



Memorandum

TO: Ms. Catherine Baker, AIA
Landon Bone Baker Architects

FROM: Stephen B. Corcoran, P.E., PTOE
Director of Traffic Engineering

DATE: September 12, 2019

RE: Trip Generation Comparison
Naperville Micro Housing
#19-1000092
1350 E. Ogden Avenue
Naperville, Illinois

This memorandum provides a comparison of the trips generated by the redevelopment of 1350 E. Ogden Avenue from a 123-room motel into 112-unit micro-apartment building. Micro-apartments are smaller apartments that usually include a living/bedroom area, a bathroom, and a kitchenette for one or two persons.

Redevelopment Plan

The redevelopment site is located at 1350 E. Ogden Avenue (US Route 34) on the south side of the street west of Tuthill Road. Regency Inn Naperville operates a motel with 123 rooms on the site. Surface parking is provided around the motel with a full access drive on Ogden Avenue and a full access drive on Tuthill Road.

The existing building will be remodeled to house a 112-unit micro-apartment complex and includes amenity space with a gym, laundry, lounge, and common space. Surface parking spaces wrap around the building. Existing driveway access on Ogden Avenue and Tuthill Road will be maintained.

Trip Generation Comparison

Trip estimates were made for the existing motel and proposed micro-unit apartment complex to assess the change in traffic volumes to and from the site. Site trips for each use was estimated from data in the Institute of Transportation Engineer's Trip Generation 10th Ed. manual which contains trip generation surveys of similar uses. For the motel, Land Use Code 320, was used. Copies of the trip calculations are attached.

ITE's database does not have a specific category for micro-apartments, so Land Use Code 220 - Multi-Family (Low Rise) was used which is based multi-family developments with one or more bedrooms per unit. Micro-apartments do not have more than one-bedroom so the actual traffic generated should be less than the ITE rates. ITE has limited trip generation data for apartments based on the number of residents but it suggests that the proposed development traffic could be 60% less than the typical apartment complex.

The resulting site traffic volumes are shown in **Table 1**. Apartments generate slightly more traffic than the existing motel, 6 to 18 additional peak-hour trips, using the conservative ITE data. Existing traffic operations at the site driveways or along Ogden Avenue will not be materially impacted by this small change. With the smaller unit sizes and number of residents, it is likely there will be less trips generated by the micro-apartments compared to the existing motel.

**Table 1
Site Traffic Comparison**

Use	Size	Morning Peak			Evening Peak		
		In	Out	Total	In	Out	Total
Existing Use							
Motel ⁽¹⁾	123 rooms	17	30	47	25	22	47
Proposed Use							
Apartments ⁽²⁾	112 units	12	41	53	41	24	65
Trip Generation Change		-5	+11	+6	+16	+2	+18
Residents ⁽²⁾	120 persons	3	18	21	14	2	16
Trip Generation Change		-14	-12	-26	-11	-20	-31

(1) ITE Land Use Code 320- Motel

(2) ITE Land Use Code 220- Multi-Family (Low Rise)

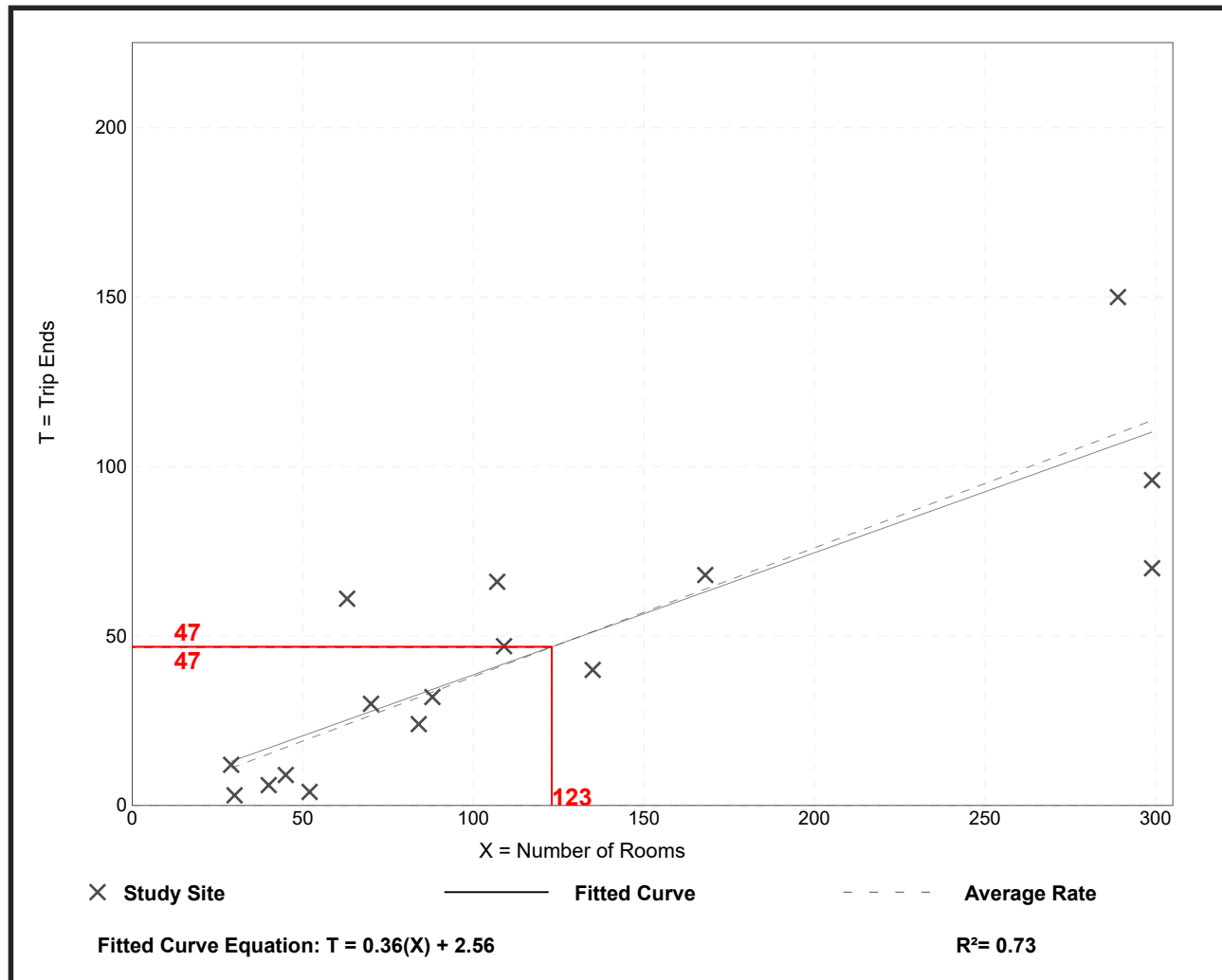
Motel (320)

Vehicle Trip Ends vs: Rooms
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: 16
 Avg. Num. of Rooms: 119
 Directional Distribution: 37% entering, 63% exiting

Vehicle Trip Generation per Room

Average Rate	Range of Rates	Standard Deviation
0.38	0.08 - 0.97	0.17

Data Plot and Equation



Trip Generation Manual, 10th Edition • Institute of Transportation Engineers

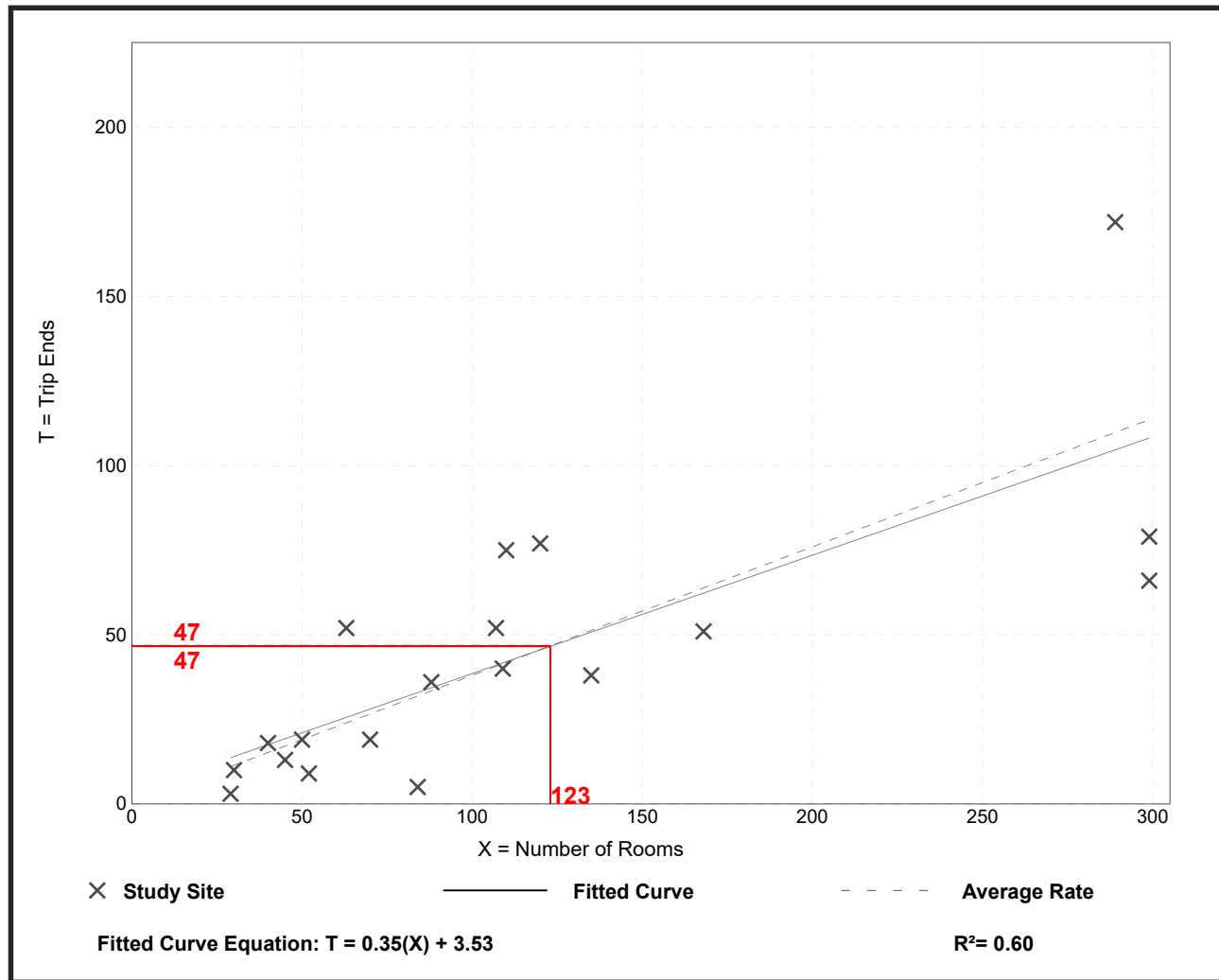
Motel (320)

Vehicle Trip Ends vs: Rooms
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: 19
 Avg. Num. of Rooms: 115
 Directional Distribution: 54% entering, 46% exiting

Vehicle Trip Generation per Room

Average Rate	Range of Rates	Standard Deviation
0.38	0.06 - 0.83	0.19

Data Plot and Equation



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Multifamily Housing (Low-Rise) (220)

Vehicle Trip Ends vs: Dwelling Units
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.

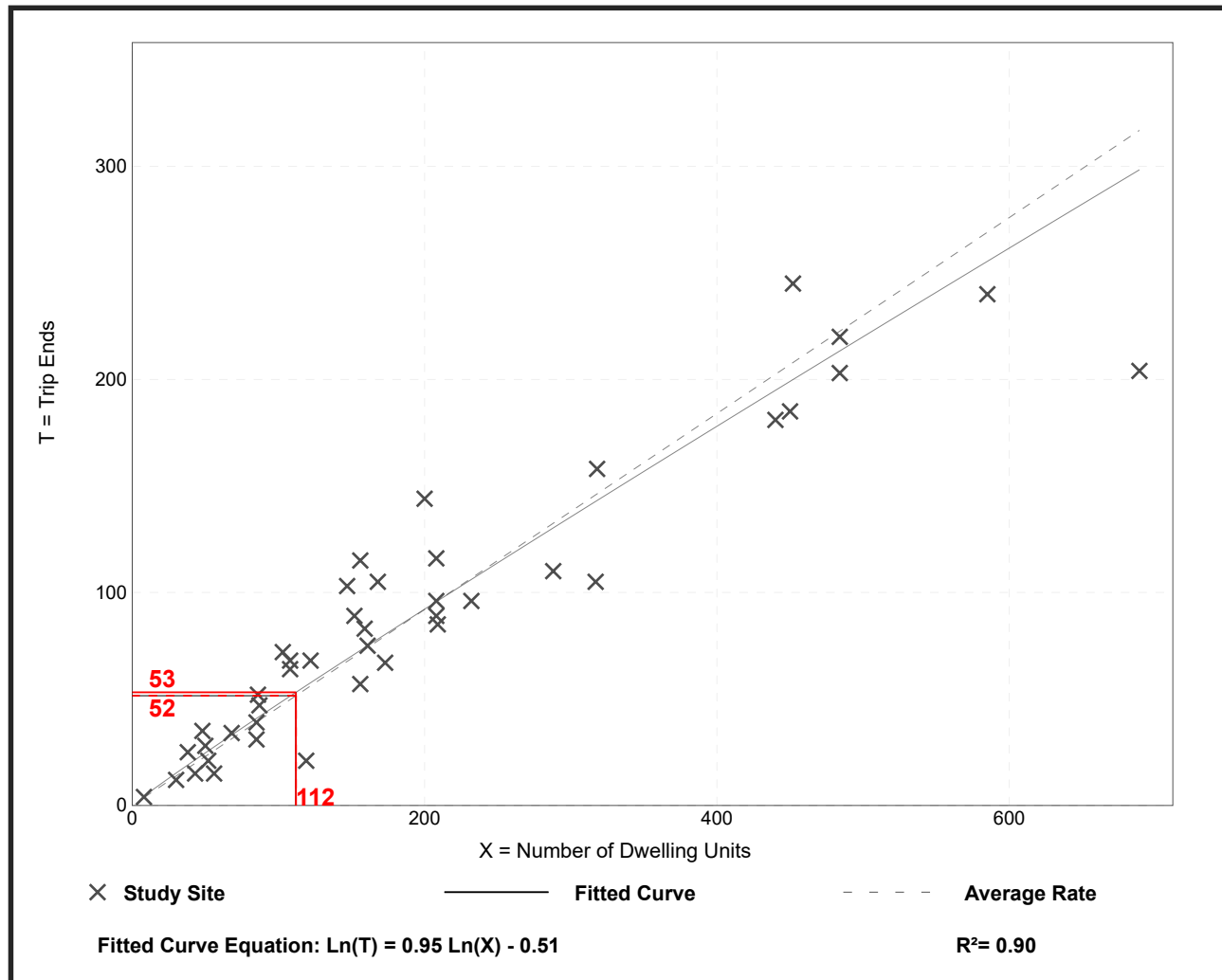
Setting/Location: General Urban/Suburban

Number of Studies: 42
 Avg. Num. of Dwelling Units: 199
 Directional Distribution: 23% entering, 77% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.46	0.18 - 0.74	0.12

Data Plot and Equation



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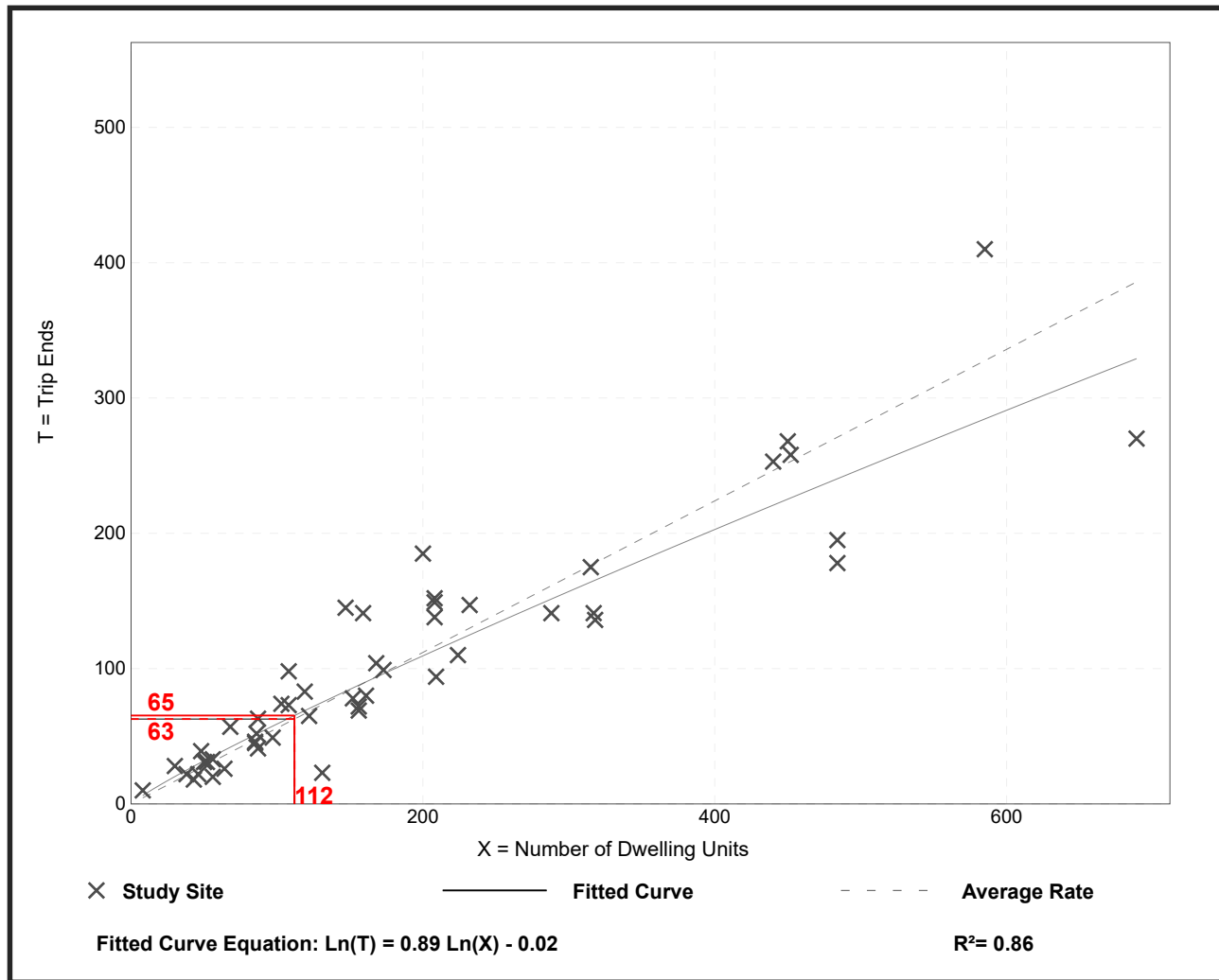
Multifamily Housing (Low-Rise) (220)

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: 50
 Avg. Num. of Dwelling Units: 187
 Directional Distribution: 63% entering, 37% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.56	0.18 - 1.25	0.16

Data Plot and Equation



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Multifamily Housing (Low-Rise) (220)

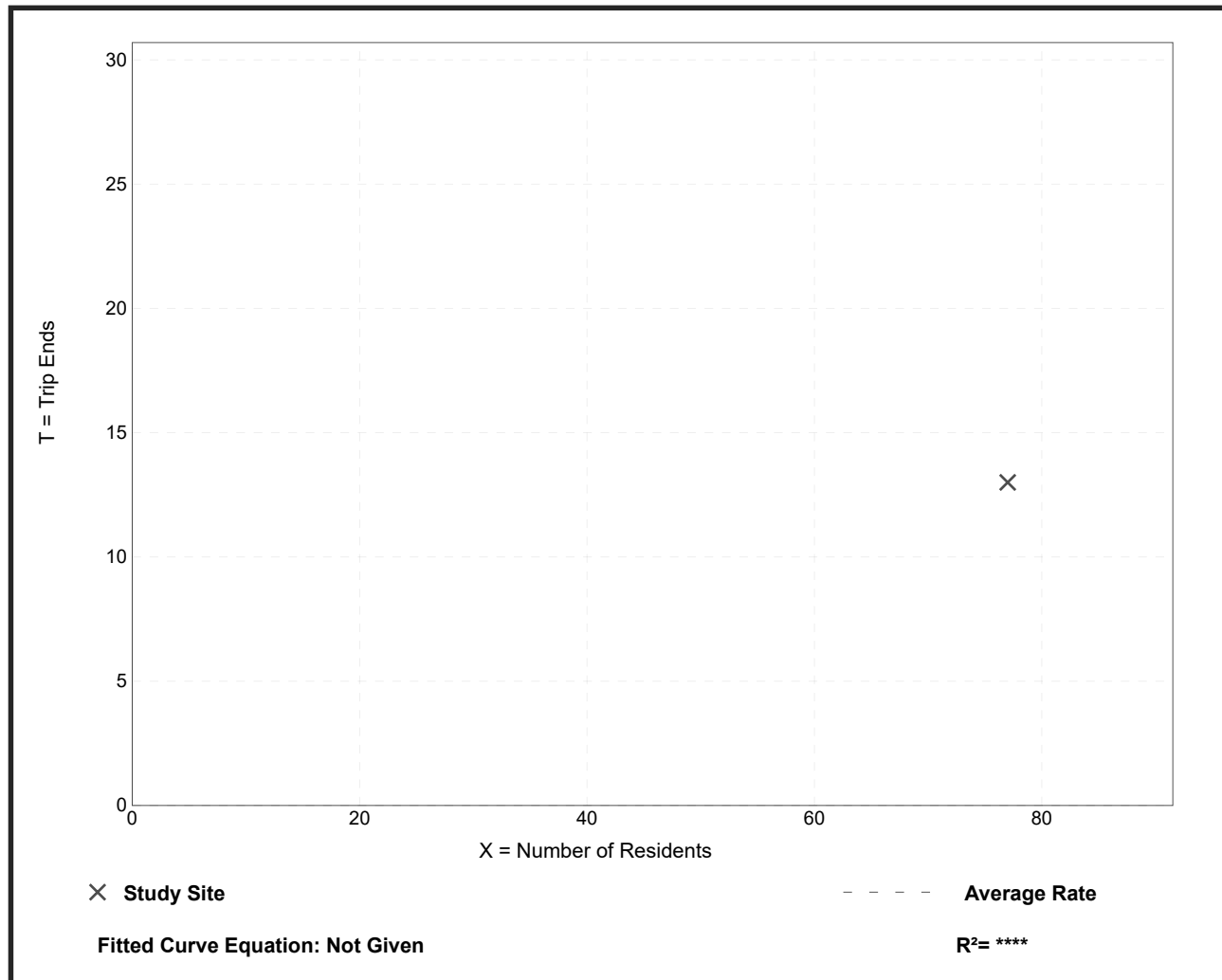
Vehicle Trip Ends vs: Residents
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: General Urban/Suburban
 Number of Studies: 1
 Avg. Num. of Residents: 77
 Directional Distribution: 15% entering, 85% exiting

Vehicle Trip Generation per Resident

Average Rate	Range of Rates	Standard Deviation
0.17	0.17 - 0.17	*

Data Plot and Equation

Caution – Small Sample Size



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Multifamily Housing (Low-Rise) (220)

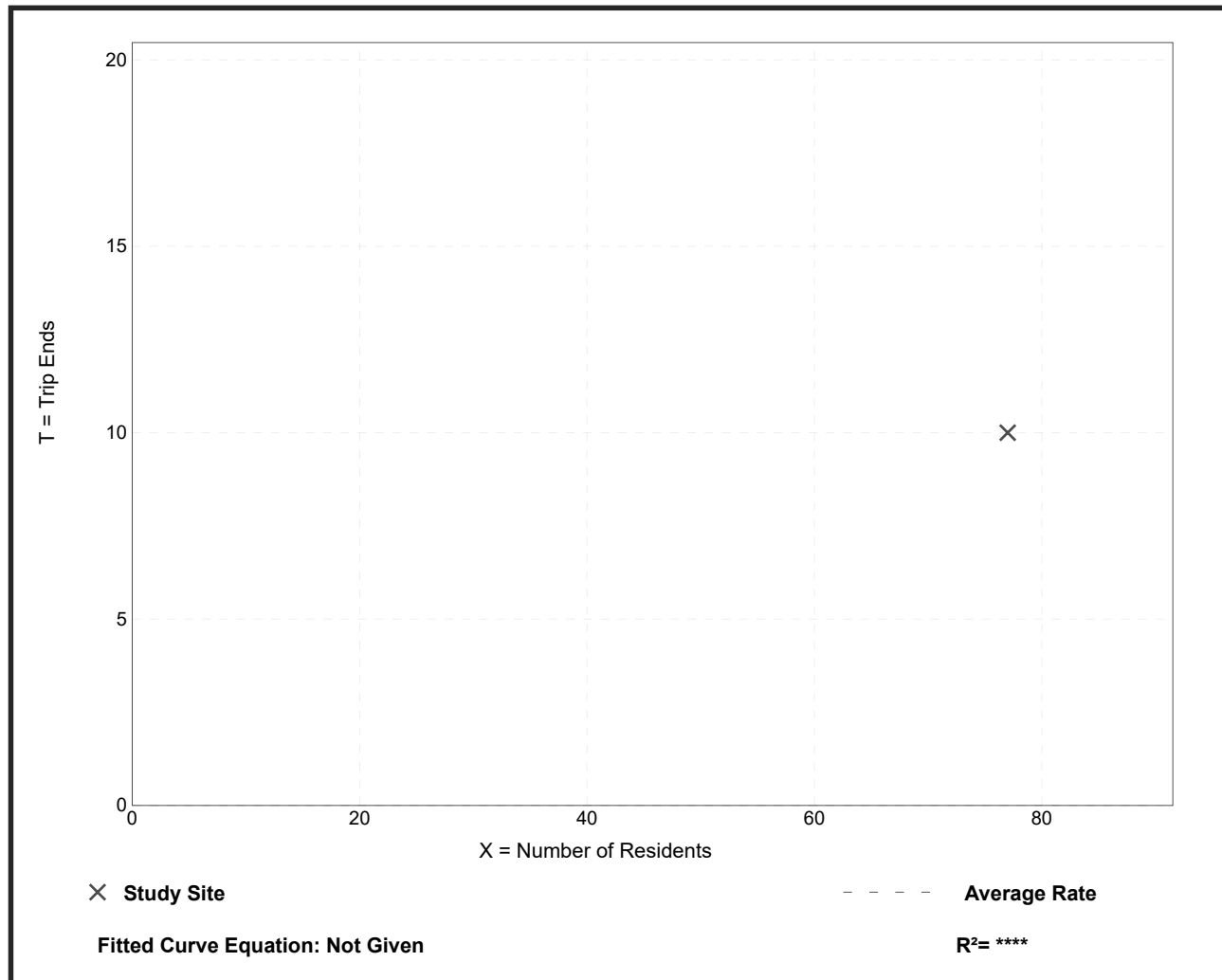
Vehicle Trip Ends vs: Residents
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: General Urban/Suburban
 Number of Studies: 1
 Avg. Num. of Residents: 77
 Directional Distribution: 90% entering, 10% exiting

Vehicle Trip Generation per Resident

Average Rate	Range of Rates	Standard Deviation
0.13	0.13 - 0.13	*

Data Plot and Equation

Caution – Small Sample Size



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