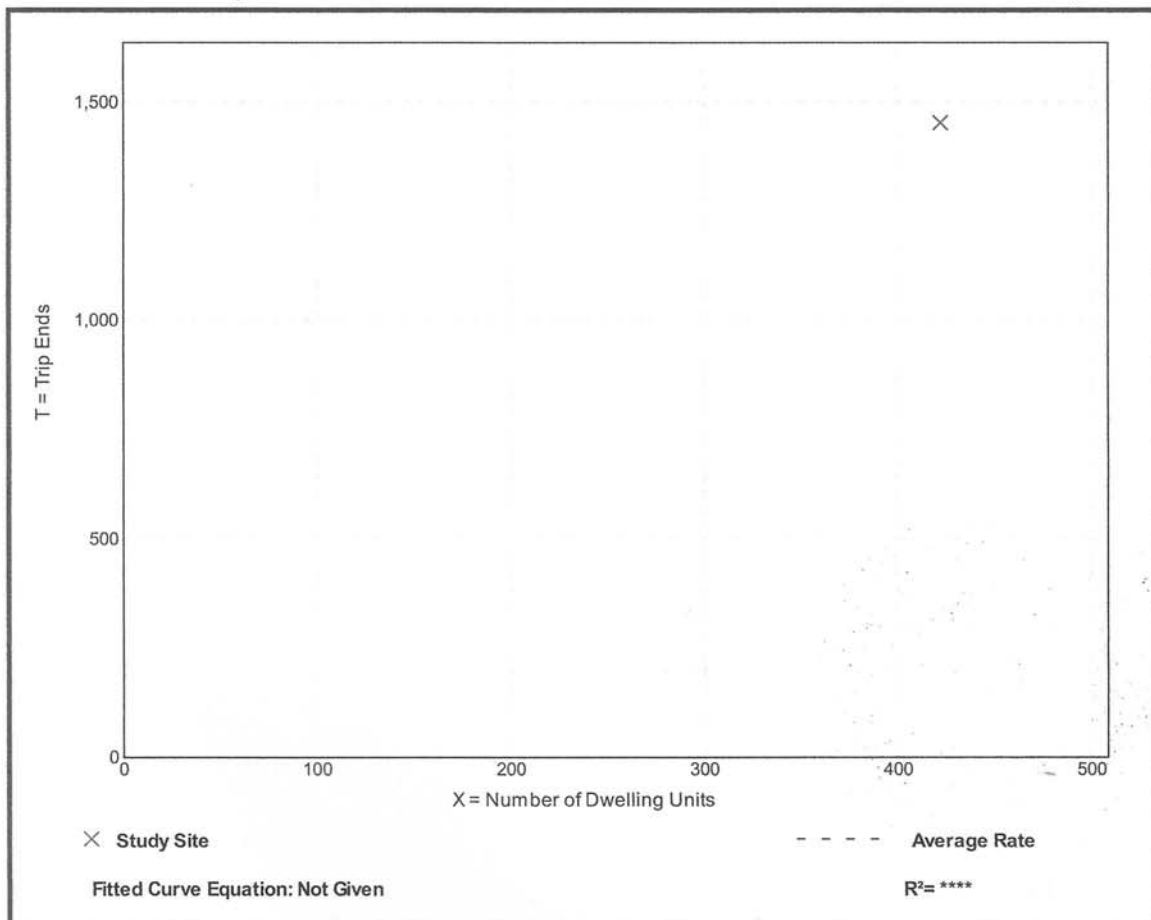
Setting/Location: General Urban/Suburban
Number of Studies: 1
Avg. Num. of Dwelling Units: 422
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
3.44	3.44 - 3.44	*

Data Plot and Equation

Caution – Small Sample Size



Mid-Rise Residential with 1st-Floor Commercial (231)

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: 2

Avg. Num. of Dwelling Units: 317

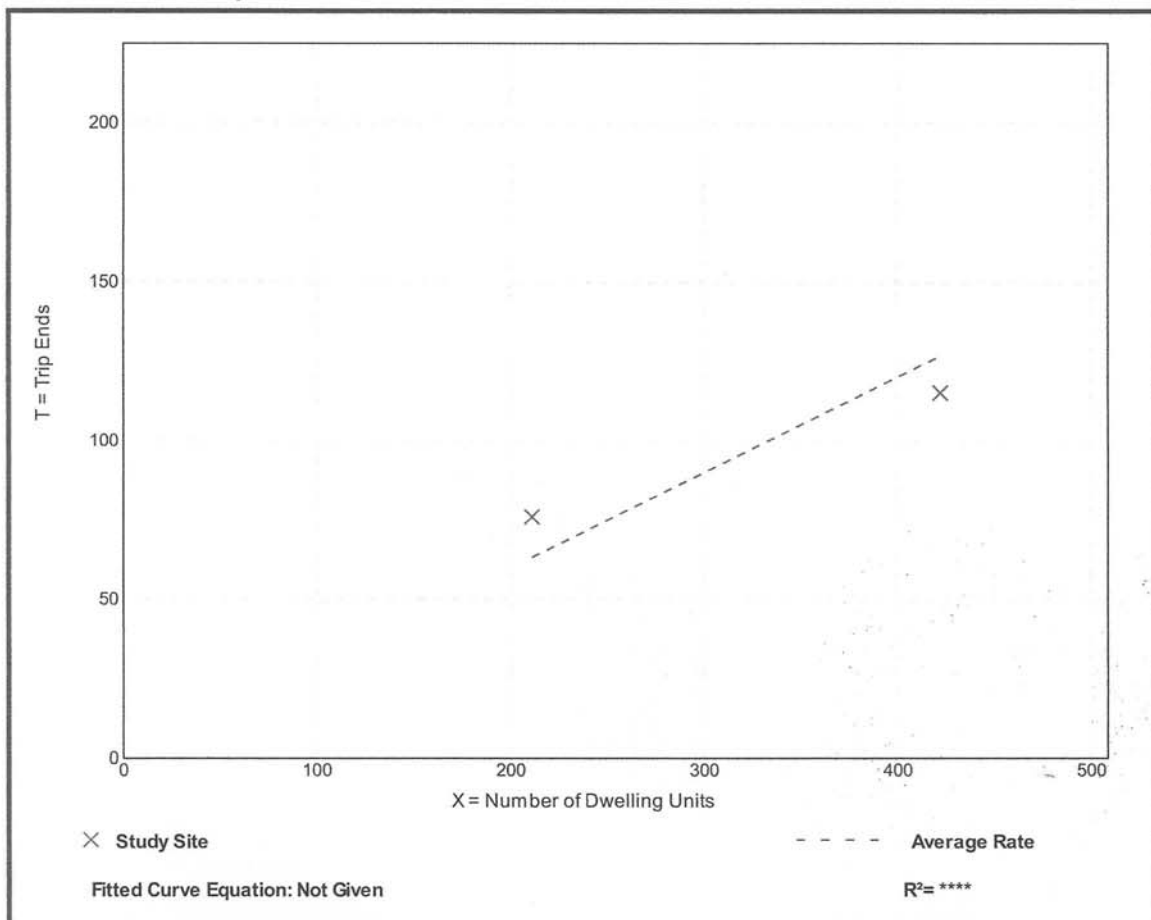
Directional Distribution: 28% entering, 72% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.30	0.27 - 0.36	*

Data Plot and Equation

Caution – Small Sample Size



Mid-Rise Residential with 1st-Floor Commercial (231)

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: 2

Avg. Num. of Dwelling Units: 317

Directional Distribution: 70% entering, 30% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.36	0.30 - 0.46	*

Data Plot and Equation

Caution – Small Sample Size

