

November 13, 2023

## RE: Johns Creek Retail Development –Trip Generation Memo

A development is proposed in the southwest quadrant of the intersection of McGinnis Ferry Road and Johns Creek Parkway behind Delta Community bank. This lot is currently vacant with full access to both roads via the bank driveways. This memo describes the proposed land uses and the trip generation associated with it.

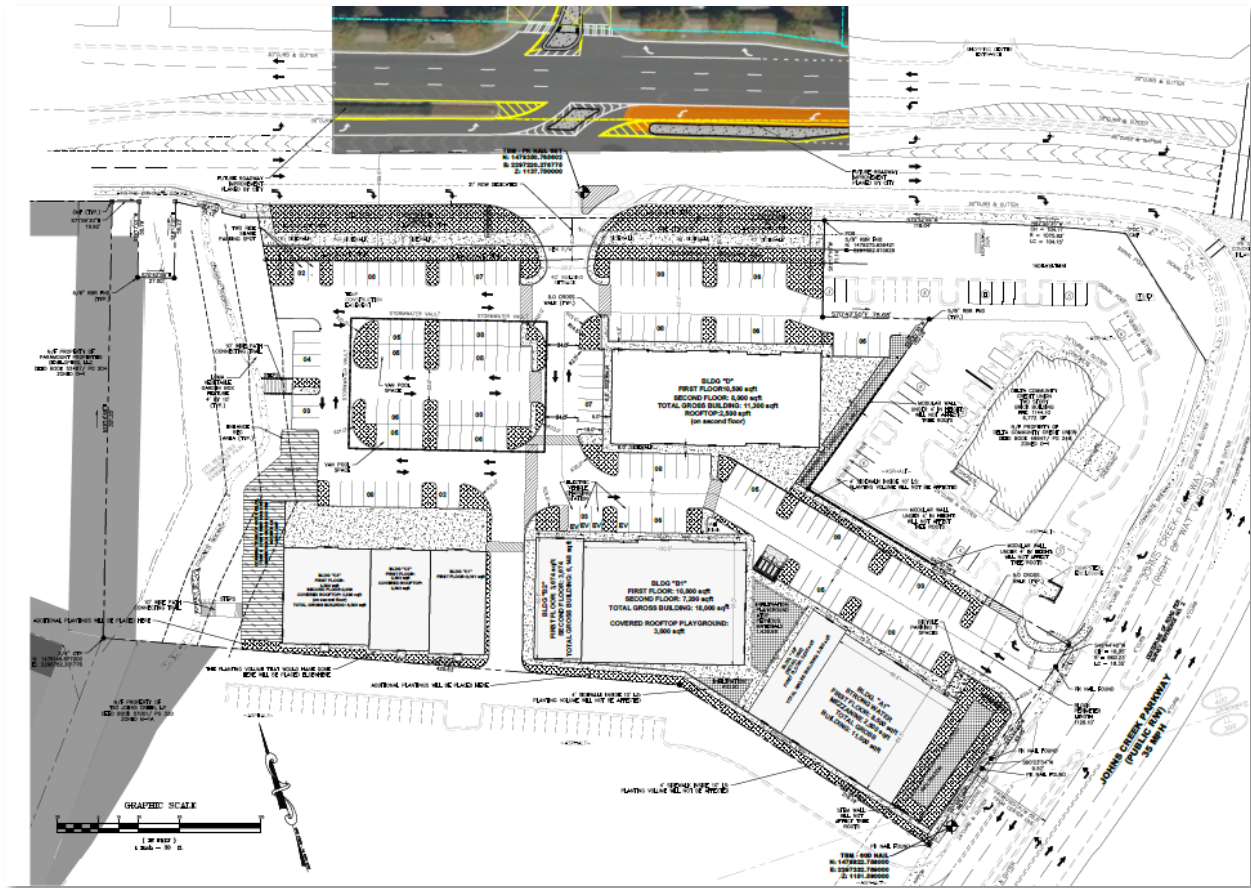
### Site Description and Project Trips



**Figure 1: Aerial view of the proposed development**

The proposed development is outlined in red in the illustrated aerial view in Figure 1. The site plan in Figure 2 shows the land uses and the square footage associated with them. The trip generation estimates are based on the average rates and equations provided in the Institute of Transportation Engineers (ITE) Manual, 11<sup>th</sup> Edition.

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VC-23-0005  
Planning & Zoning



**Figure 2: Proposed Site Plan**

Table 1 shows the proposed land uses and the associated square footages.

**Table 1: Land Use Information**

Building	Land Use	Total Square Footage		Total Square Footage
		First Floor	Second Floor/Mezzanine	
A1	Retail	8,500 SF	2,500 SF	11,000 SF
A2	Retail	2,500 SF	-	2,500 SF
B1	Daycare Center	10,800 SF	7,200 SF	18,000 SF
B2	Medical Office	3,074 SF	3,074 SF	6,148 SF
C1	Medical Office	3,161 SF	-	3,161 SF
C2	High-Turnover (Sit-down) Restaurant	3,303 SF	-	3,303 SF
C3	High-Turnover (Sit-down) Restaurant	4,580 SF	2,000 SF	6,580 SF
D	Retail	10,500 SF	8,000 SF	18,500 SF

Table 2 illustrates the results of the trip generation analysis based on the ITE Manual, 11<sup>th</sup> Edition.

**Table 2: ITE Trip Generation Results**

Land Use Information	Reduction %	Project Trips			Equation Used <sup>1</sup>	In / Out Distribution
		Total	Inbound	Outbound		
<b>822 - Strip Retail Plaza (&lt;40k) (Building A1,A2 &amp; D)</b>		<b>32,000</b>				<b>1000 S.F.</b>
Daily		1,742	871	871	T = 54.45(X)	50% / 50%
AM Peak Hour		76	46	30	T = 2.36(X)	60% / 40%
PM Peak Hour		211	106	105	T = 6.59(X)	50% / 50%
<b>932- High-Turnover (Sit-Down) Restaurant (Building C2 &amp; C3)</b>		<b>9,883</b>				<b>1000 S.F.</b>
Daily		1,059	530	529	T = 107.20(X)	50% / 50%
AM Peak Hour		95	48	47	T = 9.57(X)	51% / 49%
PM Peak Hour		89	54	35	T = 9.05(X)	61% / 39%
Reductions for Pass-By Trips						
Daily	43%	455	228	227		
AM Peak Hour	43%	41	21	20		
PM Peak Hour	43%	38	19	19		
Net New External Vehicle Trips						
Daily		604	302	302		
AM Peak Hour		54	27	27		
PM Peak Hour		51	35	16		
<b>565 - Day Care Center (Building B1)</b>		<b>18,000</b>				<b>1000 S.F.</b>
Daily		74	37	37	T = 4.09(X)	50% / 50%
AM Peak Hour		14	7	7	T = 0.78(X)	53% / 47%
PM Peak Hour		14	7	7	T = 0.79(X)	47% / 53%
Reductions for Pass-By Trips						
Daily	44%	33	16	17		
AM Peak Hour	44%	6	3	3		
PM Peak Hour	44%	6	3	3		
Net New External Vehicle Trips						
Daily		41	21	20		
AM Peak Hour		8	4	4		
PM Peak Hour		8	4	4		
<b>720 - Medical Office (Building B2 &amp; C1)</b>		<b>9,309</b>				<b>1000 S.F.</b>
Daily		292	146	146	T = 42.97(X) - 108.1	50% / 50%
AM Peak Hour		28	22	6	T = e^(0.9LN(X)+1.34)	79% / 21%
PM Peak Hour		35	11	24	T = 4.07(X) - 3.17	30% / 70%
<b>Total Net New External Vehicle Trips</b>						
Daily		<b>2,679</b>	<b>1,340</b>	<b>1,339</b>		
AM Peak Hour		<b>166</b>	<b>99</b>	<b>67</b>		
PM Peak Hour		<b>305</b>	<b>156</b>	<b>149</b>		

From Table 2 it can be observed that the total proposed development generates 2,679 daily trips. It is expected to generate 166 AM Peak hour trips (99 inbound and 67 outbound) and 305 PM peak hour trips (156 inbound and 149 outbound).

If you have any questions/ concerns/ comments, please feel free to reach out to me at 205.222.1034 or email me at [sameer@loweengineers.com](mailto:sameer@loweengineers.com).

Sincerely,



Sameer Patharkar, PE  
Traffic Engineer

## **Attachments**







# High-Turnover (Sit-Down) Restaurant (932)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA  
On a: Weekday

Setting/Location: General Urban/Suburban

Number of Studies: 50

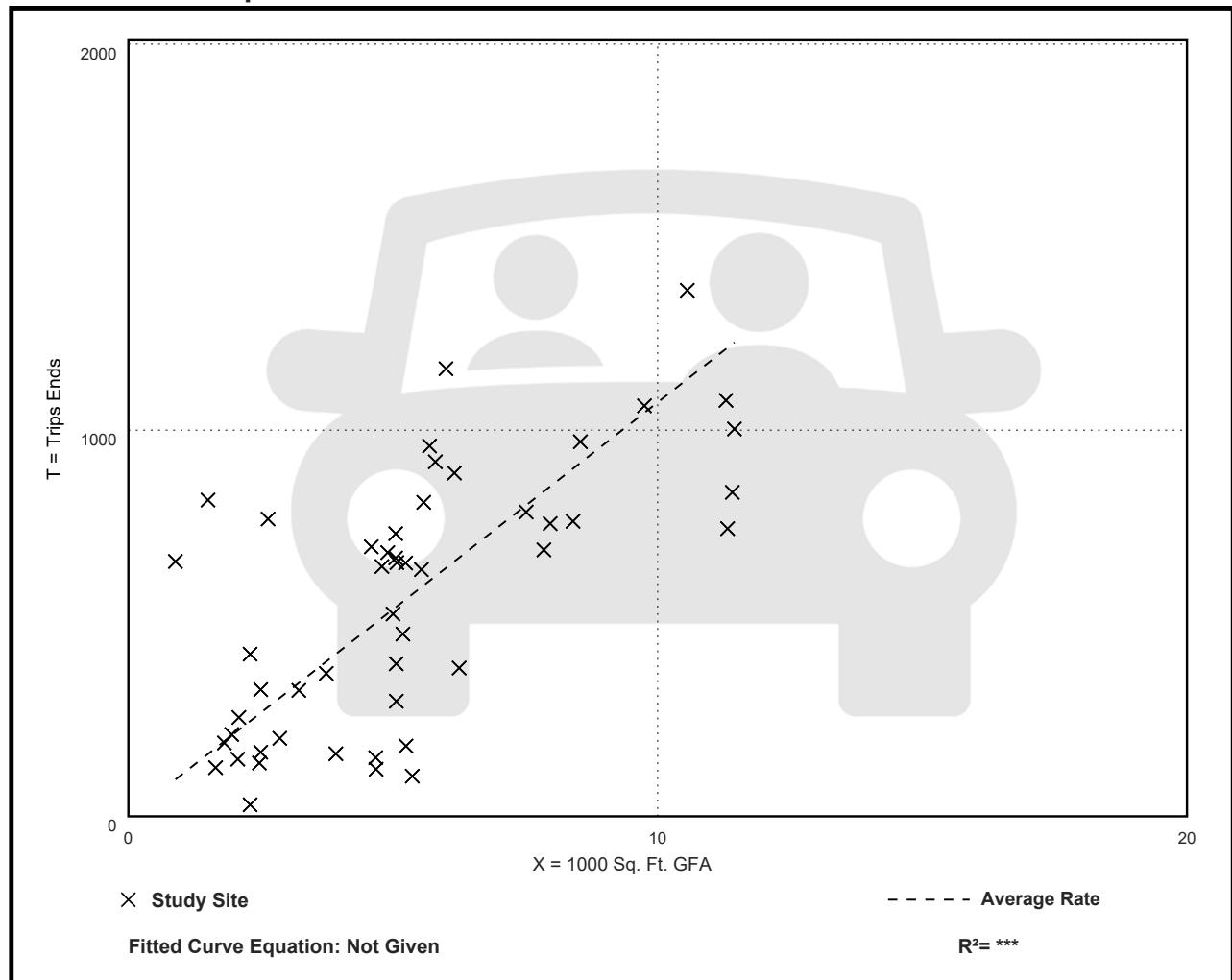
Avg. 1000 Sq. Ft. GFA: 5

Directional Distribution: 50% entering, 50% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
107.20	13.04 - 742.41	66.72

## Data Plot and Equation



# High-Turnover (Sit-Down) Restaurant (932)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA

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: 37

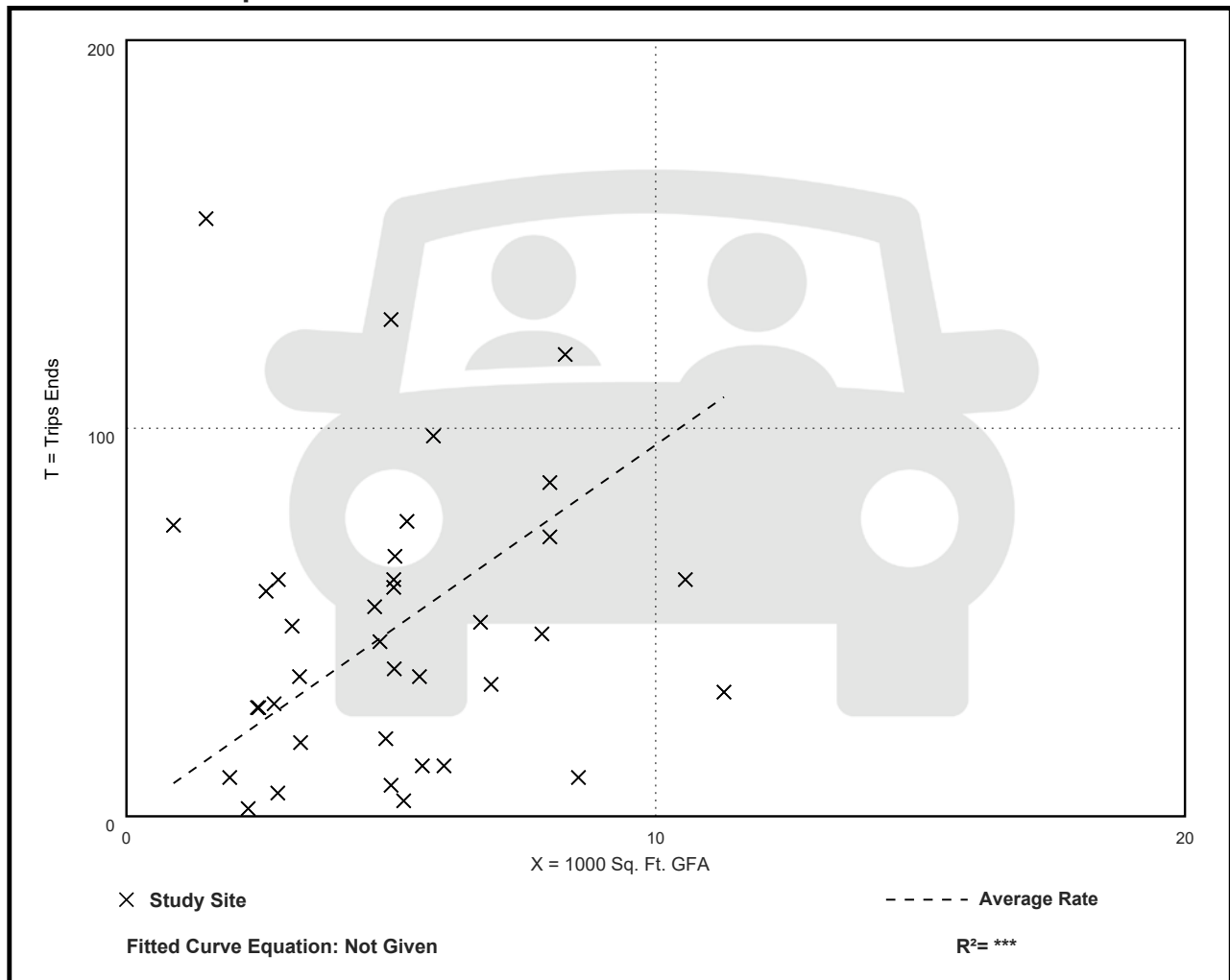
Avg. 1000 Sq. Ft. GFA: 5

Directional Distribution: 55% entering, 45% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
9.57	0.76 - 102.39	11.61

## Data Plot and Equation



# High-Turnover (Sit-Down) Restaurant (932)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA

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: 104

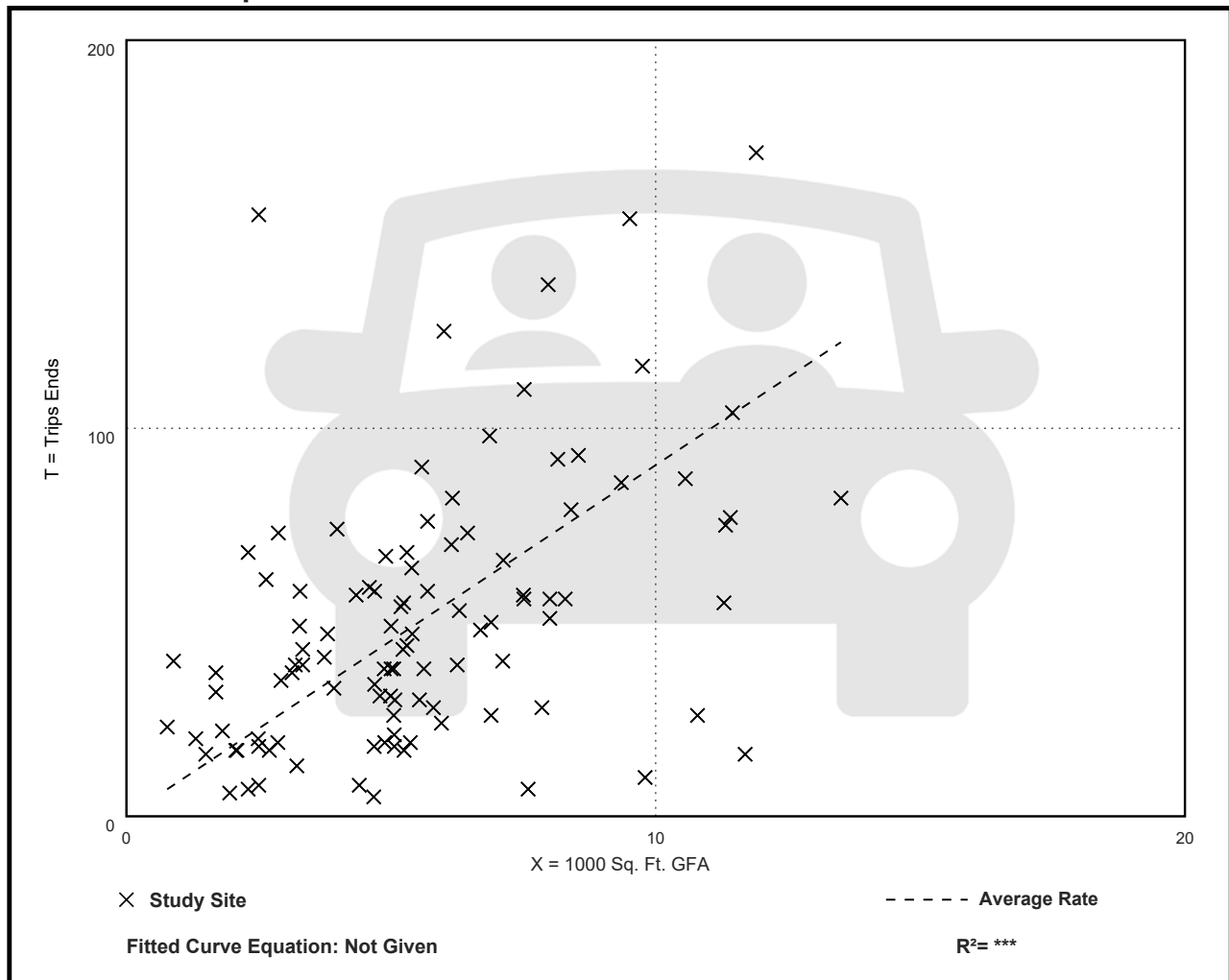
Avg. 1000 Sq. Ft. GFA: 6

Directional Distribution: 61% entering, 39% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
9.05	0.92 - 62.00	6.18

## Data Plot and Equation





# Day Care Center (565)

Vehicle Trip Ends vs: Students  
On a: Weekday

Setting/Location: General Urban/Suburban

Number of Studies: 14

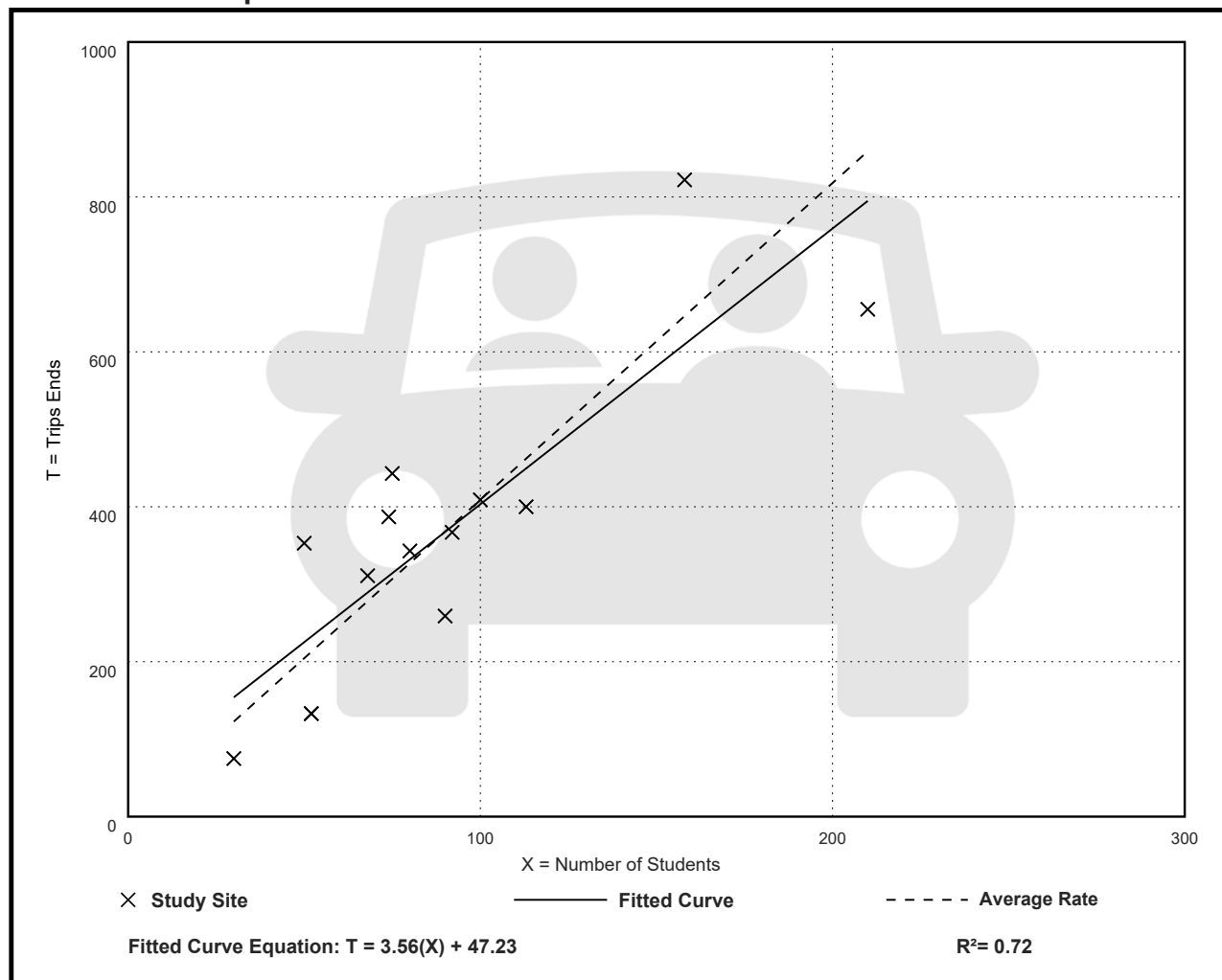
Avg. Num. of Students: 89

Directional Distribution: 50% entering, 50% exiting

## Vehicle Trip Generation per Student

Average Rate	Range of Rates	Standard Deviation
4.09	2.50 - 7.06	1.21

## Data Plot and Equation



# Day Care Center (565)

## Vehicle Trip Ends vs: Students

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: 75

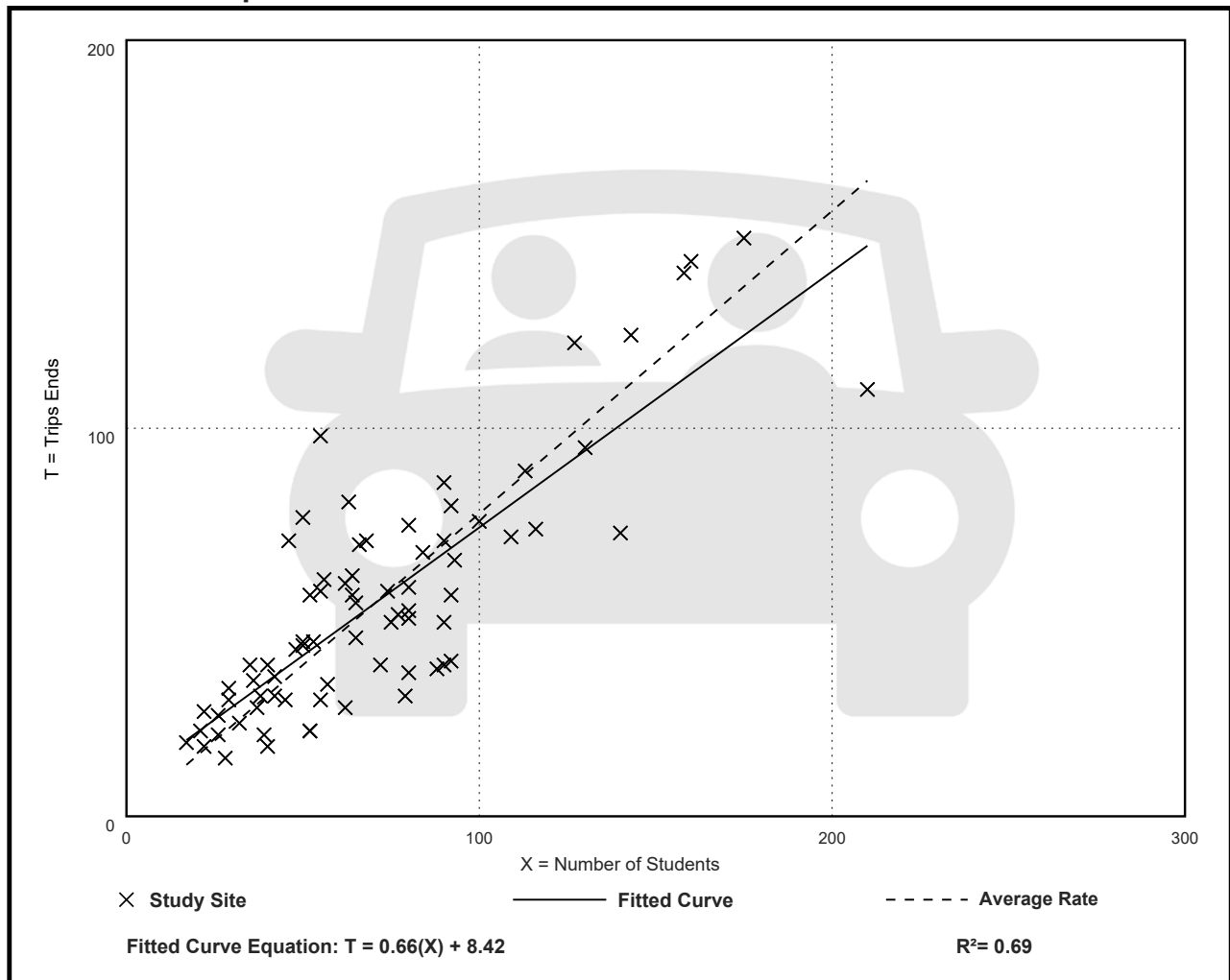
Avg. Num. of Students: 71

Directional Distribution: 53% entering, 47% exiting

## Vehicle Trip Generation per Student

Average Rate	Range of Rates	Standard Deviation
0.78	0.39 - 1.78	0.25

## Data Plot and Equation



# Day Care Center (565)

## Vehicle Trip Ends vs: Students

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: 75

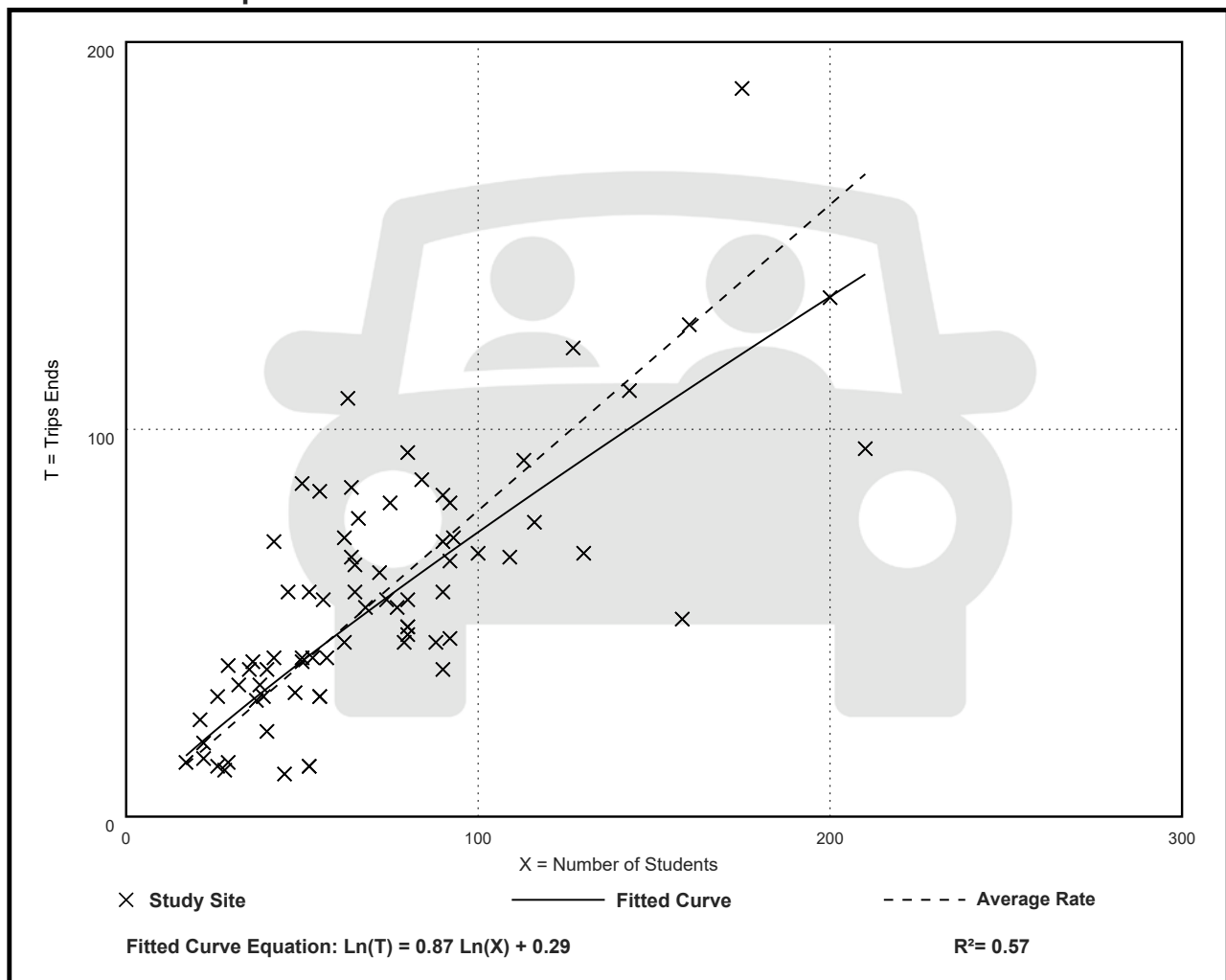
Avg. Num. of Students: 72

Directional Distribution: 47% entering, 53% exiting

## Vehicle Trip Generation per Student

Average Rate	Range of Rates	Standard Deviation
0.79	0.24 - 1.72	0.30

## Data Plot and Equation



# Clinic (630)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA  
On a: Weekday

Setting/Location: General Urban/Suburban

Number of Studies: 9

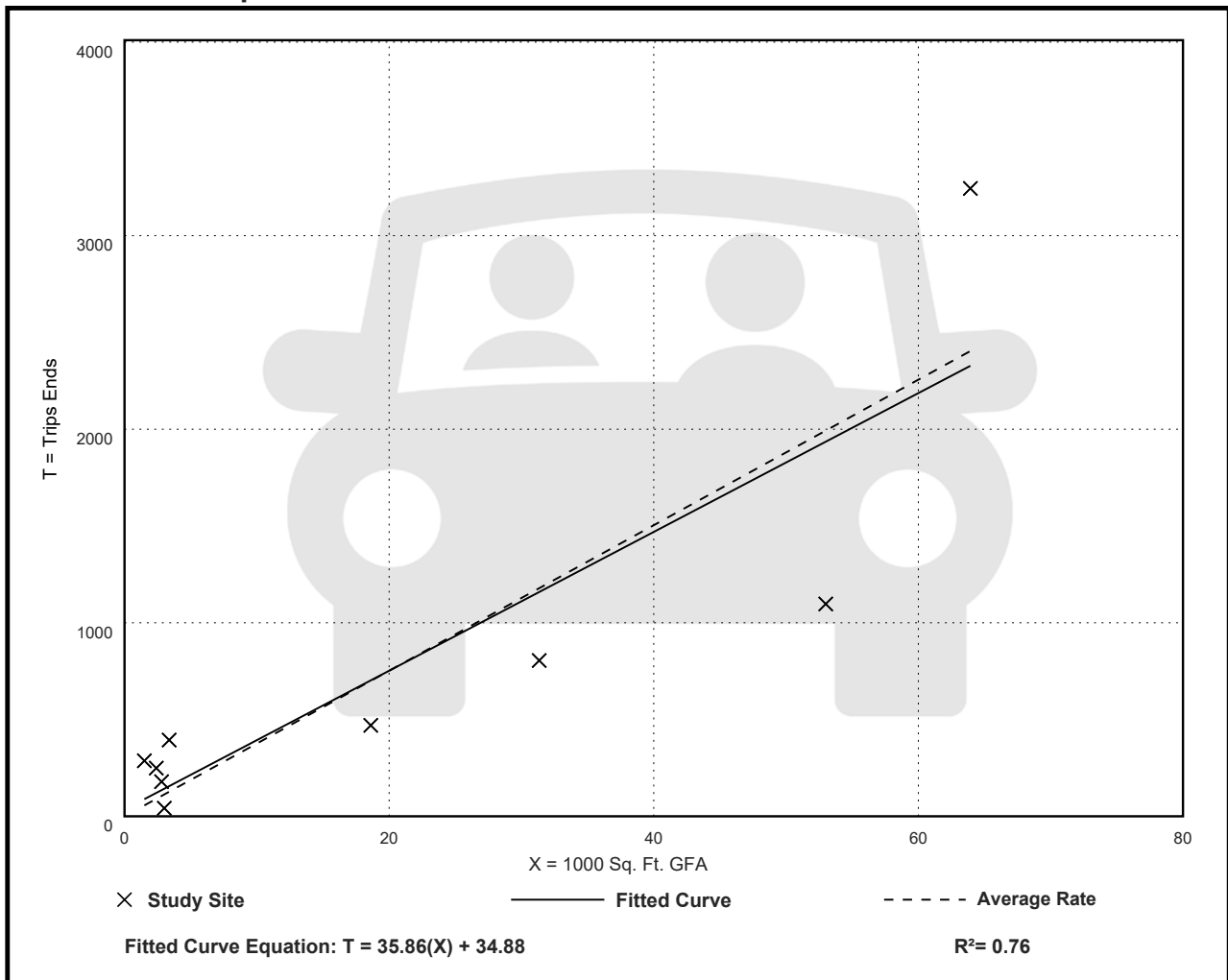
Avg. 1000 Sq. Ft. GFA: 20

Directional Distribution: 50% entering, 50% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
37.60	13.96 - 191.33	25.52

## Data Plot and Equation



# Clinic (630)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA

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: 9

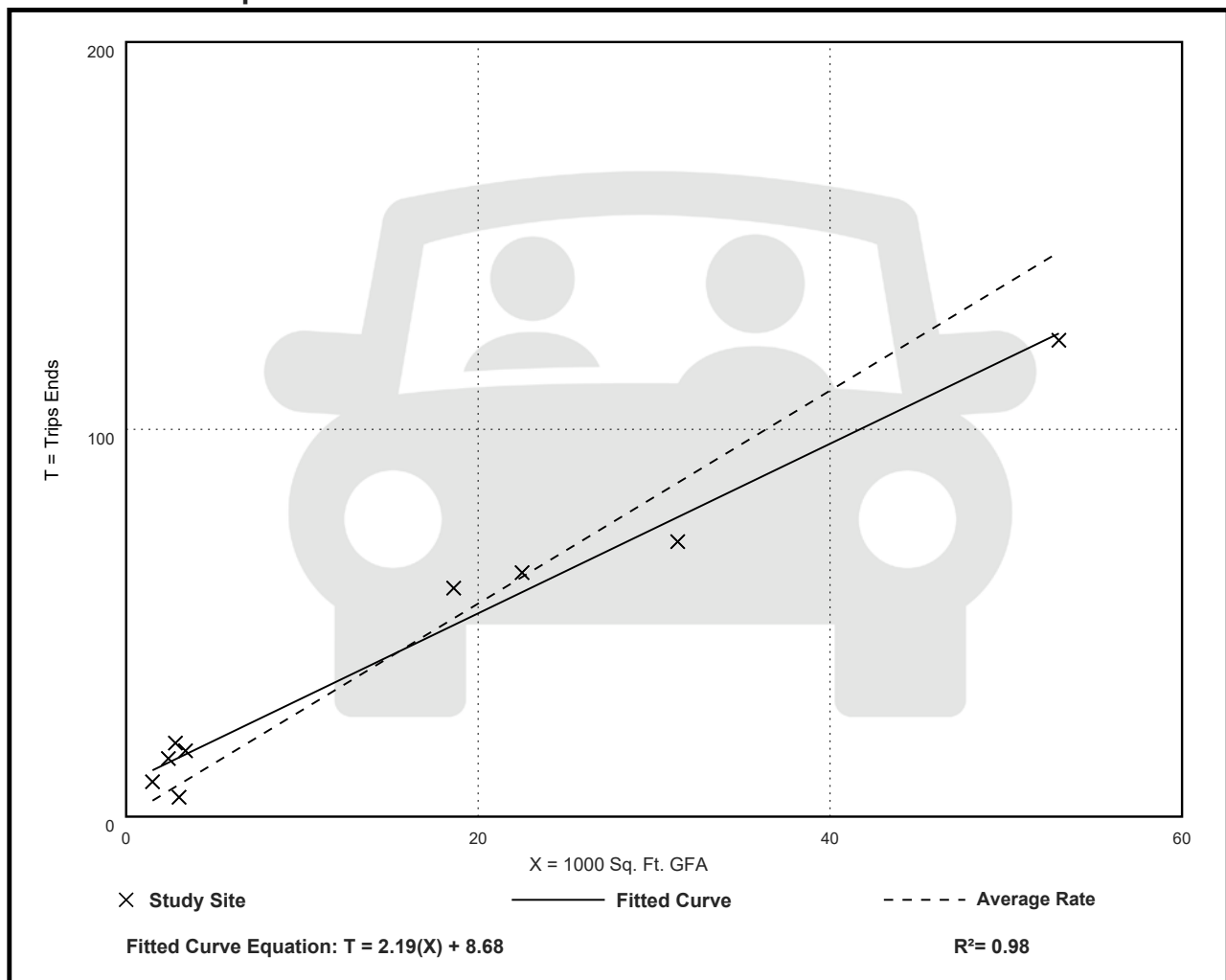
Avg. 1000 Sq. Ft. GFA: 15

Directional Distribution: 81% entering, 19% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
2.75	1.66 - 6.79	1.04

## Data Plot and Equation





# Clinic (630)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA

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: 11

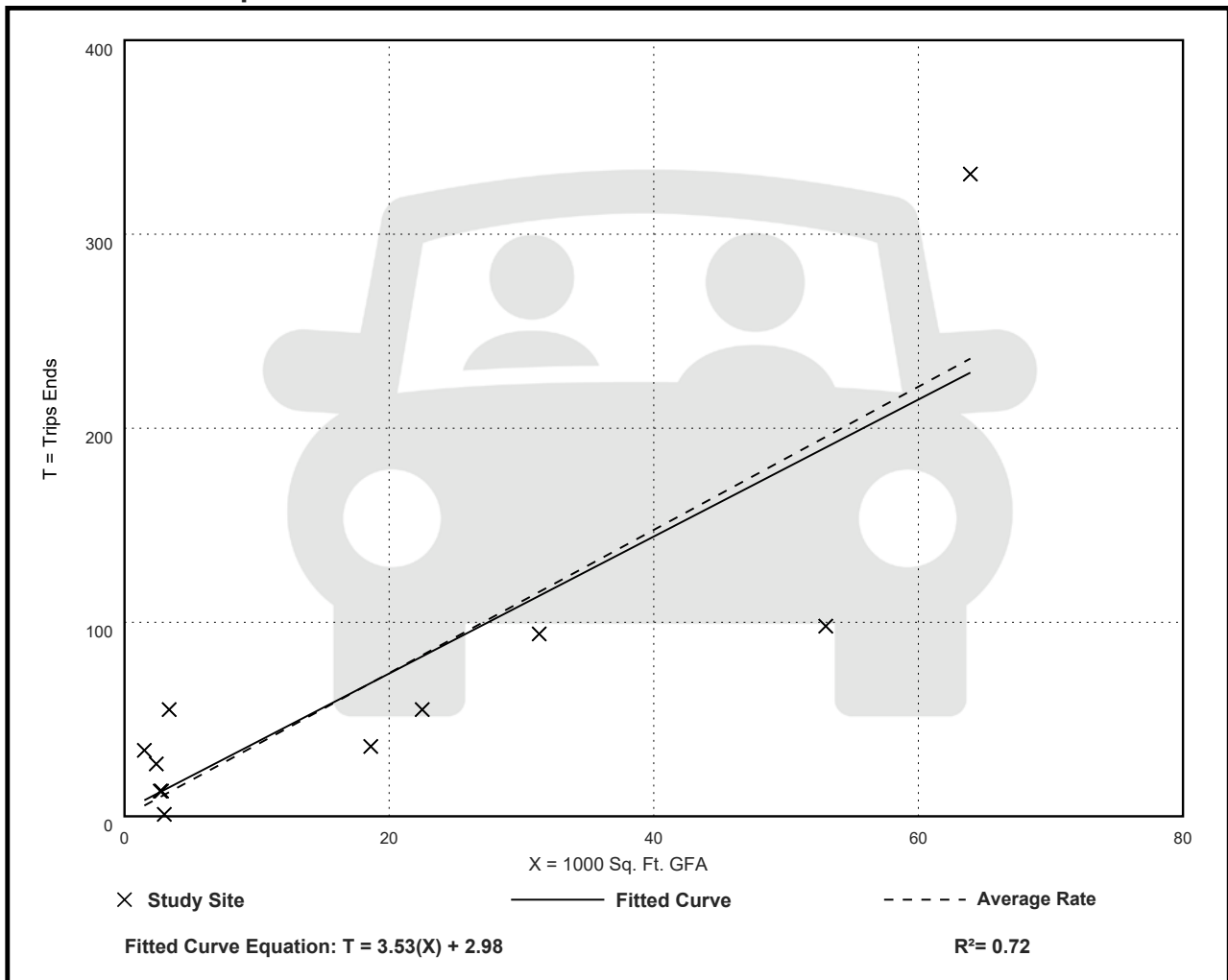
Avg. 1000 Sq. Ft. GFA: 19

Directional Distribution: 30% entering, 70% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
3.69	0.33 - 22.67	3.00

## Data Plot and Equation



# Medical-Dental Office Building - Stand-Alone (720)

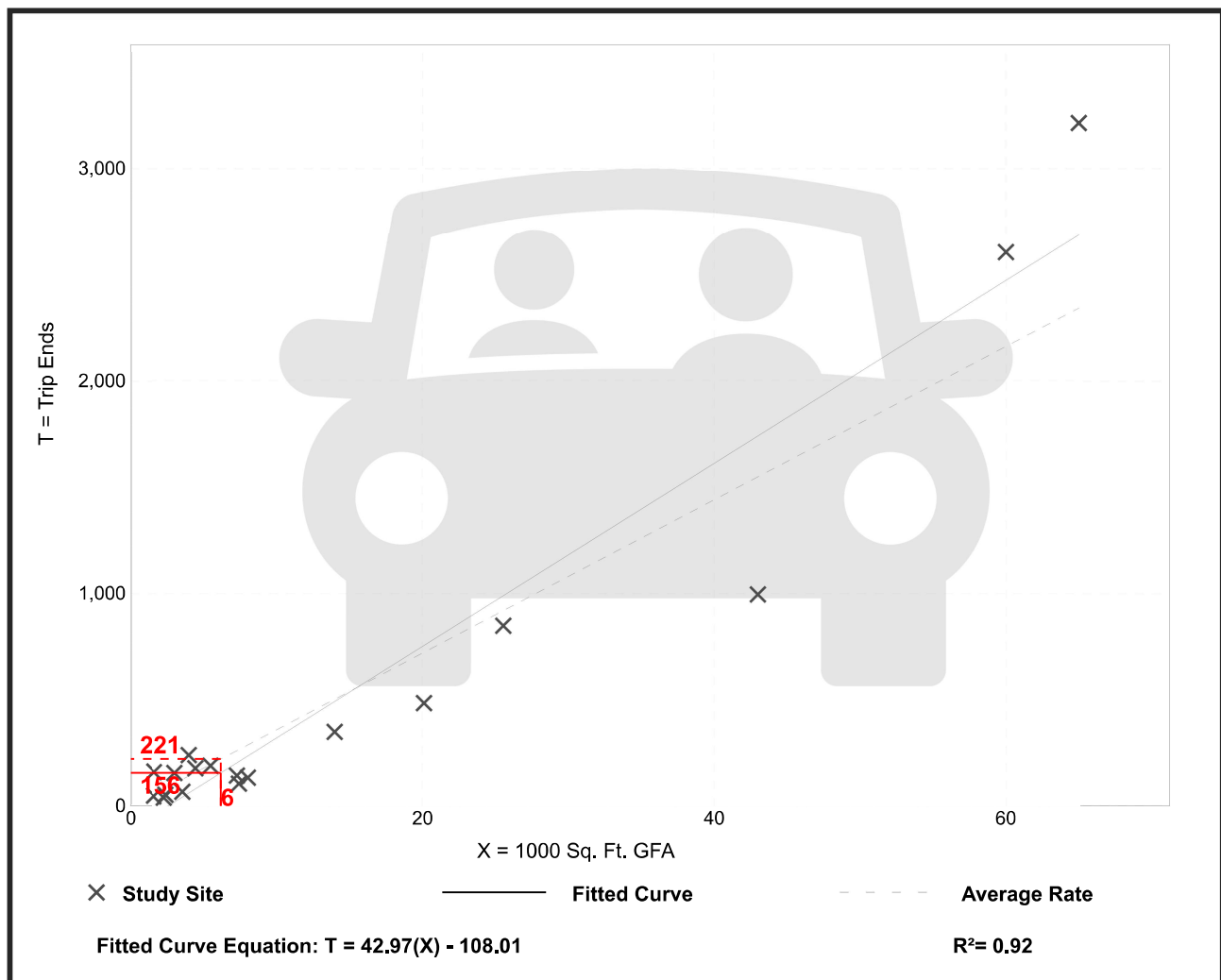
Vehicle Trip Ends vs: 1000 Sq. Ft. GFA  
On a: Weekday

Setting/Location: General Urban/Suburban  
Number of Studies: 18  
Avg. 1000 Sq. Ft. GFA: 15  
Directional Distribution: 50% entering, 50% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
36.00	14.52 - 100.75	13.38

## Data Plot and Equation



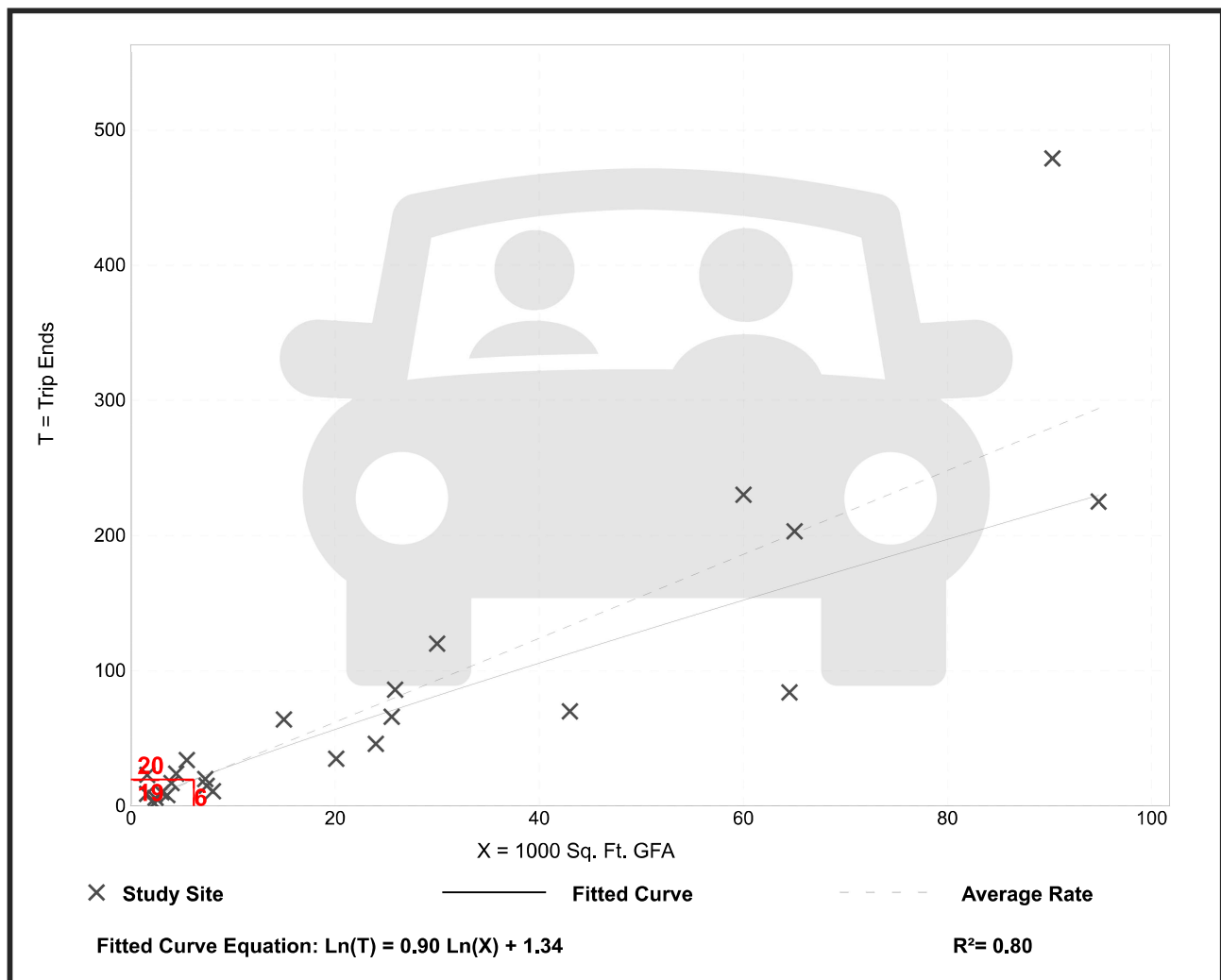
# Medical-Dental Office Building - Stand-Alone (720)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA  
 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: 24  
 Avg. 1000 Sq. Ft. GFA: 25  
 Directional Distribution: 79% entering, 21% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
3.10	0.87 - 14.30	1.49

## Data Plot and Equation



# Medical-Dental Office Building - Stand-Alone (720)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA  
 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: 30  
 Avg. 1000 Sq. Ft. GFA: 23  
 Directional Distribution: 30% entering, 70% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
3.93	0.62 - 8.86	1.86

## Data Plot and Equation

