Date: June 7, 2021

To: Brad Kaul
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Renton, WA 98058

From: Aaron Van Aken, PE, PTOE

Subject: Lacey Gas Convenience & Retail – Land Use & Trip Generation Evaluation

The intent of this memo serves to provide additional site-specific characteristics for the proposed development as it relates to the Neighborhood Commercial Zoning District prescribed in LMC 16.36. Summarized herein is the development proposal of a vacant site within the city of Lacey limits and resulting project design and anticipated activity.

PROJECT DESCRIPTION

The proposed project intends to develop a vacant 1.50-acre parcel (11936340200) within the city of Lacey. The subject property is located on the northeast corner of Willamette Drive NE & Campus Glen Drive NE. The proposal consists of a 12-fueling position gas station with an accompanying 4,000 square foot convenience market, 1,000 square feet of general office space, and 4,000 square feet of general commercial space (unknown tenant at this time). A conceptual site design is presented in Figure 2. The subject site is contained within City of Lacey's Neighborhood Commercial District Zoning where the gas station component is permitted as a conditional use.

Figure 1: Aerial Vicinity

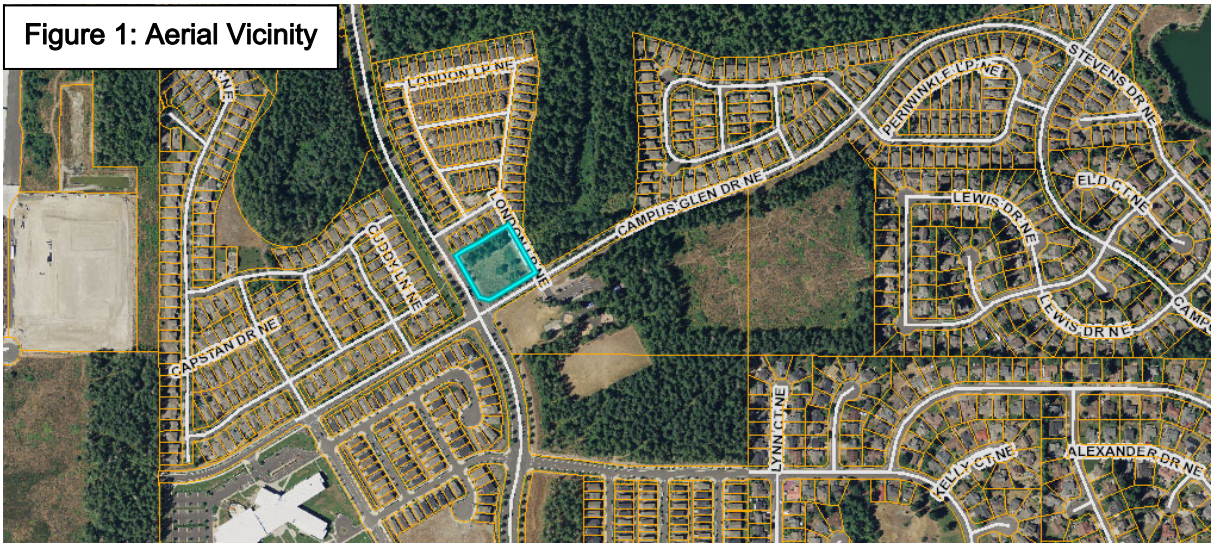
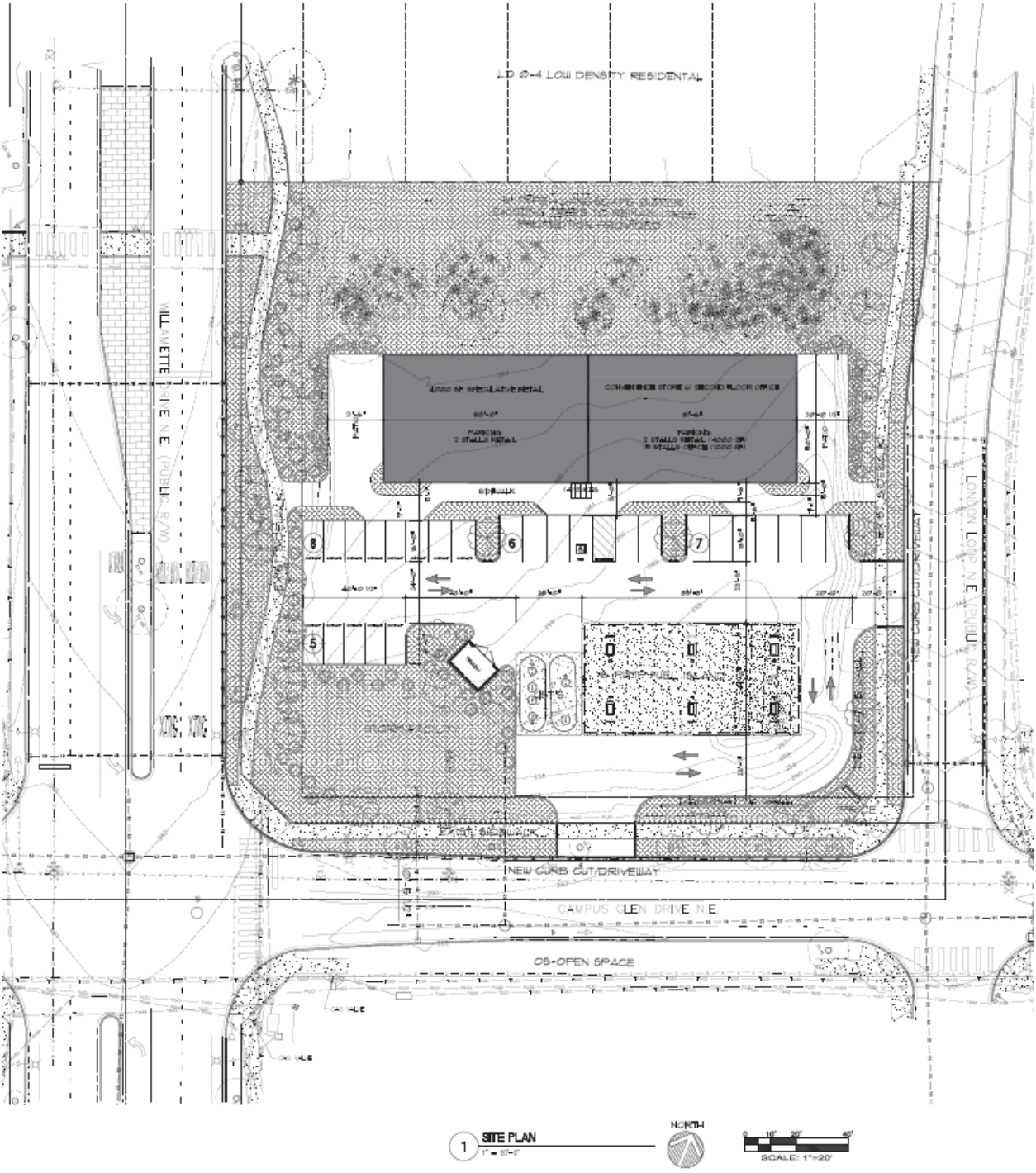


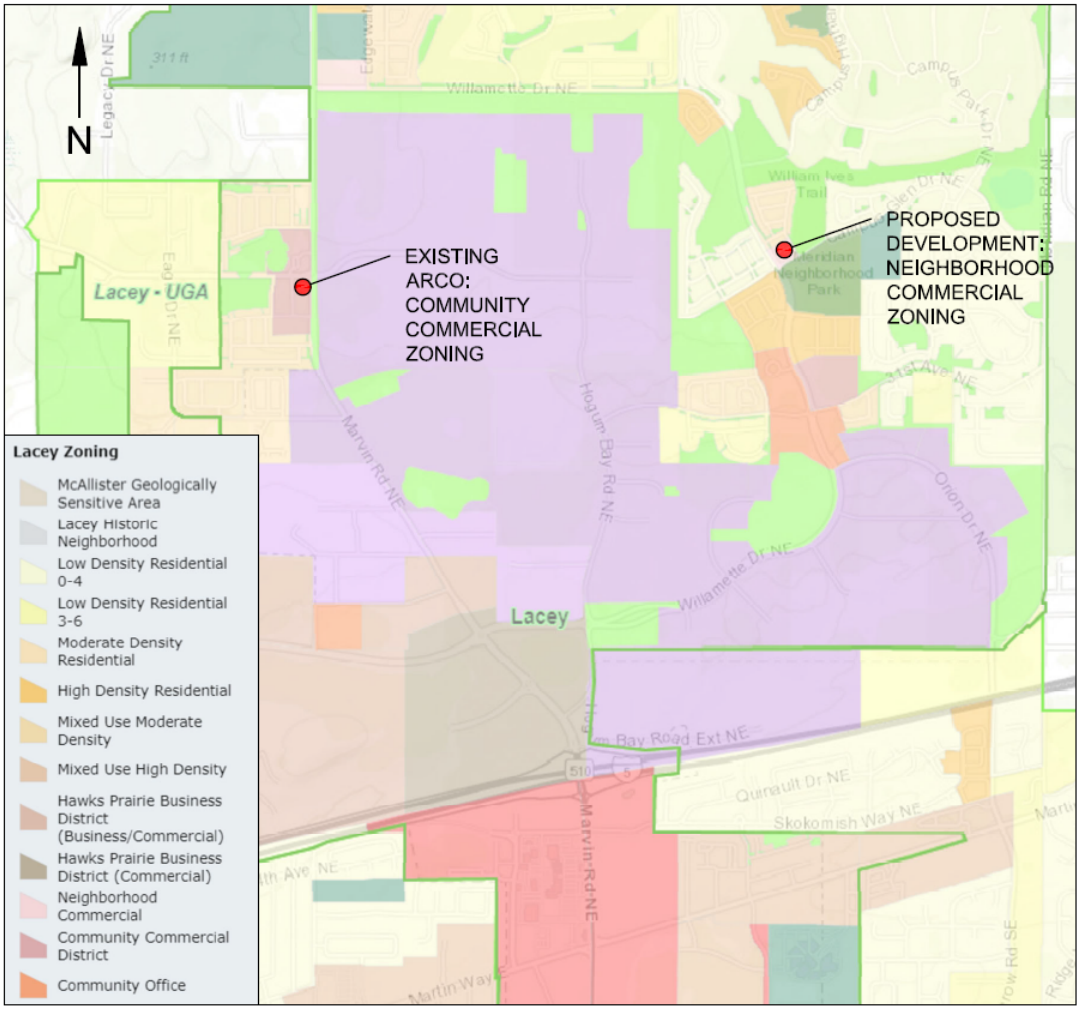
Figure 2: Conceptual Site Plan



PROJECT ZONING

The subject site is located within the City's Neighborhood Commercial District (NCD) zone. Per LMC 16.36.010, the intent of NCD zoning is to provide opportunity for commercial development to meet the needs of the surrounding residential areas. Attention should be made to the overall design and compatibility with respect to the surrounding area and consideration to non-motorist accessibility is prioritized. The figure below illustrates the surrounding zoning and identifies a comparable development located to the west under Community Commercial zoning which is similar in that both have zones have intents of serving the day to day needs of consumers for convenience goods and services

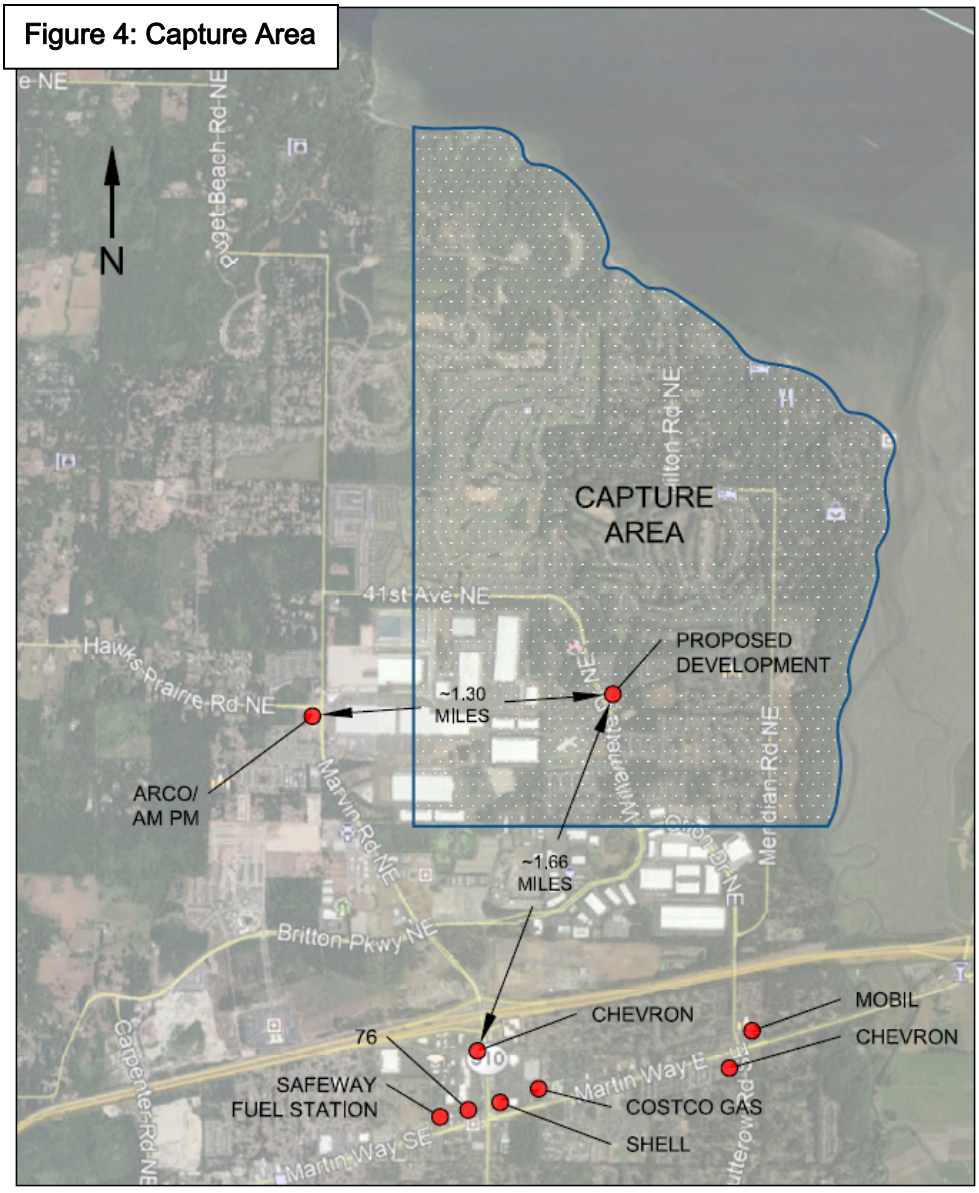
Figure 3: Area Zoning Map – City of Lacey



CAPTURE AREA

The development proposal offering retail space and a gasoline station with convenience market would serve the local residential areas and provide a convenient, walkable location. Figure 4 below illustrates the site's expected capture area which was established based on an aerial survey of nearest similar use locations. As shown, only a single gas station is currently available on the north side of I-5 and is over one mile west of the subject site serving the Marvin Road corridor. The proposed location would meet the needs of the surrounding residents and commuters by allowing an opportunity to purchase quick items and/or fuel their vehicles. As such, the proposed development meets the intent of the NC zoning by providing convenient services to the residents of the surrounding neighborhoods that would otherwise be unavailable.

Figure 4: Capture Area



TRIP GENERATION

Trip generation can be defined as the number of vehicle trips, either arriving or departing, as a result of the subject development. ITE's *Trip Generation,* 10th Edition was referenced to estimate vehicle trips for the proposed land use. As requested, a summary of the trip generating characteristics of the gas station component has been provided and compared against a convenience store offering no fueling service. In review of the ITE manual, Land Use Code (LUC) 853 – Convenience Market with Gasoline Pumps was applied and compared with LUC 851 – Convenience Market which does not encompass fueling services. Per NC zoning, a convenience market is an allowed use. Only with the introduction of fueling services does the convenience market then become a conditional use.

Table 1 below summarizes the estimated project trip generation using ITE average rates. Included are the average daily traffic (ADT) and the AM and PM peak hours.

Table 1: Convenience Market Trip Generation Comparison

Land Use	Size	AWDT	AM Peak-Hour Trips			PM Peak-Hour Trips		
			In	Out	Total	In	Out	Total
Conditional Use Convenience Market w/ Gas Pumps (LUC 853)	4,000 sq. ft.	**2497**	81	81	**162**	98	99	**197**
Allowed Use Convenience Market Only (LUC 851)	4,000 sq. ft.	**3049**	125	125	**250**	100	96	**196**

As shown in the table, ITE data suggests similar or higher activity levels at a convenience market only. Offering fueling services is more of an ancillary use allowing motorists to also fuel their vehicle while utilizing the market. Although the fuel pumps change the proposed use into a conditional use, vehicular activity levels are estimated to be equivalent or lower to that of a standalone market where the site may accommodate additional parking opportunities as opposed space allocated to fuel islands.

It should be noted that trip generation for this land use does not differentiate between a facility constructed along a heavily traveled arterial (i.e.: Marvin Road NE or Martin Way NE) vs. a more lightly traveled roadway such as those that serve the proposed development (i.e.: Campus Glen

Drive NE or Willamette Drive NE). In review of traffic volumes along Willamette Drive NE, the actually trip generation to and from the site may be lower than the values shown in the table.

Moreover, a large proportion of trips associated with gasoline service stations are in the form of pass-by. Pass-by trips are defined as vehicles already captured on the adjacent roadway and are subsequently attracted to the site for a convenience-based stop. These trips are not considered as new trips but will impact the site's access point. Gasoline service stations are largely influenced by convenience of location in relation to the motorist's end destination. As there are no gasoline service stations located north of I-5 in the eastern Hawk's Prairie neighborhood and surrounding area north of the subject site, the proposed development is anticipated to service vehicles within this catchment area passing by the subject site.

The remaining 4,000 square foot commercial building has an unknown tenant at this time. To estimate potential trip generating activity, a conservative assumption of fast-food restaurant without a drive-through window was applied. The table below summarizes vehicular activity with the 4,000 square foot market and gas station and 4,000 square feet of fast-food restaurant.

Table 2: Project Trip Generation Summary

Land Use	Size	AWDT	AM Peak-Hour Trips			PM Peak-Hour Trips		
			In	Out	Total	In	Out	Total
Convenience Market w/ Gas Pumps (LUC 853)	4,000 sq. ft.	**2497**	81	81	**162**	98	99	**197**
Fast Food Rest. No Drive-Thru (LUC 933)	4,000 sq. ft.	**1385**	60	40	**100**	56	57	**113**
	Total	**3882**	141	121	**262**	154	156	**310**

In total, the project may generate 3,882 average daily vehicles with 262 trips occurring in the AM peak hour and 310 trips in the PM peak hour. This development, zoned within Neighborhood Commercial, is intended to create pockets of retail so as to eliminate the need for potential trips entering further in the city. The convenience market and commercial space would serve the surrounding and adjacent residential communities.

PEAK TRAVEL TIME COMPARISON

According the ITE's data, the following peak trip generation is recorded for the corresponding land uses outlined in Table 3 below. As requested, peak periods associated with both a convenience market only compared to a market offering fueling services is provided.

Table 3: Vehicular Peak Daily Traffic

Land Use	Peak Hours of Daily Traffic
LUC 853: Convenience Market (With Gas)	7:30 – 8:30 AM & 4:45 – 5:45 PM
LUC 851: Convenience Market (No Gas)	9:30 – 10:30 AM & 4:45 – 5:45 PM

A convenience market with gas station is shown to have an earlier morning peak hour when compared to standalone convenience market. This can be attributed to drivers fueling their motor vehicles via their morning commute. The PM peak periods are comparable with the adjacent street's peak hour.

TRIP GENERATION COMPARISON FOR ALLOWED USES

Land uses permitted within Lacey's Neighborhood Commercial zone include restaurants, grocery stores, banks and more. For estimation purposes, the following land uses identified under ITE's *Trip Generation,* 10th Edition are shown for comparison:

- LUC 565 – Day Care
- LUC 930 – Fast Casual Restaurant
- LUC 936 – Coffee Shop without Drive-Through

Table 4 on the following page summarizes the estimated project trip generation using ITE average rates for the above land uses. Included are the average weekday daily traffic (AWDT) and the AM and PM peak hours.

Table 4: Project Trip Generation Comparison

Land Use	Size	AWDT	AM Peak-Hour Trips			PM Peak-Hour Trips		
			In	Out	Total	In	Out	Total
Day Care (LUC 565)	4,000 sq. ft.	**190**	23	21	**44**	20	24	**44**
Fast Casual Restaurant (LUC 930)	4,000 sq. ft.	**1261**	5	3	**8**	31	26	**57**
Coffee/Donut Shop w/o D-T Window (LUC 936)	4,000 sq. ft.	**N/A**	206	199	**405**	72	73	**145**

Shown in the table above are other permitted land uses within the City's NC zoning.

NON-MOTORIST ACCESS & SAFETY

The surrounding area offers a complete network of multi-modal infrastructure in the form of continuous sidewalk paths and dedicated bike lanes, which encourage alternative modes of transport. Additionally, marked pedestrian crosswalks and pedestrian signage alerting oncoming drivers are available at intersections in the vicinity of the subject site. Individuals living in the nearby residential developments would have connectivity via continuous walking paths and bike lanes to the amenities provided at the subject site. Sidewalk paths are to be constructed internal to the subject site, connecting to the surrounding roadways existing non-motorist infrastructure on Willamette Drive NE and London Loop NE.

Vehicular site access will be restricted to one driveway off Campus Glen Drive NE and one driveway off London Loop NE. As illustrated in the site plan (see Figure 2), pedestrian access is separated from vehicular access. The site may also attract and encourage alternative transport modes by providing secure bike parking and outdoor patios with wide walkways. No safety concerns are identified at this time regarding non-motorist access and overall site design.

CONCLUSION

The development proposals includes a 12-fueling position gas station with a 4,000 square foot convenience market, 1,000 square foot office, and 4,000 square feet of additional commercial space. The subject property is located within Neighborhood Commercial District zoning which permits commercial facilities that cater to the day to day needs of consumers concerning convenience goods and services. An examination of the nearby vicinity shows no comparable developments indicating that the proposal could fit within the zoning by meeting the needs of the local area.

In review of the City's code, a convenience market would be an outright allowed use. However, a convenience market with ancillary gasoline pumps would then become a conditional use. Based on ITE data, no material difference in the trip generation characteristics was identified between the two land uses indicating that the fueling activity does not create an additional demand above and beyond a standalone market. Furthermore, with no fueling services in the immediate vicinity, the gas station component may better serve the nearby area and reduce vehicle miles traveled in the city with residents who currently fuel at further away locations.

The site has separated pedestrian access from vehicular access and intends to provide on-site bike storage. Willamette Drive NE and the surrounding roadways offer complete sidewalks and/or bike lanes to facilitate non-motorist mobility to and from the site. The convenience market offered at this location is expected to generate similar trips irrespective of the fueling service given the limited commercial opportunities in the area. Most trips are expected to be from vehicles already passing by the site as motorists leave and return home. Overall, the project appears to meet the intent of the Neighborhood Commercial District zoning.

Please call if you require additional information.

Aaron Van Aken, PE, PTOE

Convenience Market with Gasoline Pumps
(853)

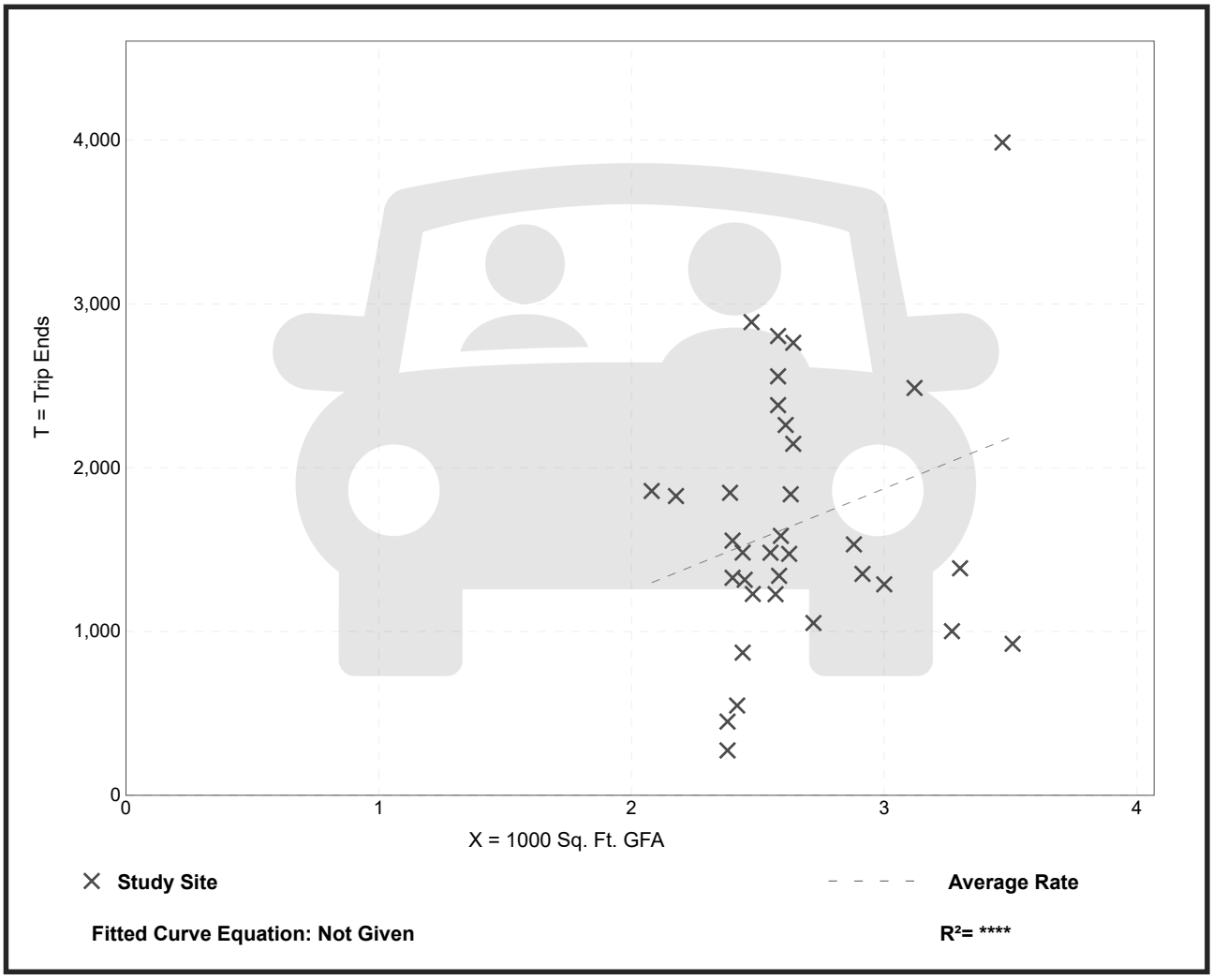
Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday**

Setting/Location: **General Urban/Suburban**
Number of Studies: 34
Avg. 1000 Sq. Ft. GFA: 3
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
624.20	115.13 - 1167.27	283.35

Data Plot and Equation



Trip Gen Manual, 10th Ed + Supplement ● Institute of Transportation Engineers

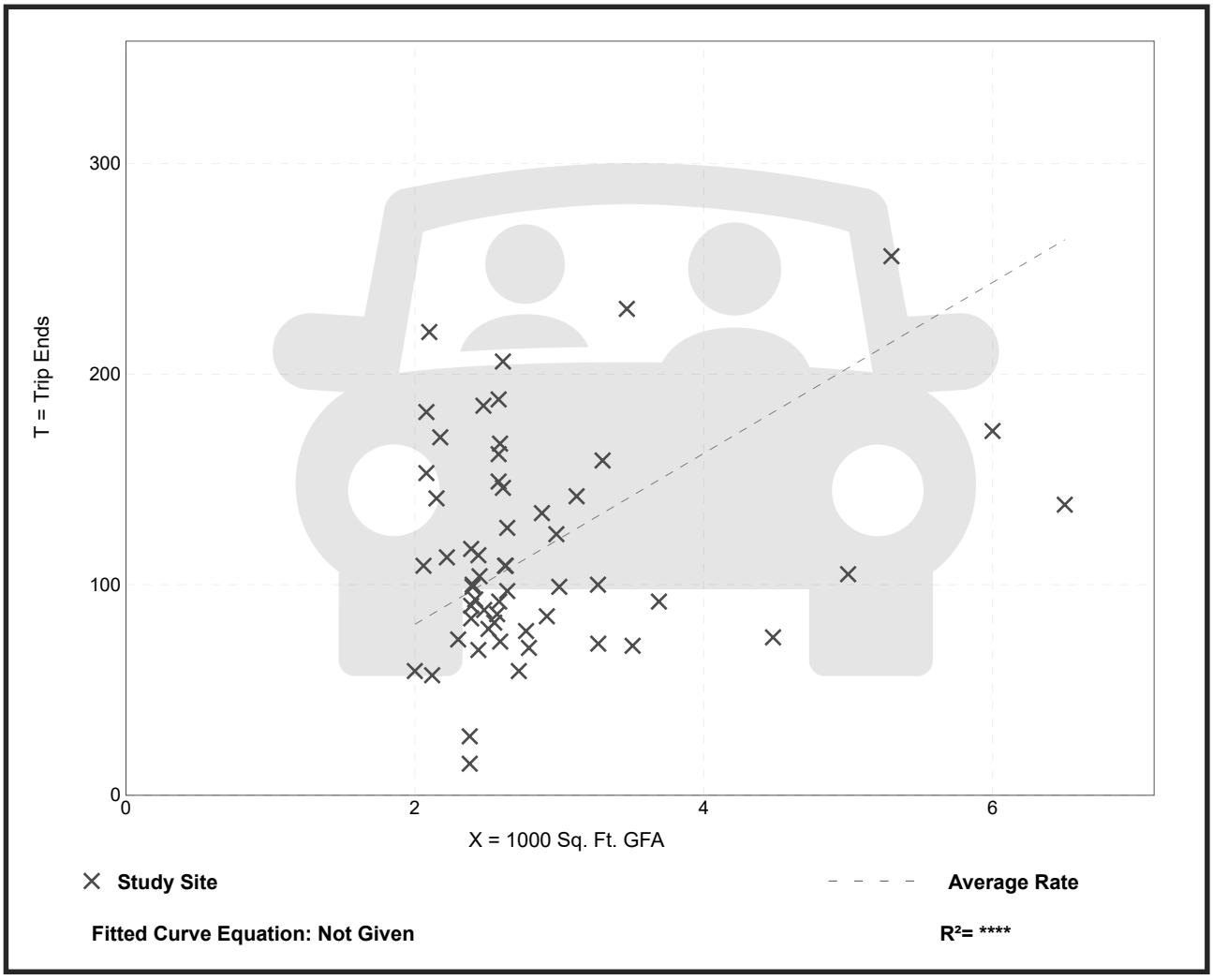
Convenience Market with Gasoline Pumps
(853)

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:	57
Avg. 1000 Sq. Ft. GFA:	3
Directional Distribution:	50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
40.59	6.30 - 104.76	19.18

Data Plot and Equation



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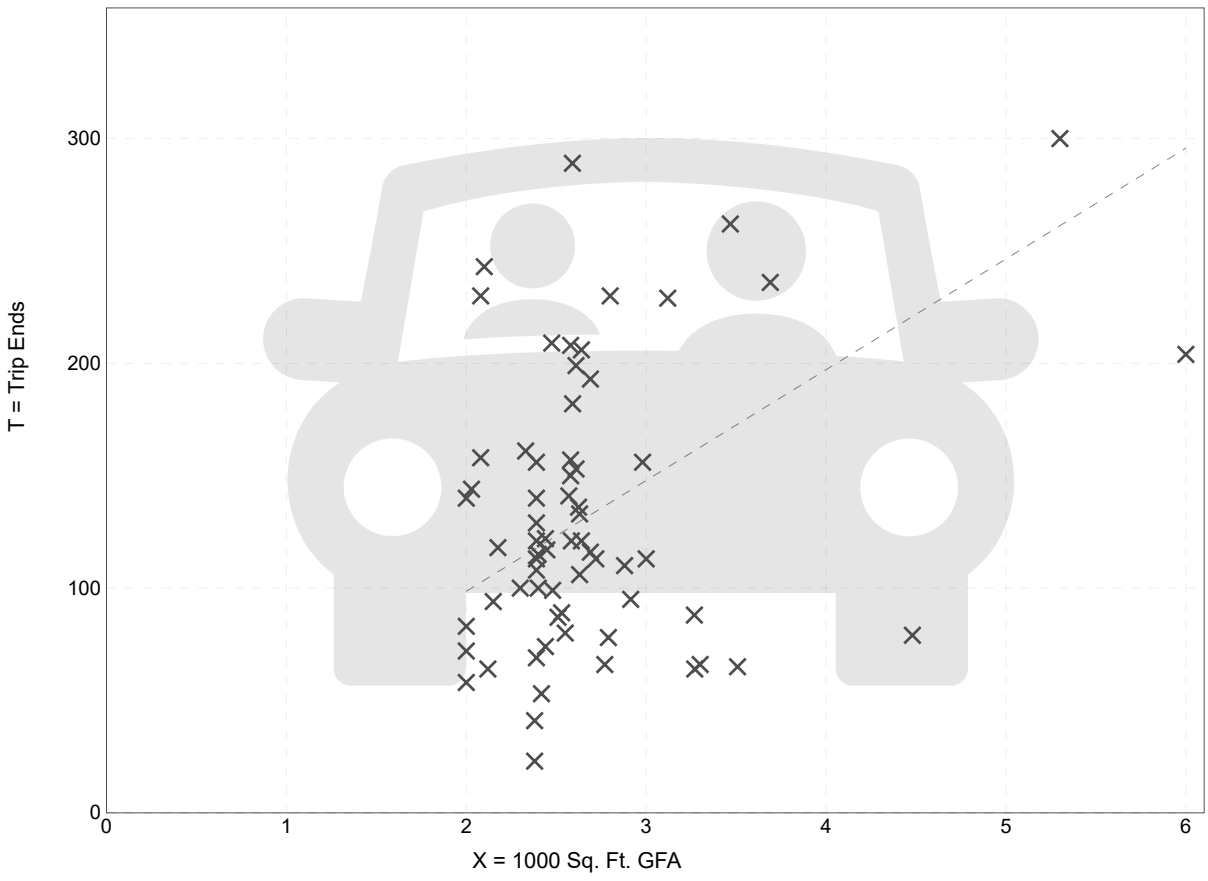
Convenience Market with Gasoline Pumps
(853)

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: 67
Avg. 1000 Sq. Ft. GFA: 3
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
49.29	9.66 - 115.71	22.49

Data Plot and Equation



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Convenience Market
(851)

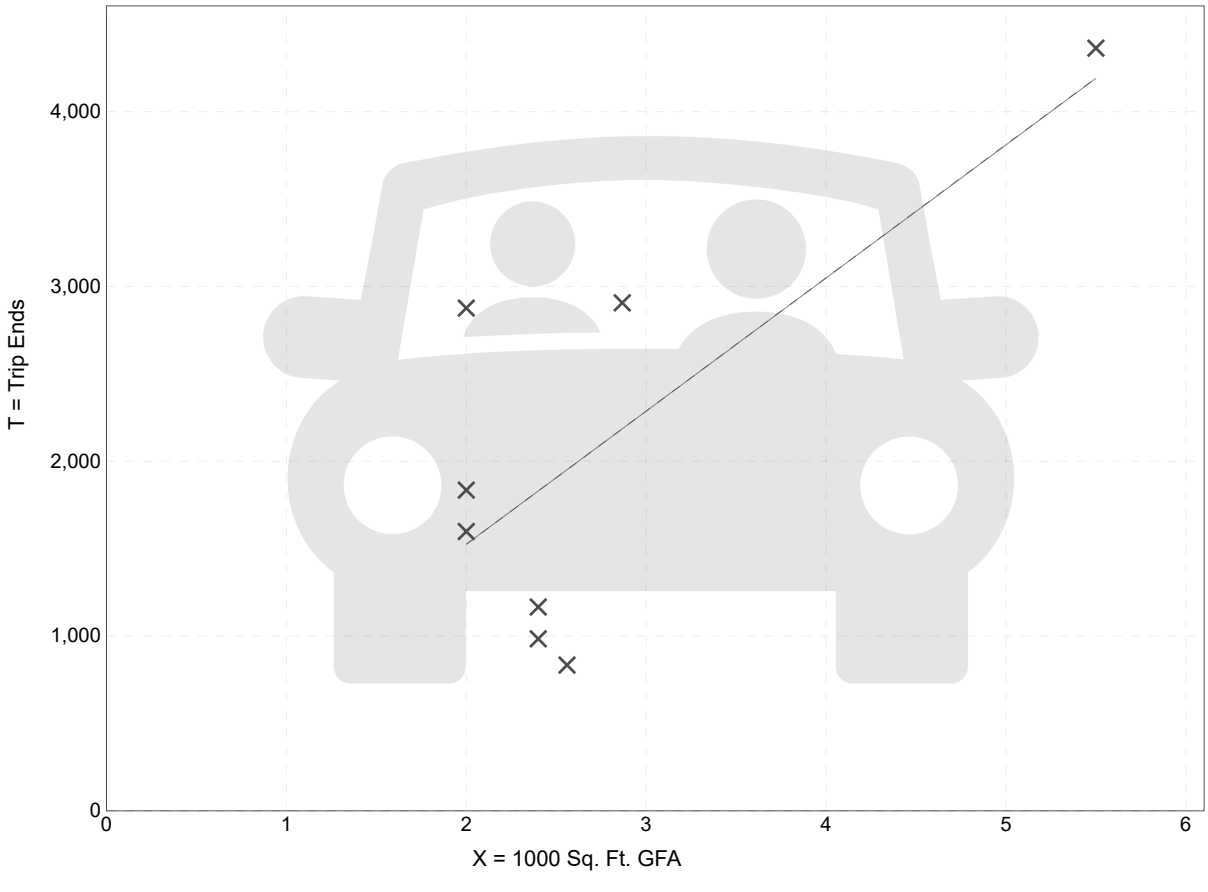
Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday**

Setting/Location: **General Urban/Suburban**
Number of Studies: 8
Avg. 1000 Sq. Ft. GFA: 3
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
762.28	325.78 - 1438.00	333.89

Data Plot and Equation



Fitted Curve Equation: T = 761.44(X) + 2.27

R^2= 0.53

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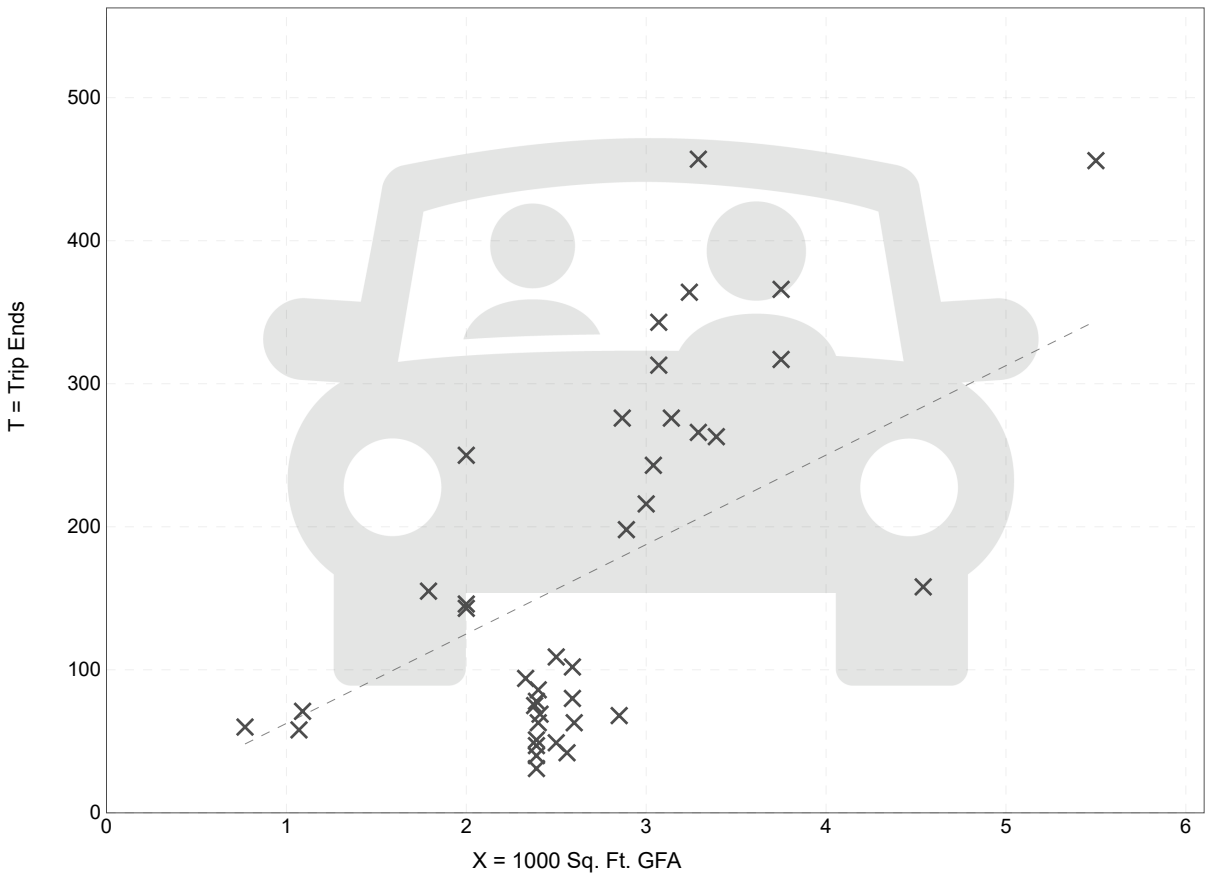
Convenience Market
(851)

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:	39
Avg. 1000 Sq. Ft. GFA:	3
Directional Distribution:	50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
62.54	12.97 - 138.91	35.04

Data Plot and Equation



Fitted Curve Equation: Not Given

R^2= ****

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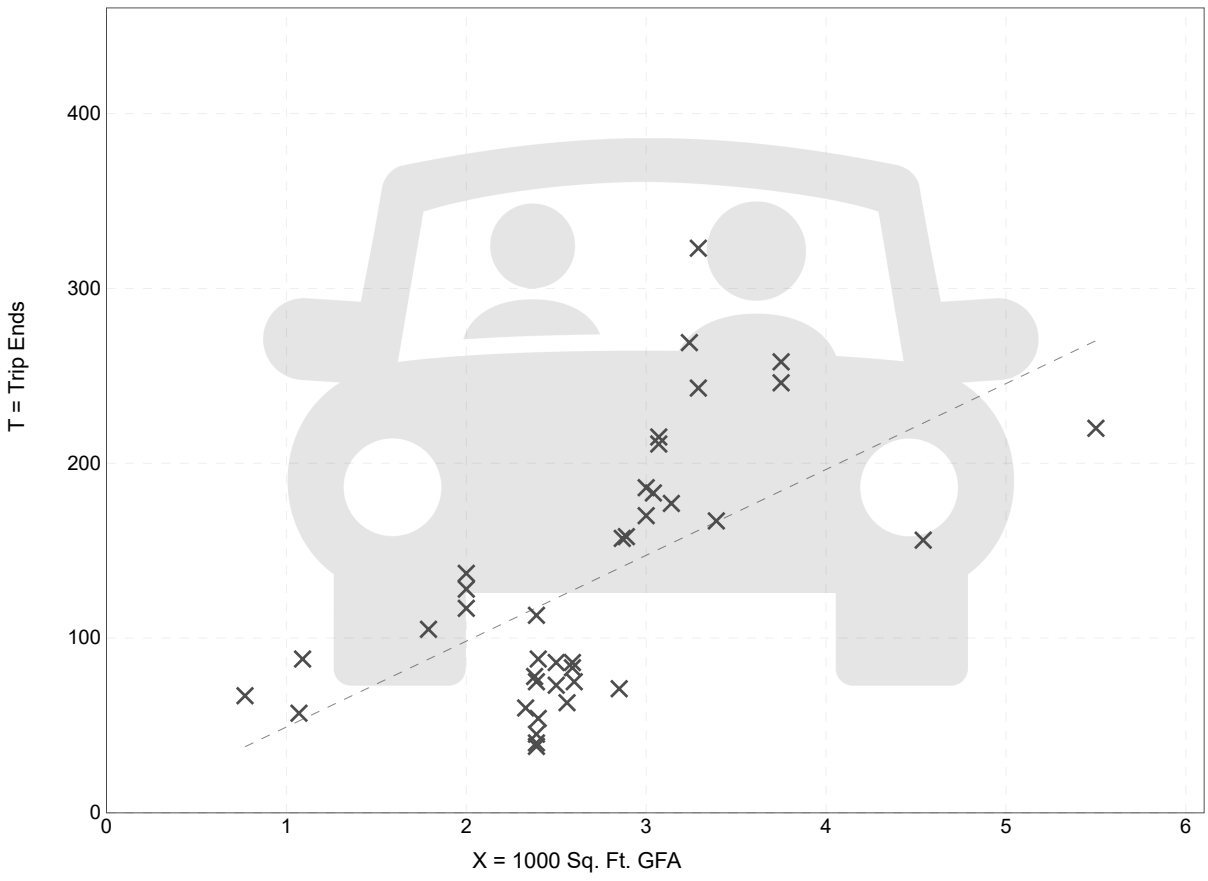
Convenience Market
(851)

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: 39
Avg. 1000 Sq. Ft. GFA: 3
Directional Distribution: 51% entering, 49% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
49.11	15.90 - 98.18	20.84

Data Plot and Equation



Fitted Curve Equation: Not Given

R^2= **

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Fast-Food Restaurant without Drive-Through Window
(933)

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

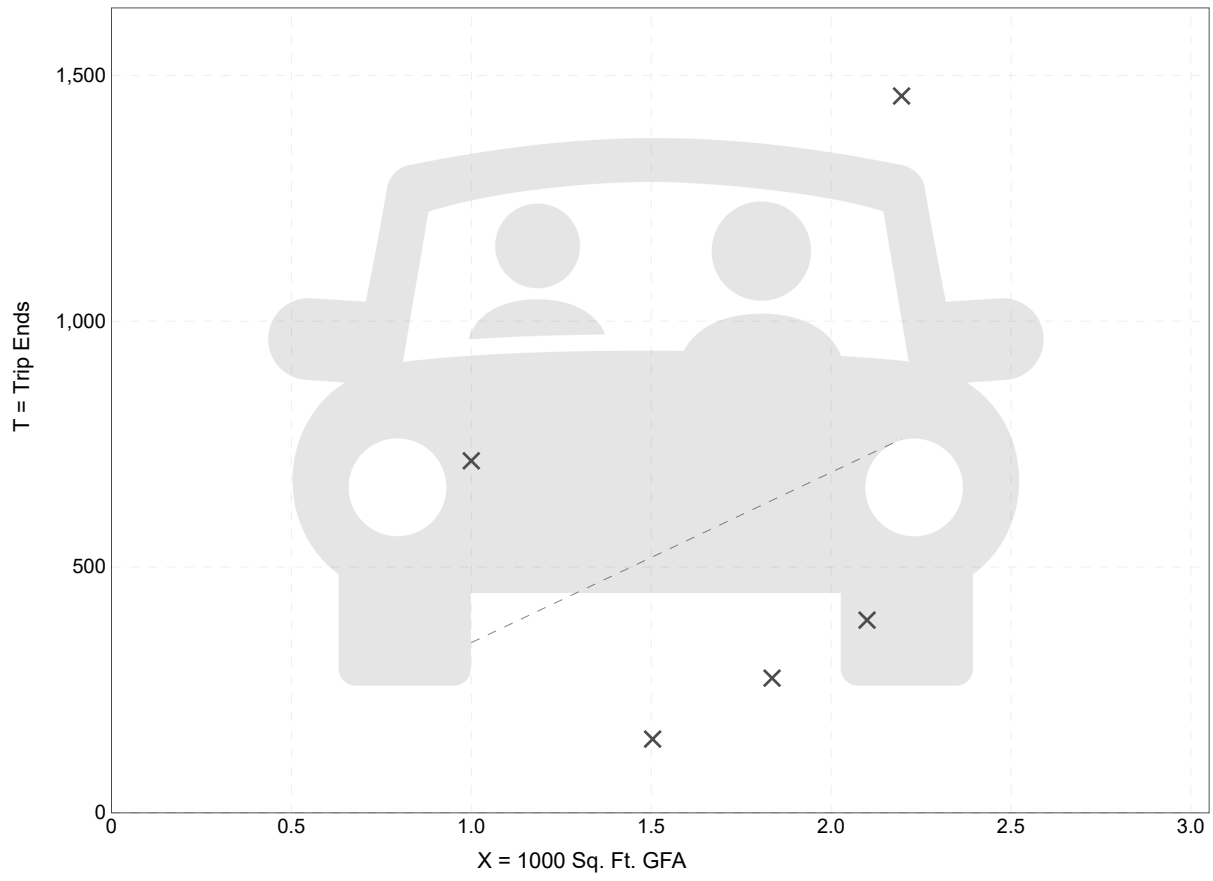
Setting/Location: **General Urban/Suburban**
Number of Studies: 5
Avg. 1000 Sq. Ft. GFA: 2
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
346.23	99.73 - 716.00	288.36

Data Plot and Equation

Caution – Small Sample Size



Fitted Curve Equation: Not Given

R^2= **

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Fast-Food Restaurant without Drive-Through Window
(933)

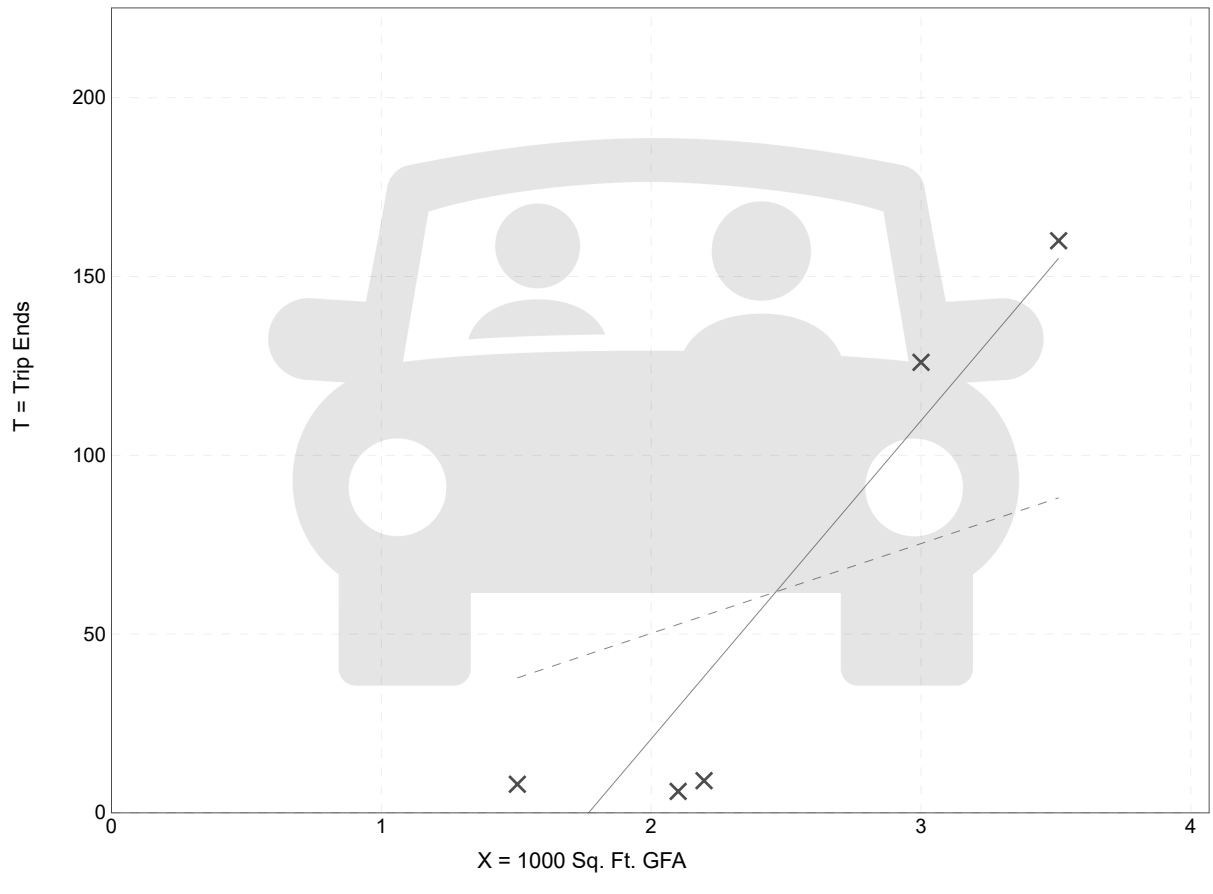
Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 5
Avg. 1000 Sq. Ft. GFA: 2
Directional Distribution: 60% entering, 40% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
25.10	2.86 - 45.58	22.36

Data Plot and Equation

Caution – Small Sample Size



Fitted Curve Equation: T = 89.03(X) - 157.40

R^2= 0.88

Trip Gen Manual, 10th Ed + Supplement ● Institute of Transportation Engineers

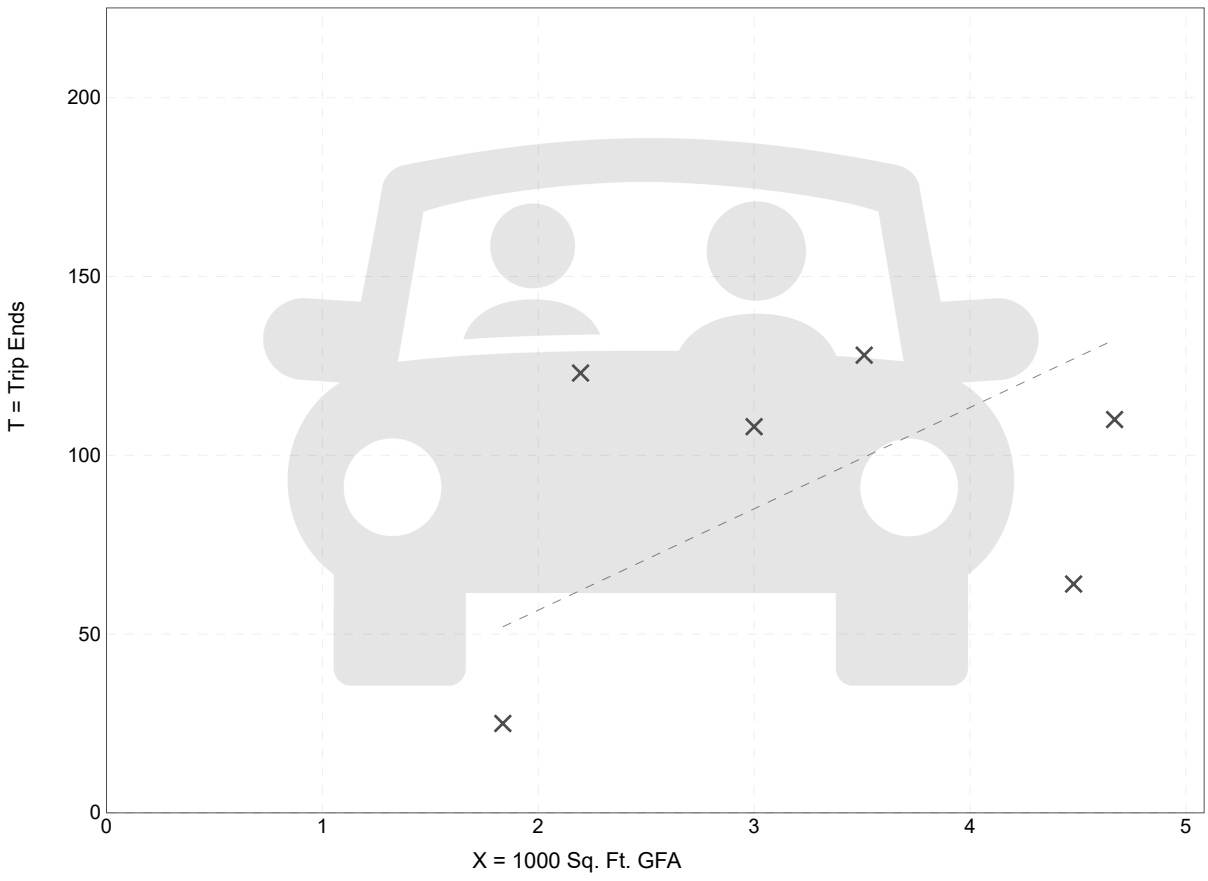
Fast-Food Restaurant without Drive-Through Window
(933)

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:	6
Avg. 1000 Sq. Ft. GFA:	3
Directional Distribution:	50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
28.34	13.62 - 56.01	14.56

Data Plot and Equation



Fitted Curve Equation: Not Given

R^2= **

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